WESTERN ELECTRIC COMPANY

TELEPHONIC APPARATUS AND SUPPLIES

WESTERN ELECTRIC COMPANY

ATLANTA—
230 Lee Street,
Atlanta, Georgia.

CHICAGO—
259 So. Clinton Street,
Chicago, Illinois.

CINCINNATI—
113 West Third Street,
Cincinnati, Ohio.

DALLAS—
Dallas,
Texas.

DENVER—
1516 Curtis Street,
Denver, Colorado.

DES MOINES—
Cor. Third and Depot Streets,
Des Moines, Iowa.

INDIANAPOLIS—
Majestic Building,
Indianapolis, Indiana.

KANSAS CITY—
611-613 Wyandotte Street,
Kansas City, Missouri.

LOS ANGELES—
117 East Seventh Street,
Los Angeles, California.

NEW YORK—
463 West Street,
New York.

OMAHA—
802 Farnum Street,
Omaha, Nebraska.

PHILADELPHIA—
11th and York Streets,
Philadelphia, Penna.

PITTSBURG—
910 River Avenue,
Allegheny, Penna.

SAINT LOUIS—
810 Spruce Street,
St. Louis, Missouri.

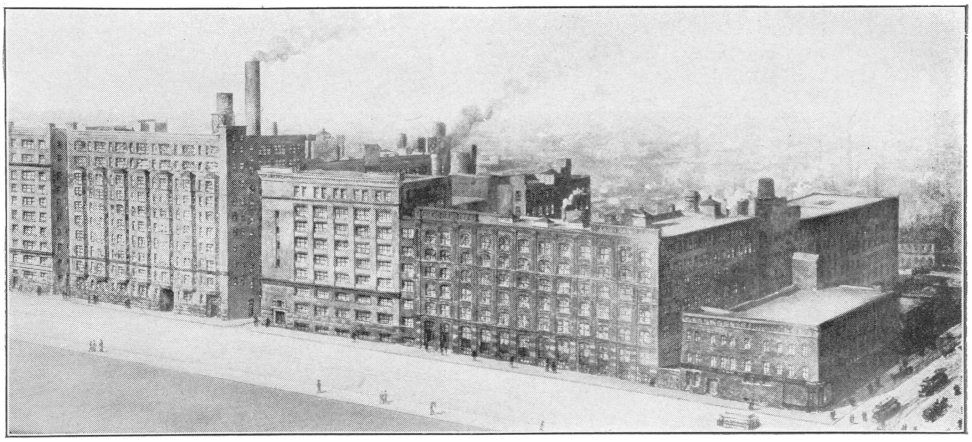
SAINT PAUL—
235-237 East 6th Street,
St. Paul, Minn.

SALT LAKE CITY—
445 South Third West Street,
Salt Lake City, Utah.

SAN FRANCISCO—
642 Folsom Street,
San Francisco, Cal.

SEATTLE—
1518 First Avenue, South,
Seattle, Washington.

NORTHERN ELECTRIC & MANUFACTURING COMPANY, Limited,
MONTREAL. WINNIPEG.



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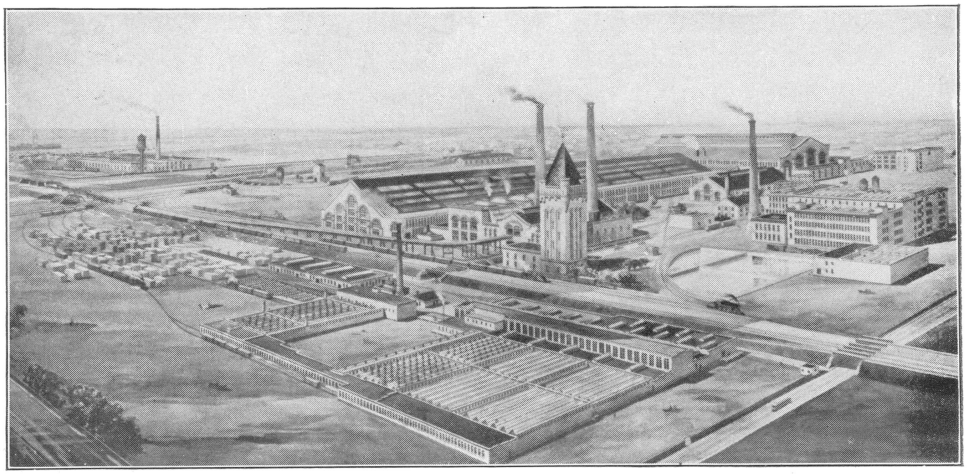


HAWTHORNE



New York



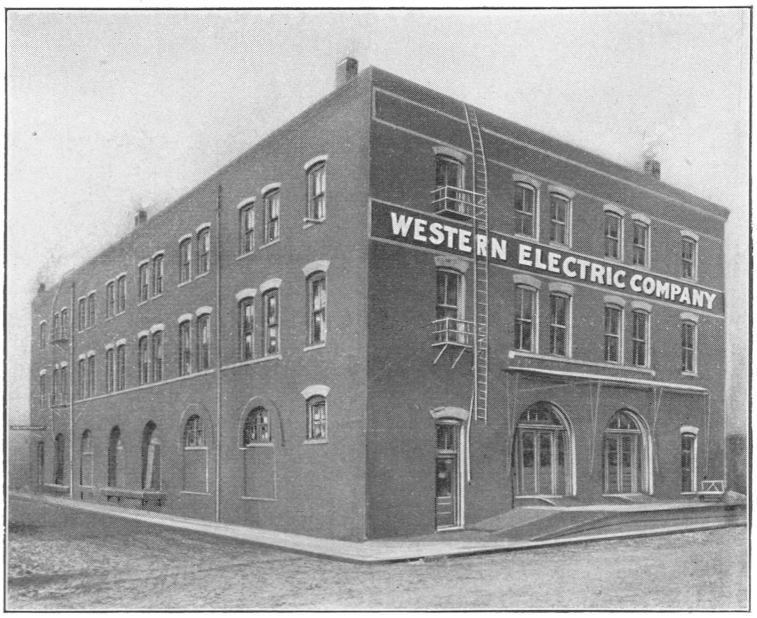
St. Louis



Indianapolis



Los Angeles



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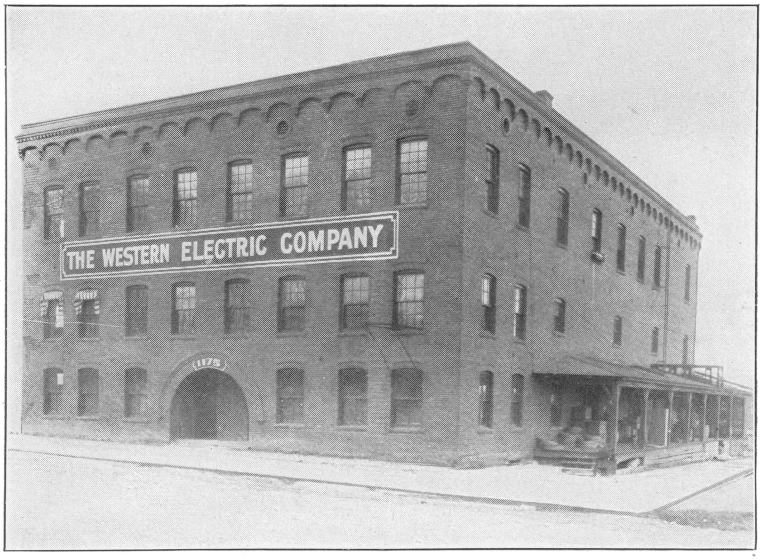

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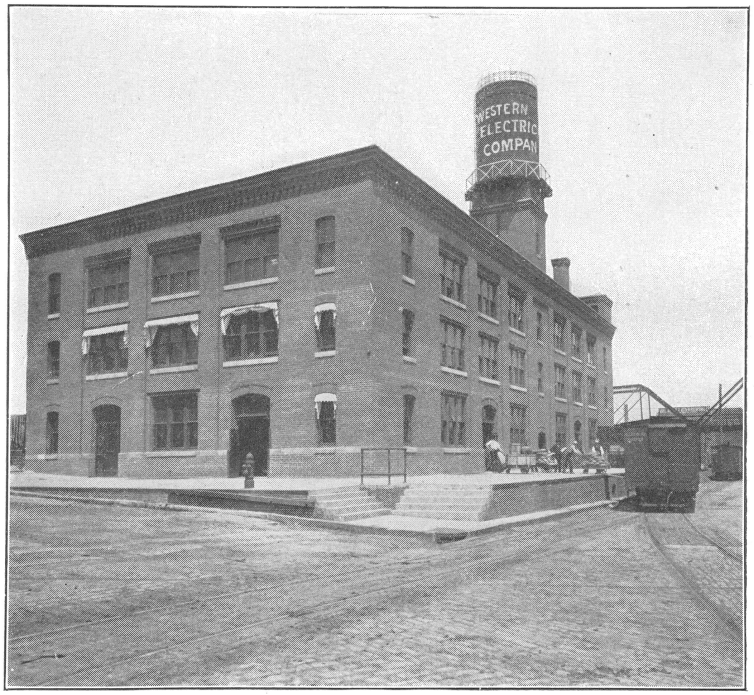

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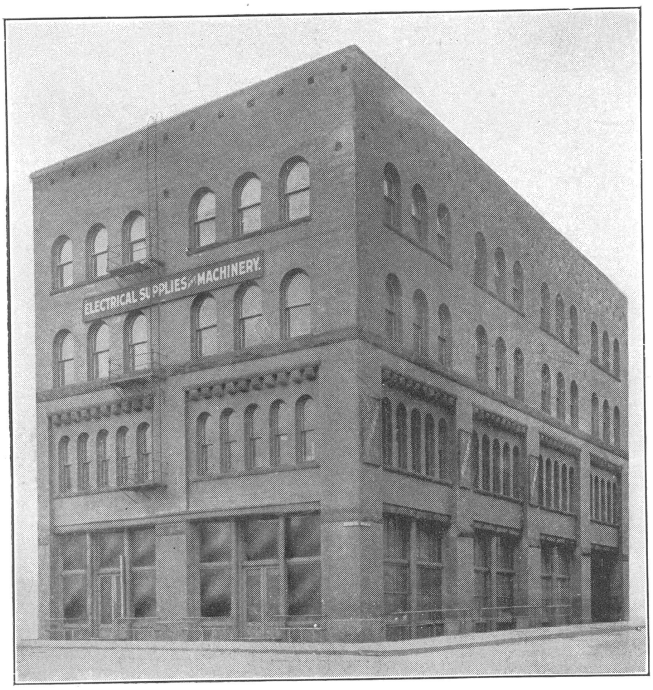

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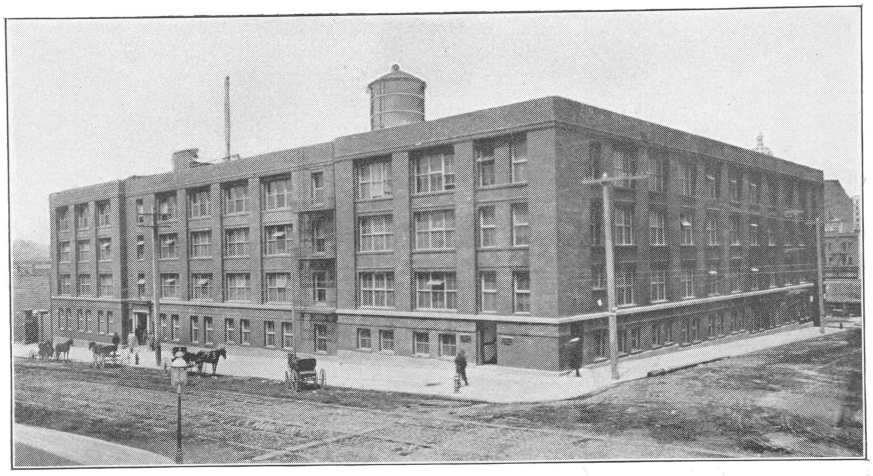
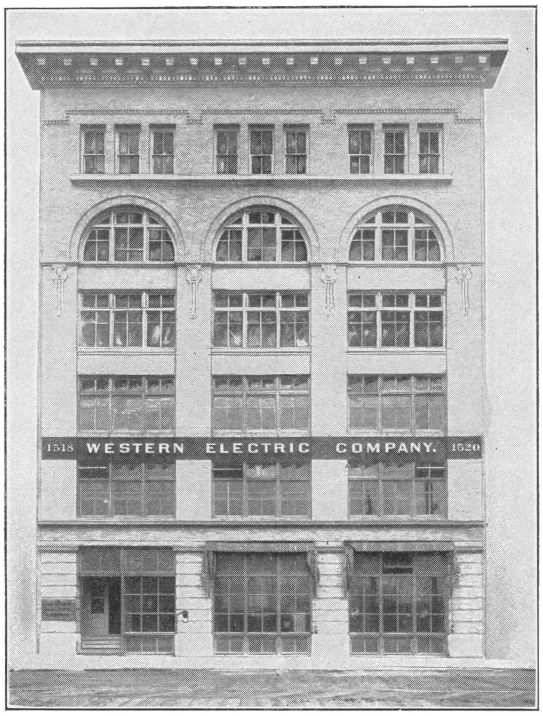
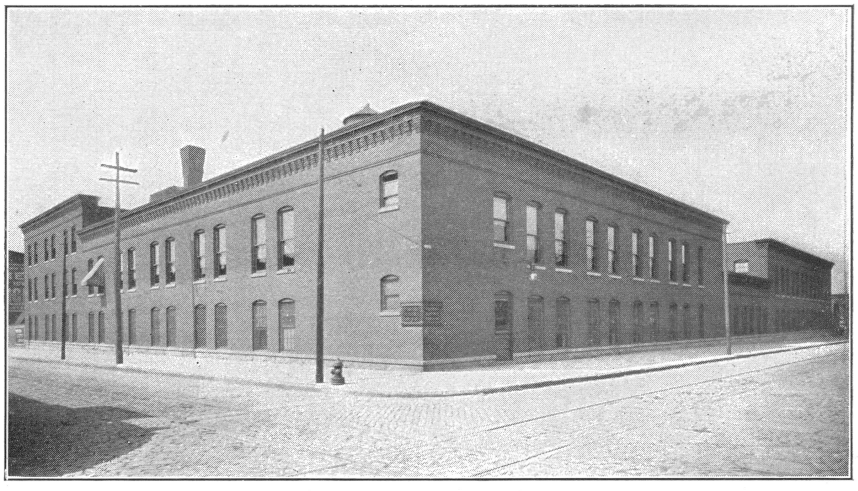


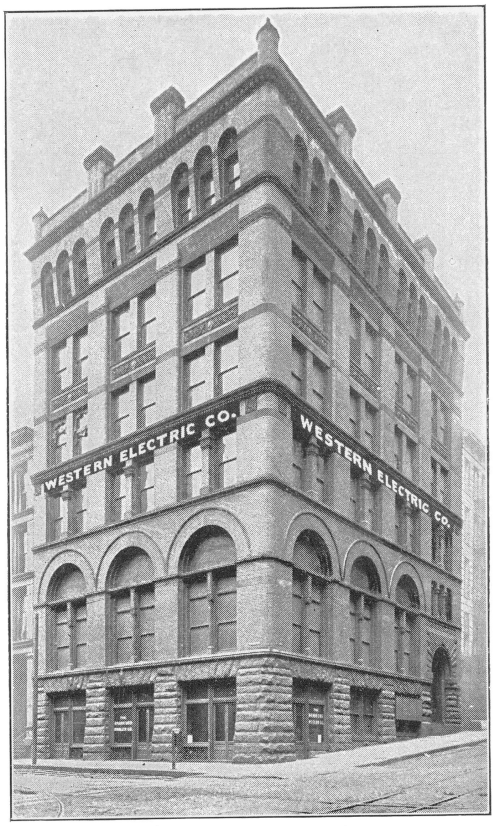
San Francisco



SEATTLE



PHILADELPHIA



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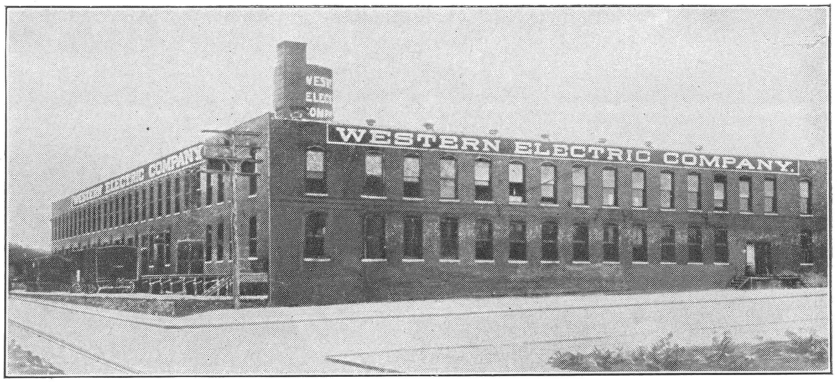

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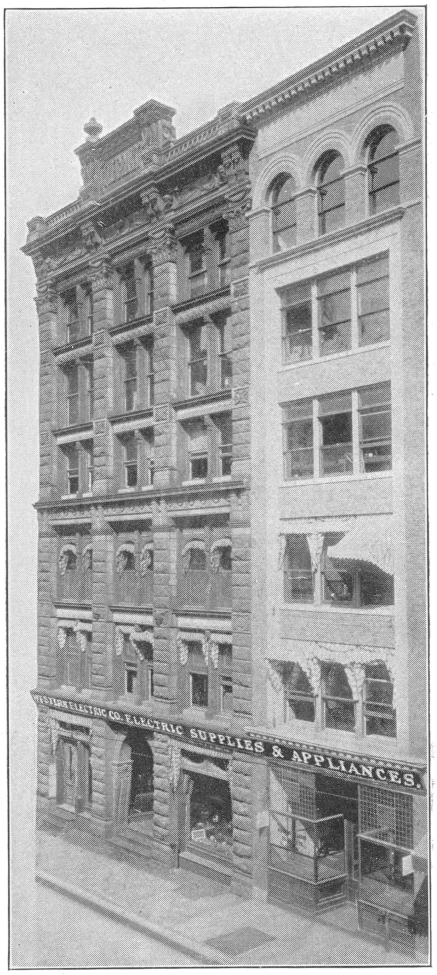

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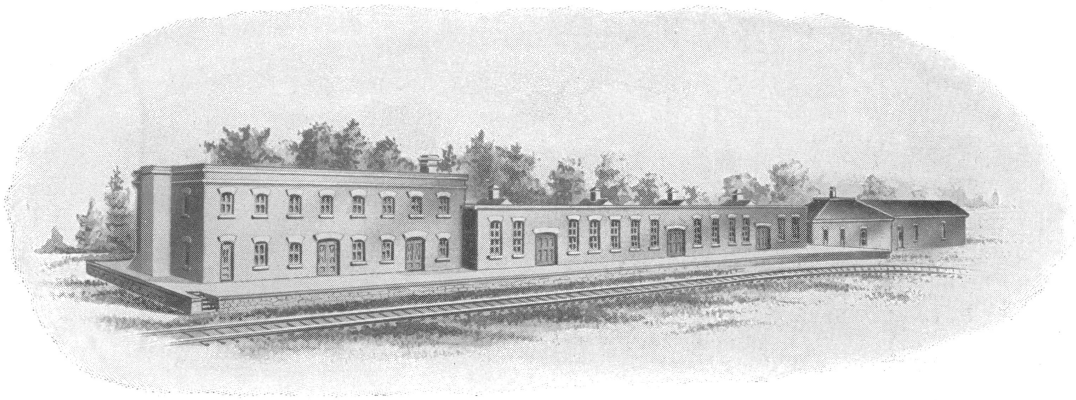

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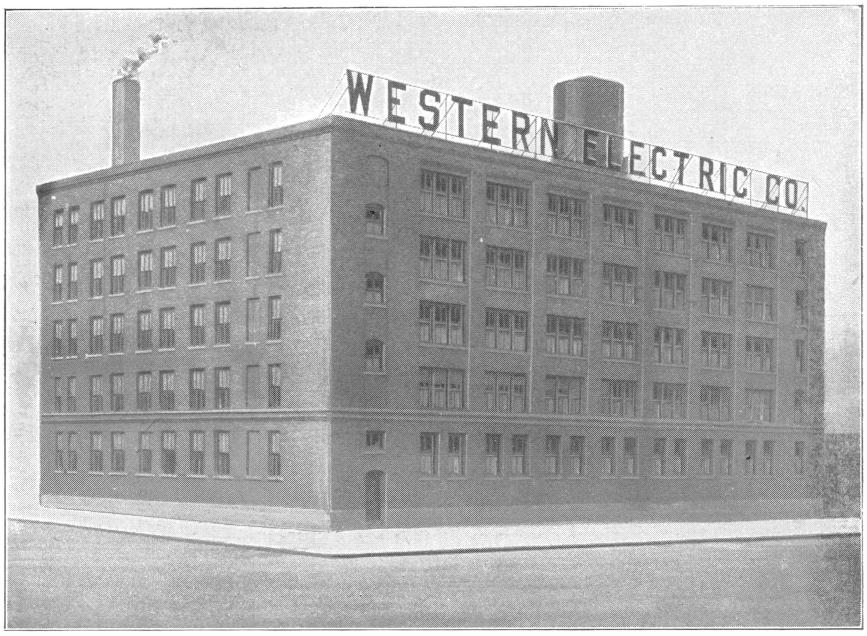


PITTSBURG

INTRODUCTION

This catalogue has been prepared for the assistance and guidance of purchasers of telephone apparatus and supplies. It lists only the types of apparatus and supplies which are in common use. Material for which there is very little demand or which is furnished only with complex exchange equipments is not included in this catalogue.

The common uses of the apparatus are given so far as possible for the guidance of the purchaser and it should be understood that the apparatus is not necessarily restricted to these uses.

All parts are interchangeable and we are prepared to furnish renewals and additions to existing equipments at any time. If the code number is not known when ordering it is advisable to send us the old parts to insure prompt and proper filling of the order.

We carry at all our houses a complete line of apparatus and supplies in general use. At every house are experts who will be glad to furnish any desired information or advice, if you will write stating your requirements.

WESTERN ELECTRIC COMPANY

TELEGRAPH CODE

To accommodate our largely increased correspondence we have arranged a code of carefully compiled words, each representing a business phrase, and customers are requested to make use of these words when ordering goods, requesting quotation, or seeking information relative to the shipment of orders by telegraph. A little ingenuity in arranging a message in code will result in a comprehensive order being placed or a request for information being transmitted at a comparatively small cost.

ORDERS

Leaking	Add to our order of.
Leaky	Cancel our order of.
Lean	Change our order of.
Leaned	Hurry forward goods on our order of.
Leaning	Have you shipped goods on our order? If not when will you?
Leanness	Enter order if you can ship in.
Leaped	Hold for instructions our order of.
Leaping	If you cannot ship in time named, advise by telegraph.
Learn	Instructions by mail.
Learned	Prepay freight.
Lectured	Send C. O. D. by express.
Lecturing	What quantity can you ship per day?
Ledge	Do not delay.
Leeward	Duplicate our order.
Leeway	Can you furnish?
Learning	Shipping instructions will be sent you.
Lease	Ship immediately.
Leased	Ship as soon as possible.
Leasehold	Ship by express.
Leaseholder	Ship by fast freight.
Leash	Ship quickest route.
Leaven	Ship cheapest route.
Leavened	Send tracer immediately for shipment of.
Leavening	Wait receipt of letter before proceeding with order.
Lecture	Change order for.
Legacy	Hold subject to our order.
Legal	Hold until further orders.
Legalize	Send us immediately.
Legally	This is very important.
Legate	Send tracer on shipment—goods not here.

ANSWERS

Legislature	Please specify quantities and trade number.
Legitimate	Unable to give better price.
Legitimately	We quote.
Legitimist	We quote for immediate acceptance.
Legless	We quote in reply to your inquiry of.
Leisure	We quote shipment from stock.
Leisurely	We quote shipment in.
Leming	We cannot accept at the price.
Lemon	We will accept your order.
Lemonade	We do not make the article.
Lender	Can ship at once from stock if advised immediately.
Lending	Can ship at once on receipt of order.
Lengthen	Can ship in.
Lengthened	Can begin shipping at once, and complete in.
Lengthening	Can ship within one week from receipt of order if advised at once.
Lengthily	Can ship within two weeks from receipt of order if advised at once.
Leniency	Have none in stock.
Lenient	First shipment will be made.
Lent	Have entered order and will ship.
Leonard	Have sent tracer as requested.
Leonine	Have suspended work as requested.
Leonora	Too late to cancel order.
Leopard	Unable to ship goods at time promised.
Leopols	We ship you to-day.
Leper	We expect to ship.
Leprosy	We will complete your order.
Leprous	We will ship.
Lessen	We have shipped.
Lessened	We have completed your order and shipped same.
Lessening	We have entered order.
Lethargy	Telegraph shipping instructions for your order of.
Lettuce	Can deliver part of your order at once. Shall we ship portion, or hold till we can make one complete shipment?
Levant	Do not understand your order. Send duplicate with full details.
Levelness	Send us official order confirming your telegram.

CODE IN GENERAL

Lapwing	Answer by mail.
Larboard	Referring to our letter of.
Larceny	Referring to your letter of.
Larch	We write you fully to-day.
Largeness	We have no letter from you.
Largess	Will write you fully in a day or so.
Lariat	Write giving full particulars.
Lark	Answer by telegraph—day message.
Larva	Answer by telegraph—night message.
Larynx	Referring to our telegram of.
Lascar	Referring to your telegram of.
Lash	Telegraph immediately.
Lashed	Telegraph reply soon as possible.
Lashing	We have no telegram from you.
Lass	Why do you not telegraph?
Lasting	Shall we?
Latch	Will you?
Laugh	Utmost care must be used.
Laughable	Cash on delivery.
Laughed	Cash in 30 days.
Laughter	Will not allow any commission.
Laughing	Commission will be allowed.
Launch	Your financial standing being unknown, we will send goods C. O. D. unless otherwise instructed.
Launched	Kindly send us references as to your financial standing, or shall we ship via freight with draft attached to bill of lading?
Laundress	Will you agree to the conditions?
Laundry	Contract awarded.
Laura	Contract will be awarded.
Laurate	Will you extend credit?
Laurel	Have you decided?
Lava	Have not decided.
Lavation	Have decided.
Lavatory	Will guarantee delivery by the.
Lavender	Cannot guarantee delivery before the.
Lawfully	The diameter is.
Lawfulness	Will do the best we possibly can.
Lawgiver	Do the best you possibly can.
Lawgiving	Shall we do so?
Lawless	Do so.
Lawn	Can do nothing until.
Lateen	Will you accept?
Lateness	Wire at once if accepted or not.
Latent	Will greatly accommodate us if you will.
Latently	According to contract.
Lateral	Not according to contract.
Lather	To which add the cost of.
Lathered	In addition to.
Lathering	How did you address?
Latin	Was addressed to.
Latinize	Please note an advance of.
Latitude	Would you advise?
Latterally	Would advise you to.
Latterly	Would not advise you to.
Lattice	Unless otherwise advised will assume that.
Laud	Will you agree to?
Laudable	Will agree to.
Laudably	Must have answer by.
Laudation	Will be in.
Laudative	Will be here.
Lawrence	What have you done about?
Lax	Will deposit sight draft on you to-day, unless advised to the contrary, for ..... dollars.
Laxative	Please accept our draft for ..... dollars.
Laxity	Send duplicate copy of invoice dated.
Laxness	Have examined very carefully and find.
Laymen	Expenses to be paid by.
Lazily	Do not fail to.
Laziness	Have figured as close as possible.
Lazy	Freight must be prepaid.
Leach	Freight rate per hundred pounds to destination.
Leaden	What is freight rate per hundred pounds?
Leader	Guarantee the account.
Leading	Hold subject to your order.
Leafage	Does not include.
Leafing	Must be included.
Leafless	Will keep you fully informed.
Leafy	Insist upon.
League	Await instructions.
Leagued	Letter in transit with full particulars.
Leak	Shall we deliver goods on verbal order of your Mr. .....?
Leakage	Advisable for you to place order at once, prices tending to advance.

QUESTIONS

Legatee	At what price could you furnish?
Legation	Quote us by telegraph.
Legend	Quote us by next mail.
Legendary	Quote lowest price by telegraph F. O. B. New York.
Legging	Quote lowest prices by mail F. O. B. New York.
Legible	Telegraph lowest price, F. O. B. New York, and how soon can ship.
Legibly	Can you ship immediately?
Legion	Can you ship in?
Legislate	Have you in stock?
Legislated	Have you in stock? If not how soon can ship?
Legislating	How soon can you ship?
Legislative	How soon can you make first shipment and how fast remainder?
Legislator	What substitution can you make?

TERMS

Terms are thirty days net. All bills are due on the 15th of the following month. Payments may be made by bank draft, post office or express money order or registered letter. We are not responsible for remittances lost in the mails.

REFERENCES

New customers, unless satisfactorily rated by the commercial agencies, should send references with their first order and brief statement of their financial condition. This will enable us to ship promptly.

C. O. D. SHIPMENTS

To avoid the slight delay necessarily occasioned by our taking time to make the usual inquiries of references, we are always glad to ship by express C. O. D. if a remittance sufficient to pay express charges both ways accompanies the order, or by freight subject to sight draft against bill-of-lading.

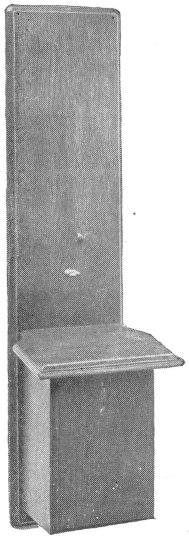
PRICES

The prices as given in this catalogue are f.o.b. warehouse unless otherwise specified, and are subject to change without notice. Net prices quoted upon request. Please state quantities desired.

SHIPMENTS

We request customers to give shipping directions with their orders, but if not given will use our best judgment in making selection of route. As experienced packers are employed we are not responsible for breakages after having obtained "in good order" receipt from the transportation company. Goods ordered to be shipped by mail will be sent only at purchaser's risk.

TELEPHONE APPARATUS



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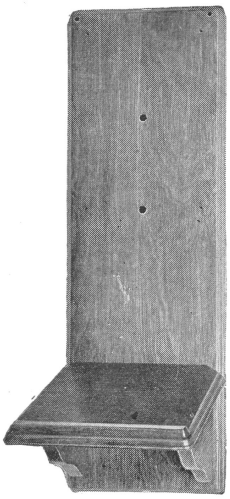

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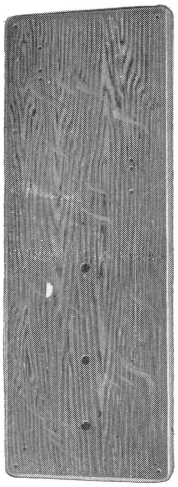

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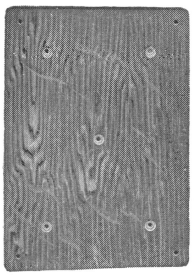

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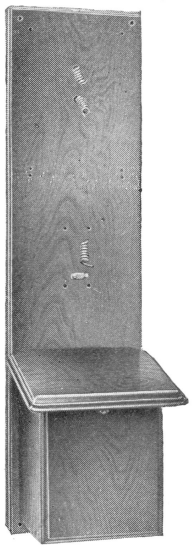

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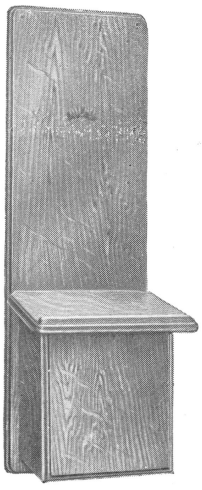


No. 136-B

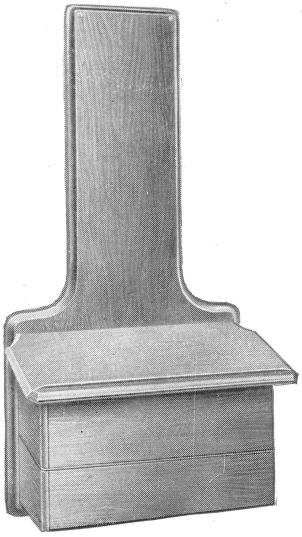
APPARATUS BLANKS

A complete line of apparatus blanks is manufactured. These are suitable for covering the drillings for any of our apparatus which is not provided.

BACKBOARDS

Regularly furnished in oak or walnut

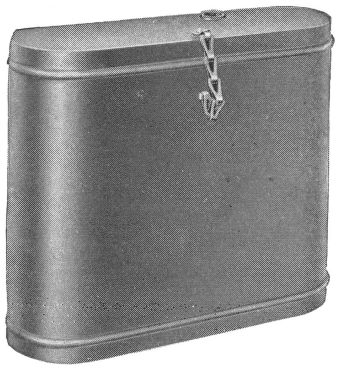
Code No.	Style	Used with	Dimensions inches	List Price each
111-C	Battery Box for 3 dry cells	Nos. 1240-A and 1240-E telephone sets. Included as part of set	$33\frac{1}{8}$x$8\frac{1}{8}$x$7\frac{3}{4}$	
		Walnut		**$1.60**
		Oak		**1.50**
132-A	Writing Shelf	Nos. 1293-A, 1293-Y and 1296-A telephone sets	$22\frac{1}{4}$x$7\frac{1}{2}$x$7\frac{3}{4}$	**1.05**
133-A	Plain	No. 1293-J telephone set. Included as part of set	21x$7\frac{1}{2}$	**.53**
133-B	Plain	Special No. 1293-J telephone set when No. 7-E coin collector is used	$24\frac{3}{4}$x$7\frac{1}{2}$	**.57**
134-A	Plain	Nos. 1293-A and 1293-Y telephone sets	$9\frac{1}{8}$x$6\frac{1}{2}$	**.24**
136-B	Battery Box for 3 dry cells	No. 1293-Y telephone set	26x$8\frac{1}{8}$x$7\frac{3}{4}$	
		Walnut		**1.50**
		Oak		**1.45**
138-A	Battery Box for 3 dry cells	No. 1298-A telephone set. Included as part of set	$30\frac{3}{4}$x$8\frac{1}{8}$x$7\frac{1}{4}$	
		Walnut		**1.60**
		Oak		**1.50**



No. S-7296

Backboards—Continued

Code No.	Style	Used with	Dimensions inches	List Price each
S-7296	Battery Box for 3 wet cells	Not drilled but suitable for Nos. 1240, 1293 and 1298 telephone sets.	35x16x8	**$2.70**

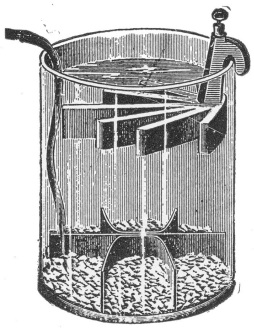


No. 1-A

BATTERY BOXES

Made of sheet steel, with black japan finish and lined with pressboard.

Code No.	Used for	Dimensions inches	List Price each
1-A	3 standard size dry cells	$8\frac{2}{3}\frac{3}{2}$x$3\frac{7}{32}$x$7\frac{25}{64}$	**$0.75**



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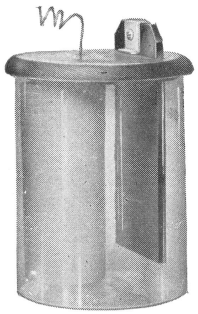


No. 10130

PRIMARY BATTERIES

GRAVITY BATTERY

5x7

Code Word	List No.	
Deerfield	**10250**	Cell, complete
Defiance	**10251**	Jar, glass 5x7
Delanco	**10252**	Zinc
Deland	**10253**	Copper

6x8

Delano	**10255**	Cell, complete
Delaware	**10256**	Jar, glass 6x8
Delevan	**10257**	Zinc
Delhi	**10258**	Copper

STANDARD FULLER BATTERY

Colville	**10130**	Cell, complete
Comanche	**10126**	Jar, glass, 6x8
Comillah	**10132**	Cover for jar
Comines	**10133**	Carbon
Como	**10134**	Porous cup
Compton	**10135**	Zinc

Primary Batteries—Continued



No. 10000

LECLANCHE BATTERY

Code Word	List No.	
Ceredo	**10000**	Cell, complete
Ceretto	**10002**	Porous cup
Ceylon	**10003**	Jar
Ceylones	**10004**	Zinc, amalgamated
Chase	**10005**	Sal-ammoniac, package

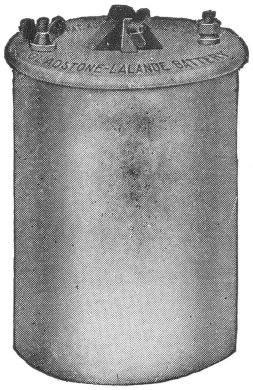
GLADSTONE-LALANDE BATTERIES

Model G-10 Vitrified Porcelain Jar and Cover
Size over all, 4½ inches x 6¾ inches
Capacity, 100 ampere hours

Code Word	List No.	
Knieboog	**G-10**	Complete battery with charge

Renewal Charges

Kniedicht	**G-11**	Complete renewal



G-20 with Jar

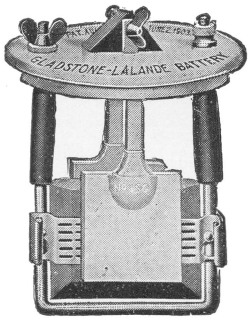
Separate Renewal Parts

Kniefall	**G-12**	One oxide plate
Kniefalles	**G-13**	One double zinc plate
Kniegurt	**G-14**	One can caustic soda
Kniegurtes	**G-15**	One bottle paraffine oil

These renewal charges can also be used in Lalande cells, types BB and Z.

Model G-20 Vitrified Porcelain Jar and Cover
Size over all, 5¾ inches x 8¾ inches
Capacity, 150 ampere hours

Code Word	List No.	
Kniehebel	**G-20**	Complete battery with charge



G-20 without Jar

Renewal Charges

Kniehieb	**G-21**	Complete renewal

Separate Renewal Parts

Kniehout	**G-22**	One oxide plate
Kniehouten	**G-23**	Two zinc plates
Kniekappe	**G-24**	One can caustic soda
Knielap	**G-25**	One bottle paraffine oil

These renewal charges can also be used in Lalande cells, type Q.

Primary Batteries—Continued

Model G-50 Vitrified Porcelain Jar and Cover
Size over all, 7¾ inches x 10½ inches
Capacity, 300 ampere hours

These batteries are largely used for central station telephone transmitter work and in operating interrupters for subscribers' ringing.

Code Word	List No.	
Knievormig	**G-50**	Complete battery with charge

Renewal Charges

Kniewele	**G-51**	Complete renewal

Separate Renewal Parts

Knoflook	**G-52**	One oxide plate
Kniffes	**G-53**	Two zinc plates
Knokkels	**G-54**	One can caustic soda
Knolkool	**G-55**	One bottle paraffine oil

These renewal charges can also be used in Lalande cells, types R and RR.

Permanent Parts of Gladstone-Lalande Batteries

Orsippos	**G-110**	Porcelain jar for G-10 cell
Orsodagna	**G-120**	Porcelain jar for G-20 cell
Ortalidi	**G-150**	Porcelain jar for G-50 cell
Orthodoxal	**G-111**	Porcelain jar for G-10 cell
Orthodoxe	**G-121**	Porcelain jar for G-20 cell
Orthogamy	**G-151**	Porcelain jar for G-50 cell
Orthogonos	**G-112**	Copper hanger with clamp and nuts for G-10 cells
Orthogonun	**G-122**	Copper hanger with clamp and nuts for G-20 cells
Orthonyx	**G-152**	Copper hanger with clamp and nuts for G-50 cells
Orthosias	**G-155**	Double threaded screw with two wing nuts and one jam nut for holding zincs in G-20 and G-50 cells



No. 100028

Code Word	List No.	
Orthostade	**G-113**	Hard rubber insulators for G-10 cells
Orthostyle	**G-123**	Hard rubber insulators for G-20 cells
Orthotone	**G-153**	Hard rubber insulators for G-50 cells
Ortigaban	**G-154**	Wire connections for all sizes of cells

DRY BATTERIES

BLUE BELL

The Blue Bell dry battery has been developed to meet the exacting requirements of telephone work. Comparative tests have been applied to the different dry cells now on sale, and show conclusively that the Blue Bell is the best dry cell on the market for light service, such as would be required of a primary battery for use in connection with a high resistance transmitter at local battery telephone sets. Size 2⅝ in. x 6¾ in. Packed in barrels containing 125 each.

Code Word	List No.
Maststueck	**100028**



No. 23939

LIBERTY

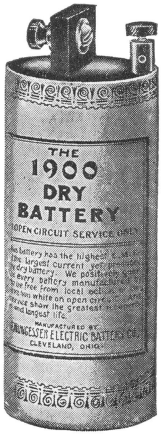
It is especially adapted to telephone work, and is highly efficient. It has a voltage of 1.5 and is one of the best dry batteries for intermittent service.

Code Word	List No.
Originally	**23939**

PRICES ON REQUEST



No. 100029



No. 4129

Dry Batteries—Continued

COLUMBIA

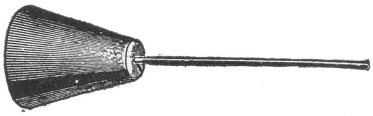
This battery has been found satisfactory for telephonic work as well as for general use.

Code Word	List No.	
Mastuerzo	**100029**	No. 6 cell

1900

This battery is manufactured expressly for telephone service.

Code Word	List No.	
Ossiforme	**4129**	Standard, $2\frac{1}{2}$ in. x 6 in.
Foolish	**4449**	Type C, 2 in. x 5 in.
Foolcracy	**4450**	Type B, $1\frac{3}{4}$ in. x $4\frac{1}{2}$ in.



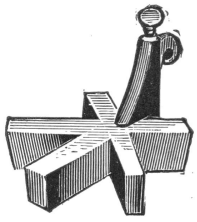
No. 10135



No. 10004



No. 10453



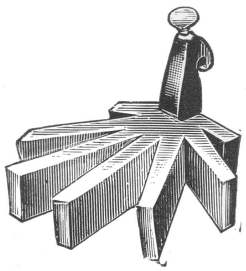
No. 10252

BATTERY SUPPLIES

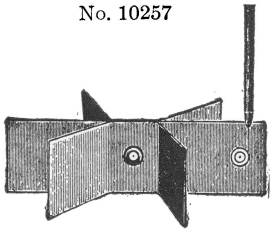
ZINCS

Code Word	List No.		
Ceylones	**10004**	Leclanche	Square, amalgamated
Devereux	**10453**	Leclanche	Round, amalgamated
Compton	**10135**	Standard Fuller	Weight, $1\frac{1}{2}$ lbs.
Delanco	**10252**	Crowfoot for 5x7 jar	Weight, $1\frac{3}{4}$ lbs.

PRICES ON REQUEST



No. 10257



No. 10253

Battery Supplies—Continued

ZINCS

Code Word	List No.	
Delevan	**10257**	Crowfoot for 6x8 jar, weight, 3 lbs.

COPPERS

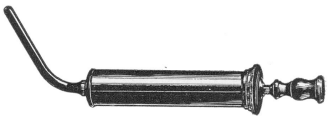
Deland	**10253**	For 5x7 jar
Delhi	**10258**	For 6x8 jar

SAL-AMMONIAC

Dundee	**10500**	Imported over 99% pure

BLUE VITRIOL

Dunellen	**10502**	



No. 10490



No. 10497



No. 10498

BATTERY UTENSILS

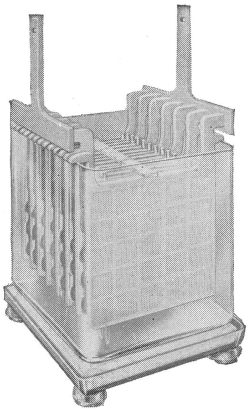
Code Word	List No.	
Dumont	**10490**	Battery syringe No. 6, solid piston
Duncan	**10497**	Battery brush
Duncannon	**10498**	Battery knife

STORAGE BATTERIES

ELEMENT OF TYPE "E"

Size of Plates, 7¾ inches by 7¾ inches

" Chloride Accumulator "



Type "E"

Number of plates		5	7	9	11	13	15
	For						
Discharge in amperes	8 hours	10	15	20	25	30	**35**
	5 hours	14	21	28	35	42	**49**
	3 hours	20	30	40	50	60	**70**
	1 hour	40	60	80	100	120	**140**
Normal charge rate		10	15	20	25	30	**35**
Outside measurement of glass jar, in inches:	Length	5½	6¾	8	8⅝	11	**11**
	Width	9⅛	9⅛	9⅛	9⅛	9⅛	**9⅛**
	Height	11⅜	11⅜	11⅜	11⅜	11⅜	**11⅜**
Outside measurement of rubber jar, in inches:	Length	2⅞	3⅞	5	6⅛	8⅛	**8½**
	Width	8½	8½	8½	8½	8½	**8½**
	Height	11	11	11	11	11	**11**
Outside measurement of all metal tanks, in inches:	Length	8¾	9¾	11⅛	12⅜	13¾	**15⅛**
	Width	11	11	11	11	11	**11**
	Height	12¼	12¼	12¼	12¼	12¼	**12¼**
Weight of electrolyte, in pounds:	In glass	18½	20	24½	26	35	**34**
	In rubber	5½	8	10½	12	17	**18½**
	In all metal tanks	27½	31½	36	40	44½	**49**
Weight of cell complete with electrolyte, in pounds:	In glass	49	60	74	86½	104	**112**
	In rubber	29½	40½	52	63	77	**87**
	In all metal tanks	85	104	124	136	161	**180**

PRICES ON REQUEST

Elements of Type "E"—Continued

Size of Plates, 7¾ inches by 7¾ inches

"Chloride Accumulator"

Number of plates		5	7	9	11	13	15
Height of cell to top of lug, in inches:	In glass	20	20	20	20	20	20
	In rubber	12½	12½	12½	12½	12½	12½
	In all metal tanks	16	16	16	16	16	16
List Price, element only		$ 8.25	$11.75	$15.25	$18.75	$22.25	$25.75
List Price, glass jar, extra		1.50	1.70	1.85	2.05	2.90	2.90
List Price, rubber jar and cover, extra		2.90	3.25	3.75	5.05	5.75	6.10
List Price, all metal tank, extra		10.30	11.35	12.40	13.45	14.50	15.55

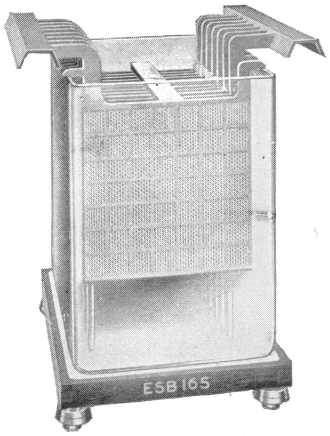
N. B.—In ordering Elements, or parts thereof, specify whether intended for glass or rubber jars or tanks.

ELEMENTS OF TYPE "F"

Size of Plates, 11 inches by 10½ inches

"Chloride Accumulator"

Number of plates		9	11	13	15	17	19	21	23	25	27
Discharge in amperes:	For 8 hours	40	50	60	70	80	90	100	110	120	130
	5 hours	56	70	84	98	112	126	140	154	168	182
	3 hours	80	100	120	140	160	180	200	220	240	260
	1 hour	160	200	240	280	320	360	400	440	480	520
Normal charge rate		40	50	60	70	80	90	100	110	120	130
Outside measurements of glass jar, in inches:	Length	9	10⅝	10⅝	12	Old type jars 15½ inches high can be furnished for renewals					
	Width	12⅝	12⅝	12⅝	12⅝						
	Height	17	17	17	17						
Outside measurements of glass tanks, in inches:	Length	....	....	....	14⅛	....	17⅜	....	20¾	....	....	....
	Width	....	....	....	13⅛	....	13⅛	....	13⅛	....	....	....
	Height	....	....	....	18¼	....	18¼	....	18¼	....	....	....
Clearance between glass tanks, 2¼ and 3⅜ inches												
Outside measurements of all metal tanks, in inches:	Length	13⅛	14⅞	16½	18⅛	19¾	21½	23⅛	24¾	26⅜	28⅛
	Width	15	15	15	15	15	15	15	15	15	15
	Height	17⅝	17⅝	17⅝	17⅝	17⅝	17⅝	17⅝	17⅝	17⅝	17⅝
Clearance between metal tanks, 2 inches												
Outside measurements of lead-lined wood tanks, in inches:	Length	13⅜	15⅛	16¾	18⅜	20	21¾	23⅜	25	26⅝	28⅜
	Width	15	15	15	15	15	15	15	15	15	15
	Height	20¼	20¼	20¼	20¼	20¼	20¼	20¼	20¼	20¼	20¼
Clearance between wood tanks, 2 inches												
Weight of electrolyte, in lbs.:	In glass jars	63	69	67	79	....	....	....	....	....	....
	In glass tanks	....	....	97	....	121	....	143	....	....	....
	In all metal tanks	95	108	121	134	146	160	172	185	198	212
	In wood tanks	86	99	111	123	133	145	156	168	180	191
Weight of cell complete with electrolyte, in lbs.:	In glass jars	174½	206	227	260	....	....	....	....	....	....
	In glass tanks	....	....	279	....	352	....	422	....	....	....
	In all metal tanks	256	297	337	377	416	457	497	537	577	618
	In wood tanks	250	292	332	372	411	452	492	532	573	615
Height of cell, in glass jars, from bottom of insulator to top of lug, in inches:		29½	29½	29½	29½	....	....	....	....	....	....
Height of cell, in glass tanks, from bottom of insulators to top of bus bar, in inches:		....	....	23¼	....	23¼	....	23¼	....	....	....
Height of cell, in all metal tanks, from floor to top of bus bar, double insulation, in inches:		33½	33½	33½	33½	33½	33½	33½	33½	33½	33½
Height of cell, in wood tanks, from floor to top of bus bar, double insulation, in inches:		33¼	33¼	33¼	33¼	33¼	33¼	33¼	33¼	33¼	33¼



Type "F"

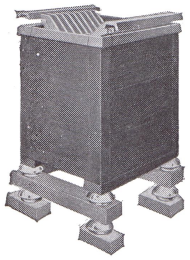
Number of plates	9	11	13	15	17	19	21	23	25	27
List Price, element only	$30.00	37.50	45.00	52.50	60.00	67.50	75.00	82.50	90.00	97.50
List Price, glass jar, extra	4.40	5.05	5.05	6.25	....	....	....	....	....	....
List Price, glass tank, extra	....	....	6.75	....	7.75	....	11.50	....	....	....
List Price, all metal tank, extra	15.55	16.70	17.85	19.00	20.15	21.30	22.45	23.60	24.75	25.90
List Price, lead-lined wood tank, extra	13.00	13.85	14.70	15.55	16.40	17.25	18.10	18.95	19.80	20.65

N. B.—In ordering Elements, or parts thereof, specify whether intended for glass jars, glass tanks, all metal tanks, or wood tanks.

ELEMENTS OF TYPE "G"

Sizes of Plates, 15 5/16 inches by 15 5/16 inches. Clearance between tanks, 2 inches

"Chloride Accumulator"



Number of plates		11	13	15	17	19	21	23	25	27	29	31	33	35	37	39	41	43
	For																	
Discharge in amperes:	8 hours	100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420
	5 hours	140	168	196	224	252	280	308	336	364	392	420	448	476	504	532	560	588
	3 hours	200	240	280	320	360	400	440	480	520	560	600	640	680	720	760	800	840
	1 hour	400	480	560	640	720	800	880	960	1040	1120	1200	1280	1360	1440	1520	1600	1680
Normal charge rate		100	120	140	160	180	200	220	240	260	280	300	320	340	360	380	400	420
Outside measurement of tank in in.	Length	15 1/8	16 3/4	18 3/8	20	22 3/4	24 3/8	26	27 5/8	29 3/8	31	32 5/8	34 1/4	36	37 5/8	39 1/4	40 7/8	42 5/8
	Width	19 3/4	19 3/4	19 3/4	19 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4	20 3/4
	Height	26	26	26	26	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	26 1/2	27 1/2	27 1/2
Weight of electrolyte, in pounds		188	210	231	253	274	296	317	338	360	381	403	424	446	467	489	510	532
Weight of cell, complete, with electrolyte, in lead-lined wood tank, in pounds		568	645	719	798	925	1006	1085	1165	1266	1347	1427	1507	1588	1668	1748	1841	1922
Height of cell from floor to top of bus-bar, for double insulation, in inches		38 13/16	38 13/16	38 13/16	38 13/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	40 1/16	41 1/16	41 1/16
List Price, element only	$	75 00	90 00	105 00	120 00	135 00	150 00	165 00	180 00	195 00	210 00	225 00	240 00	255 00	270 00	285 00	300 00	315 00
List Price, lead-lined wood tank, extra	$	18 70	19 55	20 40	21 25	23 85	25 00	26 15	27 30	28 45	29 60	30 75	31 90	33 05	34 20	35 35	36 50	37 65

Number of plates		45	47	49	51	53	55	57	59	61	63	65	67	69	71	73	75	
	For																	
Discharge in amperes:	8 hours	440	460	480	500	520	540	560	580	600	620	640	660	680	700	720	740	
	5 hours	616	644	672	700	728	756	784	812	840	868	896	924	952	980	1008	1036	
	3 hours	880	920	960	1000	1040	1080	1120	1160	1200	1240	1280	1320	1360	1400	1440	1480	
	1 hour	1760	1840	1920	2000	2080	2160	2240	2320	2400	2480	2560	2640	2720	2800	2880	2960	
Normal charge rate		440	460	480	500	520	540	560	580	600	620	640	660	680	700	720	740	
Outside measurement of tank in inches:	Length	44 1/4	45 1/8	47 1/2	49 1/4	51 5/8	53 1/4	54 7/8	56 5/8	58 1/4	59 7/8	61 1/2	63 1/4	64 7/8	66 1/2	68 1/8	69 7/8	
	Width	20 3/4	20 3/4	20 3/4	20 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	21 1/2	
	Height	27 1/2	27 1/2	27 1/2	27 1/2	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	27 7/8	
Weight of electrolyte, in pounds		553	575	596	618	639	661	682	704	725	747	768	790	811	833	854	876	
Weight of cell, complete, with electrolyte, in lead-lined wood tank, in pounds		2005	2086	2165	2249	2393	2475	2557	2641	2724	2805	2889	2971	3053	3135	3217	3300	
Height of cell from floor to top of bus-bar, for double insulation, in inches		41 1/16	41 1/16	41 1/16	41 1/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	41 7/16	
List Price, element only	$	330 00	345 00	360 00	375 00	390 00	405 00	420 00	435 00	450 00	465 00	480 00	495 00	510 00	525 00	540 00	555 00	
List Price, lead-lined wood tank, extra	$	38 80	39 95	41 10	42 25	45 70	46 85	48 00	49 15	50 30	51 45	52 60	53 75	54 90	56 05	57 20	58 35	

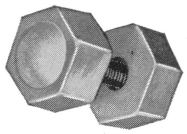
COUNTER ELECTRO-MOTIVE FORCE CELLS

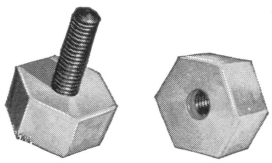
These are similar to the regular storage cells, except that the plates are merely grids without the filling. Two are used in the primary circuit of the battery driven ringing machines when 4-party selective ringing is given.

	List Price Elements Only each
Type E-5: Same size as the regular E-5 cell, used with 75-watt battery driven ringing machines	**$ 4.125**
Type E-7: Same size as the regular E-7 cell, used with 150-watt battery driven ringing machines	**5.875**
Type E-11: Same size as the regular E-11 cell, used with 300-watt battery driven ringing machines	**7.625**

STORAGE BATTERY ACCESSORIES

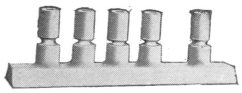
		List Price
Acid	See Electrolyte	
Battery Covers	Glass plates about $\frac{3}{16}$ in. thick used for covering the individual storage battery cells of Electric Storage Battery Company's manufacture. Made for types "E," "F" and "G" cells. Orders should specify the type of cell, and whether the bus bars are plain or have terminal cups	On request





Bolt Connectors

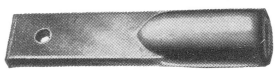
Bolt Connectors	For bolting together the connecting straps of type "E" or type "F" elements in glass jars, each	**$ 0.20**
Bus Bars	Two types are made, plain and reinforced. The plain bars are for joining together the elements of two adjacent cells. The reinforced bars are for the last cell in a row and the orders for them should state the number of cups on each, together with the size of wire for which each cup is to be drilled	On request

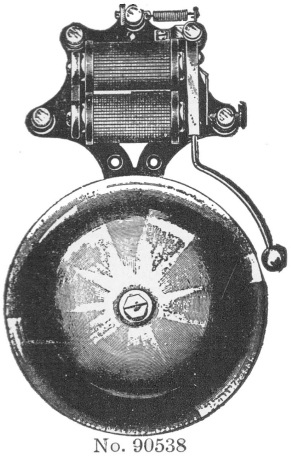


Reinforced Bus Bar and Terminal Cups.

Displacing Tanks	Used in the pilot cell of batteries of types "F" and "G" cells to fill vacant space of partially equipped tank so that the variation of density of electrolyte between charge and discharge will be a maximum. In ordering the displacing tanks it is necessary to state the type of tank and the number of plates which it is intended to displace	On request

Storage Battery Accessories—Continued

		List Price
Electrolyte	Sulphuric acid having a specific gravity of 1.200. Delivered in carboys which are charged for, but which are credited when returned in good order. Per hundred pounds	$3.00
 Type "E"	Hydrometer — Type "E" for type "E" cells, each	1.50
	Type "H" for types "F" and "G" cells, each	1.50
 Compensating	Hydrometer (Compensating) — For the pilot cell of batteries composed of types "F" and "G" cells, each	6.00
Insulators	These are made of glass. Type "F" is used under sand trays. Type "G" is used under type "F" and "G" tanks and under stringers used in connection with tanks up to and including type G-17. Type "H" glass insulators are used under stringers for tanks larger than G-17.	
	Type "F," each	.04
	Type "G," each	.225
	Type "H," each	.26
Sand Trays	Wooden trays intended to be filled with sand, on which glass jars are placed. In ordering specify size of jar	On request
Terminal Cups	To be specified with the reinforced bus bars.	
	For 1,000,000 circular mil cable, each	$2.93
	For 750,000 circular mil cable, each	2.55
	For 500,000 circular mil cable, each	2.06
	For No. 0000 B. & S. gauge cable, each	1.76
Terminal Lugs	For connecting power wires to types "E" or "F" elements in glass jars. Type "E" has ½ in. hole for wire. Special type "F" has three holes drilled for the sizes of wire specified in the order.	
 Type "E"	Type "E," each	.85
	Special type "F," each	1.50
Vitrified Bricks	Used under battery racks and stands, size 8½ in. x 2½ in., each	.045



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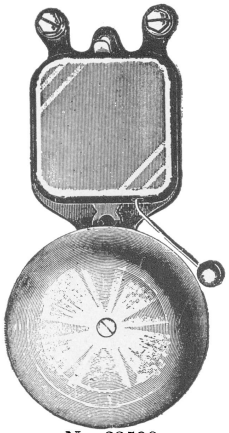

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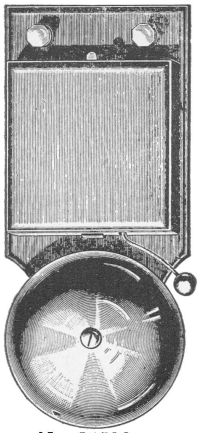

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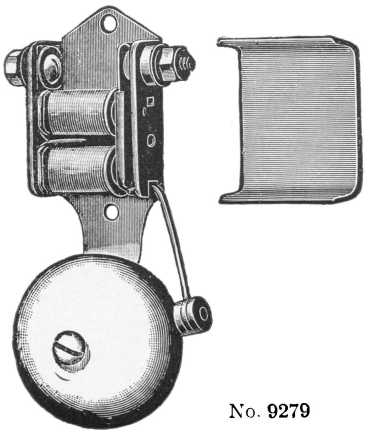


No. 9279

BELLS

FOR DIRECT CURRENT

Skeleton Bell

Code Word	List No.	Standard Sizes of Gong inches
Orbiana	90535	3
Orbical	90536	4
Orbicello	90537	5
Orbicles	90538	6
Orbicular	90539	7
Orbiculato	90540	8
Orbiculina	90541	10
Orbiculos	90542	12

Iron Box Bell

Orbificabo	23590	$2\frac{1}{2}$
Orbificata	23591	3
Orbificavi	23592	4

Wood Box Bell

Orbitatem	23596	$2\frac{1}{2}$
Orbitatis	23597	3
Orbitele	23598	4

The Eco Bell

No adjustment screws to be displaced. Will operate equally well on one or ten cells of battery. Contact points are platinized.

Hammer rod and armature in one piece. Is practically dust and insect proof.

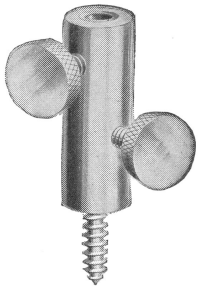
Gongs are stamped brass heavily nickeled.

Code Word	List No.	Standard Sizes of Gong inches
Factive	2460	1
Annawan	9275	$1\frac{3}{4}$
Anniston	9276	2
Annville	9277	$2\frac{1}{2}$
Anserated	9279	3
Anserine	9280	4

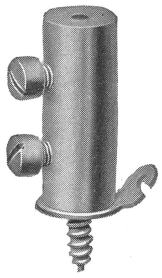
No. 2460 is nickel plated. Other sizes are japanned.

PRICES ON REQUEST

BINDING POSTS



No. 1-A



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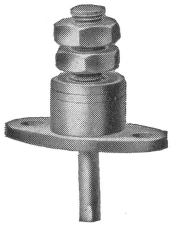

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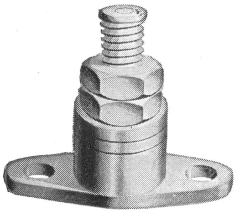

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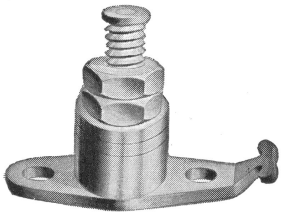

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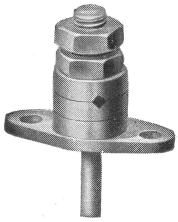

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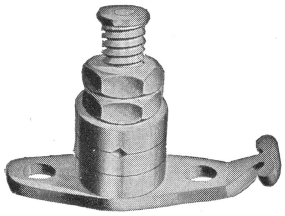

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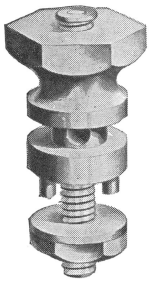

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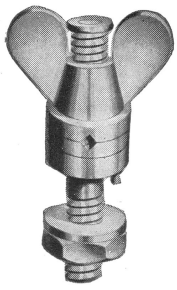

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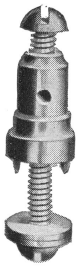

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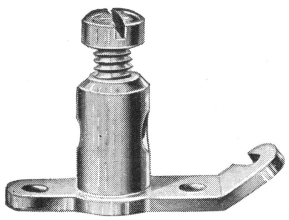
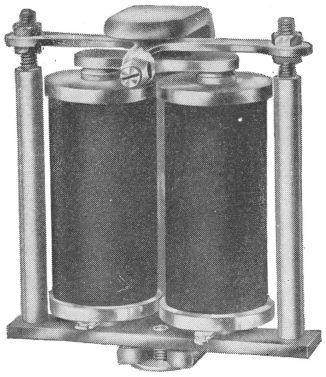


No. 20-C

Code No.	Finish	List Price each
1-A	Brass	$0.15
1-B	Brass	.12
2-A	Nickel plate	.06
2-D	Nickel plate	.06
2-E	Brass	.075
3-A	Nickel plate	.09
3-E	Nickel plate	.105
9-A	Brass	.2025
9-B	Brass	.225
16-A	Nickel plate	.0425
20-C	Nickel dip	.0825

WRITE FOR LIBERAL DISCOUNTS

BUZZERS



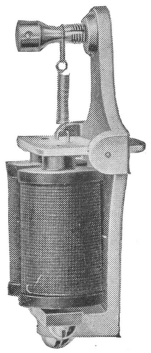
No. 1-A

FOR ALTERNATING CURRENT

The No. 1 type is made from a standard ringer, the gongs, gong posts and clapper wire being omitted.

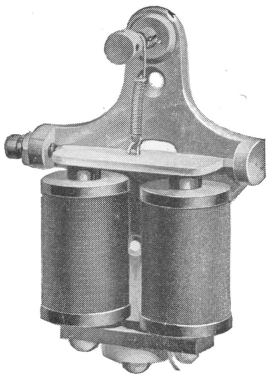
The No. 2 type has an armature spring and screw adjustment.

Code No.	Resistance ohms	Used in	List Price each
1-A	1000	Telephone sets	$ 1.35
1-B	2500	Telephone sets	1.95



No. 2-A

2-A	100	Nos. 1006-A, 1006-C, 1006-D, 1006-E test sets	.70
2 B	250	No. 1006-B test set	.70



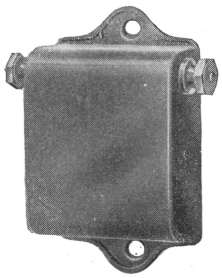
No. 2-D

2-C	1000		.90
2-D	100	No. 1017-A test set	.70

FOR DIRECT CURRENT

The Eco Buzzer

Needs no adjusting. Will operate equally well on one or ten cells of battery. There are no adjustment screws to be displaced. Contact points are platinized. The ribbed edges over the cover spring tightly over the base, making this buzzer absolutely dust and insect proof.



No. 2633

Code Word	List No.	Size inches
Ashcraft	9344	$1\frac{1}{2}$ x $\frac{3}{4}$
Falcon	2632	2 x1
Falconette	2633	$2\frac{1}{2}$x$1\frac{1}{4}$
Falconer	2634	$2\frac{3}{4}$x$1\frac{3}{8}$
Falcones	2635	$3\frac{1}{4}$x$1\frac{5}{8}$

No. 9344 is full nickeled. Other sizes japanned.

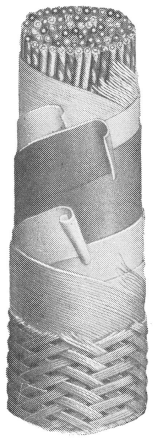
CABLES FOR SWITCHBOARDS

The cables listed in the following tables are adapted for interior use; but should not be used where there is excessive dampness, since they are not provided with waterproof covering.

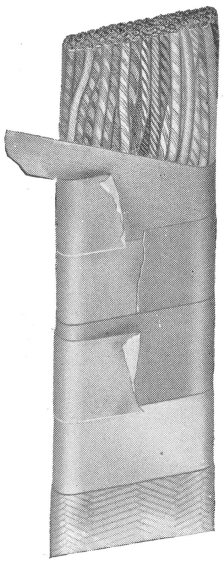
The conductors are provided with double silk and single cotton insulation which is colored in such a way that each pair and each single wire can be identified. The cable is protected from injury by a layer of lead tape and a heavy braiding which enclose the conductors. The cable is given a heavy coat of gray fireproofing paint.

The sizes of conductors are given in Brown and Sharpe gauge. No. 19 gauge wire in cables is used for the central office wiring of toll talking circuits, and No. 14 or No. 16 wire for supplying battery current to cord circuits, operator positions, lamp signals, etc.

The conductors in excess of the numbers mentioned in the columns for pairs and singles are provided as spares to be used in case some of the regular wires in the cable are accidentally cut.



No. 16



No. 84

Cable with Dry Core

Code No.	Number of Conductors	Number of Pairs	Number of Singles	Size Inches	Shape	List Price Per Foot
16	64	20-No. 22	20-No. 22	$2\frac{5}{32} \times \frac{7}{16}$	Oval	**$ 0.22**
24	43	20-No. 22		$\frac{11}{16} \times \frac{11}{32}$	Oval	**.15**
35	53	25-No. 22		$\frac{3}{4} \times \frac{13}{32}$	Oval	**.19**
50	34	10-No. 22	10-No. 22	$1\frac{9}{32} \times \frac{13}{32}$	Oval	**.13**
59	71	34-No. 22		$2\frac{7}{32} \times \frac{15}{32}$	Oval	**.24**
60	75	36-No. 22		$1\frac{13}{16} \times \frac{15}{32}$	Oval	**.25**
62	63	30-No. 22		$2\frac{5}{32} \times \frac{7}{16}$	Oval	**.22**
63	105	51-No. 22		$\frac{3}{4}$	Round	**.34**
65	53	25-No. 19		$\frac{7}{8} \times \frac{7}{16}$	Oval	**.235**
66	103	50-No. 22		$\frac{3}{4}$	Round	**.34**
70	83	40-No. 22		$2\frac{7}{32} \times \frac{1}{2}$	Oval	**.28**
72	11		10-No. 19	$\frac{1}{4}$	Round	**.07**
74	21		20-No. 22	$\frac{3}{8}$	Round	**.085**
79	23	10-No. 22		$\frac{1}{2} \times \frac{5}{16}$	Oval	**.09**
81	13	6-No. 22		$\frac{7}{16} \times \frac{9}{32}$	Oval	**.06**
84	64	20-No. 22	20-No. 22	$1\frac{5}{16} \times \frac{5}{16}$	Oval	**.265**
87	35	16-No. 22		$2\frac{5}{32} \times \frac{13}{32}$	Oval	**.135**
96	100	32-No. 22	32-No. 22	$\frac{1}{2} \times 1$	Oval	**.325**
97	132	64-No. 22		$\frac{5}{8} \times 1\frac{1}{8}$	Oval	**.42**
98	166	64-No. 22	32-No. 22	$\frac{3}{4} \times 1\frac{1}{4}$	Oval	**.525**
100	84	40-No. 24		$\frac{9}{16} \times \frac{11}{16}$	Oval	**.24**
105	64	20-No. 24	20-No. 24	$\frac{1}{2} \times \frac{11}{16}$	Oval	**.19**
106	103	40-No. 22	20-No. 22	$1 \times \frac{9}{16}$	Oval	**.33**
107	102	39-No. 22	19-No. 22 4-No. 16	$1\frac{1}{32} \times \frac{9}{16}$	Oval	**.36**
108	94	36-No. 22	19-No. 22	$1 \times \frac{1}{2}$	Oval	**.31**
115	64	20-No. 19	20-No. 22	$\frac{15}{16} \times \frac{7}{16}$	Oval	**.285**
116	43	20-No. 19		$\frac{7}{8} \times \frac{3}{8}$	Oval	**.225**
117	83	20-No. 19 20-No. 22		$\frac{31}{32} \times \frac{1}{2}$	Oval	**.345**
119	103	50-No. 19		$\frac{3}{4} \times 1\frac{1}{16}$	Oval	**.52**
120	64	20-No. 24	20-No. 24	$\frac{3}{4} \times \frac{11}{32}$	Oval	**.19**
121	53	10-No. 19 10-No. 22	10-No. 22	$\frac{7}{16} \times \frac{3}{4}$	Oval	**.22**
122	25	10-No. 22 1-No. 14		$\frac{7}{16}$	Round	**.12**
123	45	20-No. 22 1-No. 14		$\frac{17}{32}$	Round	**.19**
124	65	30-No. 22 1-No. 14		$\frac{5}{8}$	Round	**.25**
125	23	10-No. 19		$\frac{11}{32} \times \frac{9}{16}$	Oval	**.13**
126	43	10-No. 19 10-No. 22		$\frac{3}{8} \times \frac{3}{4}$	Oval	**.19**
127	33	10-No. 19	10-No. 22	$\frac{3}{8} \times \frac{21}{32}$	Oval	**.16**

Cable with Beeswaxed Core

39	35	16-No. 22		$\frac{19}{32} \times \frac{11}{32}$	Oval	**.135**
118	154	20-No. 19 40-No. 22	28-No. 22	$\frac{11}{16} \times \frac{13}{16}$	Oval	**.60**

CABLES

LEAD COVERED

Cable having conductors insulated with a single paper wrapping is standard for aerial and underground construction, but double wrapping can be furnished if desired. These have a lead sheath with 3% tin in preference to one of pure lead, on account of its greater strength and durability. A pure lead sheath can be furnished if desired at a somewhat lower cost.

For interior construction, cable having its conductors insulated with double wool, or silk and cotton is generally used. These are seldom employed for outside construction on account of their high cost. The former have a pure lead sheath, but one of composition can be furnished if desired.

TYPE "A" CABLE

For Aerial or Underground Use

Conductors No. 22 B. & S. gauge, single paper insulation, covering on pair colored red and white.
Characteristics per mile of cable,
Average electrostatic capacity ..... .069 microfarads
Insulation resistance ..... 500 megohms
Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet	Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet
A-5	5	1/12	3000	**A-125**	125	3/32	1500
A-10	10	1/12	3000	**A-150**	150	3/32	1250
A-15	15	1/12	3000	**A-175**	175	3/32	1000
A-20	20	1/12	2500	**A-180**	180	3/32	1000
A-25	25	1/12	2500	**A-200**	200	1/8	1000
A-30	30	1/12	2500	**A-225**	225	1/8	1000
A-40	40	1/12	2250	**A-240**	240	1/8	900
A-50	50	1/12	2000	**A-250**	250	1/8	900
A-60	60	1/12	2000	**A-275**	275	1/8	850
A-75	75	1/12	1750	**A-300**	300	1/8	800
A-90	90	1/12	1500	**A-350**	350	1/8	750
A-100	100	3/32	1500	**A-375**	375	1/8	725
A-120	120	3/32	1500	**A-400**	400	1/8	700

TYPE "B" CABLE

For Aerial or Underground Use

Conductors No. 19 B. & S. gauge, single paper insulation, covering on pair colored red and white.
Characteristics per mile of cable,
Average electrostatic capacity ..... .054 microfarads
Insulation resistance ..... 500 megohms
Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet	Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet
B-5	5	1/12	3000	**B-50**	50	3/32	1500
B-10	10	1/12	2500	**B-60**	60	3/32	1500
B-15	15	1/12	2000	**B-75**	75	3/32	1000
B-20	20	1/12	2000	**B-100**	100	1/8	1000
B-25	25	1/12	2000	**B-120**	120	1/8	900
B-30	30	1/12	1800	**B-150**	150	1/8	800
B-40	40	1/12	1600				

TYPE "C" CABLE

For Aerial or Underground Use

Conductors No. 19 B. & S. gauge, single paper insulation, covering on pair colored red and white.
Characteristics per mile of cable,
Average electrostatic capacity ..... .080 microfarads
Insulation resistance ..... 500 megohms
Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet	Code No.	Number of Pairs	Thickness of Sheath inches	Maximum Length per Reel feet
C-5	5	1/12	3000	**C-75**	75	3/32	1000
C-10	10	1/12	2500	**C-100**	100	1/8	1000
C-15	15	1/12	2000	**C-120**	120	1/8	900
C-20	20	1/12	2000	**C-150**	150	1/8	800
C-25	25	1/12	2000	**C-180**	180	1/8	800
C-30	30	1/12	1800	**C-200**	200	1/8	750
C-50	50	3/32	1500	**C-240**	240	1/8	700
C-60	60	3/32	1500	**C-300**	300	1/8	700

PRICES ON REQUEST

Cables—Continued

TYPE "D" CABLE

For Inside Construction

Conductors No. 22 B. & S. gauge, double wool insulation, covering on pair colored white and red white.
Characteristics per mile of cable,
Insulation resistance.....100 megohms.
Sheath of pure lead.

Code No.	Number of Pairs	Thickness of Sheath inches	Code No.	Number of Pairs	Thickness of Sheath inches
D-5	5	1/12	**D-140**	140	3/32
D-10	10	1/12	**D-150**	150	3/32
D-15	15	1/12	**D-180**	180	3/32
D-20	20	1/12	**D-200**	200	3/32
D-25	25	1/12	**D-220**	220	3/32
D-30	30	1/12	**D-225**	225	3/32
D-50	50	1/12	**D-240**	240	3/32
D-60	60	1/12	**D-250**	250	3/32
D-75	75	1/12	**D-300**	300	3/32
D-100	100	3/32	**D-360**	360	3/32
D-110	110	3/32	**D-400**	400	1/8
D-120	120	3/32	**D-480**	480	1/8
D-125	125	3/32			

TYPE "E" CABLE

For Inside Construction

Conductors No. 19 B. & S. gauge, double wool insulation, covering on pair colored white and red white
Characteristics per mile of cable,
Insulation resistance.....100 megohms
Sheath of pure lead.

Code No.	Number of Pairs	Thickness of Sheath inches	Code No.	Number of Pairs	Thickness of Sheath inches
E-10	10	1/12	**E-120**	120	3/32
E-15	15	1/12	**E-125**	125	3/32
E-20	20	1/12	**E-150**	150	3/32
E-25	25	1/12	**E-160**	160	3/32
E-30	30	1/12	**E-180**	180	3/32
E-40	40	1/12	**E-200**	200	3/32
E-50	50	3/32	**E-225**	225	1/8
E-60	60	3/32	**E-240**	240	1/8
E-70	70	3/32	**E-250**	250	1/8
E-75	75	3/32	**E-300**	300	1/8
E-100	100	3/32	**E-325**	325	1/8

TYPE "F" CABLE

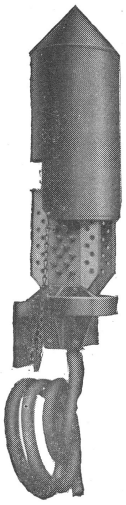
For Interior Construction

Conductors No. 22 B. & S. gauge, double silk and single cotton insulation, covering on pair colored white and red white.
Characteristics per mile of cable,
Insulation resistance.....100 megohms
Composition lead sheath with 3% tin.

Code No.	Number of Pairs	Thickness of Sheath inches	Code No.	Number of Pairs	Thickness of Sheath inches
F-5	5	3/64	**F-60**	60	1/16
F-10	10	3/64	**F-75**	75	1/16
F-15	15	3/64	**F-100**	100	1/16
F-20	20	3/64	**F-120**	120	1/16
F-25	25	3/64	**F-150**	150	1/16
F-30	30	3/64	**F-200**	200	1/16
F-40	40	3/64	**F-240**	240	1/16
F-50	50	1/16			

PRICES ON REQUEST

CABLE TERMINALS

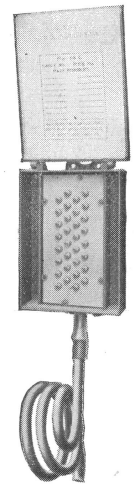


No. 8—Open

These are for open wire distribution from lead covered aerial cable and are arranged for attaching to poles. No arrangement is made for protective devices. The code number does not include a cable stub, but it is recommended that they be ordered with 6 ft. of No. 22 B. & S. gauge cable attached.

Prices are f. o. b. New York

Code No.	Capacity pairs	Height of Hood inches	Diameter of Hood inches	Number in Standard package	Approx. Weight of Standard Package lbs.	List Price each with 6 ft. No. 22 B. & S. cable attached
8-A	10	14½	6¼	10	250	**$ 3.75**
8-B	16	14½	6¼	10	250	**4.20**
8-C	26	19	6¼	10	280	**5.85**
8-D	31	19	6¼	10	280	**6.75**
8-E	51	28	6¼	8	350	**9.60**
8-F	61	28	6¼	8	385	**11.25**



No. 14—Open

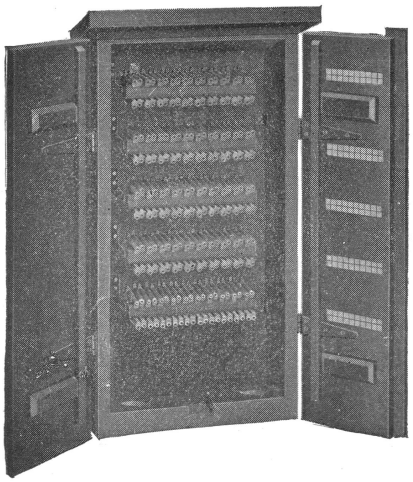


No. 14 closed

These are for open wire distribution from lead covered aerial cable and are intended to be mounted on poles or buildings. No arrangement is made for protective devices. The code number does not include a cable stub, but it is recommended that they be ordered with 6 ft. of No. 22 B. & S. gauge cable attached.

Prices are f. o. b. New York

Code No.	Capacity pairs	Height of Cover inches	Width of Cover inches	Number in Standard package	Approx. Weight of Standard package lbs.	List Price each with 6 ft. No. 22 B. & S. cable attached
14-A	10	7½	7½	8	210	**$ 4.40**
14-B	11	7½	7½	8	210	**4.45**
14-C	16	9⅞	7½	8	230	**5.50**
14-D	26	14½	7½	8	300	**8.05**
14-E	21	12⅞	7½	8	280	**7.15**



No. 15—Open, with Protectors

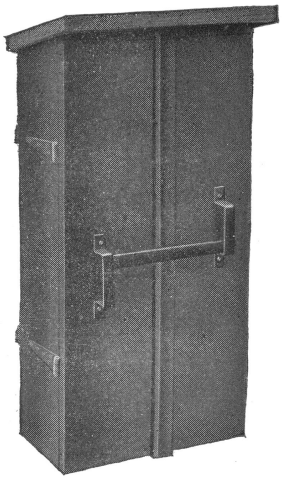
These are for joining aerial and underground cables. No. 77-A protectors, consisting of 6 ampere fuses, 40 per strip, can be mounted in them, but are not furnished unless ordered. No provision is made for open space cutouts.

They are for mounting on poles and are not conspicuous on account of their narrow width.

Prices are f. o. b. New York

Code No.	Capacity pairs	Dimensions inches Height	Width	Depth	Approx. Weight of one box crated lbs.	List Price each without protectors
15-A	100	38	20	9⅝	70	**$ 8.25**
15-B	200	63	22	9⅝	113	**11.25**

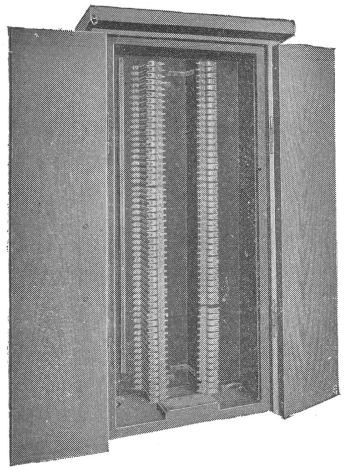
In ordering specify the code number and number of pairs (in groups of 20) of protectors desired.



No. 15—Closed

Cable Terminals—Continued

Prices are f. o. b. New York



SH 5108—Open, with Protectors

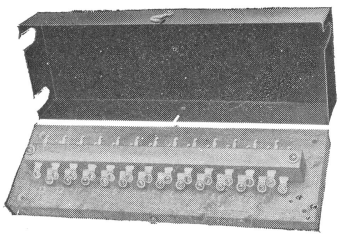
These are for joining aerial and underground cables or for open wire distribution. No. 7-A protectors consisting of 6 ampere fuses or No. 61-A protectors consisting of 6 ampere fuses and carbon open-space cutouts can be mounted in them, but are not furnished unless ordered.

Boxes up to 100 pairs are arranged to mount the protectors in two strips; larger ones are arranged for four strips.

They are for mounting on poles.

Code No.	Dimensions inches Height	Width	Depth	Approx. Weight of one box crated lbs.	List Price each without protectors
SH-5108 for 25 pairs	25½	20¾	8¾	38	**$ 6.75**
SH-5108 for 30 pairs	29	20¾	8¾	46	**6.90**
SH-5108 for 50 pairs	42½	20¾	8¾	55	**7.20**
SH-5108 for 55 pairs	46	20¾	8¾	59	**7.35**
SH-5108 for 60 pairs	49½	20¾	8¾	67	**7.35**
SH-5108 for 100 pairs	77	20¾	8¾	94	**8.80**
SH-5109 for 110 pairs	46	37¼	9	97	**9.45**
SH-5109 for 120 pairs	49½	37¼	9	104	**9.45**
SH-5109 for 150 pairs	60½	37¼	9	122	**9.90**
SH-5109 for 200 pairs	77	37¼	9	145	**10.50**

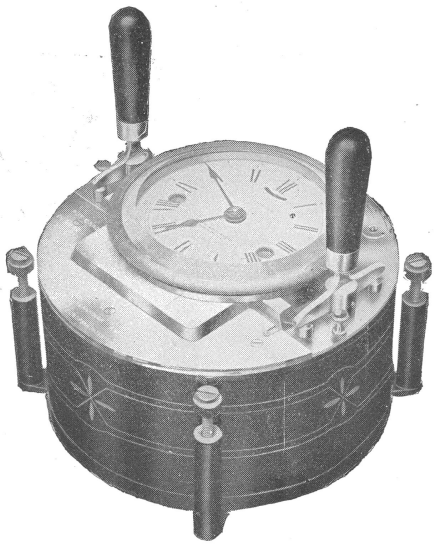
In ordering specify code number and capacity of box, together with number of pairs and kind of protector desired.



No. 12-A

These are provided with a cover and are convenient in cross-connecting cables for inter-communicating systems.

Code No.	Capacity pairs	Dimensions inches Length	Width	Depth	List Price each
12-A	10	12	4	1¾	**$ 1.00**
12-B	20	12	4	2¾	**1.30**
12-C	30	12	4	3¾	**1.65**



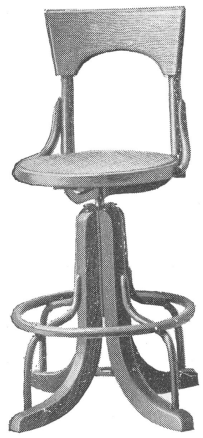
No. 52041

CALCULAGRAPH

The calculagraph is the most convenient and accurate means of recording a telephone conversation. It is furnished suitable for mounting either directly in the keyboard of the switchboard, or on a pedestal which may be placed beside the operator. It may be furnished with or without a visible dial. The instrument has two handles, one of which is pulled for recording the beginning of the conversation and the other for ending. It records the time at which the conversation is begun and computes the elapsed time in minutes and quarter minutes.

Code Word	List No.		List Price each
Hygram	**52041**	Model No. 6.....	**$ 100.00**

Has visible dial and is arranged for mounting in keyshelf.



CHAIRS

For telephone switchboard operators. The chairs are furnished in birch with a mahogany finish. They can be furnished with leather over cane, and with castors or rubber tips.

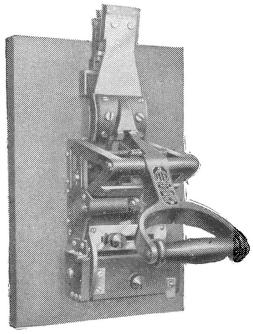
The first measurement indicates the distance of seat from the floor when the seat is in its lowest position while the second indicates the highest.

Code Word	List No.	Height inches
Hygeist	**52032**	18 to 22
Hygia	**52033**	24 to 31
Hygiciam	**52034**	28 to 35

Prices on request.

CIRCUIT BREAKERS

Cutter overload circuit breaker with auxiliary shunt tripping coil for 30 volts, for use with our No. 154 type relay to protect the storage battery and charging generators from excessive or reverse currents.



Type NX

Type	Capacity Amperes	Calibration Volts	List Price each
EL	30	25 to 45	**$ 41.00**
EL	60	45 to 90	**45.00**
EL	100	75 to 150	**48.00**
EL	200	150 to 300	**52.00**
EL	300	225 to 450	**55.00**
NX	400	300 to 600	**92.00**
NX	600	450 to 900	**100.00**
NX	800	600 to 1200	**110.00**
NX	1000	800 to 1500	**125.00**

Order should read:—1 Cutter .... ampere overload circuit breaker type .... with auxiliary shunt tripping coil for 30 volts, with terminal lugs drilled for .... circular mil cable.

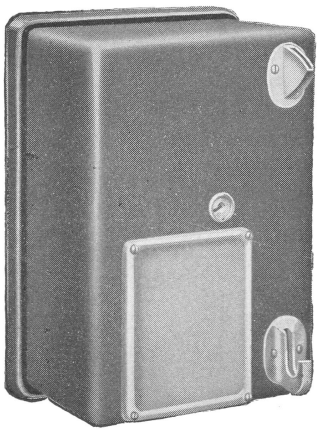
CUTTER UNDERLOAD CIRCUIT BREAKER

Type	Capacity Amperes	Calibration Volts	List Price each
EL	30	25 to 45	**$ 28.00**
EL	60	45 to 90	**32.00**
EL	100	75 to 150	**35.00**
EL	200	150 to 300	**39.00**
EL	300	225 to 450	**42.00**

Orders should read:—1 Cutter.... ampere underload circuit breaker, type EL with lugs drilled for .... circular mil cable.

COIN COLLECTORS

FOR CENTRAL BATTERY TELEPHONES



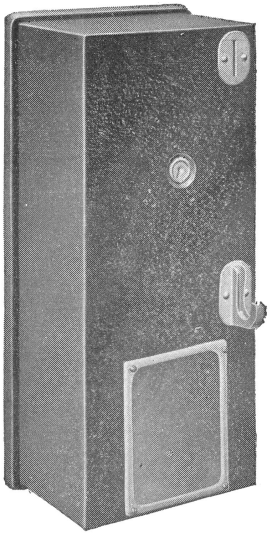
No. 7-A.

These are arranged so that a coin placed in the coin chute remains under control of the central office operator, who may refund or deposit it into the coin box. The coin collector is ordinarily connected to the telephone line so that it is necessary to drop a coin of the proper denomination into the box to signal central office. This saves considerable time on the part of the operator. It may be wired so that the coin need not be deposited until the operator requests it.

All electrical circuits are insulated from the case. The case has a heavy black japanned finish.

On the front of each of these coin collectors is mounted a small metal frame which holds an instruction card. Over the card is placed a piece of glass for protecting the card from dirt and injury.

Code No.	Arranged for	Dimensions inches Length	Width	Depth	List Price each
7-A	Nickels	$7\frac{3}{4}$	$5\frac{1}{4}$	$3\frac{27}{32}$	**$ 5.25**
7-C	Dimes	$7\frac{3}{4}$	$5\frac{1}{4}$	$3\frac{13}{32}$	**5.55**



No. 7-E

Coin Collectors—Continued

Code No.	Arranged for	Dimensions inches Length	Width	Depth	List Price each
7-E	Nickels	$11\frac{1}{2}$	$5\frac{1}{4}$	$3\frac{13}{32}$	**$6.40**

The No. 7-E has a larger coin box than the No. 7-A.



No. 13-A

FOR CENTRAL BATTERY OR MAGNETO TELEPHONES

This is arranged so that any coin dropped into the chute falls directly into the coin box when the lever is rotated. It has but a single coin slot into which may be inserted, one at a time, nickels, dimes or quarters. It is necessary for the operator to listen on the line while the coins are being deposited, since the signal is given on a gong, a nickel giving one, a dime two and a quarter three strokes.

Code No.	Arranged for	Dimensions inches Length	Width	Depth	List Price each
13-A	Nickels, dimes and quarters	$9\frac{3}{4}$	$4\frac{3}{4}$	4	**$9.75**

CONDENSERS

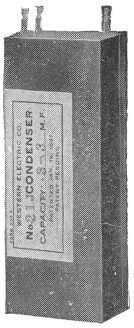


No. 21-D

These are of small size and made of selected material. Except as noted in the list, they are designed to withstand a potential of 500 volts direct current, and are rated at the minimum capacity.

They may be mounted in any desired position by means of a condenser strap (P-43065) and two wood screws. The No. 21-E is usually mounted by means of strap WM-2381.

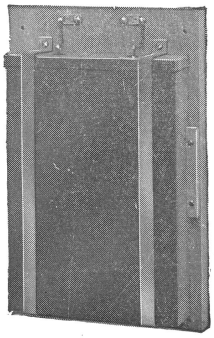
Code No.	Capacity micro-farads	Style of terminal	Size of case inches	Use	List Price each
21-D	2	Bent	$4\frac{13}{32} \times 1\frac{3}{4} \times 1\frac{5}{8}$	For telephone sets	**$1.15**
21-E	2	Straight	$4\frac{13}{32} \times 1\frac{3}{4} \times 1\frac{5}{8}$	For switchboards and for general use	**1.15**
21-F	1	Bent	$4\frac{13}{32} \times 1\frac{3}{4} \times 1\frac{5}{16}$	For telephone sets	**.70**
21-H	0.1	Bent	$4\frac{13}{32} \times 1\frac{3}{4} \times 1\frac{5}{16}$	For No. 84 type interrupter—designed to stand 1000 volts alternating current	**.60**



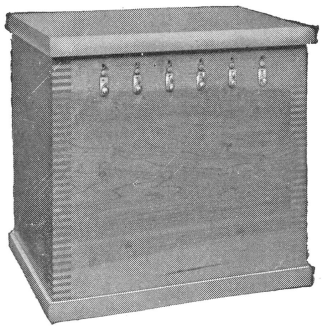
No. 21-J



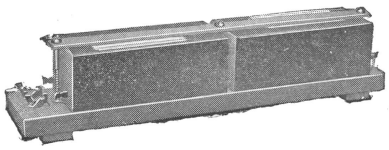
No. 21-U



No. 27-B



No. 28-B



No. 33-A

Condensers—Continued

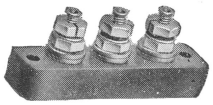
Code No.	Capacity micro-farads	Style of terminal	Size of case inches	Use	List Price each
21-J	0.3				
	0.3	Straight	$4\frac{13}{32}$x$1\frac{3}{4}$x$1\frac{1}{16}$	Designed to stand 750 volts direct current—3 terminals	**$0.75**
21-K	1	Straight	$4\frac{13}{32}$x$1\frac{3}{4}$x$\frac{15}{16}$	For general use	**.70**
21-L	2	Straight	$4\frac{13}{32}$x$1\frac{3}{4}$x$1\frac{5}{8}$	For mounting on coil racks	**1.15**
21-M	1	Straight	$4\frac{13}{32}$x$1\frac{3}{4}$x$\frac{15}{16}$	For mounting on coil racks	**.70**
21-N	1.0				
	0.5	Straight	$4\frac{13}{32}$x$1\frac{3}{4}$x$1\frac{5}{8}$	For mounting on coil racks —3 terminals.....	**1.05**
21-R	0.1	Straight	$4\frac{13}{32}$x$1\frac{3}{4}$x$\frac{13}{32}$	For general use.....	**.40**
21-S	0.125				
	0.250				
	0.500	Straight	$4\frac{15}{32}$x$1\frac{3}{4}$x$1\frac{5}{8}$	For telegraph work—4 terminals.....	**1.05**
21-U	.05	Bent	$4\frac{13}{32}$x$1\frac{3}{4}$x$\frac{17}{16}$	For railway composite telephone set, designed to stand 1200 volts alternating current.....	**.45**
31-A	.05				
	.05	Wire	$4\frac{1}{2}$x$1\frac{5}{8}$x$\frac{17}{32}$	For general use—4 terminals	**.75**

These are used in connection with telegraph and telephone stations on railway composite systems.

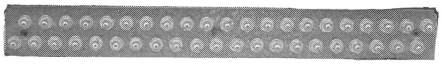
Code No.	Capacity micro-farads	Size of case inches	Use	List Price each
23-A	1	$8\frac{23}{32}$x$6\frac{1}{4}$x$1\frac{15}{32}$	For railway composite system; designed to stand 1000 volts alternating current.....	**$3.75**
27-B	1	$10\frac{7}{8}$x$7\frac{1}{16}$x$2\frac{3}{16}$	For intermediate telegraph stations on railway composite system; a No. 23-A condenser on a maple base; designed to stand 1000 volts alternating current.....	**4.35**
28-B	1	$10\frac{3}{4}$x11x$8\frac{7}{16}$	For terminal telephone stations on railway composite system; comprises 1 No. 23-A condenser and 1 No. 5-L retardation coil mounted in a maple box; designed to stand 1000 volts alternating current.....	**16.95**

These are designed for mounting on the coil rack, either on the same shelves with the repeating coils, or grouped on shelves by themselves, and consist of No. 21 type condensers mounted on a wood base $10\frac{3}{4}$ in. long by $1\frac{7}{8}$ in. wide.

Code No.	Condensers Used	Capacity of each No. 21 Type Condenser microfarads	List Price each
33-A	2 No. 21-L	2	**$ 2.50**
33-B	1 No. 21-L	2	**1.35**
33-C	2 No. 21-M	1	**1.60**
33-D	1 No. 21-M	1	**.90**
33-E	2 No. 21-N	1.0 0.5	**2.35**



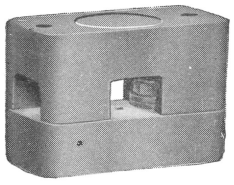
No. 1-A—Connecting Block



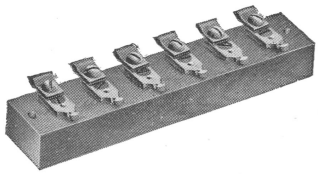
No. 6-D—Connecting Block

CONDENSER STRAPS

Code No.		List Price each
WM-2381	Bent iron strap for use with No. 21-E condenser. Dimensions over all $5\frac{3}{8}$ in. x $1\frac{7}{16}$ in. x $\frac{9}{16}$ in., inside $4\frac{9}{16}$ in. x $1\frac{3}{8}$ in.	$0.045
P-43065	Straight iron strap for use with No. 21 type condensers. Dimensions $4\frac{15}{16}$ in. x $\frac{1}{2}$ in.	.012



No. 7-A—Connecting Block



No. 8-A—Connecting Block

CONNECTING BLOCKS

Code No.	Number of Binding Posts	Style	Size inches	Base	List Price each
1-A	3	Lock nut	$2\frac{17}{32}$x$\frac{29}{32}$	Electrose	$0.12
6-A	7 pairs	Lock nut	$5\frac{5}{8}$x$1\frac{7}{8}$	Electrose	.53
6-B	11 pairs	Lock nut	$8\frac{5}{8}$x$1\frac{7}{8}$	Electrose	.71
6-C	16 pairs	Lock nut	$12\frac{3}{8}$x$1\frac{7}{8}$	Electrose	.98
6-D	21 pairs	Lock nut	$16\frac{1}{8}$x$1\frac{7}{8}$	Electrose	1.35
6-E	26 pairs	Lock nut	$19\frac{7}{8}$x$1\frac{7}{8}$	Electrose	1.65
7-A	2	Lock nut with cover.	$2\frac{1}{32}$x1	Electrose	.14
8-A	6	For cord tip	5x1	Ebonized Wood	.23
8-B	3	For cord tip	$2\frac{3}{4}$x1	Ebonized Wood	.15
9-A	3	Lock nut with cover.	$2\frac{1}{8}$x$1\frac{15}{16}$	Electrose	.15

CORDS

FOR CENTRAL OFFICES

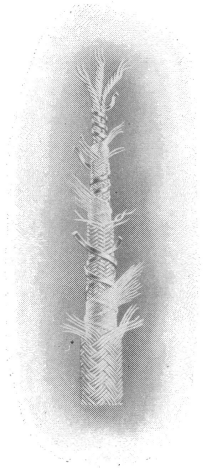
It is customary to use 4 ft. switchboard and 6 ft. operator's telephone cords on small magneto and private exchanges and 6 ft. switchboard and operator's telephone cords on other boards.

These lengths are carried in stock but others will be furnished on request. The switchboard cords, Nos. 152, 155, 156, 236, 244, and 249 are regularly made in three colors, red, white and green. The white cords are furnished unless the color is specified. The steel cords are more substantial than the tinsel but have a higher resistance. It is accordingly customary to use steel cords for local positions and tinsel for toll.

In ordering specify the code number, length, color, and, if plugs are to be attached, give the code number of the plugs. No extra charge is made for attaching plugs to cords.

Code No.	Description	Used with	Standard Length feet	List Price each
10	2 conductor tinsel cord, green silk covering.	Operator's head telephone when connected to binding posts	6	$0.31
26	Single conductor stranded copper and tinsel cord, green silk covering.	Suspended switchboard transmitter and No 7 transmitter arm	6	.12
30	2 conductor tinsel cord, green silk covering.	Operator's head telephone when connected to No. 85 plug	6	.36
87	4 conductor tinsel cord, green silk covering.	Operator's head telephone and chest transmitter when attached to No. 103 or 112 plug	6	.75
129	4 conductor stranded copper cord, green glazed cotton covering.	Neither end equipped with tips, but there may be connected to one end a No. 124, 128 or 132 plug, for testing on protectors or terminal strips	10	.765

Cords—Continued



No. 152

Code No.	Description	Used with	Standard Length	List Price each
152	3 conductor steel switchboard cord, glazed cotton covering.	No. 110 plug	6 ft.	$ 0.75
153	4 conductor stranded copper cord, green glazed cotton covering.	No. 124, 128 or 132 plug	10 ft.	.78
155	3 conductor steel switchboard cord, glazed cotton covering.	No. 109 plug	6 ft.	.75
156	2 conductor steel switchboard cord, glazed cotton covering.	No. 47 plug	4 ft. 6 ft.	.425 .53
236	2 conductor tinsel switchboard cord, glazed cotton covering.	No. 47 plug	4 ft. 6 ft.	.29 .38
244	3 conductor tinsel switchboard cord, glazed cotton covering.	No. 109 plug	6 ft.	.60
249	3 conductor tinsel switchboard cord, glazed cotton covering.	No. 110 plug	6 ft.	.53
254	2 conductor tinsel cord, green silk covering.	Operator's head telephone, when connected to No. 103 plug	6 ft.	.36
264	2 conductor stranded copper cord, green glazed cotton covering.	One end equipped with spring clips for testing on terminal strips	6 ft.	.66
265	Single conductor tinsel switchboard cord, glazed cotton covering.	No. 116 plug	4 ft.	.24
338	Single conductor stranded copper cord, rubber covered.	For connecting dry cells	4 in.	.0375

FOR TELEPHONE SETS

Note:—The length of all cords, except combination cords, should be specified on the order.

10	2 conductor tinsel cord, green silk covering.	Receiver on wall set	3	ft.	.195
15	2 conductor stranded copper cord, red worsted covering.	Receiver on No. 1006 test set (included with No. 125-W receiver)	3	ft.	.225
92	2 conductor tinsel cord, red and blue worsted covering.	Receiver on wall set	3	ft.	.13
175	4 conductor tinsel cord, green silk covering.	Desk stand as extension cord. Part of No. 293 cord.	6	ft.	.57
178	2 conductor tinsel cord, green silk covering.	Receiver on desk stand or transmitter arm	2½ 3	ft. ft.	.18125 .20
179	Single conductor tinsel cord, green silk and cotton covering.	Transmitter on desk stand or transmitter arm	5½ in. 8 in. 9½ in. 12 in.		.045
180	3 conductor tinsel cord, green silk covering.	Desk stand or transmitter arm as extension cord	6	ft.	.45
196	2 conductor tinsel cord, green silk covering.	Receiver on metal wall box and part of No. 293 cord.	3	ft.	.20
202	3 conductor tinsel cord, green silk covering.	Metal wall box as extension cord	6	ft.	.45
231	4 conductor tinsel cord, green silk covering.	Desk stand as extension cord. Part of No. 232 cord.	6	ft.	.57
232	Combination of 6 ft. 231; 3 ft. 178; 8 in. 179.	No. 1020-F desk stands			.81
234	Combination of 6 ft. 180; 3 ft. 178; 9½ in. 179.	Nos. 1020-B, 1020-M and 1020-S desk stands			.69
242	4 conductor steel cord, glazed cotton covering.	No. 1278 telephone set	18	in.	.50
243	Single conductor tinsel cord, green silk and cotton covering.	Nos. 1278 and 1280 telephone sets	8	in.	.04125

Cords—Continued

Code No.	Description	Used with	Standard Length		List Price each
247	Single conductor copper cord, green cotton covering.	No. 250–W transmitters	$10\frac{3}{16}$	in.	$ 0.045
267	Single conductor stranded steel cord, blue linen covering.	No. 1314 telephone set to connect rail clamp	10	ft.	.3875
268	Single conductor stranded steel cord, blue linen covering.	No. 1314 telephone set to connect set to line	104	ft.	1.50
285	3 conductor steel cord, glazed cotton covering.	No. 1280 telephone set	18	in.	.39
287	6 conductor tinsel cord, green silk covering.	No. 1020–H desk stand	6	ft.	.87
289	Combination of 6 ft. 287; 3 ft. 196; $9\frac{1}{2}$ in. 179.	No. 1020–H desk stand			1.11
293	Combination of 6 ft. 175; 3 ft. 196; 12 in. 179.	No. 1020–C desk stand			.83
308	Combination of 6 ft. 313; $2\frac{1}{2}$ ft. 178; 8 in. 179.	No. 1040 transmitter arm			.67
309	3 conductor steel cord, beeswaxed cotton covering.	Nos. 1280–A and 1302–A telephone sets to No. 126 plug	15	ft.	1.02
310	Combination of $8\frac{1}{2}$ ft. 180; $2\frac{1}{2}$ ft. 178; 11 in. 179.	No. 1020–A transmitter arm			.84
311	2 conductor steel cord, glazed cotton covering.	Receiver on Nos. 1302–A and 1314–A telephone sets	3	ft.	.34
313	3 conductor tinsel cord, green silk covering.	Transmitter arm as extension cord. Part of No. 308 cord.	6	ft.	.45
317	Single conductor tinsel cord, green silk and cotton covering.	No. 1002–A hand set. Part of No. 319 cord.	$9\frac{1}{2}$	in.	.06
318	3 conductor tinsel cord, green silk covering.	No. 1002–A hand set. Part of No. 319 cord.	$4\frac{1}{2}$	ft.	.39
319	Combination of $4\frac{1}{2}$ in. 336; $9\frac{1}{2}$ in. 317; $4\frac{1}{2}$ ft. 318.	No. 1002–A hand set			.50
325	5 conductor tinsel cord, green silk covering.	No. 1020–F desk stand. Part of No. 326 cord.	6	ft.	.69
326	Combination of 6 ft. 325; 3 ft. 178; 8 in. 179.	No. 1020–F desk stand			.93
329	Single conductor tinsel cord, green silk and cotton covering.	Telephone sets No. 1020–P desk stand	$5\frac{1}{2}$ 9	in. in.	.045 .045
330	Single conductor tinsel cord, green silk and cotton covering.	No. 1020–P desk stand	$9\frac{1}{2}$	in.	.045
331	Combination of 3 ft. 178; 6 ft. 180; 9 in. 329; $9\frac{1}{2}$ in. 330.	No. 1020–P desk stand			.74
336	Single conductor tinsel cord, green silk and cotton covering.	No. 1002–A hand set	$4\frac{1}{2}$	in.	.06
337	2 conductor steel cord, glazed cotton covering.	No. 1017–A test set for receiver	24	in.	.32
338	Single conductor cord, rubber covering.	Dry cells for connecting batteries	4	in.	.0375
348	2 conductor with testing clips.	No. 1001 hand set	3	ft.	.7875



No. 9

CORD FASTENERS

Code No.		List Price each
9	Used on cord shelves with all types of switchboard cords	$ 0.03



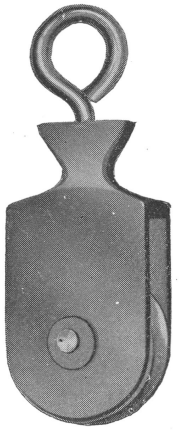
No. 3—Cord Hook



No. 7—Cord Hook

CORD HOOKS

The two types of cord hooks shown will meet all requirements. The No. 3 is the screw hook type, and can be mounted in any desired location. The No. 7 is designed for placing on the rear edge of cordshelves, and consists of a flat strip of brass $\frac{1}{16}$ in. thick by $\frac{3}{4}$ in. wide, the hooks being punched out at various spacings as listed in the following table. Hooks of this type are strong and efficient, present a neat appearance and occupy a minimum amount of space.

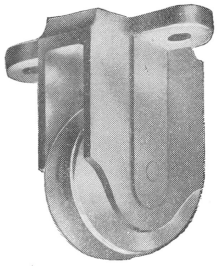


No. 103



No. 105

Code No.	Number per Strip	Spacing inches	Length inches	List Price each
3	single			**$ 0.375** per gross
7-A	9	$\frac{27}{32}$	$7\frac{17}{32}$	**.27**
7-B	10	$\frac{1}{2}$	$4\frac{15}{16}$	**.24**
7-C	10	$\frac{3}{4}$	$7\frac{7}{16}$	**.29**
7-D	18	$\frac{13}{32}$	$7\frac{5}{16}$	**.27**
7-E	11	$\frac{5}{8}$	$6\frac{7}{8}$	**.27**
7-F	18	$\frac{7}{16}$	$7\frac{7}{8}$	**.29**
7-G	19	$\frac{17}{32}$	10	**.30**
7-H	8	$1\frac{1}{8}$	9	**.27**
7-J	10	$\frac{3}{8}$	$3\frac{3}{4}$	**.23**
7-K	7	$\frac{3}{4}$	$5\frac{1}{4}$	**.23**
7-L	3	$\frac{3}{4}$	$2\frac{9}{16}$	**.14**

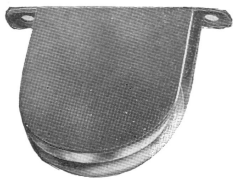


No. 106

CORD PULLEYS

These have brass wheels about $\frac{9}{32}$ in. wide and are for use with our standard switchboard or telephone cords as the case may require.

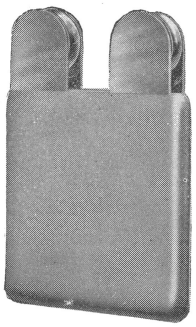
Code No.	Width inches	List Price each
103	$\frac{19}{32}$	**$ 0.24**
105	$\frac{9}{16}$	**.21**
106	$1\frac{3}{16}$	**.15**
111	$\frac{3}{8}$	**.41**



No. 111



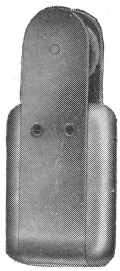
No. 103



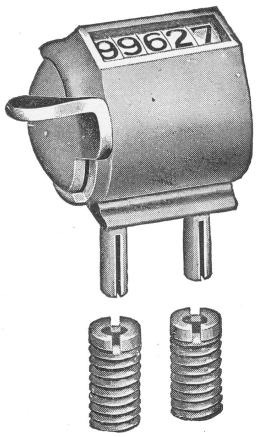
No. 108

CORD WEIGHTS

Code No.	Style	Used with	List Price each
103	Brass 14 oz.	Suspended transmitter and No. 7 transmitter arm.....	**$ 0.60**
108	Lead 28 oz.	Switchboard cords when cord pulley is used.....	**.55**
111	Lead 10 oz.	Switchboard cords on No. 49 jack switchboard and magneto switchboards except No. 105.....	**.25**
112	Lead 8 oz.	Switchboard cords on No. 92 jack switchboard and No. 105 switchboard.....	**.25**



No. 111



No. 18880

COUNTER

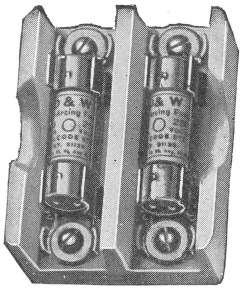
For counting the number of telephone calls handled at an operator's position; the sockets are permanently placed, and the counter may be mounted or removed at will.

Code Word	List No.
Placando	**18880**

CUT-OUTS

Made in single, double and triple pole styles, for D. & W. fuses, 3 to 60 amperes, 250 volts.

Orders should state number of poles, voltage and capacity of fuses which will be used.



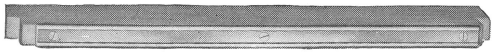
D. & W. Cut-out

DESIGNATION STRIPS

These consist of a wooden mounting with a No. 8 type designation strip mounted on the face, and are for use in designating outgoing trunk jacks, etc.

The No. 6-B and No. 6-F are the same as the No. 6-A and No. 6-E, respectively, except that they mount flush with the face of the jack mountings, while the No. 6-A and No. 6-B project slightly.

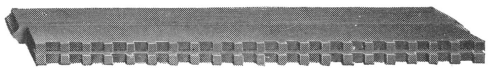
Code No.	Width inches	Finish	Used with Switchboard	List Price each
1-A	$\frac{7}{16}$	Nickel plate	No. 49 jack, No. 1	**$ 0.23**
1-B	$\frac{1}{4}$	Nickel plate	No. 49 jack, No. 1	**.23**
1-C	$\frac{7}{16}$	Black	No. 49 jack, No. 1	**.23**
1-D	$\frac{3}{8}$	Black	No. 49 jack, No. 1	**.23**
6-A	$\frac{3}{8}$	Nickel plate	No. 92 jack, No. 1	**.23**
6-B	$\frac{3}{8}$	Nickel plate	No. 92 jack, No. 1	**.23**
6-E	$\frac{3}{8}$	Black	No. 92 jack, No. 1	**.23**
6-F	$\frac{3}{8}$	Black	No. 92 jack, No. 1	**.23**
10-B	$\frac{7}{16}$	Nickel plate	No. 9	**.23**
10-C	$\frac{1}{2}$	Nickel plate	No. 9	**.23**



No. 1-A

Designation Strips—Continued

These are of the same type as the No. 1, except that in place of a No. 8 type designation strip a hard rubber face milled out and drilled for 20 No. 4 or No. 31 number plates is used.



No. 2-C

Code No.	Width inches	Finish	Used with Switchboard	List Price each
2-C	$\frac{7}{16}$	Black	No. 49 jack, No. 1	**$ 0.90**
50-A	$\frac{7}{16}$	Black	No. 10	**.98**



No. 7-A

These are of the same type as the No. 1, except that in place of a card holder a strip of printed figures is held in place by a transparent celluloid face fastened to the base by nickel plated screws.

Code No.	Width inches	Finish	Used with Switchboard	List Price each
7-A	$\frac{7}{16}$	Celluloid face	No. 49 jack, No. 1	**$ 0.20**
7-B	$\frac{1}{4}$	Celluloid face	No. 49 jack, No. 1	**.20**
7-D	$\frac{3}{8}$	Celluloid face	No. 49 jack, No. 1	**.20**
13-A	$\frac{3}{8}$	Celluloid face	No. 92 jack, No. 1	**.20**
48-A	$\frac{7}{16}$	Celluloid face	No. 10	**.23**



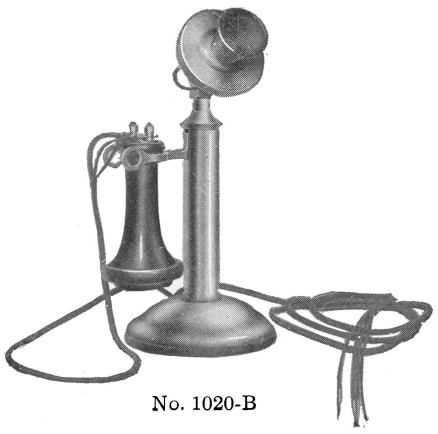
No. 8

These consist of a metal card holder and a thin transparent celluloid strip for protecting a strip of printed paper.

Code No.	Width inches	Length inches	Finish	Used for	List Price per foot
8-A	$\frac{7}{16}$	As specified	Nickel plate	Keyshelf and miscellaneous numbering	**$ 0.18**
8-B	$\frac{3}{8}$	As specified	Nickel plate	Keyshelf and miscellaneous numbering	**.18**
8-D	$\frac{1}{4}$	As specified	Nickel plate	Keyshelf and miscellaneous numbering	**.18**
8-E	$\frac{1}{4}$	As specified	Black	Keyshelf and miscellaneous numbering	**.18**
43-A	$\frac{7}{16}$	$1\frac{1}{2}$	Black	Test boards	**.09** each
43-B	$\frac{39}{64}$	$1\frac{1}{2}$	Black	Test boards	**.075** each
43-C	$\frac{39}{64}$	$1\frac{1}{4}$	Black	Test boards	**.075** each

DESK STANDS

WITH TRANSMITTERS, RECEIVERS AND CORDS



No. 1020-B

The No. 122-W receiver and standard high resistance transmitter are furnished with these desk stands, as specified below. Others will be furnished if ordered.

Code Co.	Description	Finish	List Price each
1020-B	For regular local battery bridging or central battery service. Includes: 1 No. 20-B desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 234 cord.	Nickel plate	**$ 6.90**
1020-C	For operator's telephone set with cordless private exchange. Includes: 1 No. 20-C desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 293 cord	Nickel plate	**7.15**

Desk Stands—Continued

Code No.	Description	Finish	List Price each
1020-F	For central battery service, used with No. 7 type coin collector. Includes: 1 No. 20-F desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 232 cord.	Nickel plate	**$7.05**
1020-H	For intercommunicating service. Includes: 1 No. 20-H desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 289 cord.	Nickel plate	**7.60**



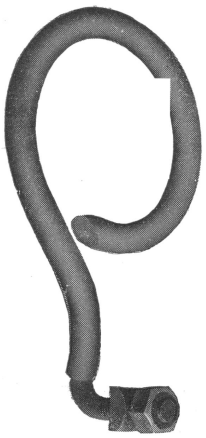
No. 1020-M

Code No.	Description	Finish	
1020-J	For operator's telephone set, using No. 128-W receiver. No switchhook Includes: 1 No. 20-J desk stand. 1 No. 229-W transmitter. 1 No. 128-W receiver. 1 6 ft. No. 178 cord. 1 6 ft. No. 10 cord. 1 9 in. No. 179 cord.	Nickel plate	**6.90**
1020-M	For central battery service using transmitter cutout button. Includes: 1 No. 20-M desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 234 cord.	Nickel plate	**7.15**
1020-P	For local battery bridging or central battery service, using insulated transmitter. Includes: 1 No. 20-P desk stand. 1 No. 271-W transmitter. 1 No. 122-W receiver. 1 No. 331 cord.	Nickel plate	**7.05**
1020-S	For regular local battery bridging or central battery service. Includes: 1 No. 20-S desk stand. 1 No. 229-W transmitter. 1 No. 122-W receiver. 1 No. 234 cord.	Black enamel	**6.90**

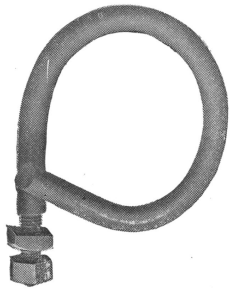
WITHOUT TRANSMITTERS, RECEIVERS OR CORDS

These are similar to those listed above except that the transmitters, receivers and cords are omitted.

Code No.	Service	Finish	List Price each
20-B	Regular local battery bridging, or central battery	Nickel plate	**$ 2.25**
20-C	Operator's telephone set, cordless private exchange	Nickel plate	**2.35**
20-F	Central battery for use with No. 7 coin collector	Nickel plate	**2.55**
20-H	Intercommunicating systems	Nickel plate	**2.50**
20-J	Operator's telephone set without switch hook	Nickel plate	**1.75**
20-M	Central battery with transmitter cut-out button	Nickel plate	**2.50**
20-P	Local battery bridging or central battery for insulated transmitter	Nickel plate	**2.35**
20-S	Regular local battery bridging, or central battery	Black enamel	**2.25**



No. 1



No. 3

DISTRIBUTING RINGS

These are made from a steel rod covered with vulcanized rubber tubing which is very substantial.

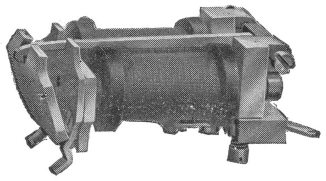
Code No.	Inside Diameter inches	Used for	List Price each
1	2⅞	Main and intermediate distributing frames	**$ 0.27**
3	3	Intermediate distributing frame No. 10 switchboard	**.27**

DROPS

In the following list the Nos. 3 and 4 types of drops are equipped with two electro-magnet spools each. The Nos. 19, 22, 35, 56 and 57 are single spool drops with tubular iron shells and are cross-talk proof. The No. 19 type is employed especially on long bridging lines, toll lines, cord circuits, etc.

All drops are equipped with night bell contacts. The contact of the No. 19–F is made only while the drop is energized by the ringing current. In all the other drops listed below, the night bell contact remains closed until the drop is restored.

All drops except the No. 57–A will operate on alternating ringing current. The No. 57–A is used particularly for selective central office signalling on rural lines and will operate only on pulsating or direct current.

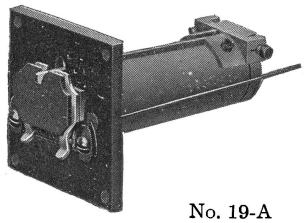


No. 4-A

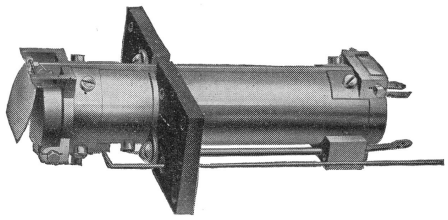
The No. 22 type drop is equipped with an extra winding for restoring the shutter when the call is answered.

The No. 35 type drop is equipped with two windings, one front and one back, and is adapted for selective central office signalling by grounding the middle of the winding and one side of the calling generator.

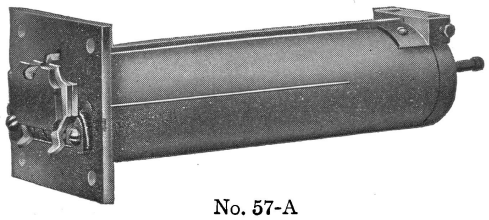
The Nos. 55 and 56 drops are similar to the No. 19, except that they are arranged to mount on $1\frac{1}{8}$ and 1 in. centers respectively instead of $1\frac{3}{8}$ in.



No. 19-A



No. 22-A



No. 57-A

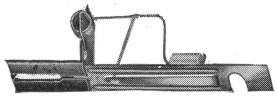


No. 58

Code No.	Total Resistance ohms	List Price each
3-A	80	**$ 1.05**
3-B	500	**1.15**
3-C	1,000	**1.20**
4-A	80	**.85**
4-B	100	**.90**
4-C	1,000	**1.20**
4-D	500	**1.05**
19-A	525	**1.45**
19-B	600	**1.50**
19-C	1,000	**1.65**
19-D	800	**1.60**
19-E	10	**1.30**
19-F	500	**1.65**
35-A	300–300	**1.75**
35-B	500–500	**1.80**
55-B	600	**1.50**
56-A	500	**1.45**
56-B	600	**1.50**
56-C	1,000	**1.65**
22-A	Line 600, restoring 45	**3.70**
22-B	Line 1,000, restoring 450	**4.05**
22-D	Line 1,000, restoring 45	**3.90**
57-A	1,750	**3.70**

DROP MOUNTINGS

Code No.	Number per Strip	Centers inches	Size of Plate inches	For Drops number	Used on Switchboards number	List Price each
2	10	$1\frac{3}{8}$	15 x 1	4, 19, 35	101, 102, 1006, 1010, 1011	**$0.60**
54	3	$1\frac{3}{8}$	$4\frac{19}{32}$ x 1	19	Cordless private exchange	**.18**
56	20	$1\frac{1}{8}$	$24\frac{9}{16}$ x 1	55, 56	9	**1.20**
57	15	$1\frac{3}{8}$	$24\frac{9}{16}$ x 1	4, 19, 35	1102	**.90**
58	15	$1\frac{3}{8}$	$21\frac{3}{4}$ x 1	4, 19, 35	105, 1005	**.85**
59	12	$1\frac{3}{4}$	$21\frac{3}{4}$ x 1	4, 19, 35	105, 1005	**.75**
64	5	$1\frac{1}{2}$	$8\frac{11}{16}$ x 1	4, 19, 35	106	**.40**
65	5	$1\frac{1}{2}$	$8\frac{11}{16}$ x $1\frac{1}{2}$	4, 19, 35, 57	106, 1101	**.40**
69	10	1	$11\frac{3}{16}$ x 1	56	10	**1.30**



No. 46-A



No. 24-A

FUSES

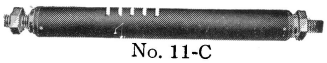
These will blow on 50 per cent. increase in current above rating. In ordering specify the code number and ampere rating.

PLAIN MICA FUSES

Will Mount on 1 Inch Centers



No. 7-A

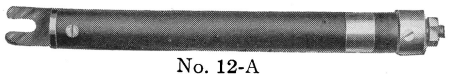


No. 11-C

Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred	Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred
24-A	1½	10	**$ 1.15**	**24-B**	3	6	**$ 1.15**
24-B	½	6	**1.15**	**24-B**	4	6	**1.15**
24-B	1½	6	**1.15**	**24-B**	5	6	**1.15**
24-B	**2**	**6**	**1.15**	**24-C**	2	10	**1.15**

ALARM FUSES

Will Mount on 1¼ in. Centers



No. 12-A

These have a spring which makes contact with an auxiliary bus bar and gives a signal when the fuse blows.

Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per 100	Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per 100
45-A	1⅓	10	**$ 3.90**	**45-B**	4	6	**$ 3.90**
45-B	1⅓	6	**3.90**	**45-B**	5	6	**3.90**
45-B	2	6	**3.90**	**45-C**	2	10	**3.90**
45-B	3	6	**3.90**				



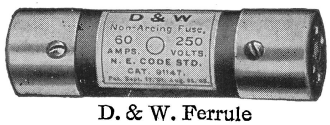
No. 47-A

INDICATOR ALARM FUSES

Will Mount on 1¼ in. Centers

These are similar to the alarm type but in addition have a bead which gives a prominent visual signal when a fuse operates.

Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred	Code No.	Carrying Capacity amperes	Slotted for Screws number	List Price per hundred
46-A	1⅓	10	**$ 5.25**	**46-B**	4	6	**$ 5.25**
46-B	1⅓	6	**5.25**	**46-B**	5	6	**5.25**
46-B	2	6	**5.25**	**46-C**	2	10	**5.25**
46-B	3	6	**5.25**				



D. & W. Ferrule

TUBULAR FUSES

With Fibre Shell

These are made in 1, 2, 3, 4, 5, 6, 7, and 8 amperes capacity.

The No. 7 fuse is furnished in 6 amperes capacity, and the No. 11 fuse and No. 12 fuse in 7 amperes capacity, unless otherwise specified. The No. 12 fuse contains a heat coil.



D. & W. Knife Blade

Code No.	Used with Protectors number	List Price each
7 -A	7-A, 7-D, 61-A, 77-A	**$ 0.09**
11-C	58-A, 58-B, 59-A, 79-A	**.135**
12-A	12-A	**.30**

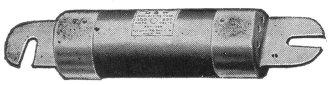
TUBULAR FUSES

With Porcelain Shell



D. & W. Type A Contact

Code No.	Capacity amperes	Used	List Price each
47-A	7	At telephone stations as an outside fuse in connection with No. 60-A protector.....	**$ 0.105**
47-B	14	At telephone stations as an outside fuse in connection with No. 79-A protector.....	**.105**



D. & W. Type A Middle Contact

FUSES D. & W.

For power panels; the ferrule and knife blade contacts conform to the rules of the National Board of Fire Underwriters; the type "A" or screw clamp type of contact is used only on battery panels. The fuses are made for two voltages, 250 and 600.

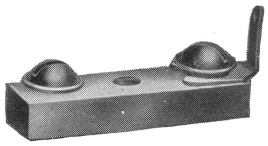
Orders must state the capacity in amperes, the voltage and style of contact.

Style of Contact	For Fuses amperes
Ferrule	3 to 60
Knife blade	61 to 600
Type "A" contact	4 to 125
Type "A" middle contact	126 to 500

FUSE POSTS

These are furnished with two sizes of fuse screw. The larger screw is furnished with small capacity fuses and the smaller screw for those of large capacity. This is to guard against using a fuse of high capacity in a circuit designed for one of low capacity. The only exception to this rule is in the case of the No. 24-C, No. 45-C and No. 46-C fuses (2 amperes), which with the No. 5-B post are to be used only in the service meter circuits. To further guard against using the wrong fuse, the post and fuse terminal designed for $1\frac{1}{3}$ ampere capacity circuits are nickel plated and tinned respectively, while those for circuits above $1\frac{1}{3}$ ampere capacity are copper plated.

In replacing a fuse it should therefore be noted that the finish of the fuse terminals and post is similar.



No. 2



No. 7-B



No. 5-A



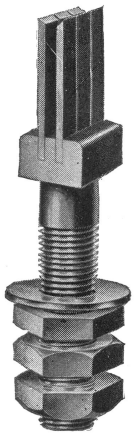
No. 11



No. 94013



No. 94016



No. 94027



No. 94023

Code No.	Finish	Screw number	Used with Fuse number	List Price each
2	Nickel plate	10	24-A	**$ 0.105**
3	Brass plate	6	24-B	**.105**
5-A	Nickel plate	10	24-A, 45-A, 46-A	**.085**
5-B	Copper plate	10	24-C, 45-C, 46-C	**.085**
6	Copper plate	6	24-B, 45-B, 46-B	**.085**
7-B	Nickel plate	10	46-A, No. 10 switchboard	**.07**
7-C	Copper plate	6	46-B, No. 10 switchboard	**.07**

For mounting fuses on power panels.

For D. & W. Fuses with Screw Clamp Contact—(Type A)

Code No.	Capacity amperes	Volts	Stud	List Price each
8	3 to 15	250	No. 10–32	**$ 0.375**
9	18 to 30	250	$\frac{5}{16}$ in.–24	**.45**
	or			
	3 to 25	500		
10	35 to 60	250	$\frac{5}{16}$ in.–24	**.525**
	or			
	30 to 50	500		
11	65 to 125	250	$\frac{1}{2}$ in.–18	**.75**
12	150 to 300	250	$\frac{1}{2}$ in.–18	**1.45**
13	150 to 300	250	$\frac{3}{4}$ in.–18	**2.10**
14	350 to 500	250	$\frac{3}{4}$ in.–18	**2.80**
15	500 to 600	250	$\frac{7}{8}$ in.–14	**4.20**

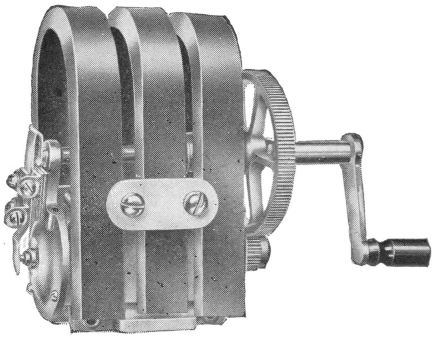
For D. & W. Fuses, National Electrical Code Standard

94022	3 to 30	250	No. 12–24
94023	31 to 60	250	$\frac{5}{16}$ in.–24
	or		
	3 to 30	600	
94024	31 to 60	600	$\frac{5}{16}$ in.–24
94025	61 to 100	0 to 600	$\frac{1}{2}$ in.–18
94026	101 to 200	0 to 600	$\frac{3}{4}$ in.–18
94027	201 to 400	0 to 600	1 in.–14
94028	201 to 600	0 to 600	$1\frac{1}{4}$ in.–14

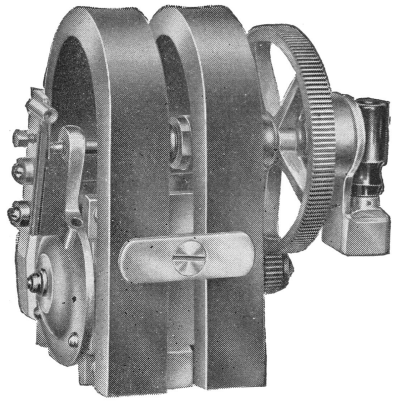
FUSE CLIPS

For use with D. & W. fuses; for mounting on bus bars; they conform to the rules of the National Board of Fire Underwriters.

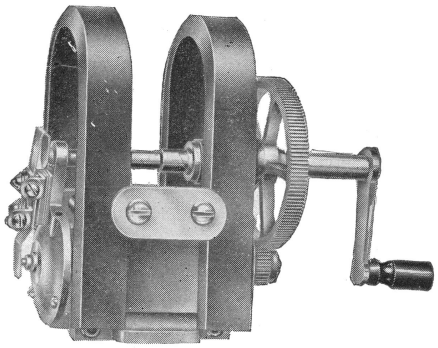
Code No.	Used with Fuse Amperes	Volts
94013	3 to 30	250
94015	31 to 60	250
	or	
	3 to 30	600
94016	31 to 60	600
94018	61 to 100	0 to 600
94019	101 to 200	0 to 600
94020	201 to 400	0 to 600
94021	401 to 600	250



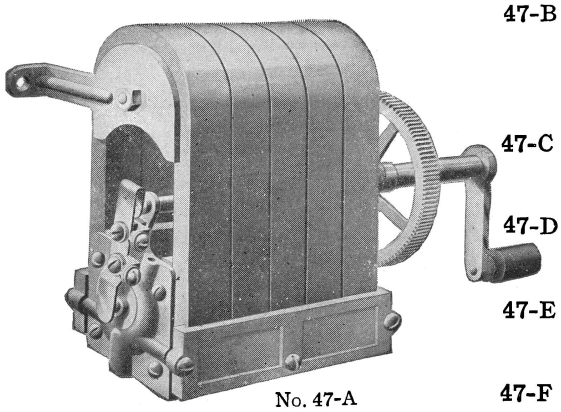
No. 22-A



No. 29-A



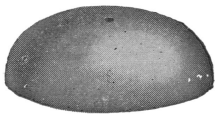
No. 22-E



No. 47-A

HAND GENERATORS

Code No.	Number of Bars	Current	Open or Closed Circuit	Used in	List Price each
22-A	3	Alternating	Open	Magneto telephone sets and switchboards	$ 3.15
22-B	3	Alternating	Closed	1006–D and 1006–E test sets	3.15
22-D	3	Pulsating	Open or Closed	Magneto telephone sets and switchboards	3.15
22-K	3	Alternating	Closed	90510 and 90530 test sets	3.15
22-N	3	Alternating	Closed	90511 and 90512 test sets	3.15
43-B	3	Alternating	Open	1302-A telephone set	4.50
29-A	2	Alternating	Open	1006–A, 1006–B, 1006–C and 1017–A test sets	3.00
22-E	2	Alternating	Open	Magneto telephone sets	3.15
20-B	5	Alternating	Open	1280–A telephone set	5.65
47-A	5	Alternating	Open	Magneto telephone sets and switchboards 1101, 1102, 1006	6.00
47-B	5	Pulsating and alternating	Open	Magneto telephone sets and switchboards 1101, 1102, 1006	7.00
47-C	5	Alternating	Open	Switchboards 1005 1010, 1011	6.00
47-D	5	Pulsating and alternating	Open	Switchboards 105, 1005	7.00
47-E	5	Pulsating and alternating	Open	Switchboard 106	7.00
47-F	5	Alternating	Open	Switchboard 1012	6.00

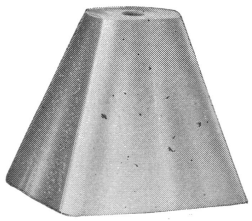


No. 1

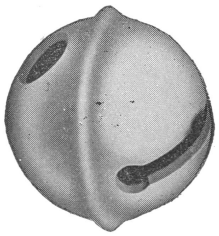
GONGS

FOR RINGERS

The Nos. 1 and 16 may be placed on the regular ringers without any change in the mounting. The others, however, require different gong mountings and gong nuts, as listed under Gong Mountings.



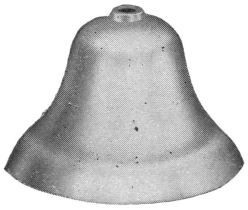
No. 3



No. 6

Code No.	Description	Diameter inches	Height inches	Finish	List Price each
1	Telephone set gong.	$2\frac{1}{2}$	$\frac{51}{64}$	Nickel plate.....	$ 0.07
3	Cow gong.	$2x1\frac{1}{2}$	$1\frac{5}{8}$	Nickel plate.....	.21
6	Large sleigh gong.	$1\frac{3}{4}$	$1\frac{19}{32}$	Nickel plate.....	.30
10	Large tea gong.	$2\frac{15}{32}$	$1\frac{23}{32}$	Nickel plate.....	.45
16	Standard telephone set gong.	$2\frac{1}{2}$	$\frac{29}{32}$	Nickel plate.....	.07

GONG MOUNTINGS



No. 10

Each of the code numbers in the following list includes a pair of gong mountings and No. 2 includes also the necessary screws for fastening the gongs to the mountings. The gong nuts listed below must be ordered separately, for example:

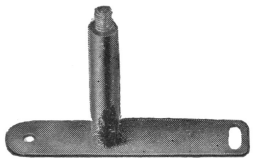
1–No. 3 gong mounting
2–P–19097 gong nuts



No. 16

Code No.	Length of Post inches	Used with Gongs	Gong Nuts	Finish	List Price each
2	$\frac{25}{32}$	No. 6.		Nickel plate.....	$ 0.15
3	$1\frac{11}{16}$	Nos. 3 and 10.	P–19097	Nickel plate.....	.165

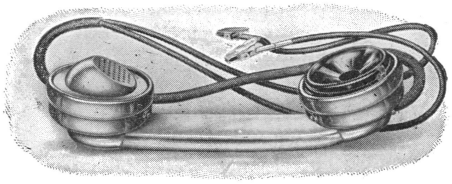
GONG NUTS



No. 3

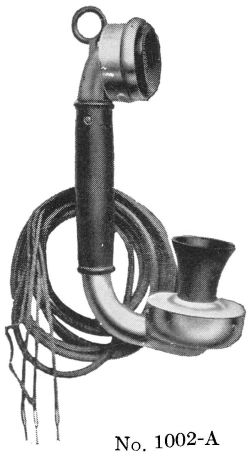
P-19097	$ 0.0275

HAND SETS



No. 1001

Code No.	Description	List Price each
1001	Includes No. 1 hand set handle, No. 244-W transmitter, No. 131-W receiver and 3 ft. two conductor cord, code No. 348 which has two spring clips for lineman's testing.....	$ 7.50



No. 1002-A

Hand Sets—Continued

Code No.	Description	List Price each
1002-A	For use in place of a regular local battery bridging or central battery desk stand or transmitter arm. Includes No. 141-W receiver, No. 267-W transmitter and No. 319 cord	**$ 6.35**

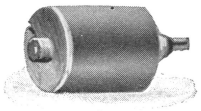
HAND SET HANDLES



No. 1

Code No.	Description	List Price each
1	For use with street railway telephone sets and lineman's hand set No. 1001. It is suitable for the No. 244-W transmitter and No. 131-W receiver.....	**$ 1.50**

HEAT COILS



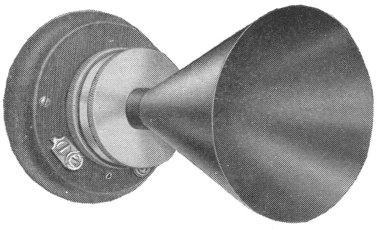
No. 4-A



No. 66

Code No.	Description	Used with Protectors numbers	List Price each
4-A	Black shell for magneto equipments.	4–A, 65–A, 78–A, 84–A	**$ 0.105**
41	Red shell for central battery equipments.	4–C 65–B, 78–B, 84–B	**.105**
66	Brass dummy.	4–A, 4–C, 65–A, 65–B, 78–A, 78–B, 84–A, 84–B	**.0075**

HOWLER

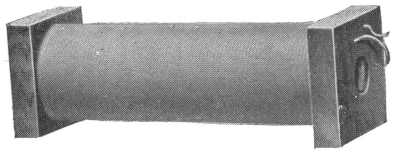


No. 1-A

Used in place of a bell for railway composite systems when signalling is accomplished by means of a high frequency interrupter.

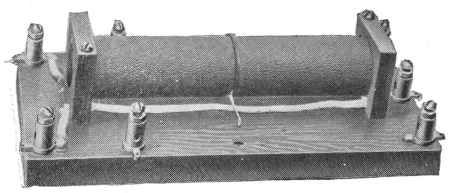
Code No.	Description	List Price each
1-A	Mounted on wood base for use with No. 1312–A telephone set	**$ 9.40**
1-B	With iron bracket for mounting in No. 1314–A telephone set	**9.10**

INDUCTION COILS



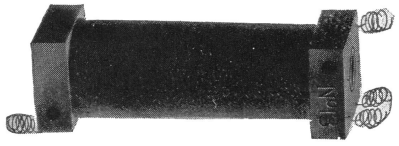
No. 5

The Nos. 10, 23 and 24 induction coils are mounted on wooden bases, the others are unmounted, unless otherwise specified.

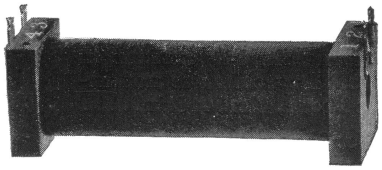


No. 10

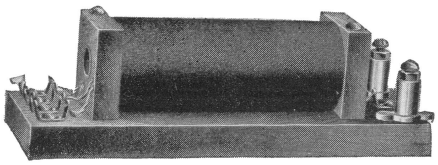
Code No.	Size inches	Used with	List Price each
5	$4\frac{3}{4}$x$1\frac{5}{8}$	Nos. 1312-A and 1314-A railway composite telephone sets	**$ 1.50**
10	$8\frac{5}{8}$x$3\frac{3}{4}$	Operator's telephone sets in the following switchboards: Nos. 105, 1005, 1006, 1010, 1011, 1101, 1102.....	**2.00**



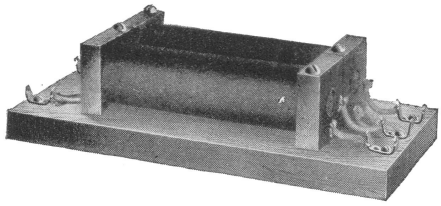
No. 13



No. 20



No. 23

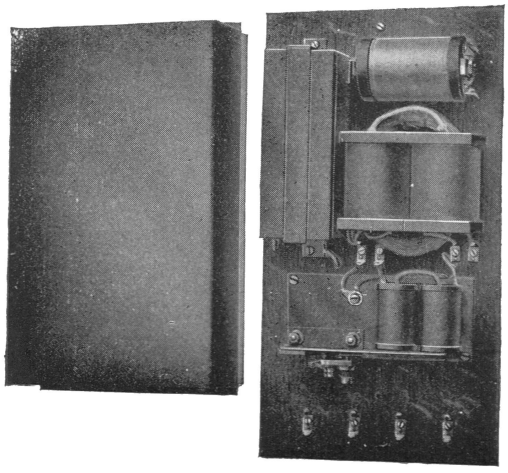


No. 24

Induction Coils—Continued

Code No.	Size inches	Used with	List Price each
13	3¼x1	Magneto telephone sets.....	**$ 0.47**
20	4¼x1⅜	Central battery telephone sets	**.70**
23	6¼x2	Operator's telephone sets in the following switchboards: Nos. 9, 10, 106, 1012, and in Nos. 4, 101, 102 private exchanges.....	**1.10**
24	6¾x3¼	Operator's telephone sets in No. 1 switchboards.....	**1.50**

INTERRUPTERS

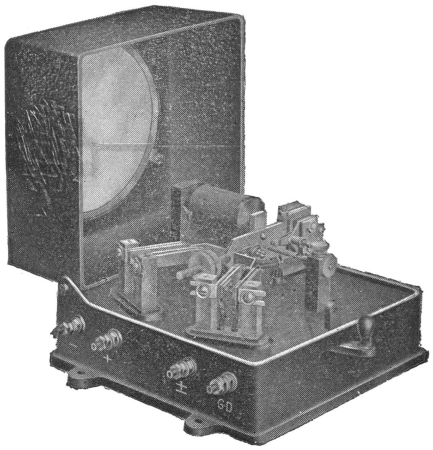


No. 100-A

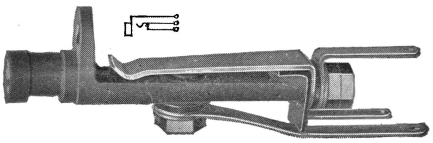
Code No	Description and Use	List Price each
65-A	A wooden box containing: 1 vibrating sending relay, 100 ohms, 1 No. 21-E condenser, 1 No. 8 repeating coil, 1 resistance, 20,000 ohms.... Base is 10 3/16 in. x 5¾ in. Used with the ringing set for composite telephone lines.	**$ 18.40**
100-A	Same as No. 65-A, except base is 10¾ in. x 5¾ in., and is designed for mounting on a rack.....	**18.40**



No. 84-A, closed



No. 84-A, open



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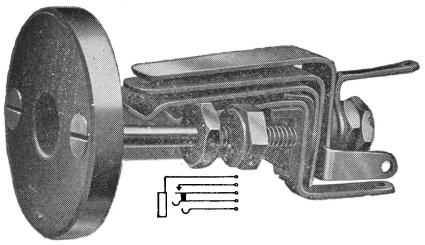

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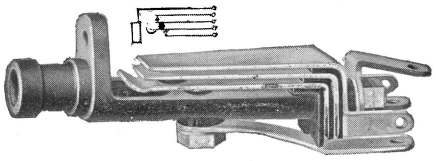

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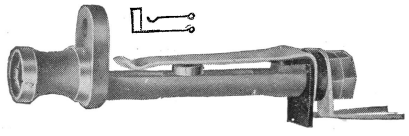


No. 99

Interrupters—Continued

Code No.	Description and Use	List Price each
84-A	An electrically operated pole changer producing alternating and positive and negative pulsating currents from a source of direct electro-motive force. Operating coil wound for current from a 24-volt battery. Ringing current taken from a battery of dry cells. Used for supplying ringing current in small exchanges. Dry cells are not included. Size of base, 8 in. x 8 in.....	**$ 24.70**
84-B	Same as No. 84-A, except the operating coil is wound for current from two primary cells in series (Gladstone-Lalande batteries usually used). Cells are not included.....	**24.00**

We make a variety of interrupter attachments which are for mounting on ringing machines and which are intended to interrupt battery current supply and ringing current supply in various circuits. Interrupters can be supplied to meet any requirements as to frequency of interruptions for such uses as tone test, howler, busy back and machine ringing.

WARNER POLE CHANGER

Operated by One Cell of Closed Circuit Battery

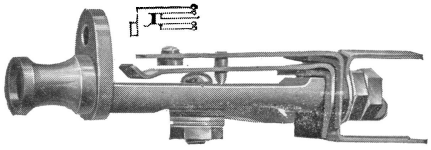
Code Word	List No.	Description
Hygiocome	**52039**	Standard
Hygiologie	**52040**	Selective

JACKS

The jacks designed for mountings must be ordered in connection with them. See note under JACK MOUNTINGS.

Code No.	Contact Points	Used with Plugs number	Used with Jack Mountings number		List Price each
3	Not platinum	47,116	Singly.....		**$ 0.17**
49	None	110	1, 2, 3, 114...	5 per strip	**.71**
				10 per strip	**.48**
				20 per strip	**.38**
77	Platinum	85	Singly.....		**.83**
81	Platinum	110	6, 7.....	10 per strip	**.68**
				20 per strip	**.53**
91	Platinum make contact Break contact not platinum	47, 103 or 112 for two	Singly and 30, 78, 80 jack mounting....	singly	**.48**
				mounted	**.78**
92	None	109	18, 19, 113...	10 per strip	**.48**
				20 per strip	**.38**
99	None	47, 103 or 112 for two	Singly and 30, 78, 80 jack mounting....	singly	**.20**
				mounted	**.50**

Jacks—Continued



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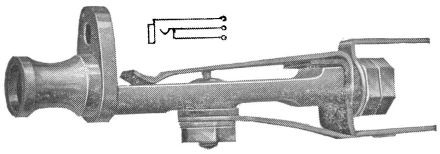

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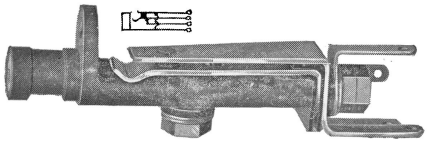

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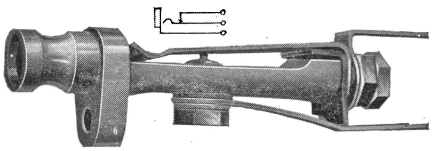

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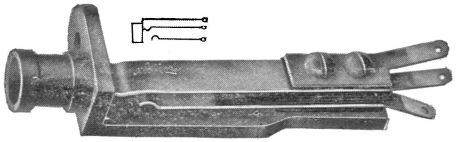

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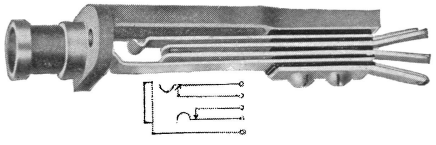

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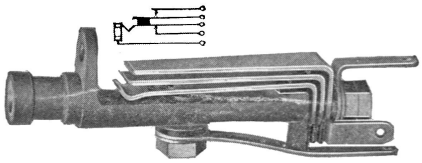
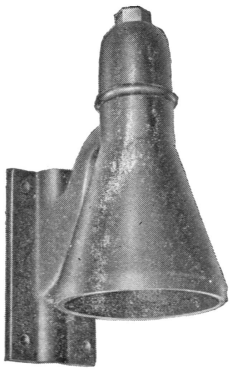


No. 124

Code No.	Contact Points	Used with Plugs number	Used with Jack Mountings number	List Price each
102	Not Platinum	47	Singly.....	**$ 0.42**
103	Platinum	47	Singly.....	**.36**
107	Platinum	47	Singly.....	**.54**
108	Platinum	47	Singly.....	**.39**
117	None	110	Singly.....	**.20**
118	Platinum	110	Singly.....	**.38**
124	Platinum	47	Singly.....	**.60**
132	None	126	Singly.....	**3.38**
140	Platinum	110	Singly.....	**.45**
141	Platinum	110	108, 109, 110, 112, 10 per strip	**.68**
			20 per strip.....	**.53**



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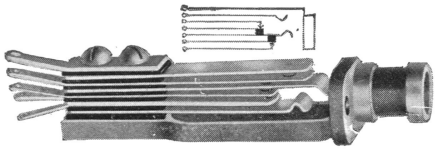
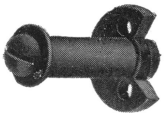


No. 140

JACK FASTENERS



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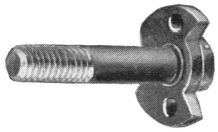


No. 16

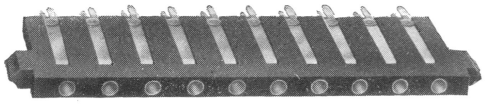
These are for holding the jack and lamp socket mountings in place.

Code No.	Used with Jack number	List Price each
4	49, 81	**$ 0.06**
16	92, 141	**.045**

JACK MOUNTINGS

For central battery exchanges the multiple jack strips in each panel are separated into groups of five by thin white holly strips. Each group consists of one hundred jacks numbered 0 to 99. Each strip is divided into four parts, each having five jacks, by a distinctive mark so that an operator may readily choose the proper ones. It is also usual to furnish these jack mountings with a groove on the lower edge for marking the jacks for various purposes such as signifying that several adjoining jacks are connected to one private exchange.

In ordering specify the number of jacks and the code number, the code number of the mounting with the number per strip together with the numbering desired. If holly strips are to be attached to the lower edge of any, the order should specify which ones. The proper number of jacks should be ordered to fully equip the mountings.



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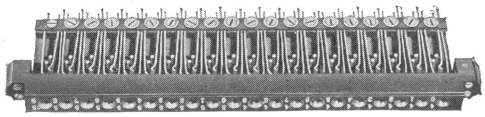

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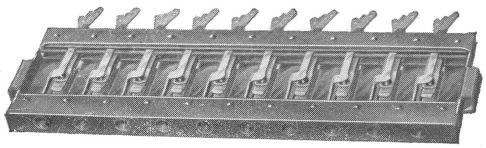

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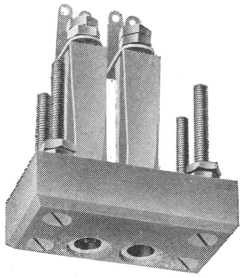

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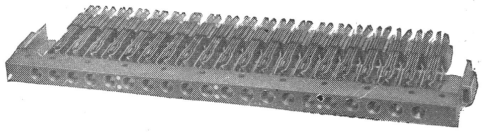
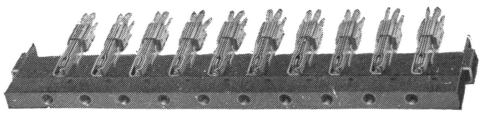


No. 108

Not Arranged for Number Plates

Code No.	Used with Jack number	Number per Strip	Used with	List Price
1	49	10	No. 49 jack, No. 1 switchboard.	The price of the jack mounting is included in the price of the jack.
3	49	20	No. 49 jack, No. 1 switchboard.	
6	81	10	No. 9 switchboard.	
7	81	20	No. 9 switchboard.	
18	92	10	No. 92 jack, No. 1 switchboard.	
30	91, 99	4	All switchboards for operator's telephone jacks.	
78	91, 99	6	No. 1 switchboard for operator's and supervisor's telephone jacks.	
80	91, 99	2	All switchboards for operator's telephone jacks.	
108	141	20	No. 10 switchboard.	



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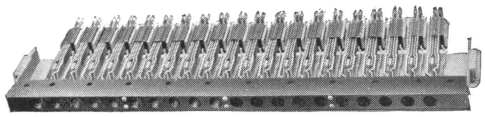

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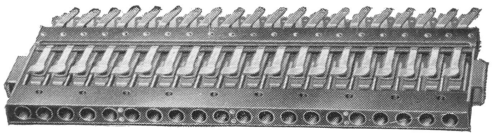

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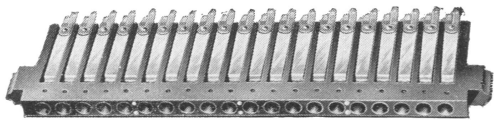

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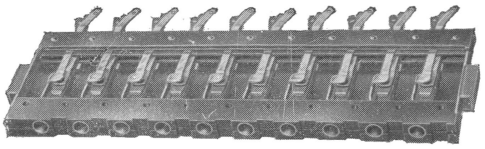

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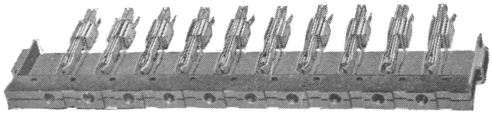


No. 110

Jack Mountings—Continued

Code No.	Used with Jack number	Number per Strip	Used with	List Price
109	141	10	No. 10 switchboard.	The price of the jack mounting is included in the price of the jack.
112	141	20	No. 10 switchboard.	
113	92	20	No. 92 jack, No. 1 switchboard.	
114	49	20	No. 49 jack, No. 1 switchboard.	

Arranged for Number Plates

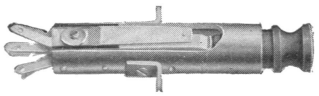
These are not numbered. In ordering specify the number of jacks and the code number, the code number of the mounting with the number per strip. The proper number of jacks should be ordered to fully equip the mountings.

Code No.	Used with Jack number	Number per Strip	For Number Plates	Used with	List Price
2	49	10	4, 31, 109	No. 49 jack, No. 1 switchboard.	The price of the jack mounting is included in the price of the jacks.
19	92	10	6, 30, 108	No. 92 jack, No. 1 switchboard.	
110	141	10	5-A	No. 10 switchboard.	

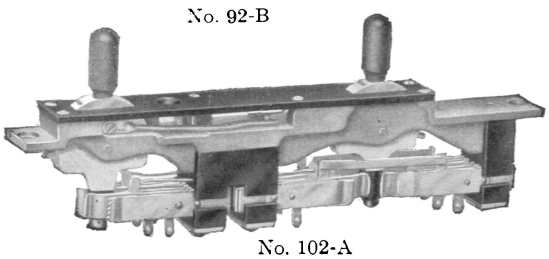
KEYS

These represent a few of the commonly used types which we manufacture. We have a very complete line of standard keys, from which can be selected those which, we believe, will fulfil any requirements.

All contacts used in the talking circuit are made of platinum.

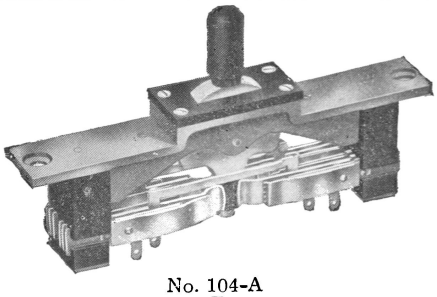


No. 92-B

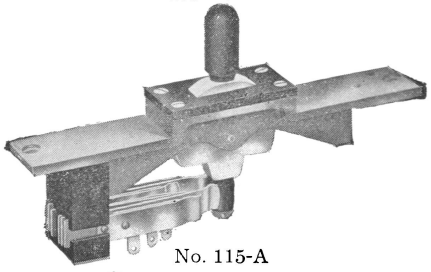


No. 102-A

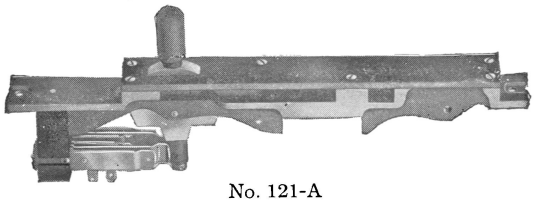
Code No.	Description	List Price each
69-A	Push button type, mounted in strips; used in order wire circuits	**$ 0.60**
242-A	Push button type, mounted in strips; used in order wire circuits where local contact is necessary	**1.00**
92-B	Single brass listening key; locks when operated	**.75**



No. 104-A



No. 115-A



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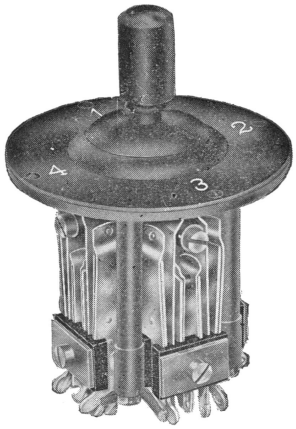
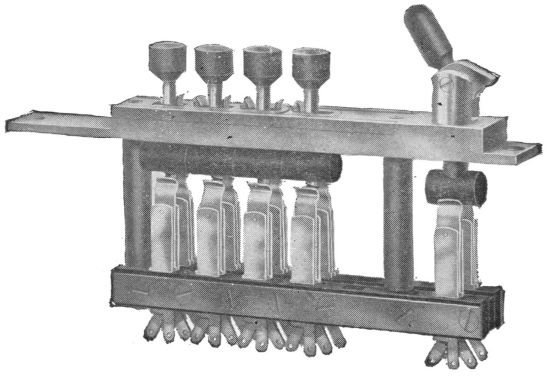


No. 128-A



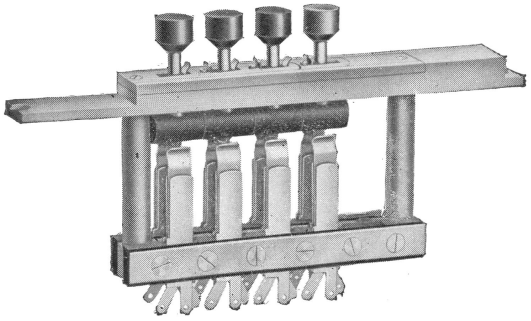
No. 223-A



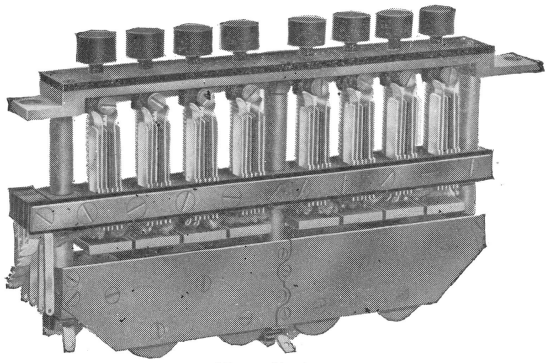
No. 227-A

Keys—Continued

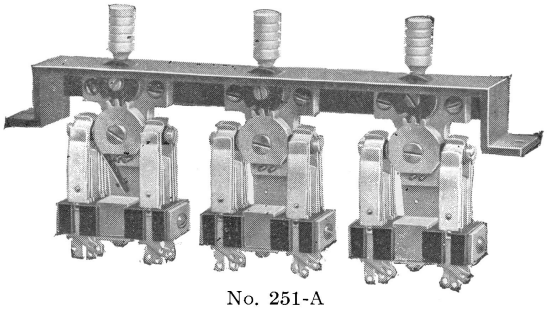
Code No.	Description	List Price each
102-A	Listening and two-party ringing key with indicator	$ 3.15
120-A	Listening and two-party ringing key with indicator; has local contact springs on listening end	3.30
124-A	Double listening key	2.80
156-A	Listening and two-party ringing key without indicator; has local contact springs on listening end	2.85
104-A	Listening and single ringing key	1.75
116-A	Listening and single ringing key; has local contact springs on listening end	1.90
184-A	Listening and single ringing key	1.80
115-A	Single ringing key	1.20
155-A	Single listening key	1.45
121-A	Single listening key	1.60
123-A	Single ringing key	1.35
128-A	Four party ringing switching key	6.00
223-A	Single service meter key	.55
227-A	Four party ringing and listening key with indicator	6.00



No. 228-B



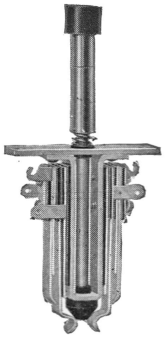
No. 237-A



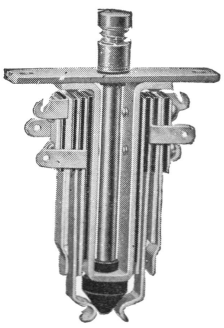
No. 251-A



No. 371-A



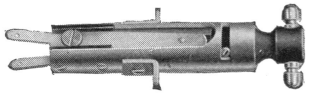
No. 375-A



No. 378-A

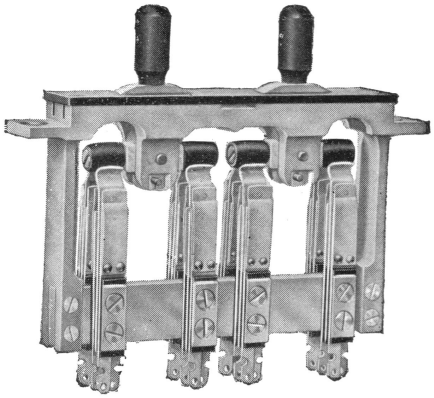
Keys—Continued

Code No.	Description	List Price each
228-B	Four party ringing key with indicator	**$ 4.90**
237-A	Double four party machine ringing key; button is held depressed until party answers.....	**14.25**
251-A	Ringing and listening key; used on cordless private exchange switchboard.....	**5.25**
371-A	Ten line push button key used in intercommunicating system.....	**8.80**
371-B	Twenty line push button key used in intercommunicating system.....	**15.55**
371-C	Thirty line push button key used in intercommunicating system.....	**22.30**
375-A	Push button type; single mounted ringing key.....	**.70**
378-A	Plunger type listening key, single mounted; used with key lever ...	**.70**
381-A	Plunger type listening key with local contact springs, single mounted; used with key lever.....	**.85**



No. 406-A

Keys—Continued



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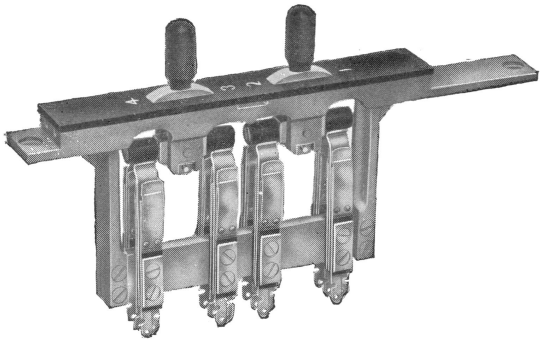
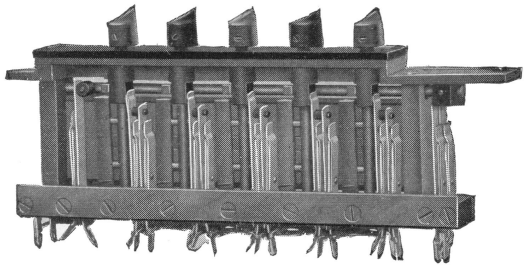
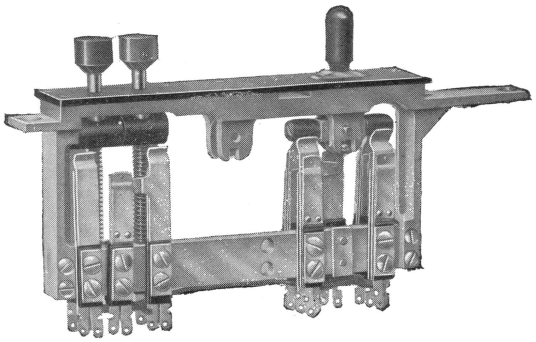


No. 439-A

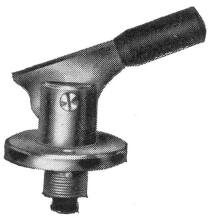


No. 442-B



No. 462-A

Code No.	Description	List Price each
406-A	Single switching key; locking....	**$0.75**
438-A	Four party ringing key.....	**4.50**
439-A	Four party ringing key.....	**4.90**
442-B	Four party machine ringing and listening key; ringing key remains operated until party answers.....	**8.55**
462-A	Listening, single party ringing, coin collector and service meter key..	**4.60**



No. 2-A

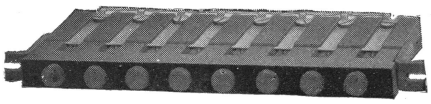


No. 6-A

KEY LEVERS

These are used with the No. 378 type plunger keys.

Code No.	Operated Position of Handle	Handle	List Price each
2-A	Vertical	Hard rubber, black	**$ 0.45**
4-A	Horizontal	Hard rubber, black	**.45**
6-A	Vertical	Hard rubber, black	**.38**
6-B	Vertical	Hard rubber, red	**.38**
14-A	Horizontal	Hard rubber, black	**.38**
14-B	Horizontal	Hard rubber, red	**.38**

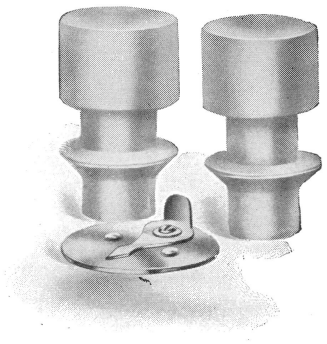


No. 303

KEY MOUNTINGS

These are used with the Nos. 69 and 242 type order wire keys. They are made in various lengths with different numbers of keys per strip to mount with all our standard cord circuit and trunk keys. The width of these mountings is $\frac{1}{2}$ in. for No. 69 type keys and $\frac{5}{8}$ in. for No. 242 type keys.

Code No.	Number per Strip	Used with Keys Number	List Price each
300	5	242	The price for Nos. 69 and 242 keys includes the mounting
303	8	69	
304	8	242	
314	5	69	
315	4	69	



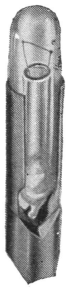
No. 1

KEY INDICATORS

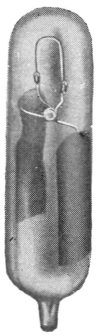
Code No	Use	List Price each
1	With No. 375 type keys to indicate which key was last operated	**$ 0.15**

LAMPS

The overall diameter of the No. 2 type lamp is .3075 in. and of the No. 4 type .515 in.



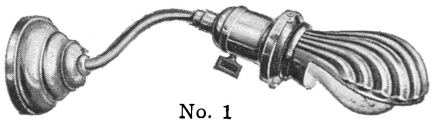
No. 2



No. 4

Code No.	Voltage	Current Consumption Minimum Amperes	Current Consumption Maximum Amperes	Used with Lamp Sockets Number	List Price each
2-A	4	.17	.21	12, 13, 30, 32	**$ 0.225**
2-B	4	.27	.31	12, 13, 30, 32	**.27**
2-C	15	.09	.12	12, 13, 30, 32	**.27**
2-D	16	.27	.31	12, 13, 30, 32	**.27**
2-E	20	.09	.12	12, 13, 30, 32	**.27**
2-F	12	.097	.12	12, 13, 30, 32	**.225**
2-G	24	.075	.105	12, 13, 30, 32	**.225**
2-H	6	.27	.31	12, 13, 30, 32	**.27**
2-J	24	.025	.035	12, 13, 30, 32	**.27**
2-K	30	.09	.12	12, 13, 30, 32	**.27**
2-L	10	.24	.26	12, 13, 30, 32	**.27**
2-N	6	.12	.16	12, 13, 30, 32	**.27**
2-P	8	.085	.10	12, 13, 30, 32	**.27**
2-R	18	.09	.12	12, 13, 30, 32	**.27**
2-T	35 to 47	.03		12, 13, 30, 32	**.27**
4-A	4	.50	.60	16	**.39**
4-B	8	.50	.60	16	**.39**
4-C	22	.17	.21	16	**.39**
4-D	12	.27	.31	16	**.39**
4-E	18	.17	.21	16	**.39**
4-F	20	.17	.21	16	**.39**
4-G	24	.15	.185	16	**.39**

LAMP BRACKETS

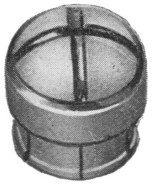


No. 1

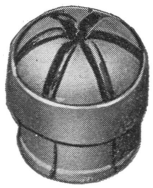
	List Price each
For use on power switchboards. Comprises a bracket fitted with Edison key socket, lamp shade holder, green porcelain half shade and a 16 c. p. lamp. Voltage of lamp to be called for on the order.....	$ 1.35

LAMP CAPS

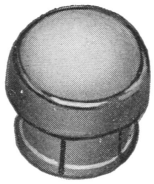
No. 2 TYPE (Used with Nos. 12 and 13 Lamp Sockets)



No. 2-C



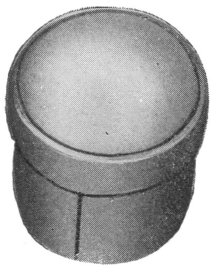
No. 2-J



No. 2-AY

Code No.	Symbol	Color	List Price each	Code No.	Symbol	Color	List Price each
2-A		White Opalescent	$ 0.12	2-AC		Red	$ 0.12
2-B		White Opalescent	.12	2-AD	E	White Opalescent	.12
2-C		White Opalescent	.12	2-AE	P	Red	.15
2-D		White Opalescent	.12	2-AF	U	White Opalescent	.12
2-E		White Opalescent	.12	2-AG	W	White Opalescent	.12
2-F		White Opalescent	.12	2-AH	D	White Opalescent	.12
2-G		White Opalescent	.12	2-AJ	B	White Opalescent	.12
2-H		Red	.12	2-AK	N	White Opalescent	.12
2-J		White Opalescent	.12	2-AL		Green	.15
2-K		White Opalescent	.12	2-AM	S	White Opalescent	.12
2-L		Green	.12	2-AN	V	White Opalescent	.12
2-M		White Opalescent	.12	2-AP	X	White Opalescent	.12
2-N		Red	.12	2-AR	O	Red	.15
2-P		Jeweled Red	.15	2-AS	P	White Opalescent	.12
2-R		Jeweled Blue	.15	2-AT	T	White Opalescent	.12
2-S		Jeweled Green	.15	2-AU	S	White Opalescent	.12
2-T		Red	.15	2-AW		White Opalescent	.12
2-U		Amber	.12	2-AY		White Opalescent	.075
2-W		Blue	.12	2-AZ		Red	.15
2-Y		Green	.15	2-BA	28 36	White Opalescent Engraved as Specified	.15
2-Z	M	White Opalescent	.12	2-BC	F	White Opalescent	.12
2-AA		Red	.15	2-BD		White Opalescent	.12
2-AB	A	White Opalescent	.12	2-BE		Green	.15

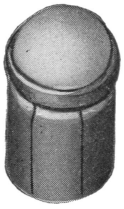
No. 4 TYPE (Used with Nos. 16 and 32 Lamp Sockets)



No. 4-A

4-A		White Opalescent	.15	4-E		White Opalescent	.225
4-B		Jeweled Red	.225	4-F		Green	.225
4-C		Jeweled Green	.225	4-G		White Opalescent	.225
4-D		Red	.225	4-H	M	White Opalescent	.225

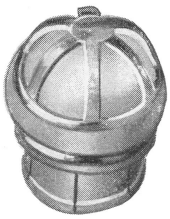
No. 8 TYPE (Used with No. 30 Lamp Socket)



No. 8-A

8-A		White Opalescent	.06	8-G		White Opalescent	.12
8-B		Clear	.12	8-H		White Opalescent	.12
8-C		Clear, Flat Top	.26	8-J		White Opalescent	.12
8-D		Red	.12	8-K		White Opalescent	.12
8-E		White Opalescent	.12	8-L		Green	.12
8-F		White Opalescent	.12				

WRITE FOR LIBERAL DISCOUNTS

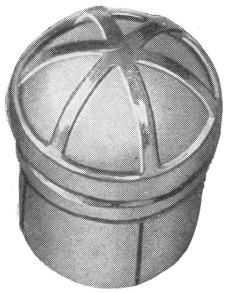


No. 68-A

Lamp Caps—Continued

No. 68 TYPE (Used with Nos. 12 and 13 Lamp Sockets)

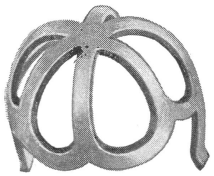
Code No.	Color	List Price each
68-A	White Opalescent	**$ 0.09**
68-B	Red	**.135**
68-C	Green	**.135**



No. 69-A

No. 69 TYPE (Used with Nos. 16 and 32 Lamp Sockets)

69-A	○	White Opalescent	**.165**
69-B	⊛	Jeweled Red	**.24**
69-C	⊛	Jeweled Green	**.24**
69-D	⊕	White Opalescent	**.24**



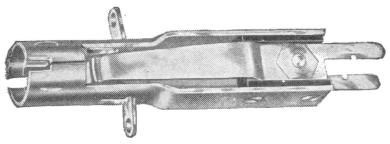
No. 21

LAMP GUARDS

Code No.	Used with Lamp Sockets number	List Price each
21	12, 13	**$ 0.03**
22	16, 32	**.03**

LAMP SOCKETS

Mounted Singly



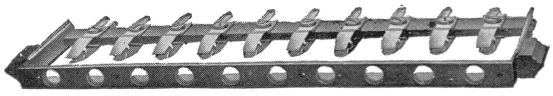
No. 13

Code No.	Used with Lamps number	Used with Lamp Caps number	Used with Thickness of Shelf inches	List Price each
13	2 type	2, 68	$\frac{7}{8}$	**$ 0.23**
16	4 type	4, 69, 70	$\frac{7}{8}$, $1\frac{3}{16}$, $1\frac{1}{4}$, $1\frac{13}{16}$ as specified	**.75**
32	2 type	4, 69, 70	$\frac{7}{8}$, $1\frac{3}{16}$, $1\frac{1}{4}$, $1\frac{13}{16}$ as specified	**.75**

Mounted in Strips

These must be ordered in connection with the lamp socket mountings. See note under LAMP SOCKET MOUNTINGS.

Code No.	Used with Lamps number	Used with Lamp Caps number	Suitable for Lamp Socket Mountings number		List Price each
12	2 type	2	102, 117, 118, 122, 134, 136, 137	5 per strip	**$ 0.75**
				10 per strip	**.53**
				20 per strip	**.38**
30	2 type	8	101, 102, 111, 118	10 per strip	**.53**
				20 per strip	**.38**



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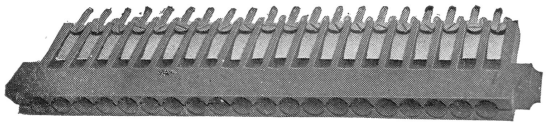

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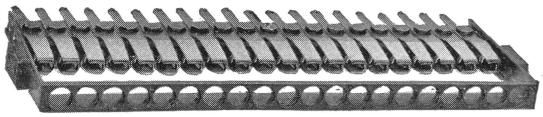

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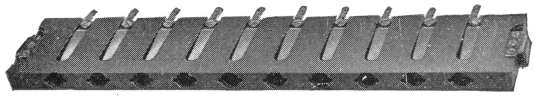
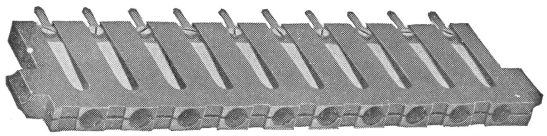


No. 136



No. 137



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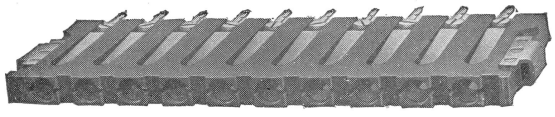


No. 134



No. 2

LAMP SOCKET MOUNTINGS

In ordering specify the number of lamp sockets and the code number together with the code number of the lamp socket mounting. The proper number of lamp sockets should be ordered to fully equip the mountings.

Not arranged for Number Plates

Code No.	Used with Lamp Sockets No.	No. per Strip	Used with	List Price
101	30	10	No. 49 jack, No. 1 switchboard	The price of the lamp socket mounting is included in the price of the lamp socket
111	30	10	No. 92 jack, No. 1 switchboard	
102	12, 30	20	No. 49 jack, No. 1 switchboard	
118	30	20	No. 92 jack, No. 1 switchboard	
136	12	10	No. 10 switchboard	
137	12	20	No. 10 switchboard	

Arranged for Number Plates

Code No.	Used with Lamp Sockets No.	No. per Strip	For Number Plates	Used with	List Price
122	12	10	4, 31, 109	No. 49 jack, No. 1 switchboard	The price of the lamp socket mounting is included in the price of the lamp socket.
134	12	10	6, 30, 108	No. 92 jack, No. 1 switchboard	

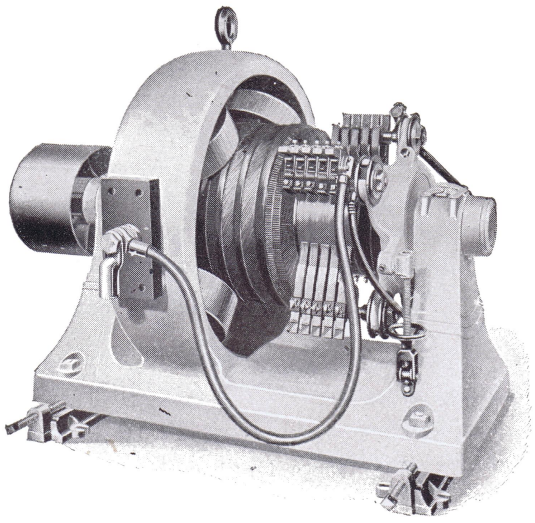
LINE POLES

Code No.		List Price each
2	Pole designed to make the line connection for portable railway composite set No. 1314-A. It consists of three six foot sections and one No. 268 cord 100 feet long. The two upper sections are made of bamboo, the lower section of hickory.	**$ 11.25**

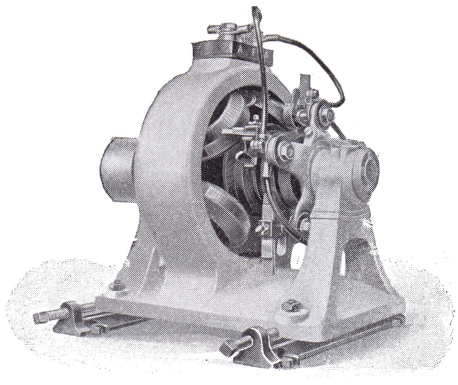
MACHINES

CHARGING GENERATORS

These have been designed for charging storage batteries in telephone exchanges. They are especially constructed to reduce to a minimum the chances of noise being introduced into the telephone circuits while the battery is being charged.



No. 7-A



No. 1-A

CHARGING GENERATORS, BELT DRIVEN

These are suitable for charging eleven cells in series. If there are two batteries (each of eleven cells) the fact should be stated in the order so that the proper rheostat may be determined. The rheostat will regulate the voltage between 22 and 30.

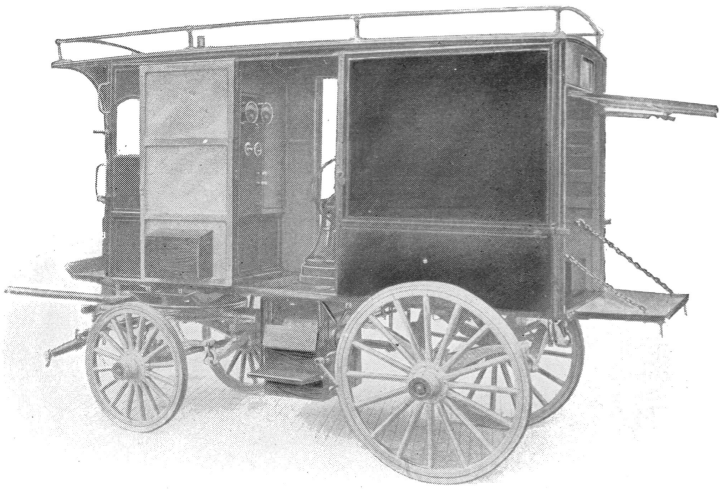
When ordering a new rheostat to replace one in service, the name plate data of the machine should be stated in the order.

Code No.	Type	Output			Standard Speed R.P.M.	Diameter of Pulley inches	Horse Power Required to Drive	Size. Length Including Pulley inches	Size. Width Including Slide Rails inches	Approximate Shipping Weight pounds
		Amperes	Volts	Watts						
1-A	M-1	25	30	750	1,750	8	1¾	20½	20	275
2-A	M-2	50	30	1,500	1,750	8	3	23½	20	385
3-A	M-3	100	30	3,000	1,150	8	5½	24¾	24	575
4-A	M-4	175	30	5,250	1,150	8	9½	28¾	30	900
5-A	M-5	225	30	6,750	1,150	8	11½	28¾	30	1,000
6-A	M-5½	300	30	9,000	1,150	8	14½	46⅜	41	1,950
6-B	M-5½	400	30	12,000	1,150	8	19½	46⅜	41	1,950
7-A	M-7	600	30	18,000	850	14½	28½	50½	47	2,200
8-A	M-8	800	30	24,000	850	15	37½	52¾	51	3,980
9-A	M-9	1,000	30	30,000	475	20 or 24	48	71¼	57	6,000

Note:—Orders should read thus:

One No. .... belt driven charging generator to give an output of .... amperes at 30 volts; to run at .... R.P.M., with pulley .... inches in diameter; terminals drilled for .... circular mil cable; with necessary rheostat for rear of board mounting with hand wheels; to be used for charging a battery of 11 type "G" .... cells and also a battery of 11 type E-11 cells.

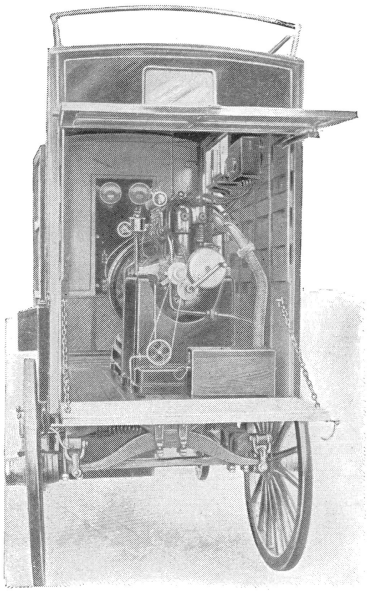
PRICES ON REQUEST



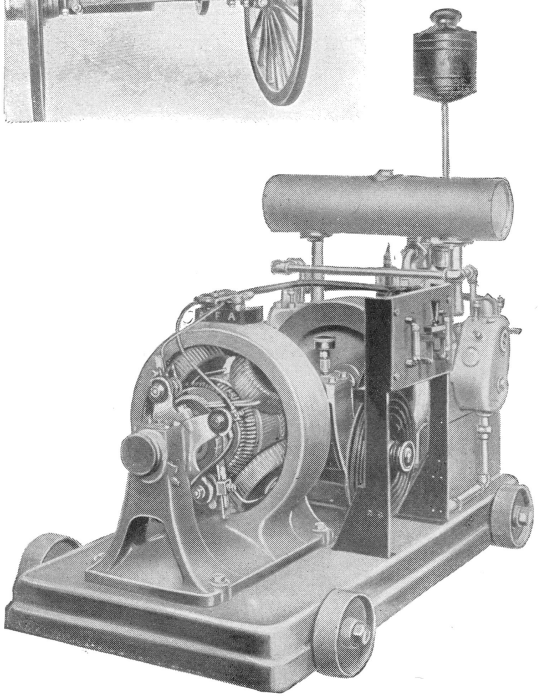
PORTABLE CHARGING SETS

For Charging Storage Batteries

Output	Generator	Remarks	Shipping Weight pounds
25 amperes at 42 volts	M-2	On iron base with wheels...	1400



Output	Generator	Remarks	Shipping Weight pounds
50 to 60 amperes at 36 volts	M-3	Mounted in covered wagon....	2200
100 to 125 amperes at 36 volts	M-4	Mounted in covered wagon.....	3800



Output	Generator	Remarks	
200 to 225 amperes at 36 volts	M-5	Mounted in covered wagon....	4000
300 to 350 amperes at 36 volts	M-5½	Mounted in covered wagon....	4500

The above sets include a type "M" generator direct connected to a gasolene engine and the necessary field rheostat. The rheostat with the 25 ampere set is capable of regulating the terminal voltage between 22 and 42 volts. The field rheostat furnished with the other sets is capable of regulating the terminal voltage between 22 and 30 volts.

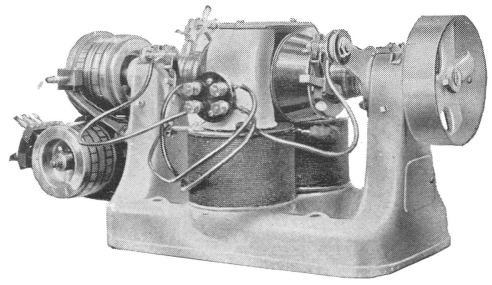
The shipping weights given above for the large sets are for the apparatus complete including the wagon.

PRICES ON REQUEST

CHOKE COILS

Used in the lead between the charging machine and the non-grounded side of the storage battery to choke down any disturbances which might cause noises in the telephone circuits while the battery is being charged. Mounted on wooden base. Terminals are included. Prices are f.o.b. Chicago.

Code No.	Used with Charging Units Employing the Following Generators	Winding	Size of Base inches	List Price each
1-A	M–2	90 turns of No. 0 wire.	24 x 5¾	**$ 59.35**
1-B	M–2	80 turns of No. 00 wire.	24 x 5¾	**64.15**
1-C	M–3	72 turns of No. 0000 wire.	24 x 6¾	**110.65**
2-A	M–4	69 turns of 3–No. 10x1 in. copper ribbons in parallel.	26¼x11½	**272.55**
2-B	M–5	69 turns of 3–No. 8x1 in. copper ribbons in parallel.	36¼x12¾	**399.20**
2-C	M–7	48 turns of 7–No. 8x1¼ in. copper ribbons in parallel.	43½x17¾	**1,232.85**
2-D	M–5½ (300 ampere)	56 turns of 4–No. 9x1 in. copper ribbons in parallel.	37 x13	**375.15**
2-E	M–5½ (400 ampere)	48 turns of 4–No. 9x1¼ in. copper ribbons in parallel.	42 x14½	**509.85**
2-F	M–8	40 turns of 10–No. 8x1½ in. copper ribbons in parallel.	43½x21¼	**1,979.85**
2-G	M–9	38 turns of 11–No. 8x2 in. copper ribbons in parallel.	52½x23	**3,642.30**



No. 3-A
With Interrupter

RINGING GENERATORS

Belt Driven, Self Excited

Prices are f.o.b. Chicago and do not include slide rails or starting boxes

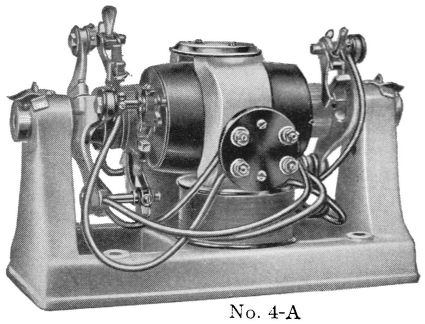
When the power supply is direct current at a voltage exceeding 220 or alternating current, ringing generators driven by suitable motors are used.

Code No.	Output: Amperes	Output: Volts	Output: Watts	Full Load Speed R. P. M.	Overall Size: Length Including Pulley inches	Overall Size: Width inches	Horse Power Required to Drive without interrupters	Shipping Weight without Interrupters pounds	List Price each
1-A	¼	75	19	950	14½	7⅛	⅛	50	**$ 179.55**
3-A	1	75	75	950	16	9⅛	¼	95	**243.70**
5-A	2	75	150	950	18½	10⅝	½	160	**373.55**
8-A	4	75	300	950	23	13⅜	⅝	290	**488.95**

Slide rails are not needed when the driving motor has means for tightening the belt.

Orders should read thus:

1 No. . . . .ringing machine, self-excited; with an output of. . . .amperes at 75 volts, complete with slide rails and pulley. . . .inches in diameter; equipped with. . . .interrupter.



No. 4-A

RINGING DYNAMOTORS

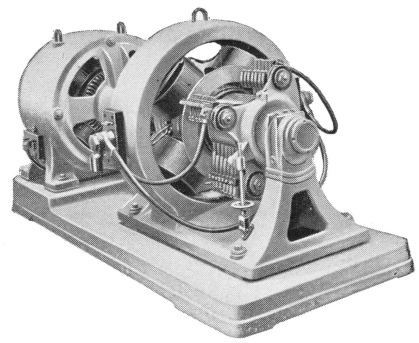
Direct Current Primary

Prices are f.o.b. Chicago and do not include starting boxes

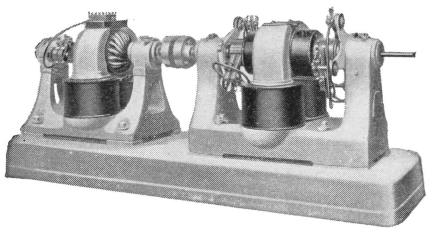
Code No.	Output Amperes	Output volts	Output watts	Primary Voltage	Size of Starting Box Horse Power	Full Load Speed R.P.M.	Overall Size Length inches	Overall Size Width inches	Shipping Weight Without Interrupters pounds	List Price
2-A	$\frac{1}{5}$	75	15	20	None Required	950	13	9	50	**$ 168.35**
2-B	$\frac{1}{5}$	75	15	110	None Required	950	13	9	50	**168.35**
2-C	$\frac{1}{5}$	75	15	220	None Required	950	13	9	50	**168.35**
4-A	$\frac{1}{2}$	75	38	20	$\frac{1}{6}$	950	$14\frac{1}{2}$	$10\frac{3}{4}$	95	**232.50**
4-B	$\frac{1}{2}$	75	38	110	$\frac{1}{6}$	950	$14\frac{1}{2}$	$10\frac{3}{4}$	95	**232.50**
4-C	$\frac{1}{2}$	75	38	220	$\frac{1}{6}$	950	$14\frac{1}{2}$	$10\frac{3}{4}$	95	**232.50**
6-A	1	75	75	20	$\frac{1}{4}$	950	17	13	160	**360.70**
6-B	1	75	75	110	$\frac{1}{4}$	950	17	13	160	**360.70**
6-C	1	75	75	220	$\frac{1}{4}$	950	17	13	160	**360.70**
7-A	2	75	150	20	$\frac{1}{2}$	950	$20\frac{3}{4}$	$15\frac{1}{4}$	290	**472.90**
7-B	2	75	150	110	$\frac{1}{2}$	950	$20\frac{3}{4}$	$15\frac{1}{4}$	290	**472.90**
7-C	2	75	150	220	$\frac{1}{2}$	950	$20\frac{3}{4}$	$15\frac{1}{4}$	290	**480.95**
9-A	4	75	300	20	$\frac{3}{4}$	950	28	$18\frac{1}{4}$		**641.25**
9-B	4	75	300	110	$\frac{3}{4}$	950	28	$18\frac{1}{4}$		**641.25**
9-C	4	75	300	220	$\frac{3}{4}$	950	28	$18\frac{1}{4}$		**681.35**

Orders should read thus:

1 No...ringing machine to give an output of .... amperes at 75 volts; primary voltage....volts; equipped with....interrupters and necessary starting box for rear of board mounting with hand wheel.



Charging Motor Generator



Ringing Motor Generator

MOTORS

We carry a complete line of motors suitable for all power circuits. In ordering, specify the voltage of the circuit if direct current, or the voltage, phase and frequency if the current is alternating, also whether a starting box for rear of board mounting with hand-wheel is to be provided. If the motor is to be direct connected to a generator, the order should state if a flexible insulated coupling is to be furnished and if the sub-base is to have cushions.

COIN COLLECTOR MOTOR-GENERATORS

We furnish motor generators for supplying current for operating coin collectors. Orders should state the output desired, and specify exactly the power circuit on which the motor is to work, also whether the rheostat and starting box should be furnished with hand wheels for rear of board mounting.

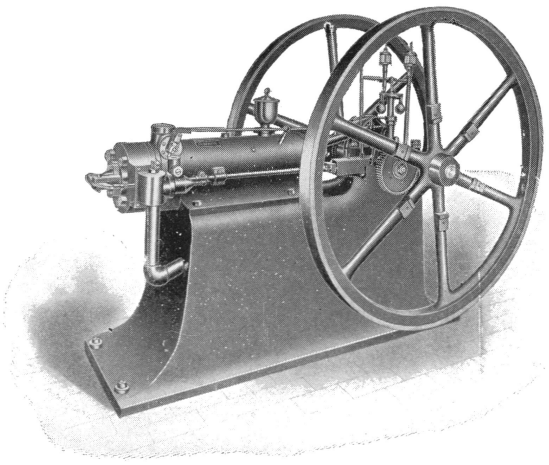
SERVICE METER MOTOR-GENERATORS

We furnish motor-generators for supplying current for operating the service meters. Orders should state the output desired, and specify exactly the power circuit on which the motor is to work, also whether the rheostat and starting box should be furnished with hand wheels for rear of board mounting.

GAS ENGINES

White & Middleton

Brake Horse Power	Extreme Length Including Fly Wheel	Width to Outside of Fly Wheels	Diameter of Fly Wheels	Width of Fly Wheels inches	Width of Belt Used inches	Speed R.P.M.	Approx. Shipping Weight pounds	Used with Charging Machine
4	5 ft. 2¼ in.	2 ft. 2¼ in.	3 ft. 4 in.	3⅞	3	300	1600	M-1 and M-2
6	6 ft. 3 in.	2 ft. 5 in.	4 ft. 0 in.	4	4	250	2400	M-3
9	7 ft. 2¼ in.	2 ft. 9 in.	4 ft. 8 in.	5½	4	250	3100	M-4
12	7 ft. 3 in.	2 ft. 9 in.	4 ft. 8 in.	5½	5	240	3600	M-5
15	7 ft. 7 in.	3 ft. 1 in.	5 ft. 1 in.	6¼	5	220	4300	M-5½ (300 amperes)
20	8 ft. 6¼ in.	3 ft. 6 in.	5 ft. 6 in.	6½	6	200	5600	M-5½ (400 amperes)
25	8 ft. 7 in.	3 ft. 7½ in.	6 ft. 0 in.	8	7	200	7700	
30	9 ft. 6½ in.	3 ft. 7½ in.	6 ft. 0 in.	9	8	200	8500	M-7
40	10 ft. 9¾ in.	4 ft. 1¼ in.	6 ft. 8 in.	9	9	180	13500	M-8
50	12 ft. 3 in.	4 ft. 3½ in.	7 ft. 6 in.	10	10	180	16000	M-9



The engine requires a foundation which is slightly longer and wider than the space occupied by the engine as given above.

The following accessories should be ordered with each engine:

1 gas bag
1 exhaust muffler
1 set of oil cans
1 set of wrenches
1 5 gallon can of cylinder oil
1 5 gallon can of bearing lubricating oil
1 wooden templet for locating foundation bolts
1 set of foundation bolts and anchor plates
1 list of framed instructions
1 cooling tank (unless running water will be used for the cylinder jacket)
1 spark coil panel including one No. 1 spark coil and one double pole, single throw switch
1 belt

SPARK COIL

Code No.	Description and Use	List Price each
1	A gas or gasolene engine spark coil for use on a 24-volt circuit. Resistance 60 ohms. Base 13 in. x 3¾ in.	$7.50

MACHINE COVERS

A complete line of machine covers is manufactured for all of our machines. They are made of eight ounce brown army paraffined canvas.

PRICES ON REQUEST

MACHINE TABLES

These consist of an angle iron frame with a slate top drilled for our various small machines, such as ringing, coin collector or service meter machines.

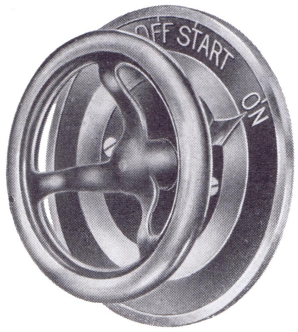
RHEOSTATS

These are used with our various generators which supply direct current, and are made for mounting on the front or rear of the power switchboard. When rear mounted they require hand wheels and index plates.

They should be ordered with each new machine when required. When a rheostat is being ordered for a machine already installed, the data on the name plate on the machine should be stated in the order.

STARTING BOXES

No-voltage release or no-voltage release and overload boxes are supplied for motors of all capacities and voltages. They are arranged for rear of board mounting and require a hand wheel on the front. They should be ordered with new motors. When a starting box is being ordered for a machine already installed the data on the name plate on the motor should be stated in the order.



No. 194

HAND WHEELS

These are finished in polished copper and black dip, and are for use with rear mounted starting boxes and rheostats. A complete line is carried for all the various sizes. The hand wheel includes a dial properly marked.

BELTS

Endless leather belts are carried in single or double ply. Specify length, width and ply

POWER PROTECTION PANELS

These are arranged for mounting an a wall, and comprise a slate panel equipped with a switch, together with the necessary fuses, retardation coils and lightning arresters for protecting motors. A complete line is manufactured, suitable for all kinds of circuits and for motors of different horse-power.

POWER SWITCHBOARDS

These comprise one or more slate panels mounted on an iron framework, which is braced to the floor and wall. Space is left for access to the back of the board. The size and number of panels depend upon the machines furnished. There is mounted on these boards all of the apparatus for controlling the machines.

BATTERY PANELS

These are arranged for mounting on a wall and comprise a slate panel equipped with fuses for protecting the storage battery and a shunt for reading the battery current. They are made for protecting one or two batteries.

PRICES ON REQUEST

MOUNTING PLATES

The term "mounting plate" refers in general to a mild steel plate drilled and slotted for mounting relays, resistance coils, service meters or small retardation coils. Plates for mounting drops and signals are known as "drop mountings" and "signal mountings" respectively.

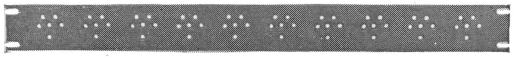
The standard thickness of a relay mounting plate is $\frac{7}{32}$ in.; of a mounting plate for No. 18 and No. 19 type resistances $\frac{1}{8}$ in.; and of a mounting plate for service meters $\frac{3}{8}$ in. All these plates are of mild steel, copper plated, oxidized and lacquered to improve the appearance and prevent rusting.

Whenever necessary the holes for terminals are equipped with hard rubber bushings to insulate the parts in circuit from the plate.

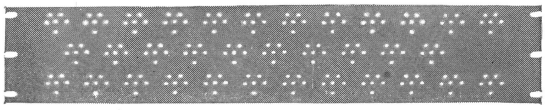
Certain mounting plates are equipped with dust proof covers which enclose the strips of relays. Such mounting plates are used with relays like the No. 189, not equipped with individual covers.

The length of mounting plates is usually 19 in., $21\frac{5}{8}$ in., 23 in., or 27 in. The first is used on relay racks, the second and third on subscriber and trunk sections of the No. 1 board and the last on the No. 10 board. Service meters are regularly mounted 20 per strip on a plate $33\frac{3}{4}$ in. long.

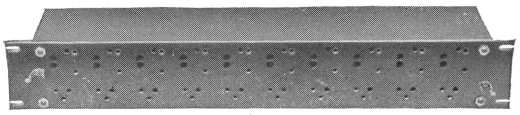
Mounting plates of other sizes are furnished to meet conditions.



No. 600-A



No. 610-C



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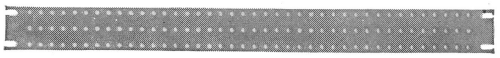


No. 601-C



No. 671-A

Relay Mounting Plates

Code No.	Number per Strip	Centers inches	Size inches	List Price each
600-A	10	$1\frac{3}{4}$	19 x$1\frac{23}{32}$	**$ 0.60**
606-A	10	$1\frac{3}{4}$	$21\frac{5}{8}$x$1\frac{23}{32}$	**.70**
609-A	10	$1\frac{3}{4}$	23 x$1\frac{23}{32}$.....	**.70**
605-B	34	$1\frac{19}{32}$	$21\frac{5}{8}$x$4\frac{11}{32}$	**1.80**
610-C	34	$1\frac{37}{64}$	23 x$4\frac{11}{32}$	**1.80**
603-F	10	$1\frac{5}{8}$	19 x$2\frac{23}{32}$.....	**1.75**

Resistance Mounting Plates

601-A	10	$1\frac{3}{4}$	19 x$1\frac{23}{32}$.....	**.45**
601-C	40	$\frac{7}{16}$	19 x$1\frac{23}{32}$.....	**.70**
607-D	40	$\frac{7}{16}$	$21\frac{5}{8}$x$1\frac{23}{32}$.....	**.85**
602-F	42	$\frac{7}{16}$	23 x$1\frac{23}{32}$.....	**.85**

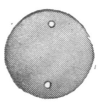
Service Meter Mounting Plates

623-A	20	$1\frac{5}{8}$	$33\frac{3}{4}$x$1\frac{1}{4}$.....	**1.00**
671-A	10	$1\frac{5}{8}$	19 x$1\frac{1}{4}$.....	**.60**

NUMBER PLATES



No. 1-A



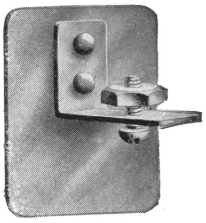
No. 23-B

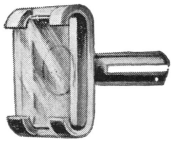


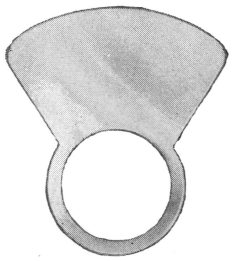
No. 4-A

Code No.	Description	Size inches	Used on	List Price each
1-A	White ivory, black figures $\frac{1}{4}$ in. high	$\frac{5}{8}$ diameter	Wooden stile casings and panel numbers	**$ 0.075**
12-A	White ivory, black figures $\frac{3}{16}$ in. high	$\frac{3}{8}$ diameter	Plug shelves and key shelves.....	**.0675**
113-A	White ivory, black figures $\frac{1}{2}$ in. high	$1\frac{1}{4}$ diameter	Panels of switchboards	**.36**
23-B	Aluminum, black figures $\frac{9}{32}$ in. high	$\frac{25}{32}$ diameter	Flat iron stile casings..	**.075**
107-A	Aluminum, black figures $\frac{1}{4}$ in. high	$\frac{19}{32}$ diameter	Flat iron stile casings..	**.075**
4-A	Metal, black finish white figures $\frac{9}{64}$ in. high	$\frac{5}{16}$x$\frac{7}{16}$	No. 2 jack mounting No. 2-C designation strip No. 50-A designation strip.....	**.045**

Number Plates—Continued


No. 58-A


No. 30-A


No. 93-A

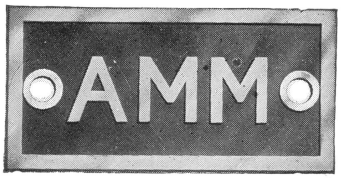

No. 97-A



No. 110-A

Code No.	Description	Size inches	Used on	List Price each
5-A	Metal, black finish, white figures $\frac{5}{32}$ in. high	$\frac{5}{16}$x$\frac{1}{2}$	No. 110 jack mounting.	**$ 0.045**
6-A	Metal, black finish white figures $\frac{1}{8}$ in. high	$\frac{1}{4}$x$\frac{3}{8}$	No. 19 jack mounting.	**.045**
21-A	Metal, black finish, white figure $\frac{5}{32}$ in. high	$\frac{5}{16}$x$\frac{11}{16}$	No. 105 board, for numbering toll and out-going jacks.....	**.06**
30-A	Metal, black finish, numbers printed on white paper	$\frac{1}{4}$x$\frac{3}{8}$	No. 19 jack mounting.....	**.0375**
31-A	Metal, black finish, numbers printed on white paper	$\frac{5}{16}$x$\frac{7}{16}$	No. 2 jack mounting and Nos. 2–C strip and 50–A designation strips ..	**.0375**
108-A	Metal, black finish, numbers printed on white paper	$\frac{15}{64}$x$\frac{25}{32}$	No. 19 jack mounting and No. 134 lamp socket mounting when mounted together	**.0375**
109-A	Metal, black finish, numbers printed on white paper	$\frac{19}{64}$x$\frac{27}{32}$	No. 2 jack mounting and No. 122 lamp socket mounting when mounted together.....	**.0375**
58-A	Metal, nickel finish, black figures	$\frac{15}{16}$x1$\frac{1}{4}$	Protector bar of main distributing frame..	**.06**
93-A	Aluminum, black figures	1$\frac{7}{8}$x2$\frac{5}{32}$	Transmitter of telephone sets.....	**.03**
97-A	Metal, black finish, white letters or figures $\frac{1}{4}$ in. high	2x2$\frac{13}{16}$	Transmitter of telephone sets.....	**.06**
110-A	Metal, nickel plated, paper card with celluloid covering	1$\frac{17}{32}$x2$\frac{3}{32}$	Transmitter of telephone sets.....	**.05**

Number Plates—Continued



No. 67-AF

Code No.	Description	Size inches	Used on	List Price each
67	Brass, black finish, raised copper figures $\frac{3}{8}$ in. high; designations as listed below	2x1	Power switchboards for designating the circuits controlled by switches, etc.	

Code No.	Designation	List Price each	Code No.	Designation	List Price each
67-A	BAT	$0.55	67-Q	R–3	$0.55
67-B	VM	.40	67-R	R–4	.55
67-C	G–1	.55	67-S	B–1	.55
67-D	G–2	.55	67-T	B–2	.55
67-E	G–3	.55	67-U	GEN	.55
67-F	G–4	.55	67-W	R–2	.55
67-G	G–5	.55	67-Y	PC–2	.70
67-H	G–6	.55	67-Z	START	.85
67-J	M–1	.55	67-AA	RUN	.55
67-K	M–2	.55	67-AB	LINE	.70
67-L	M–3	.55	67-AC	R–I	.55
67-M	M–4	.55	67-AE	PC–1	.70
67-N	M–5	.55	67-AF	AMM	.55
67-P	M–6	.55			



No. 24-A



No. 117-A

These are used for inserting in a jack to designate change of number, dead lines, lines temporarily disconnected, lines arranged for calling only or similar purposes.

For Number 49 Jacks

Code No.	Color	List Price per thousand	Code No	Color	List Price per thousand
24-A	White	$ 9.85	24-E	Yellow	$ 9.85
24-B	Red	9.85	24-F	Dark Blue	9.85
24-C	Slate	9.85	24-G	Dark Green	9.85
24-D	Black	9.40	24-H	Light Green	9.85

These are for the same purpose as those above but have a slot in the face. By means of a screwdriver they can be turned through half a circle when the jack springs will force them out.

117-A	White	9.85	117-E	Yellow	9.85
117-B	Red	9.85	117-F	Dark Blue	9.85
117-C	Slate	9.85	117-G	Dark Green	9.85
117-D	Black	9.40	117-H	Light Green	9.85

For Number 92 Jacks

These are similar to the No. 24 type.

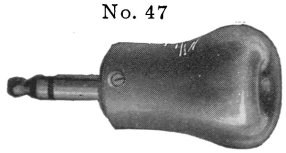
27-A	White	9.85	27-E	Yellow	9.85
27-B	Red	9.85	27-F	Dark Green	9.85
27-C	Slate	9.85	27-G	Light Green	9.85
27-D	Black	9.40			

These are similar to the No. 117 type.

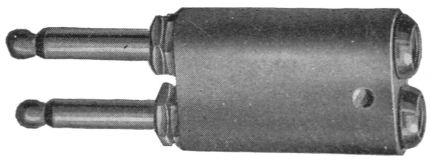
118-A	White	9.85	118-E	Yellow	9.85
118-B	Red	9.85	118-F	Dark Blue	9.85
118-C	Slate	9.85	118-G	Dark Green	9.85
118-D	Black	9.40	118-H	Light Green	9.85



No. 47



No. 85

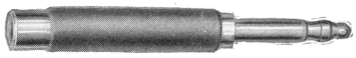


No. 103

PLUGS

In ordering specify the code number and if cords are to be attached give the code number of the cords together with the length and color. No extra charge is made for attaching cords to plugs.

Code No.	Number of Conductors	Used with Jacks number	Used with Cords number	Use	List Price each
47	2	3, 91, 99 102, 103 107, 108 124	156, 236	Switchboards	$0.45
85	3	77	30	Operator's head telephone	1.50
103	Twin 2	91,99	87, 254	Operator's head telephone and chest transmitter	1.50



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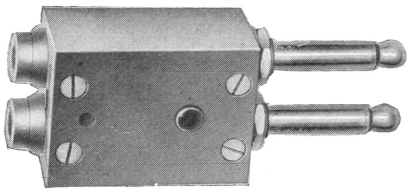
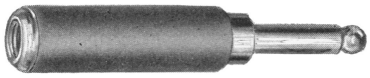


No. 112



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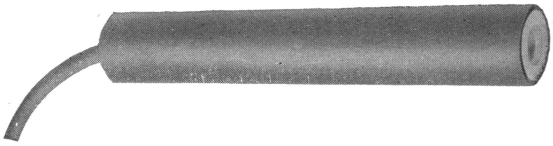
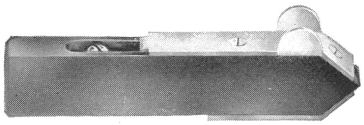


No. 126



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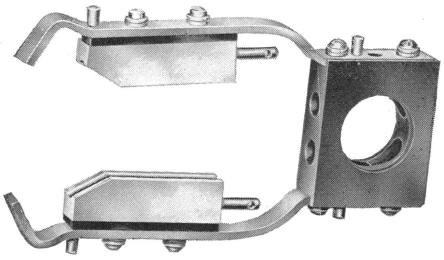

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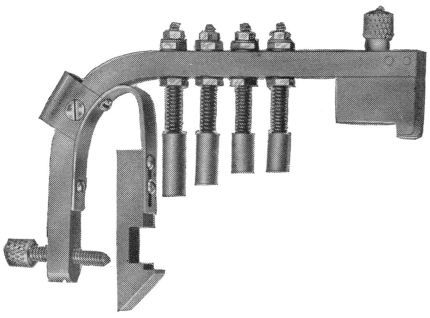


No. 132

Plugs—Continued

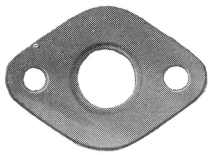
Code No.	Number of Conductors	Used with Jacks number	Used with Cords number	Use	List Price each
109	3	92	155, 244	Switchboards...	**$1.13**
110	3	49, 117 118, 140 141	152, 249	Switchboards...	**1.13**
112	Twin 2	91, 99	87	Operator's head telephone and chest transmitter. Has transmitter cutout key...	**3.75**
116	1	3, 103	265	Switchboards...	**.225**
126	3	132	309	Portable street railway sets..	**4.15**

For Testing on Frames

Code No.	Number of Conductors	Used with Cords number	Use	List Price each
124	2	129	For testing on Nos. 4, 65, 78 and 84 protectors.....	**$0.98**
128	4	129	For testing on Nos. 4, 65, 78 and 84 protectors.....	**1.90**
132	4	129, 153	For testing on terminal strips Nos. 35, 36, 38 and 39	**2.65**

PLUG SEATS

Red Fibre



No. 13

Code No.	Mounted on Centers inches	Used with Plugs number	List Price each
12	$\frac{3}{4}$	110	**$ 0.015**
13	$\frac{3}{4}$	109	**.015**
15	$\frac{13}{16}$	47, 116	**.015**

PROTECTION

The complete protection of telephone apparatus from foreign electrical currents which might cause damage by fire or injury from electrical shock requires the use of high potential, abnormal current and sneak current arresters. These arresters should be installed (1) at central offices, (2) at cable terminals, and (3) at telephone stations.

Central Offices All lines entering the central office should be equipped with heat coils or sneak current arresters. In case the lines outside the central office are wholly underground, or of non-exposed, insulated wire, no protection other than heat coils is necessary. In case the lines leave the central office in underground cable but are exposed, carbon block cutouts should be installed in addition to heat coils. In case the lines are distributed immediately to open lines, heat coils, carbon block cutouts and No. 7-A fuses should be provided.

When open wire lines enter the central office and at any portion of their length are exposed to potentials in excess of 2,500 volts, the protection noted above should be used and, in addition, metal block cutouts should be installed at the outer end of the bridle cable.

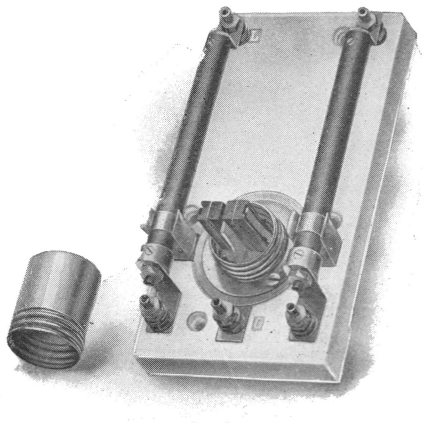
Cable Terminals Cable terminals should be located at the outer end of underground cable and equipped with No. 7-A fuses. If the lines are connected to aerial cable or open wires in localities where lightning is not very prevalent, and if they are not exposed to foreign electrical circuits this protection is sufficient, provided the lines are less than one-half mile in length. Under these conditions if the lines are over one-half mile long, copper block cutouts should also be used. Carbon block cutouts should be installed if the lines are exposed to other electrical circuits. If the lines are not exposed to other circuits copper block cutouts should be used if the lines are over one-half mile in length or if they are in districts where lightning is very severe.

Telephone Stations In case the line from the central office to a telephone station is wholly underground or of non-exposed, insulated wire, no protection need be installed at the telephone station.

If the lines are wholly or in part of open wire, and exposed to circuits not in excess of 1800 volts, the No. 12-A protector should be used at magneto stations and the No. 58-A or Nos. 59-A and 60-A at central battery telephone stations. If the lines are not exposed to other circuits the No. 58-B or the Nos. 59-A and 60-B may be used at central battery and magneto stations respectively.

In case the lines are exposed to lighting or power circuits in excess of 1800 volts, or to severe lightning discharges, the No. 47 type fuse should be employed at the telephone stations. These are outside fuses to be connected in the drop wire and are so constructed that if an arc persists after the fuse blows, the tube will be shattered and the wire will fall away by several feet, thus effectually opening the line.

When the exposed line is not more than one-half mile long, the No. 47-A, 7 ampere fuse, may be employed in connection with the No. 60-A protector. In case the exposed line is more than one-half mile long the No. 47-B, 14 ampere fuse, may be used in connection with the No. 79-A protector.



No. 12-A

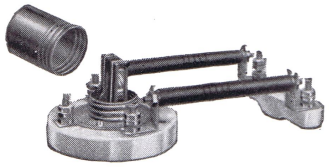
PROTECTORS

For code numbers of fuses, protector blocks and protector micas, see tables having these headings.

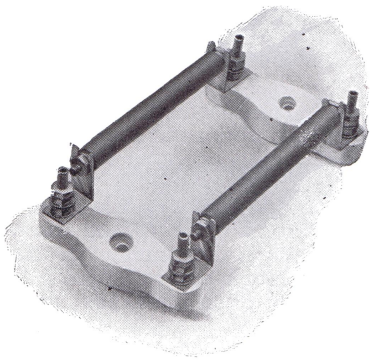
MOUNTED SINGLY

Code No.	Used with	Protecting against	Consists of	List Price each
12-A	Magneto telephone sets	High potential, abnormal and sneak currents	2 7-ampere fuses with heat coils, 2 carbon cutouts and mounting....	**$ 1.22**

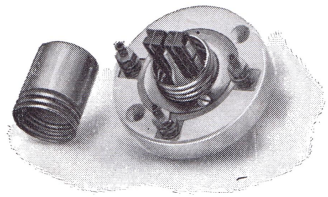
Protectors—Continued



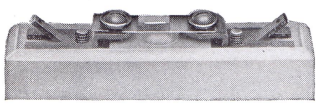
No. 58-A



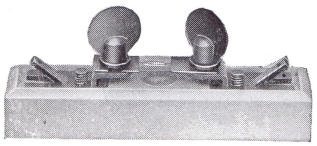
No. 59-A



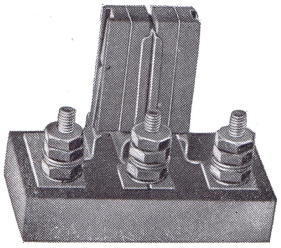
No. 60-A



No. 62-A

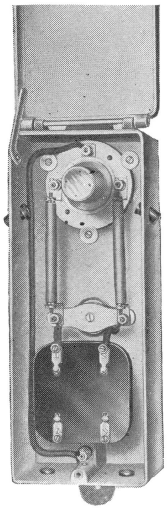


No. 68-A



No. 70-A

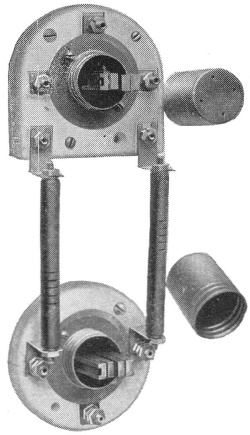
Code No.	Used with	Protecting against	Consists of	List Price each
58-A	Central battery or magneto telephone sets	High potential and abnormal currents	2 7-ampere fuses, 2 carbon cutouts and mountings..	$ 0.77
58-B	Magneto telephone sets	High potential and abnormal currents	2 7-ampere fuses, 2 copper cutouts and mountings...	.93
58-C	Magneto street railway telephone sets	High potential and abnormal currents	2 ½-ampere fuses, 2 copper cutouts and mountings. Two protector micas are used between each pair of protector blocks..	.85
59-A	No. 60 type protector	Abnormal current	2 7-ampere fuses and mountings...	.48
60-A	Central battery or magneto telephone sets	High potential current	2 carbon cutouts and mounting....	.38
60-B	Magneto telephone sets	High potential current	2 copper cutouts and mounting....	.54
62-A	Central battery switchboard circuits	Abnormal current	1 mica fuse and mounting; capacity ½ to 5 amperes as specified.....	.09
62-B	Central battery switchboard circuits	Abnormal current	1 alarm fuse with mounting; capacity ½ to 5 amperes as specified	.195
68-A	Central battery switchboard circuits	Abnormal current	1 mica fuse and mounting; capacity ½ to 5 amperes as specified.....	.135
70-A	Portable street railway telephone sets	High potential current	2 carbon cutouts and mounting....	1.23



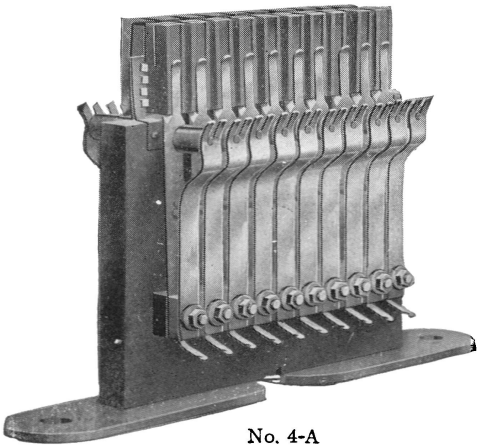
No. 74-A. (open)



No. 74-A (closed)



No. 79-A



No. 4-A

Protectors—Continued

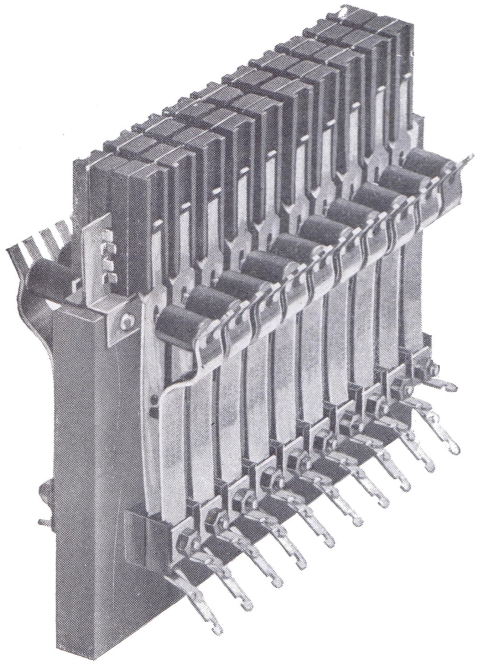
Code No.	Used with	Protecting against	Consists of	List Price each
74-A	Magneto street railway telephone sets	High potential and abnormal currents	2 ½-ampere fuses, 2 copper cutouts, repeating coil and mounting in iron box. Two protector micas are used between each pair of protector blocks.....	**$ 11.18**
79-A	Central battery and magneto telephone sets	High potential and abnormal currents	2 7-ampere fuses, 2 copper cutouts, 2 carbon cutouts, 1 retardation coil and mountings. Two protector micas are used between each pair of copper protector blocks	**1.64**

MOUNTED IN STRIPS

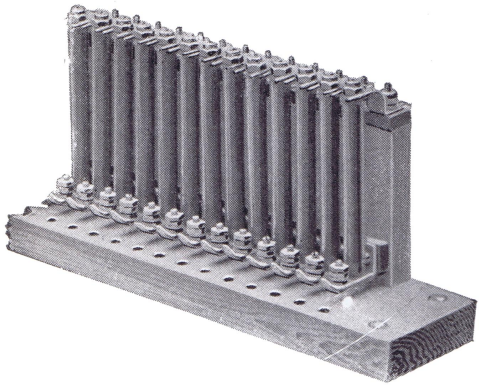
The No. 4 and No. 65 protectors are like the No. 84 and No. 78 respectively except the mounting and the No. 4 and No. 84 differ from the No. 65 and No. 78 only in the way the wires are connected to them. The Nos. 4 and 84 are designed for the outside wires to be connected first to a terminal block, and jumper wires to extend from the terminal block to one side of the protector, and the switchboard cables to the other. The Nos. 65 and 78 are just the reverse, that is, they are designed for the outside wires to be connected directly to one side of the protector, and jumper wires to extend from the other side to a terminal strip, where they are connected to the switchboard cables.

In ordering, specify the number of protectors per strip (noting that some protectors are single, while others are in pairs) and if the protector is for a frame give sufficient information for the drilling. If the protector is to be mounted on a frame which we have furnished, the name of the exchange with the location of the protectors on the frame is sufficient.

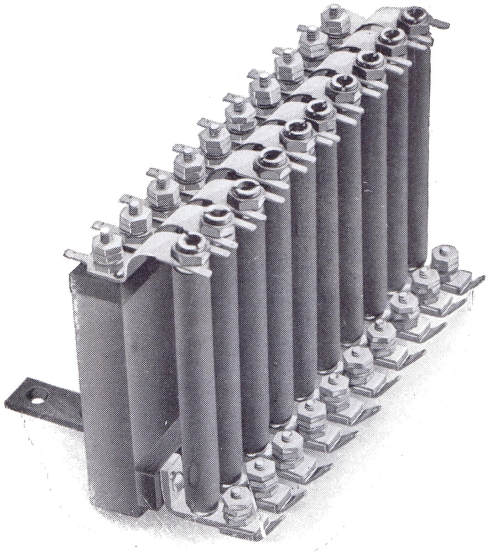
Code No.	Used with	Protecting against	Consists of	List Price each
4-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 10 protector mounting for mounting on wall	**$ 0.68**
4-C	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 10 protector mounting for mounting on wall	**.68**
65-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 23 protector mounting for mounting on wall	**.68**
65-B	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 23 protector mounting for mounting on wall	**.68**



No. 84



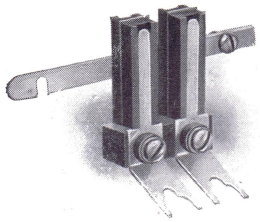
No. 7-D



No. 7-A

Protectors—Continued

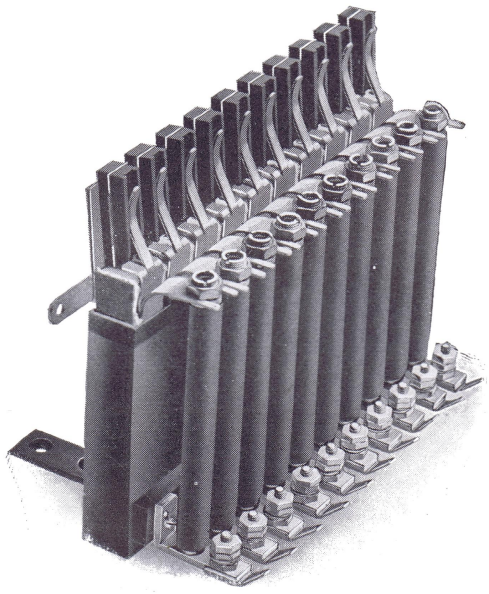
Code No.	Used with	Protecting against	Consists of	List Price each
78-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 24 protector mounting for mounting on frame	$ 0.68
78-B	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 24 protector mounting for mounting on frame	.68
84-A	Magneto central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No 11 protector mounting for mounting on frame	.68
84-B	Central battery central office	High potential and sneak currents	2 heat coils, 2 carbon cutouts and No. 11 protector mounting for mounting on frame	.68
7-A	Magneto and central battery central offices and cable terminals	Abnormal current	1 6-ampere fuse and No. 2 protector mounting for mounting on wall or in cable terminals (except No. 15 type)	.24
7-D	Magneto and central battery central offices	Abnormal current	1 6-ampere fuse and No. 41 protector mounting for wall type main distributing frame	.27



No. 17-A

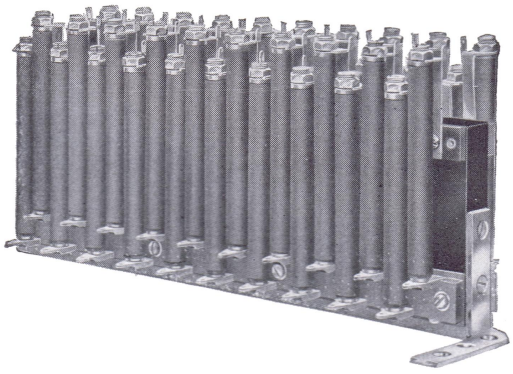
Protectors—Continued

Code No.	Used with	Protecting against	Consists of	List Price each
17-A	No. 7-A protector	High potential current	2 carbon cutouts and No. 15 protector mounting for mounting on No. 7-A protector	**$ 0.41**



No. 61-A

17-B	No. 7-A protector	High potential current	2 copper cutouts and No. 15 protector mounting for mounting on No. 7-A protector	**.54**
61-A	Magneto and central battery central offices and cable terminals	High potential and abnormal currents	1 6-ampere fuse, 1 carbon cutout and No. 30 protector mounting for mounting on wall or in cable terminals (except No. 15 type)	**.45**

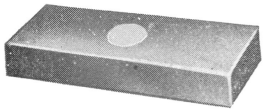


No. 77-A

77-A	No. 15 cable terminal	Abnormal current	1 6-ampere fuse and No. 51 protector mounting for mounting in No. 15 type cable terminal	**.24**

PROTECTOR BLOCKS

A No. 1 protector block is used with a No. 2 and requires one or two No. 3 protector micas. A No. 5 block is used with another No. 5 and requires a No. 7 protector mica. A No. 9 protector block is used by itself and requires no protector mica. A No. 19 protector block is used with a No. 20 and requires one or two No. 10 protector micas.



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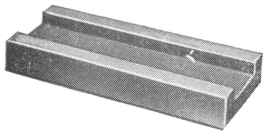
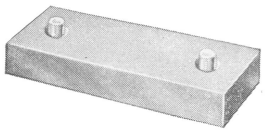


No. 2



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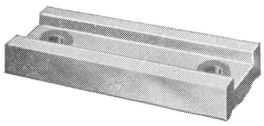
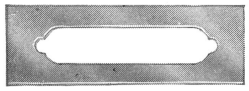


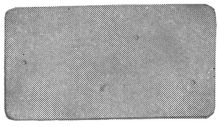
No. 20



No. 3



No. 10



No. 48



No. 9641

Code No.	Description	Used with Protectors number	List Price each
1	Plain carbon block with fuse metal.	4-A, 4-C, 12-A, 58-A, 60-A, 61-A, 65-A, 65-B, 70-A, 78-A, 78-B, 79-A, 84-A, 84-B	$ 0.0225
2	Grooved carbon block without fuse metal.	4-A, 4-C, 12-A, 58-A, 60-A, 61-A, 65-A, 65-B, 70-A, 78-A, 78-B, 79-A, 84-A, 84-B	.0125
5	Grooved carbon block with fuse metal.	17-A	.02625
9	Wood dummy	4, 65, 78, 84	.0075
19	Copper block with two pins which fit into two bushings of the 20 protector block.	17-B, 58-B, 58-C, 60-B, 74-A, 79-A, 80-A	.04875
20	Copper block with two bushings which engage two pins of the 19 protector block.	17-B, 58-B, 58-C, 60-B, 74-A, 79-A, 80-A	.07125

PROTECTOR MICAS

Code No.	Used with Protector Blocks number	Used with Protectors number	List Price per hundred
3	1, 2	4-A, 4-C, 12-A, 58-A, 60-A, 61-A, 65-A, 65-B, 70-A, 78-A, 78-B, 79-A, 84-A, 84-B	$ 1.15
7	5	17-A	1.60
10	19 and 20	17-B, 58-B, 58-C, 60-B, 74-A, 79-A	1.15

PROTECTOR MOUNTINGS

Code No.	Description	List Price each
48	Asbestos mat, 8 in. x 4⅜ in. for placing under No. 58 type protectors	$ 0.021

PUSH BUTTONS

WOOD

Diameter 1¾ in.

Code Word	List No.	Finish
Benton	9641	Natural oak
Benwood	9642	Antique oak
Berkeley	9643	Walnut
Berkley	9644	Ash
Berkshire	9645	Cherry
Berl	9646	Mahogany

Diameter 2⅛ in.

Berea	9650	Natural oak
Berger	9651	Antique oak
Berholz	9652	Walnut
Bernice	9653	Ash
Bernie	9654	Cherry
Berryville	9655	Mahogany

Push Buttons—Continued



No. 9703



No. 9675.



No. 2890

Diameter, 1 in. at base

Code Word	List No.	Finish
Bloomville	**9703**	Oak
Blodgett	**9704**	Ash
Boca	**9705**	Walnut
Bodan	**9706**	Mahogany
Boise	**9707**	Rosewood

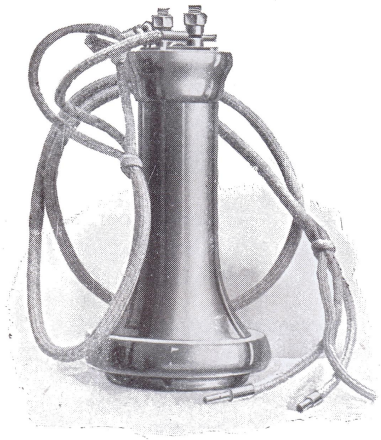
NEW MITE PUSH

The smallest push made. Fits in ½ in. hole, is ⅝ in. deep and has a face ⅝ in. in diameter. Held in place by side springs. Centers will not turn. Wire connectors will take any size wire.

Code Word	List No.	Finish
Famelict	**2889**	Light or dark pearl center.
Fames	**2890**	Black or white celluloid center.
Organiscos	**23695**	Red or blue celluloid center.

PEAR PUSHES

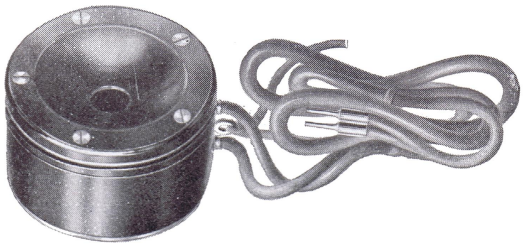
Biddeford	**9675**	Oak
Bigelow	**9676**	Cherry
Billin	**9677**	Walnut



No. 122-W

RECEIVERS

Code No.	Description	Used with		List Price each
122-W	Standard bipolar hand receiver, hard rubber case.	Telephone sets, desk stands, transmitter arms, etc.	Without cord With 3 ft. No. 92 cord.....	**$ 1.52** **1.65**



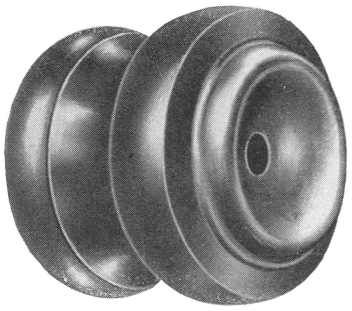
No. 125-W

Code No.	Description	Used with	List Price each
125-W	Lineman's receiver, hard rubber case, metal front and back. Includes a 3 ft. No. 15 cord.	No. 1006 type test sets...	With cord **$ 3.45**

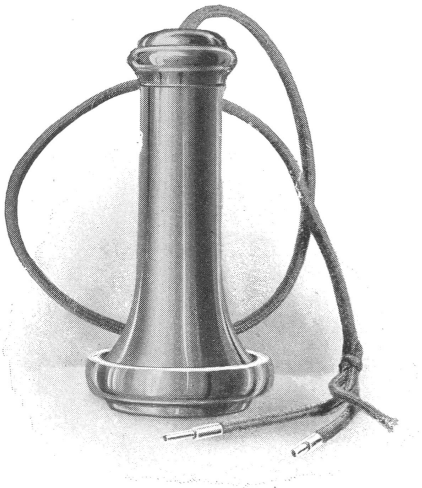


No. 128-W

Code No.	Description	Used with		List Price each
128-W	Standard bipolar head receiver, hard rubber case. This receiver used in combination with the No. 234 transmitter takes a No. 87 cord; when used with a No. 85 plug it takes a No. 30 cord.	Operator's telephone set all switchboards...	Without cord With 6 ft. No. 87 cord..... With 6 ft. No. 30 cord.....	**$ 1.95** **2.70** **2.31**



No. 133-W



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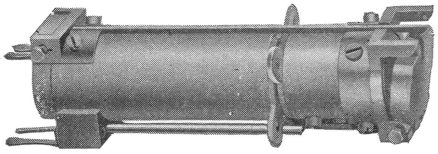
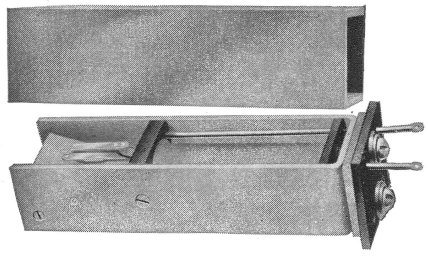
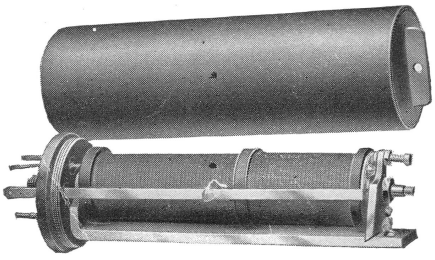


No. 44-A



No. 87-A



No. 89-A

Receivers—Continued

Code No.	Description	Used with		List Price each
131-W	Metal case bipolar receiver.	No. 1 hand set handle, No. 1001 hand set.....	Without cord	**$ 2.30**
133-W	Insulated bipolar hand receiver, hard rubber case	No. 1302 and 1314 telephone sets.....	Without cord With 3 ft. No. 311 cord.....	**1.90** **2.24**
141-W	Small metal case bipolar receiver	No. 1002-A hand set.....	Without cord..	**1.90**
143-W	Concealed binding post hand receiver composition case. This receiver will be furnished in hard rubber case if desired.	Telephone sets, desk stands, transmitter arms, etc.....	Without cord.. With 3 ft. No. 92 cord..... Without cord.. With 3 ft. No. 92 cord.....	**1.20** **1.33** **1.52** **1.65**

RELAYS

The wide range of types and resistances of our relays makes it impracticable to catalogue them all here. The following views are shown to convey an idea of the types generally used. The resistances of the windings and the arrangements of contacts are varied to meet the requirements of the circuits in which they are placed.

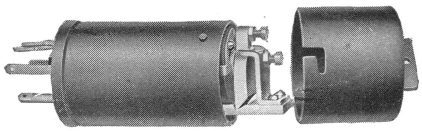
No. 44 Type Is self-restoring. Has a line operating coil and a restoring coil. Used when a local signal circuit is to be operated by ringing on the line. When the line coil is energized, the front armature is released and falls forward, closing a local contact. When the restoring coil is energized, the front armature is restored to the vertical position. Makes one contact when operated.

No. 87 Type Closes a local circuit only while the line is being rung upon. Has flexible contact springs and a heavy armature sluggish action so that the local circuit remains closed as long as there is ringing current on the line. Used in trunk circuits between central offices. Has a cross-talk proof cover. Makes one contact when operated.

No. 89 Type Has an operating coil and a locking coil. Made to respond to ringing current and to close a circuit through its armature contact and locking coil so that the relay remains in the operated position after ringing has ceased. Used for toll line signalling and in toll cord supervisory circuits. Has cross-talk proof cover. Makes one contact when operated.

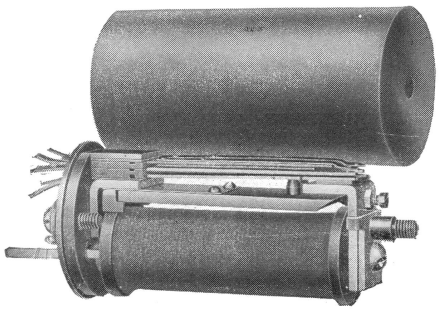
PRICES ON REQUEST

Relays—Continued



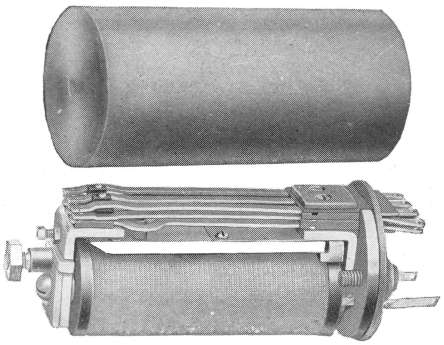
No. 118

No. 114 Type Operates on direct current. Has one or two operating windings. Used when a firmly established back contact is desired. Makes one contact and breaks one.



No. 122-A

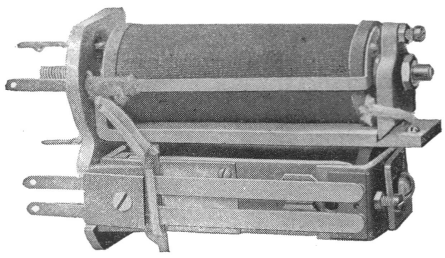
No. 118 Type Sensitive relay for operating on direct current. For general use where a single contact is to be made. Has cross-talk proof cover. One form of this relay has in addition a back contact.



No. 125-A

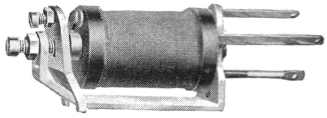
No. 122 Type Operated by direct current and generally used where it is desired to break two and make two contacts when the relay is energized.

No. 125 Type Operated by direct current and generally used where it is desired to break three and make three contacts when the relay is energized.



No. 163-E

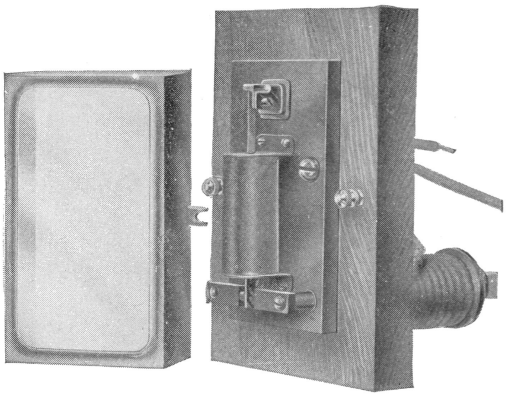
No. 163 Type The type of line and cut-off relay used with the No. 1 switchboard. Comprises a line relay which controls the signal lamp circuit, and a cut-off relay which operates and cuts off the line relay and signal equipment when the call is answered.



No. 189-B

No. 189 Type A small relay operating on direct current. Used as a line relay with the No. 10 switchboard. Makes one contact when operated.

PRICES ON REQUEST

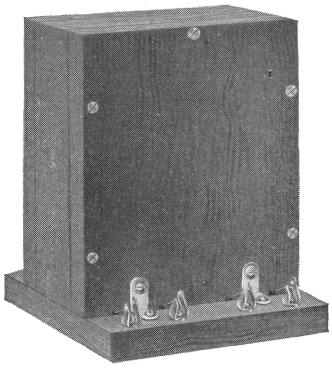


No. 154-A Relay

POLARIZED RELAYS

These are used in connection with the reverse current coil of a circuit breaker, to prevent the storage battery discharging through the generator in case the latter stops.

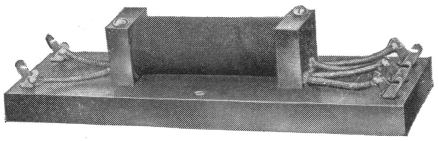
Code No.	Capacity amperes	For	List Price each
154-A	50	30 volt battery.....	$ 22.50
154-B	100	30 volt battery.....	30.00
154-C	200	30 volt battery.....	30.00
154-D	300	30 volt battery.....	30.00
154-E	400	30 volt battery.....	30.00
154-F	600	30 volt battery.....	36.00
154-G	800	30 volt battery.....	75.00
154-H	1,000	30 volt battery.....	75.00



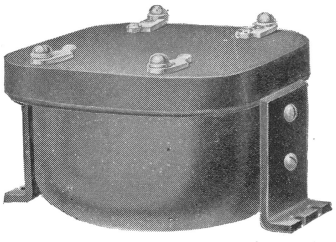
No. 8-A

REPEATING COILS

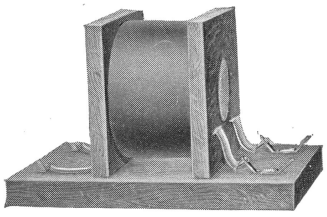
The No. 8-A repeating coil is mounted in a wooden box, and the Nos. 20-A and 30-A have a cloth covering. With these exceptions the coils listed below are enclosed in iron cross-talk proof shells. The No. 25-E is provided with a hard rubber base. All others are mounted on wooden bases.



No. 20-A

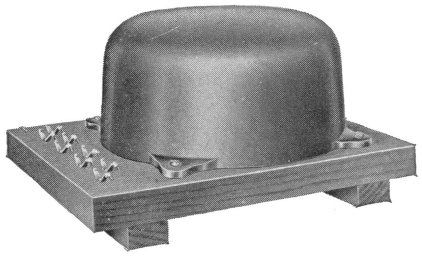


No. 25-E

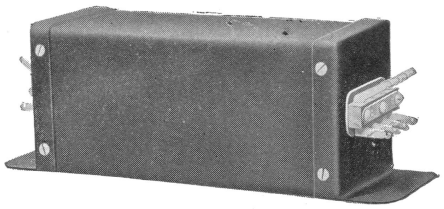


No. 30-A

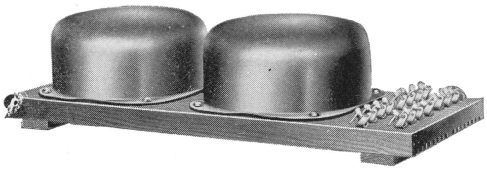
Code No.	Resistance ohms	Size of Base inches	Use	List Price each
8-A	2 Primary windings, 52.5 each. 2 Secondary windings, 76 each.	$3\frac{7}{8}$x$4\frac{1}{4}$	Cord circuits Nos. 1006, 1101, 1102 and 1010 magneto switchboards.....	$ 2.40
20-A	1 Primary winding, 277. 1 Secondary winding, 40. 1 Tertiary winding, non-inductive, 360	$5\frac{7}{16}$x$1\frac{1}{4}$	Trunk operator's telephone circuit, No. 1 switchboard.....	1.15
25-E	1 Primary winding, 46. 1 Secondary winding, 46.	$3\frac{7}{8}$x$4\frac{7}{8}$	Street railway telephone sets Nos. 1278-A and 1302-A.....	5.05
30-A	1 Primary winding, 385. 1 Secondary winding, .03.	$5\frac{1}{2}$x$5\frac{1}{2}$	Tone test circuit.....	6.25



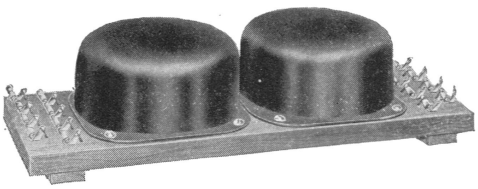
No. 37-A



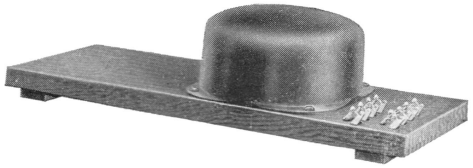
No. 39-A



No. 25-A



No. 25-C



No. 26-A

Repeating Coils—Continued

Code No.	Resistance ohms	Size of Base inches	Use	List Price each
37-A	2 Primary windings, 35 each. 2 Secondary windings, 35 each.	11 x8⅝	Phantom toll circuits and simplex circuits.....	**$ 18.90**
39-A	First winding, 62; second winding, 37; third winding, 40.	10⅜x3¼	Phantom toll circuits and simplex circuits.....	**13.70**

These have two coils mounted on one base and are for use on standard repeating coil racks. Size of base is 10¾ in. by 4 in.

The windings of the Nos. 25–C and 25–G are the same as those of the Nos. 25–A and F respectively, except that they are brought out to terminals on both ends of the base.

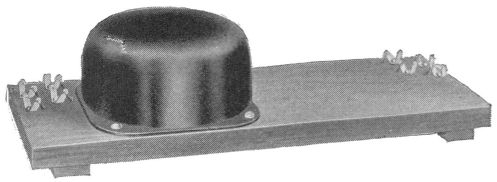
Code No.	Resistance ohms	Use	List Price each
25-A	2 Primary windings, 23 each. 2 Secondary windings, 23 each.	Cord circuits and incoming trunk circuits on central battery switchboards.....	**$ 7.65**
25-F	2 Primary windings, 23 each. 2 Secondary windings, 23 each. 2 Non-inductive windings, 40 each.	48 volt battery long distance and incoming toll trunks central battery switchboards.....	**8.30**
25-C	2 Primary windings, 23 each. 2 Secondary windings, 23 each.	Cord circuits and incoming trunk circuits of central battery switchboards.....	**7.65**
25-G	2 Primary windings, 23 each. 2 Secondary windings, 23 each. 2 Non-inductive windings, 40 each.	48 volt battery long distance and incoming toll trunks central battery switchboards.....	**8.30**

These have one coil per base, and are for use on standard repeating coil racks. Size of base is 10¾ in. by 4 in.

The windings of the Nos. 26–C and 26–F are the same as those of the Nos. 26–A and 26–E respectively, except that they are brought out to terminals on both ends of the base.

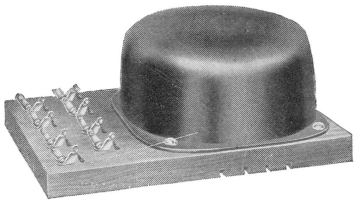
Code No.	Resistance ohms	Use	List Price each
26-A	2 Primary windings, 23 each. 2 Secondary windings, 23 each.	Cord circuits and incoming trunk circuits of central battery switchboards.....	**$ 4.05**

Repeating Coils—Continued



No. 26-C

Code No.	Resistance ohms	Use	List Price each
26-E	2 Primary windings, 23 each. 2 Secondary windings, 23 each. 2 Non - inductive windings, 40 each.	48 volt battery long distance and incoming toll trunks central battery switchboards.....	**$ 4.25**
26-C	2 Primary windings, 23 each. 2 Secondary windings, 23 each.	Cord circuits and incoming trunk circuits of central battery switchboards.....	**4.05**
26-F	2 Primary windings, 23 each. 2 Secondary windings, 23 each. 2 Non - inductive windings, 40 each.	48 volt long distance and incoming toll trunks central battery switchboards.....	**4.25**



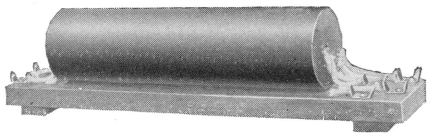
No. 27-A

These have a single coil on a base 6 in. by 4 in. and are used where a single coil mounted on a short base is desired.

Code No.	Resistance ohms	Use	List Price each
27-A	2 Primary windings, 23 each. 2 Secondary windings, 23 each.	Cord circuits and incoming trunk circuits on central battery switchboards.....	**$ 3.95**
27-C	2 Primary windings, 23 each. 2 Secondary windings, 23 each. 2 Non - inductive windings, 40 each.	48 volt battery long distance and incoming toll trunks on central battery switchboards.....	**4.25**

These coils may be used in single office districts.

The windings of the "B" type coils are the same as those of the "A" type, except that they are brought out to terminals on only one end of the base.



No. 11-A

Code No.	Resistance ohms	Use	List Price each
11-A	4 windings, 38 each.	Subscriber cord circuits at central battery switchboards..	**$ 2.50**
11-B	4 windings, 38 each.	Subscriber cord circuits at central battery switchboards..	**2.50**
12-A	4 windings, 22 each.	Trunk and toll circuits central battery switchboards.....	**3.45**
12-B	4 windings, 22 each.	Trunk and toll circuits central battery switchboards.....	**3.45**

RESISTANCES

No. 1 Type



No. 1

These have a brass core, fibre heads and are enclosed in a brass sheli. They have one coil.

Code No.	Resistance ohms	List Price each	Code No.	Resistance ohms		List Price each
1-A	400	$ 0.30	1-K	30		$ 0.30
1-B	2500	.45	1-L	100	(Non inductive)	.30
1-C	500	.30	1-N	700		.30
1-D	60	.30	1-P	5		.30
1-E	300	.30	1-R	250		.30
1-F	1000	.45	1-T	350		.30
1-G	3000	.60	1-U	45		.30
1-H	200	.30	1-W	2000	(Non inductive)	.45
1-J	20	.30				

No. 5 Type



No. 5

These have a wooden spool and one winding.

5-A	120	.70	5-S	9000	1.50
5-B	20	.70	5-T	20000	1.90
5-C	60	.70	5-U	450	.85
5-D	50	.70	5-W	150	.70
5-E	90	.70	5-Y	1450	1.15
5-F	10	.75	5-Z	8550	1.50
5-G	10000	1.50	5-AA	300	.70
5-H	500	.85	5-AB	9250	1.50
5-J	600	.85	5-AC	2000	1.12
5-K	750	1.15	5-AD	8800	1.50
5-L	1000	1.15	5-AE	1200	1.15
5-M	2500	1.15	5-AF	100	.70
5-N	800	1.15	5-AG	200	.70
5-P	180	.70	5-AH	250	.70
5-R	40	.70			

No. 18 Type



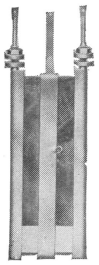
No. 18

These have a micanite core and two terminals.

18-A	37	.35	18-U	100	.35
18-B	40	.35	18-W	133	.35
18-C	83	.35	18-Y	90	.35
18-D	120	.35	18-Z	67	.35
18-E	140	.35	18-AA	95	.35
18-F	150	.35	18-AB	45	.35
18-G	200	.35	18-AC	500	.35
18-H	210	.35	18-AD	240	.35
18-J	30	.35	18-AE	600	.35
18-K	80	.35	18-AF	300	.35
18-L	170	.35	18-AG	226	.35
18-M	53	.35	18-AH	320	.35
18-N	180	.35	18-AJ	400	.35
18-P	130	.35	18-AK	60	.35
18-Q	110	.35	18-AL	4	.35
18-R	10	.35	18-AM	250	.35
18-S	20	.35	18-AN	350	.35
18-T	50	.35			

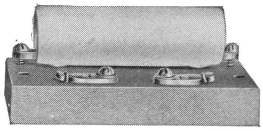
No. 19 Type

These have a micanite core, two windings and three terminals, the middle terminal being common to one end of each of the windings.



No. 19

Code No.	Resistance ohms	List Price each	Code No.	Resistance ohms	List Price each
19-A	37 and 37	$ 0.38	19-Y	15 and 15	$ 0.38
19-B	40 and 40	.38	19-Z	120 and 120	.38
19-C	40 and 83	.38	19-AA	15 and 90	.38
19-D	83 and 83	.38	19-AB	120 and 210	.38
19-E	30 and 30	.38	19-AC	60 and 83	.38
19-F	40 and 60	.38	19-AD	150 and 150	.38
19-G	40 and 100	.38	19-AE	30 and 120	.38
19-H	40 and 120	.38	19-AF	140 and 140	.38
19-J	10 and 40	.38	19-AG	120 and 160	.38
19-K	100 and 100	.38	19-AH	240 and 240	.38
19-L	60 and 60	.38	19-AJ	200 and 200	.38
19-M	20 and 20	.38	19-AK	70 and 70	.38
19-N	5 and 8	.38	19-AL	40 and 68	.38
19-P	20 and 130	.38	19-AM	50 and 50	.38
19-R	25 and 120	.38	19-AN	260 and 260	.38
19-S	60 and 90	.38	19-AP	180 and 180	.38
19-T	25 and 25	.38	19-AR	60 and 260	.38
19-U	25 and 90	.38	19-AS	170 and 170	.38
19-W	10 and 10	.38			



No. 31-A

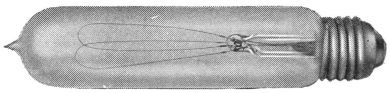
No. 31 Type

A steel tube enameled resistance; mounted on a wood base; used in railway composite circuit.

Code No.	Resistance ohms	List Price each
31-A	1,200	$ 1.15

RESISTANCE LAMPS

These have tubular bulbs 1¼ in. diameter with carbon filament and are fitted with Edison bases.



No. 1

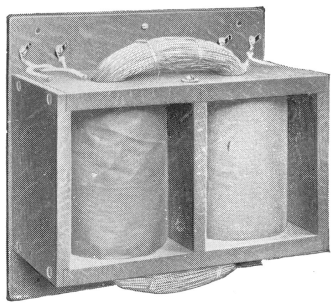
Code No.	Resistance ohms	List Price each
1-A	660	$ 0.60
1-B	220	.43
1-C	300	.60
1-D	100	.60

RETARDATION COILS

These represent a few of the commonly used types which we manufacture.



No. 1-A



No. 5-K

Code No.	Resistance ohms	Use	List Price each
1-A	1 winding 600	Telephone circuit desk operator, No. 1 switchboard	$ 1.00
1-C	1 winding 200	Telephone circuit Nos. 1006, 1010, 1101 and 1102 magneto switchboards	.90
1-F	1 winding 500	Telephone circuit, desk operator, No. 1 switchboard and cord circuit No. 9 switchboard	.90
1-G	1 winding 750	Telephone circuit, Nos. 101, 102 and cordless private exchanges	1.00
1-K	1 winding 1000	Long line circuit No. 10 switchboard	1.05
5-K	2 windings 15 each	Composite circuit and No. 9 switchboard	11.80
5-L	2 windings 25 each	Composite circuit	12.85
5-N	4 windings 250 each	Duplex telegraph circuit	16.20
5-R	2 windings 20 each	Composite circuit	1.80



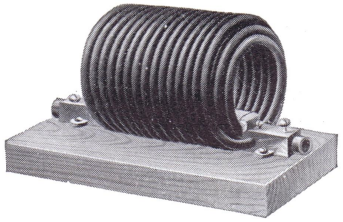
No. 8-B



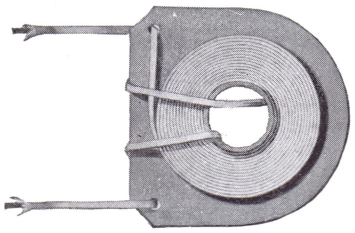
No. 12-A



No. 12-K



No. 31-B



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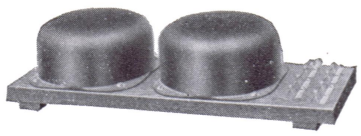

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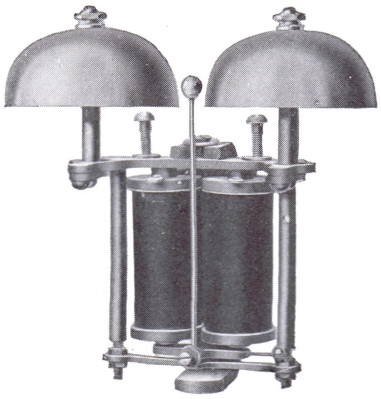


No. 2-AG

Retardation Coils—Continued

Code No.	Resistance ohms	Use	List Price each
8-B	2 windings 85 each	Cord circuit Nos. 4, 101, 102 and cordless private exchanges.....	$ 3.25
8-L	2 windings 175 each	No. 4 private exchange.....	2.55
12-A	1 winding 165	Operator's telephone circuit, Nos. 1, 9 and 10 switchboards, Nos. 101 and 102 private exchanges.....	.85
12-G	1 winding 2	Telephone set No. 1312–A.....	.75
12-L	1 winding 400	Operator's telephone circuit, No. 4 private exchange.....	1.50
12-M	1 winding 2.3	Telephone set No. 1314–A.....	.75
12-H	1 winding	Choke coil used in primary circuit of battery driven 38 watt dynamotor	6.75
12-J	1 winding	Choke coil used in primary circuit of battery driven 75 watt dynamotor	6.75
12-K	1 winding	Choke coil used in primary circuit of battery driven 150 watt dynamotor.....	6.75

The No. 31 type for use with lightning arresters for the protection of overhead direct and alternating current power circuits; mounted on a temporary base for shipment.

Code No.	Capacity amperes	List Price each
31-B	25	$ 4.30
31-D	50	7.50
31-F	100	17.65
31-H	150	25.90

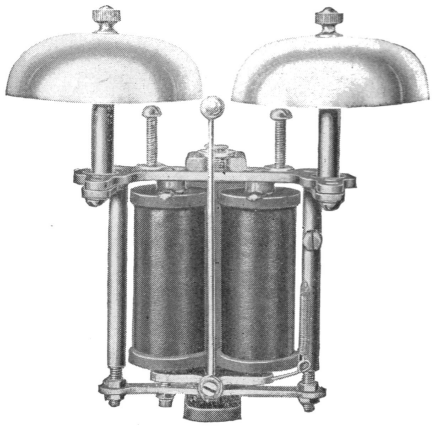
Code No.	Resistance ohms	Use	List Price each
45-A	2 windings .04 each	In No. 79 type protector.....	$ 0.20
44-B	2 windings 200 each	This has two separate toroidal coils on the same wooden base. Each coil is enclosed in a cross talk-proof shell. Used in the cord circuit of No. 1 toll switchboard.....	14.25

RINGERS

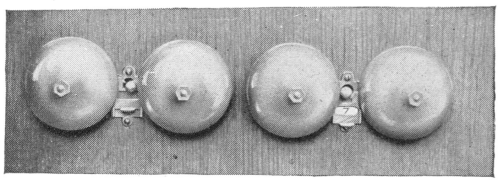
For Telephone Sets

These are equipped with No. 16 gongs and the necessary gong mountings and gong nuts. Different gongs may be used if desired, by changing the gong mountings and nuts and in ordering these it will be sufficient to specify, No. .....ringers equipped with No.....gongs.

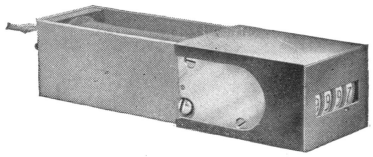
Code No.	Type	Type of Gong Posts	Resistance ohms	List Price each
2–AG	Long unbiased	Long	1000	$ 1.65
2–BG	Long unbiased	Long	2500	2.25
2–FG	Long unbiased	Long	1600	2.25
3–AG	Long unbiased	Medium	1000	1.65
3–BG	Long unbiased	Medium	2500	2.25
4–AG	Long unbiased	Short	1000	1.65
4–BG	Long unbiased	Short	2500	2.25



No. 6-AG



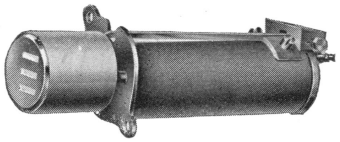
No. 1-A operated and non operated



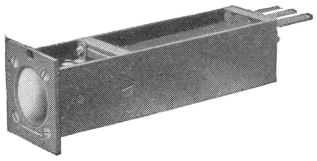
No. 5-G



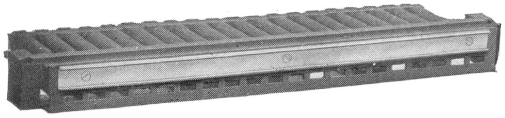
No. 4-E



No. 32-A



No. 34-A



No. 42-A

Ringers—Continued

Code No.	Type	Type of Gong Posts	Resistance ohms	List Price each
6-AG	Long biased	Long	1000	**$ 1.65**
6-BG	Long biased	Long	2500	**2.25**
6-FG	Long biased	Long	1600	**2.25**
7-AG	Long biased	Medium	1000	**1.65**
7-BG	Long biased	Medium	2500	**2.25**
8-AG	Long biased	Short	1000	**1.65**
8-BG	Long biased	Short	2500	**2.25**

RINGER INDICATORS

Used in connection with ringers to indicate the calling line.

Code No.	List Price each
1-A	**$ 0.45**

SERVICE METERS

These are for counting the number of effective calls made on a telephone line. They are mounted at the central office on steel mounting plates.

Code No.	Outer Winding Resistance ohms	Inner Winding Resistance ohms	Operates on volts	Does not Operate on volts	List Price each
5-G	40	500	26.5	25	**$ 3.70**

These are for counting the number of connections made by an operator. They are mounted on steel mounting plates.

Code No.	Resistance ohms	Operating Current amperes	Non-operating Current amperes	List Price each
5-H	.25	1.3	1.2	**$ 3.40**

SIGNALS

The No. 4 has two coils and is used principally as a line signal in private exchanges employing magnetic signals and operating on a central battery basis.

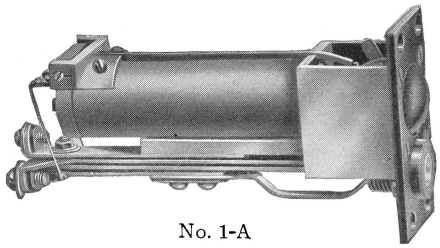
The No. 32 has a single coil and is used principally as a supervisory signal in private exchanges employing magnetic signals and operating on a central battery basis. It is also used as the line signal in the cordless private exchange switchboards.

The No. 34 is used as a line signal in the No. 9 switchboard and in the trunk circuits of the No. 105 magneto switchboard. The Nos. 39 and 41 signals are used in the cord circuits of the No. 9 switchboard.

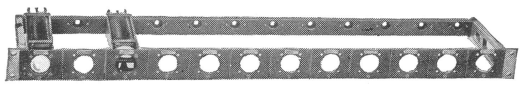
The No. 42 is used as a busy signal with multiple toll line jacks and mounts on same centers as jacks.

The Nos. 4, 34, 39 and 41 signals are numbered in paint on the shutter, numbering to be specified.

Code No.	Resistance ohms	List Price each
4-E	250	**$ 1.90**
32-A	33.3	**2.35**
34-A	80	**2.25**
34-B	300	**2.40**
39-A	2 windings 250 each	**3.30**
41-B	2 windings 100 each	**3.25**
42-A	100	**.90**



No. 1-A



No. 62

Code No.	For Signals number	Number of Signals per Strip
2	4	10
29	34, 39, 41	5
60	34, 39, 41	15
61	34, 39, 41	20
62	34, 39, 41	12
77	42	10
78	42	10
79	42	20

Signals—Continued

The No. 1-A Combination Jack and Signal is used as a line signal for the Nos. 1101 and 1102 magneto switchboards. It is designed for magneto switchboards when the jack is to be mounted adjacent to the signal. The signal is restored automatically by inserting a plug in the associated jack.

Code No.	Description	Resistance ohms	List Price each
1-A	Combination jack and signal	500	**$ 2.65**

SIGNAL MOUNTINGS

The following are the principal mountings used with the signals described above.

Size of Face Plate inches	List Price
$15 \times \frac{9}{16}$	The price of the signal mounting is included in the price of the signal if the strip is fully equipped
$7\frac{1}{2} \times 1\frac{3}{8}$	
$24\frac{9}{16} \times 1\frac{3}{8}$	
$24\frac{9}{16} \times 1\frac{3}{8}$	
$21 \times 1\frac{3}{8}$	
$9\frac{3}{16} \times \frac{7}{8}$	
$7\frac{23}{32} \times \frac{7}{8}$	
$9\frac{9}{16} \times \frac{7}{8}$	

CENTRAL BATTERY SWITCHBOARDS

No. 1 SUBSCRIBER AND TRUNK SWITCHBOARDS

The No. 1 switchboard is a central battery lamp signal and lamp supervisory switchboard arranged for positive supervision, and is recommended for use for all equipments where a central battery exchange of more than 1600 lines is desired, or for a smaller equipment, where the liability of growth within a few years to a system exceeding 1600 lines is calculated.

For small central battery exchanges we recommend the No. 9 or the No. 10 switchboards which are described herein.

The No. 1 switchboard is a multiple board, the multiple jacks being bridged across the line, and appearing once in each section, so that every operator has a multiple jack of each subscriber's line within her reach.

These boards are furnished in various standard sizes from 3000 to 9600 lines; the commonly used of these being the 3000 line, 4900 line and 9600 line boards. Any equipment desired may be provided with the original installation, as the equipment is so arranged that additions may be installed at any time without interrupting the service.

The 3000 line section is a five panel board, arranged for two operators' positions, 400 answering jacks, 300 outgoing trunk multiple and is 6 ft. 6 in. high, 4 ft. $3\frac{1}{4}$ in. long and 3 ft. $7\frac{1}{4}$ in. deep from the front of the keyshelf to the rear curtain.

The 4900 line section has seven panels, is arranged for three operators' positions, 560 answering jacks, 500 outgoing trunk multiple and is 6 ft. 10 in. high, 5 ft. $11\frac{3}{4}$ in. long and 4 ft. $\frac{1}{4}$ in. deep from the front of the keyshelf to the rear curtain.

The 9600 line section has eight panels, is arranged for three operators' positions, 640 answering jacks, 600 outgoing trunk multiple, and is 7 ft. $8\frac{1}{2}$ in. high, 5 ft. 8 in. long and 4 ft. $4\frac{5}{8}$ in. deep from the front of the keyshelf to the rear curtain.

The first two of these boards are what are commonly known as the No. 49 jack boards, on account of their being arranged for No. 49 jacks, and the latter is known as the No. 92 jack board, because it is arranged for No. 92 jacks.

The No. 49 and No. 92 jacks are similar with the exception that the No. 92 is smaller and is assembled on a metal mounting, while the No. 49 jack is assembled on a hard rubber mounting. The No. 92 jacks being smaller are mounted on closer centers, and for this reason are used in place of the No. 49 jacks where large multiple equipments are necessary.

It will be understood from the above that the plugs and cords, as well as the various other pieces of apparatus used in these sections, will be different. These differences, however, are only in dimensions, and do not in any way affect the operation, strength and efficiency of the equipment.

PRICES ON REQUEST

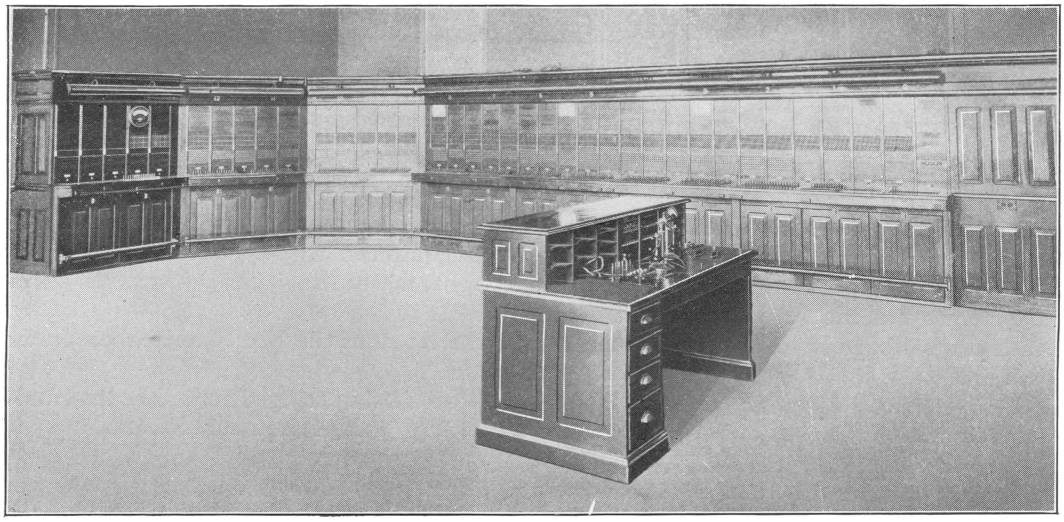
Central Battery Switchboard—Continued

Line and cut-off relays are provided for each subscriber line circuit. The function of the line relay being to operate when a subscriber takes the receiver off the hook, thus lighting the line lamp and signalling the operator. The cut-off relay operates when the call is answered, cutting off the line battery and extinguishing the line lamp. From this point on during a conversation, the talking battery is taken from the cord circuit through the repeating coil, separate coils being provided with each pair of cords.

In multiple office districts, i.e., in districts where there are two or more exchanges, as for instance, in a large city where the number of subscribers is such that they can be accommodated only by a number of central offices, instead of by only one exchange, or where the area covered is such that it is more economical to install several exchanges than to try to handle the business from one point, trunk sections are recommended for use in conjunction with the No. 1 subscriber board.

In these trunk sections appear multiple jacks, bridged across the subscribers' lines, so that a multiple jack of each line is within the reach of every one of the trunk operators.

In cases of this kind, trunk equipments are provided, terminating in jacks at the subscriber board and in incoming trunks, consisting of plugs and cords with the necessary repeating coils, relays, resistances, lamps and keys at a distant exchange. These incoming trunks are placed in the trunk sections, and when a subscriber connected to one exchange desires to converse with a subscriber connected to another exchange,



Operating Room

the operator at the subscriber board where the call originates, has a trunk assigned over a call wire, by the trunk operator at the distant exchange, who then makes connection with the trunk multiple jack of the subscriber's line with which the calling subscriber desires connection.

The trunk sections are in large exchanges placed in a separate line from the subscriber sections, but in exchanges where the number of trunks is not large the sections may be placed in the same line with the subscriber board. Subscriber sections may be readily converted into trunk sections by merely changing the equipment.

The frames of these sections are made of steel to give them strength and rigidity. All the woodwork on the front of the boards is of selected mahogany, and is very carefully fitted and finished. The rear of the board is provided with rolling wooden curtains. Lighting equipment is provided with each section.

These switchboards, both subscriber and trunk, are equipped with the necessary miscellaneous circuits, such as night bell, auxiliary signal, instruction, supervisors, tone test, etc.

FRAMES AND RACKS, USED WITH No. 1 SWITCHBOARD

MAIN DISTRIBUTING FRAME

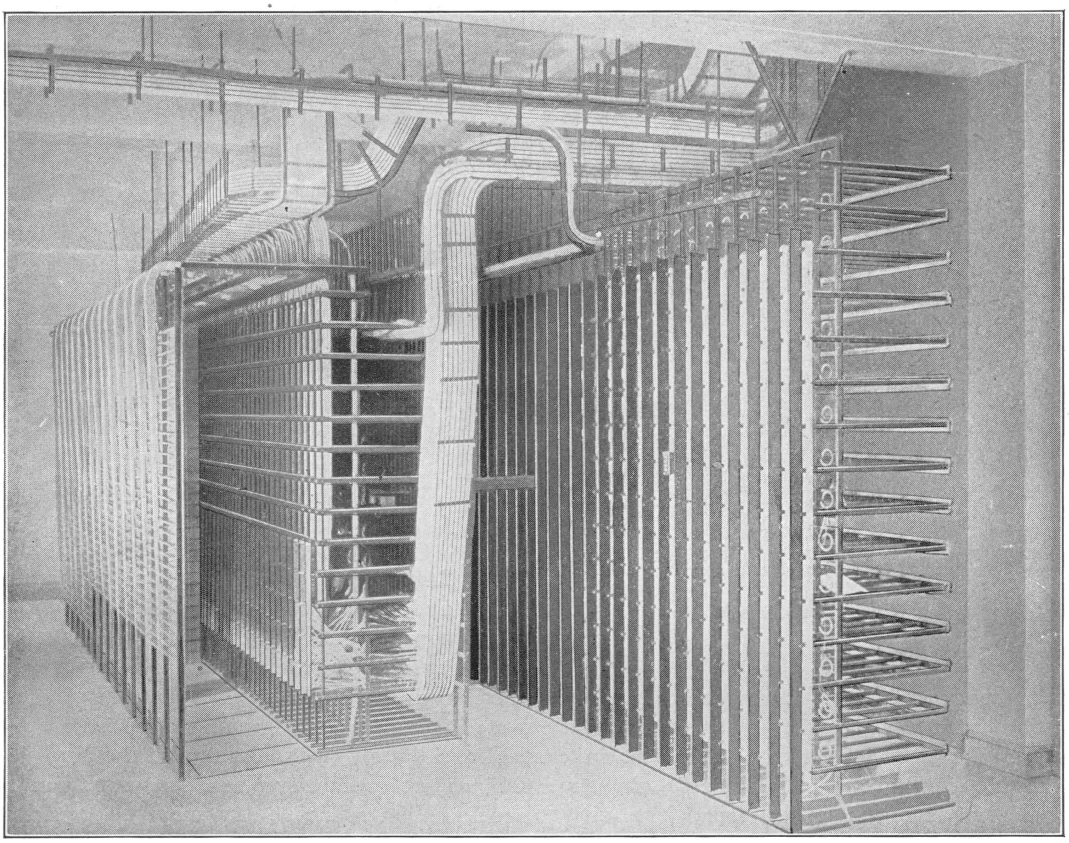
A main frame of iron construction is provided with this board, to one side of which the outside lines are connected, the other side being connected by cable to the intermediate frame. On it are mounted protectors, consisting of heat coils and carbon block arresters. Adequate provision is made for cross connecting.

PRICES ON REQUEST

Frames and Racks—Continued

INTERMEDIATE FRAME

An intermediate distributing frame of iron construction is provided, on the horizontal side of which are mounted terminal strips, to which the cables from the main frame are soldered. Terminal strips are placed on the vertical side of this frame, and from these the cables are run to the answering jacks in the switchboard and to the relays on the relay rack. Ample provision is made on this frame for cross connecting.



Terminal Room

RELAY RACK

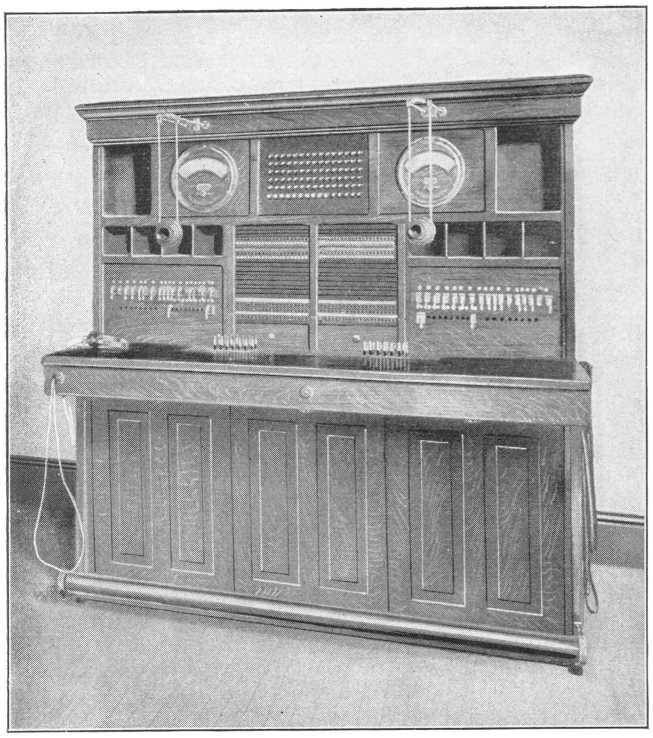
A relay rack of iron construction is provided on which to mount the line relays and the incoming trunk relays in case trunking equipment is necessary. In a very large exchange a separate relay rack is provided for the trunk relays.

COIL RACK

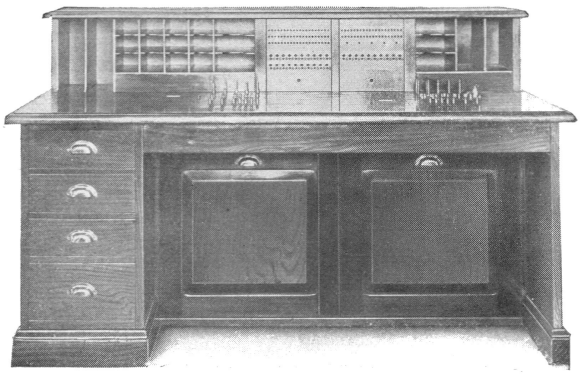
A coil rack of iron construction is provided on which the repeating coils, wired in the cord circuits, are mounted. These coils are connected to the cord circuits by cable run from the coil rack to the switchboard sections.

FUSE PANEL

At the end of the coil rack is placed a fuse panel of slate 1¼ in. thick, on which are mounted the fuses for the cord circuits and operators' sets, as well as the line fuses and other fuses necessary to protect the miscellaneous circuits. This fuse panel is generally arranged for alarm type fuses, so that when the fuse blows, a connection is made with an alarm fuse bus-bar closing a circuit through a bell, thus giving the signal that one of the fuses has burned out. (This fuse panel is separate from the power fuse panel on which the fuses used in the power circuits are mounted.)



No. 9 Wire Chief's Desk



No. 2 Chief Operator's Desk

DESKS

The necessary desks, such as Wire Chief's, Chief Operator's, Manager's and Information Desks, will be provided with the multiple switchboard.

POWER PLANT

The power plant is laid out on the basis of 24 volt battery supply for local connections and 48 volt supply for toll and long distance connections. For charging the storage batteries, it is considered desirable to have duplicate sources of power and the usual arrangement is to have two charging sets entirely independent of each other, one to operate from the city power supply and the other run from a gas engine installed at the exchange, the latter is to be used as an emergency set in case of accidents, or a breakdown in the city plant.

To provide ringing current, duplicate ringing machines are ordinarily furnished, one run from the storage battery and the other from the city power supply. These sets may be equipped with interrupters for tone, trouble and busy test service.

No. 9 SWITCHBOARD

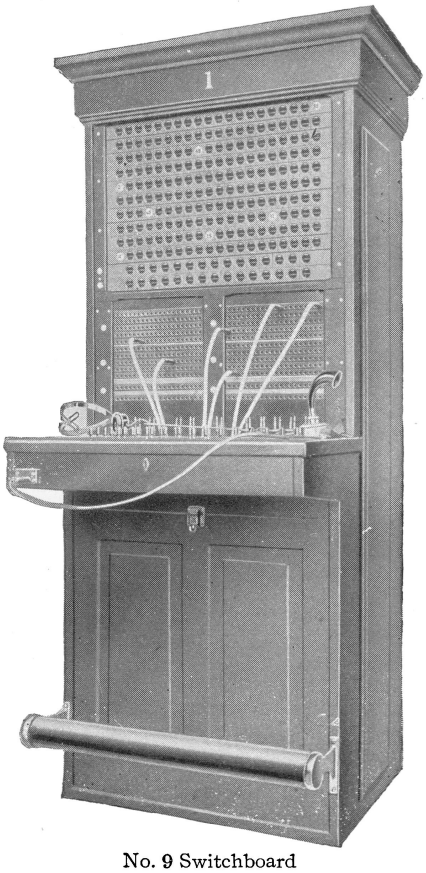
The No. 9 switchboard is used in offices up to 800 lines capacity. Two types of this board are furnished, one for use in offices to handle only local and toll traffic and the other in offices such as those in the vicinity of large telephone centers, where calls will be trunked to other exchanges. These are known as the No. 9-D and No. 9-C switchboards respectively, and differ principally in that the No. 9-D is arranged for 24 and the No. 9-C for 38 volt battery supply.

These switchboards are furnished with magnetic line and supervisory signals, and are arranged for negative supervision.

The cord circuits on the subscriber section are equipped with condensers, and those on the toll sections with repeating coils. The toll cord circuits are universal, i.e., they are entirely automatic, being arranged so that either toll to toll or toll to local connections can be made without any additional work by the operator, no keys or switching devices, other than the regular listening and ringing keys, being necessary.

The board is self-contained, terminal strips and connecting rack being mounted on the rear to provide for cross-connecting the multiple jacks and line signals.

This section is a two-panel single operator's section with a capacity for 400 multiple jacks and 200 line signals. The lines are multipled every second section, making a total multiple capacity of 800 lines.



No. 9 Switchboard

No. 9 Switchboard—Continued

The following gives the capacity of the subscriber, trunk, toll and combination subscriber and toll sections:

Subscriber Section

	Capacity
Operator's position	1
Subscriber Multiple jacks—20 per strip	400
Trunk Multiple jacks—10 per strip	40
Subscriber line signals (see note)	200
Ring down trunk drops	As specified
Subscriber cord circuits	15
Operator's telephone circuit	1
Auxiliary signal circuit	1
Ringing circuit	1
Call wire circuits	8
Night bell circuit	1
Test lines to wire chief	2

Note.—When a section is equipped with No. 22-A drops for ring down trunks the subscriber's line signal capacity will be reduced by 20 for each 15 of these trunks.

Incoming Call Wire Trunk Section

	Capacity
Operator's position	1
Subscriber multiple jacks—20 per strip	400
Trunk multiple jacks—10 per strip	30
Busy back jacks—10 per strip	10
Incoming call wire trunks	28
Trunk operator's telephone circuit	1
Call wire signal circuit	1
Ringing circuits	2
Call wire circuits	8

Toll Section

	Capacity
Operator's position	1
Subscriber multiple jacks—20 per strip	400
Toll and trunk multiple jacks—10 per strip	40
Central battery toll line signals	As specified
Magneto toll line drops	As specified
Through toll line drops	As specified
Recording trunks drops	As specified
Universal toll cord circuits (see note)	7
Operator's telephone circuit	1
Auxiliary signal circuit	1
Ringing circuit	1
Call wire circuits	4
Night alarm circuit	1
Test lines to wire chief	2

Note:—The toll cord circuits shall all be wired so that they can be used for either magneto or common battery and local subscriber's lines, and with the repeating coil out on through toll connections or in on all connections. The standard arrangement is to leave the repeating out on the first 5 cords and in on the last 2.

Combination Subscriber and Toll Section

	Capacity
Operator's position	1
Subscriber multiple jacks—20 per strip	400
Toll and trunk multiple jacks—10 per strip	40
Subscriber line signals (see note No. 1) / Central battery toll line signals	120
Magneto toll line drops / Through toll line drops / Recording trunk drops	20
Universal toll cord circuits (see note No. 2)	5
Operator's telephone circuit	1
Auxiliary signal circuit	1
Call wire circuits	4
Night alarm circuit	1
Test line to wire chief	2

PRICES ON REQUEST

No. 9 Switchboard—Continued

Notes:—

1. If a section is equipped with No. 22-A drops for ring down trunks the subscriber line signal capacity will be reduced by 20 for each 15 of these trunks.
2. The toll cord circuits shall all be wired so that they can be used for either magneto or common battery toll and local subscriber's lines, and with the repeating coil out on through toll connections or in on all connections. The standard arrangement is to leave the repeating coil out on the first 4 toll cords and in on the last cord.

In addition to these sections we have standard rural and combination subscriber and toll switching trunk sections. We will furnish complete information on any of these upon request.

The frame of this board is made of birch, finished to match mahogany. The dimensions of the standard sections are as follows: 6 ft. 3 in. high; 2 ft. 5 in. wide; 2 ft. 9 in. deep, from front of key shelf to rear door. The equipment in the rear of the section is accessible by removing the rear door.

MAIN DISTRIBUTING FRAMES

The main distributing frame is of iron construction, and may be either the wall type, or arranged to mount separately. In the wall type the lower portion is designed to carry the protectors, consisting of heat coils and carbon block arresters, while the upper portion of the frame carries the fuses

The separate type is designed so that one vertical may be added at a time, the vertical side carrying the protectors, consisting of heat coils and carbon block arresters, the horizontal side being equipped with terminal strips for connecting the outside lines.

DESKS

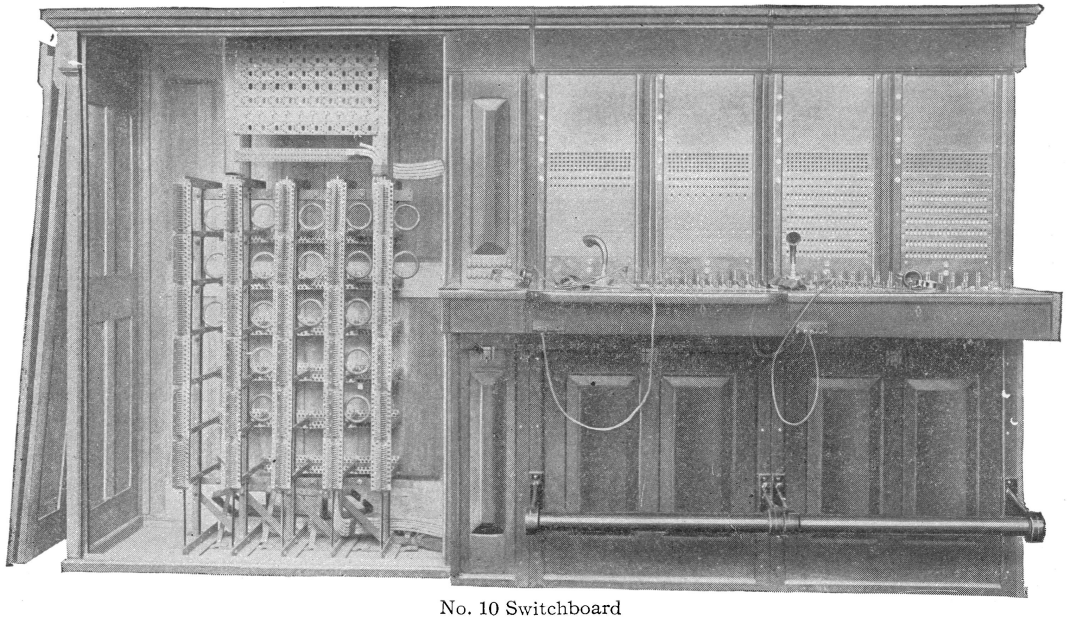
A wire chief's desk and chief operator's desk are provided for use with the No. 9 switchboard when necessary.

POWER PLANT

The power plants of the No. 9-D and No. 9-C switchboards are planned on the basis of 24 and 38 volt battery supply respectively. There is supplied a storage battery (usually E-7 cells), motor, charging generator, together with a power switchboard, on which are mounted the necessary instruments, such as voltmeter, ammeter, switches, fuses, etc.

A ringing machine is not ordinarily used, as it is the usual practice to provide two interrupters to supply the ringing current.

No. 10 SWITCHBOARD



No. 10 Switchboard

The No. 10 switchboard is used in offices up to 1600 lines capacity. In general, it may be said that the No. 10 switchboard possesses the operating and transmitting features of the No. 1 switchboard, it being provided with repeating coils in the cord circuits, and the functions of the cut-off relay being performed by a cut-off jack. The supervisory signals are controlled by back contact relays.

The board is provided with answering jacks and associated lamp signals and lamp supervising signals arranged for positive supervision. It is designed for both single and multi-office districts.

PRICES ON REQUEST

No. 10 Switchboard—Continued

This board is self-contained, except that an intermediate distributing frame is provided for cross connecting. The section is a two panel single operator's section with a capacity for 800 multiple and 120 answering jacks per panel. The lines are multipled every second section, making a total multiple capacity of 1600 lines. The equipment is arranged as flexible as possible, with a view of meeting all usual requirements shown by careful study.

The following gives the capacity of the subscriber, toll and combination subscriber and toll sections:

Subscriber Section	Capacity
Operator's position	1
Subscriber multiple jacks, 20 per strip	800
Trunk multiple jacks, 20 per strip	80
Subscriber line equipment jacks, 20 per strip	240
Subscriber cord circuits	15
Subscriber operator's telephone circuit	1
Ringing circuit	1
Call wire circuits	32
Auxiliary signal circuits	2
Night alarm circuit	1
Tone test cords	2

Toll Section	Capacity
Operator's position	1
Subscriber multiple jacks, 20 per strip.	800
Trunk multiple jacks, 20 per strip	80
Magneto toll line jacks, 10 per strip	10
Common battery toll line jacks, 20 per strip	20
Universal toll cord circuits:	
Repeating coil in on all connections	2
Repeating coil out on through connections	8
Toll operator's telephone circuit	1
Ringing circuit	1
Call wire circuits	4
Auxiliary signal circuit, magneto toll	1
Auxiliary signal circuit, common battery toll	1
Night alarm circuit	1

Combination Toll and Subscriber Section	Capacity
Operator's position	1
Subscriber multiple jacks, 20 per strip	800
Trunk multiple jacks, 20 per strip	80
Subscriber or common battery toll lines, jacks 20 per strip	120
Magneto toll lines, jacks 10 per strip	10
Subscriber cord circuits	10
Universal toll cord circuits:	
Repeating coil in on all connections	1
Repeating coil out on through connections	4
Operator's telephone circuit	1
Ringing circuit	1
Call wire circuits	4
Auxiliary signal circuit, magneto toll	1
Auxiliary signal circuit, subscriber or common battery toll	1
Night alarm circuit	1

In addition to these sections we have a standard recording, trunk, toll trunk, rural, combination subscriber and toll trunk, combination subscriber and rural sections, and subscriber sections arranged for rural cords. We will furnish complete information on any of these upon request.

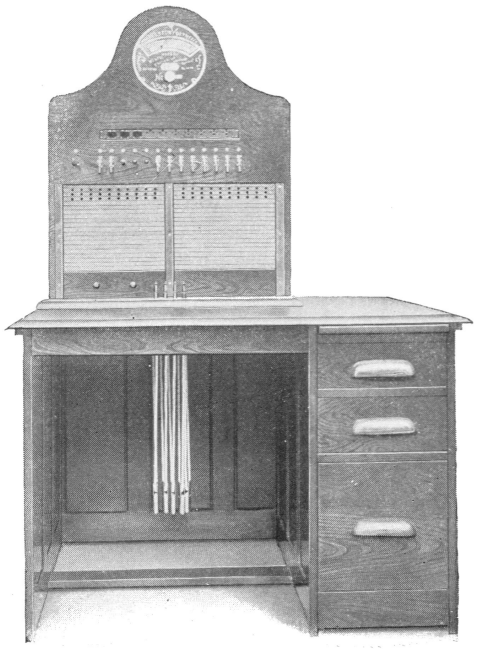
The frame of this board consists of steel enclosed in wood, all the woodwork on the front of the board having a mahogany finish.

The dimensions of the standard section are as follows:—5 ft. $10\frac{3}{8}$ in. high; 2 ft. 5 in. wide; 2 ft. $10\frac{1}{8}$ in. deep, from front of keyshelf to rear door.

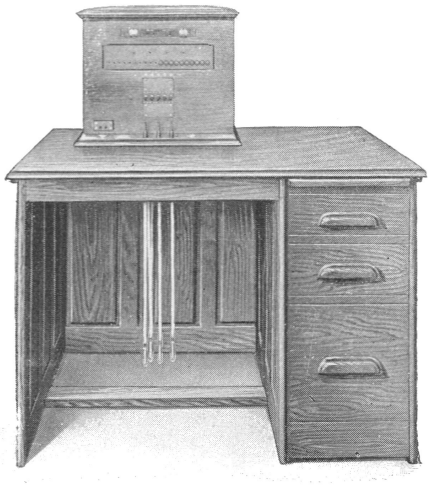
The line relays are arranged in the board and are accessible by removing the rear door.

PRICES ON REQUEST

No. 10 Switchboard—Continued



No. 10 Wire Chief's Desk



No. 10 Chief Operator's Desk

DESKS

A wire chief's desk and chief operator's desk are provided for use with the No. 10 switchboard when necessary.

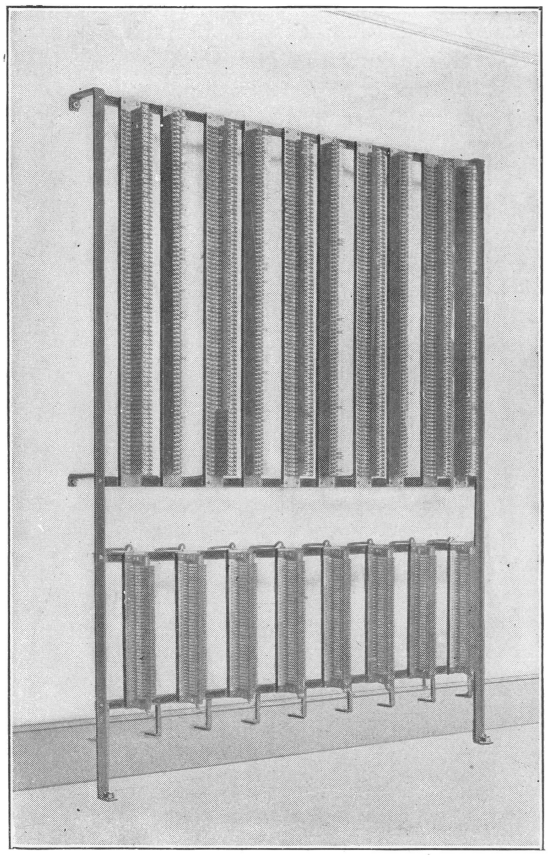
FRAMES AND RACKS

An intermediate distributing frame of iron construction is provided for cross connecting, and can be placed either at the end of the first section, or on a separate floor if desired. This frame is so designed that additions may be made in units of one vertical. When placed in line with the boards it is enclosed in a casing, finished to match the board.

The main frame is of iron construction, and may be either the wall type or arranged to mount separately.

In the wall type the lower portion is designed to carry the protectors, consisting of heat coils and carbon block arresters, while the upper portion of the frame carries the fuses.

The separate type is designed so that one vertical may be added at a time, the vertical side carrying the protectors, consisting of heat coils and carbon block arresters, the horizontal side being equipped with terminal strips for connecting the outside lines.



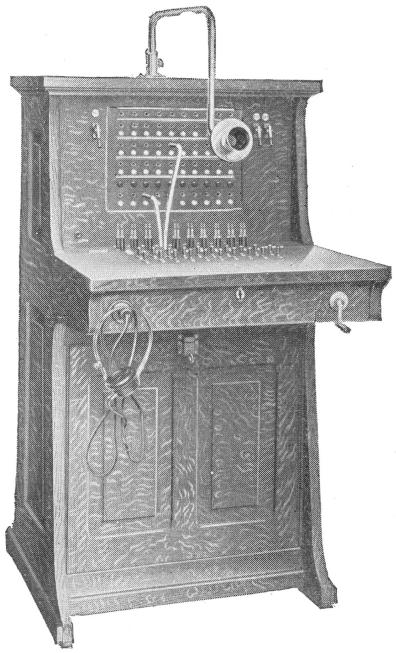
Main Distributing Frame
Wall Type

POWER PLANT

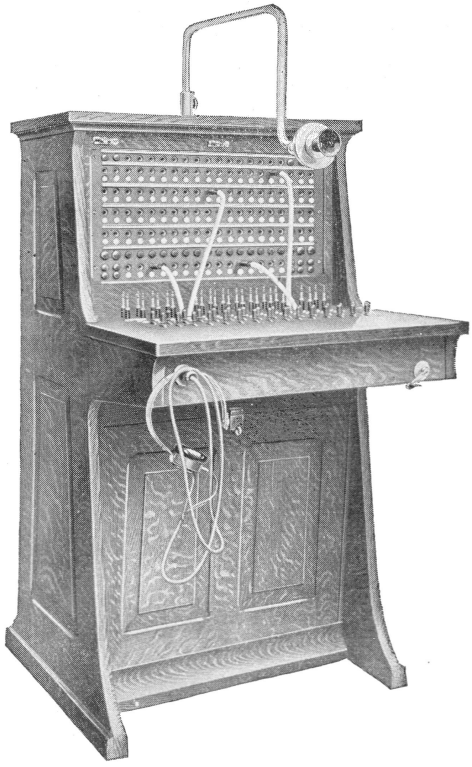
The power plant for the No. 10 switchboard is planned on the basis of a 24-volt battery supply for local connections, and a 48-volt battery supply for toll connections. The equipment is similar to the No. 1 power plant, except that it is smaller.

Standard power plant equipments, with the exception of storage batteries and miscellaneous material, are carried in stock.

PRICES ON REQUEST



30 Line Section



80 Line Section

No. 4 PRIVATE EXCHANGE SWITCHBOARDS

In the past few years there has been an increased demand for a private exchange, which will employ lamp signals, provide high efficiency in transmission and conform closely to the standard methods of operation employed in the No. 1 switchboard. This has led to the development of the No. 4 private exchange.

These boards are of the central battery lamp signal type, giving positive supervision. All of the apparatus necessary for their operation is mounted in the framework. Two or more sections may be readily lined up together, thus increasing the capacity of the exchange.

The cord circuits are so arranged that they can be used either for local connections or connections with trunks to a central battery exchange. Any of the subscriber lines may be connected by means of trunk lines direct to the central office, where calls during the night or at other times when the operator is absent, can be handled.

These boards are furnished in two sizes, 30- and 80-line, the capacities of these sections being as follows:

Capacity	30-line	80-line
Subscriber lines	30	80
Trunk lines	10	15
Cord circuits	10	15
List price of one section fully equipped	**$ 509.65**	**$ 797.50**

If the board is connected to a central battery exchange it will with few exceptions be unnecessary to install a storage battery at the private exchange, as the talking and signalling current may be supplied over cable pairs from the central office. If, however, it should be found necessary to install a storage battery, it may be charged over trunks from the central office; two trunk lines in the 30-line board and 3 trunk lines in the 80-line board are wired to permit the addition of the necessary relays.

The 30- and 80-line boards are carried in stock in two finishes,—quarter sawed oak and birch stained to match mahogany. Other finishes than these can be furnished with but a slight increase in cost and delay in delivery. If a special finish is desired a sample should accompany the order.

Either a No. 229 W. transmitter with an arm or the chest type (No. 234) can be furnished. Unless otherwise specified, the board will be arranged for the transmitter arm.

The buzzer circuit can be arranged to operate from either two cells of dry battery or from the ringing current. It will be arranged to operate from the dry battery unless otherwise specified.

The dimensions of these sections are as follows:

30-line board: 3 ft. 8½ in. high; 1 ft. 11½ in. long; 2 ft. 2½ in. deep, from front of keyshelf to rear door.

80-line board: 3 ft. 10 in. high: 2 ft. 1 in. long; 2 ft. 5¼ in. deep, from front of keyshelf to rear door.

Orders for these boards should give the following information:

Capacity
- Subscriber lines

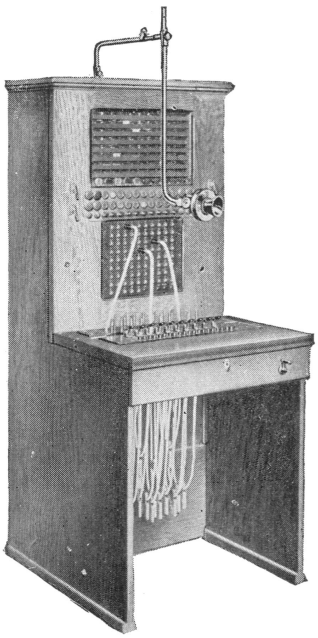
Equipment
- Subscriber lines
- Cord circuits
- Trunk lines
- Trunk lines arranged for storage battery

Will suspended or chest transmitter be used

Will buzzer circuit be connected to dry cells or ringing current

Finish

Nos. 101 AND 102 PRIVATE EXCHANGE SWITCHBOARDS



No. 102

These switchboards are furnished in two sizes, thirty line and eighty line capacity. They are equipped with magnetic line and supervisory signals and are arranged for negative supervision. The trunk circuits are equipped with No. 19 drops. The capacities of these sections is as follows:—

Capacity	No. 101	No. 102
Position	1	1
Subscriber lines	30	80
Subscriber cord circuits	10	15
Trunk circuits	10	10
List price of one section fully equipped	**$ 350.05**	**$ 573.00**

If desired two sections may be lined up together, thus increasing the capacity of the exchange.

The cord circuits are arranged so that they can be used either for local connections or connections with trunks to a central battery exchange. Any of the subscriber lines may be connected by means of trunk lines direct to the central office where calls during the night or at other times when the operator is absent can be handled.

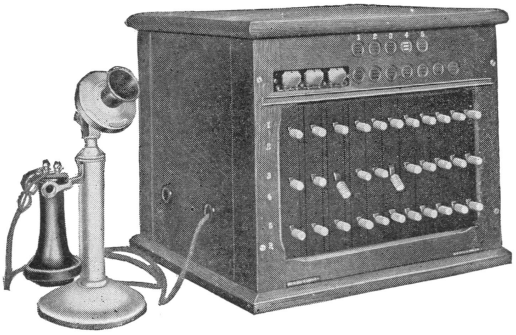
The standard finish of these sections is birch stained to match mahogany or oak.

In case writing space is desired for the operator, a shelf may be provided and attached to the section.

The No. 229-W transmitter with the No. 23 transmitter arm is used on these sections. The dimensions are as follows:—

No. 101—4 ft. 2 in. high; 1 ft. 11 in. long; 2 ft. 2¼ in. deep.

No. 102—5 ft. high; 2 ft. 1 in. long; 2 ft. 2¼ in. deep.



For 3 trunks and 7 local lines

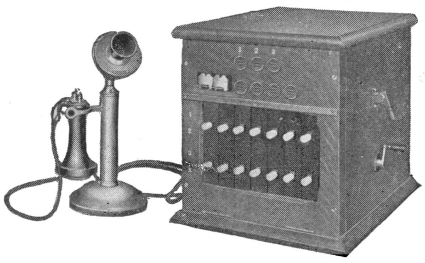
CORDLESS PRIVATE EXCHANGE SWITCHBOARDS

The cordless private exchange is particularly well adapted for use as a private exchange in small offices, factories, stores, etc. It is very compact and requires less space than a board equipped with connecting cords. All of the apparatus, with the exception of that necessary for the operator, is mounted in the framework, and is readily accessible.

These boards are made in two sizes, one for two trunks and four local stations, and the other for three trunks and seven local stations.

The standard finish is oak.

The local line and supervisory circuits are provided with No. 32 magnetic signals, and the trunks with No. 19 drops.



For 2 trunks and 4 local lines

The connections are made in this board by means of keys, any two local lines or any trunk and any local line may be connected together. The necessary keys are provided in the smaller board for 3 and in the other for 5 simultaneous connections.

The operator's set consists of a No. 20-C desk stand with No. 229-W transmitter, No. 122-W receiver and cord.

List price, smaller, fully equipped, **$ 84.45**; larger, **$ 149.20**

TOLL SWITCHBOARDS

No. 1 TOLL SWITCHBOARD

This is designed especially for large toll centers, and the cord circuits are arranged to obtain the best possible transmission over long toll lines. The section has an iron framework with selected mahogany on the front of the board.

The capacity is as follows:	Capacity
Operator's positions per section	2
Trunk multiple	400
Toll line multiple	200
Toll answering jacks	100
Toll cord circuits, per position	12

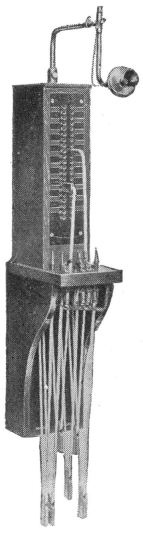
The section is 4 ft. 1 in. high; 4 ft. 3¾ in. long; 3 ft. ¾ in. deep, from front of keyshelf to rear door.

The board is arranged for all miscellaneous circuits necessary for the proper operation of the exchange, such as night alarm ringing, auxiliary signal, supervisors, instruction circuits, etc.

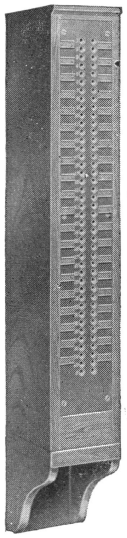
No. 2 TOLL SWITCHBOARD

This is the regular subscriber framework equipped with toll line and toll cord circuits and is arranged to line up with the No. 1 subscriber board, with which it is used. When additions are necessary, adjacent subscriber sections may be converted with very little trouble to toll sections by merely changing the equipment. The subscriber lines will be multipled through the toll sections. Universal toll cord circuits are provided. These cord circuits are entirely automatic being arranged so that either toll to toll or toll to local connections may be made without any additional work by the operator, no keys or switching devices other than the regular listening and ringing keys being necessary.

This board is arranged with the necessary miscellaneous circuits for its proper operation.



No. 21 Wire toll test board



No. 41 Wire extension

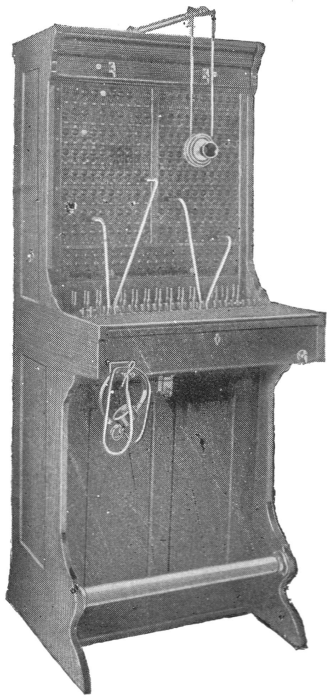
TOLL TEST BOARDS

These are made in twenty-one and forty-one wire capacities and are used as test boards in test stations and small exchanges. The jacks are mounted on a hard rubber panel either in two or four rows as desired. Designation strips are provided so that the jacks may be properly numbered. A telephone and cord circuit are provided and arrangements made for talking and ringing in either direction. The framework is made of mahogany and is arranged to mount on the wall, or on the end of the switchboard.

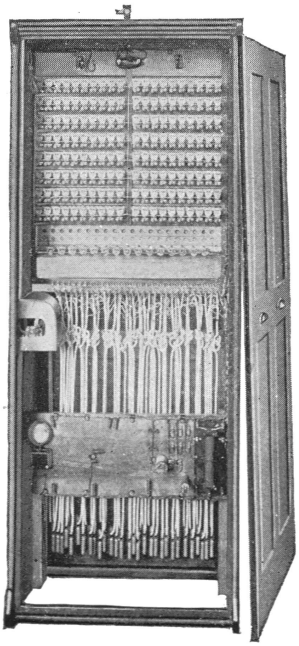
TOLL TEST BOARD EXTENSIONS

These are furnished in twenty-one and forty-one wire capacities and are similar to the toll test boards, except that they are provided with jacks only, no cord or telephone circuits being provided.

MAGNETO SWITCHBOARDS



No. 1102—Front



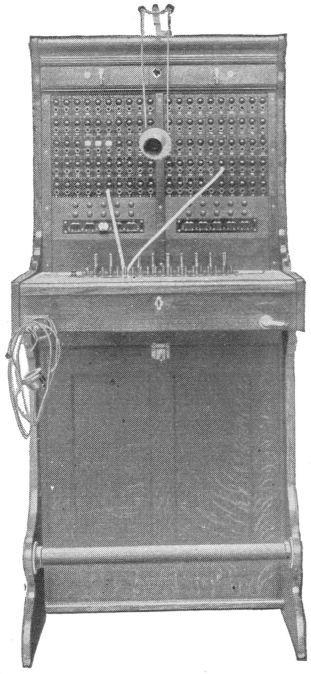
No. 1102—Rear

Nos. 1101 AND 1102 SWITCHBOARDS

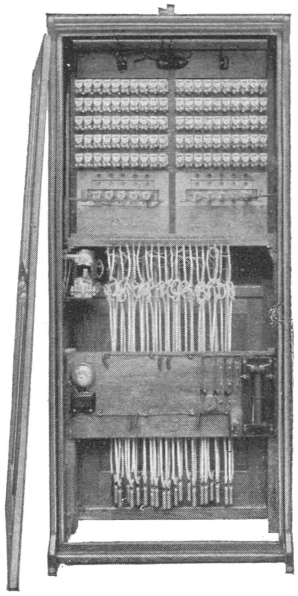
The cabinets are made in two sizes, 100- and 160-line, and are of quarter sawed oak with a dark finish. Two or more may be lined up without any change in the woodwork. Each signal is mechanically associated with its jack so that it is automatically restored when the operator plugs into the jack. The line circuit may be used for either toll or local work. The trunk circuits have lamp signals and are arranged for connection in either direction between sections. Wiring is always provided for the repeating coils, but unless otherwise specified the circuits with which they may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A suspended type of transmitter (No. 232-W) is provided unless the chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied, together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. A generator switch-

PRICES ON REQUEST

Nos. 1101 and 1102 Switchboards—Continued



No. 1101—Front



No. 1101—Rear

ing circuit is arranged with a key to throw in the hand generator or some other source of ringing current. Cable for the equipment ordered is provided sufficient to extend fifteen feet from the base of the section.

In ordering specify the number of circuits to be equipped in each section, the type of the transmitter, and whether two or four party selective ringing is to be provided.

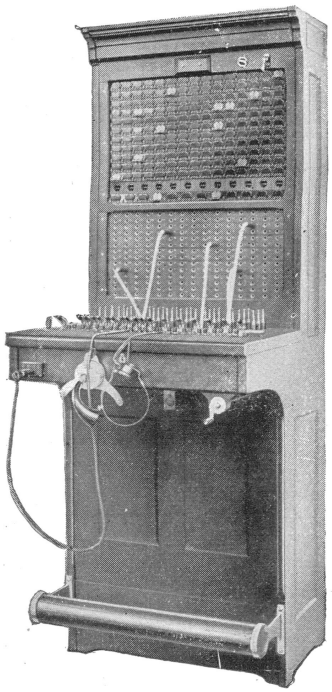
Capacity	No. 1101 Section	No. 1102 Section
Operator's position	1	1
Line circuits	100	160
Trunk circuits	10	20
Cord circuits with repeating coil	3	5
Cord circuits without repeating coil	7	10
List price of one section fully equipped less repeating coils	$436.97	$664.23

Dimensions of No. 1101 cabinet 5 ft. 1¼ in. high; 2 ft. 2⅞ in. long; 2 ft. 3 in. deep.

Dimensions of No. 1102 cabinet 5 ft. 8⅞ in. high; 2 ft. 2⅞ in. long; 2 ft. 3 in. deep.

No. 105 SWITCHBOARD

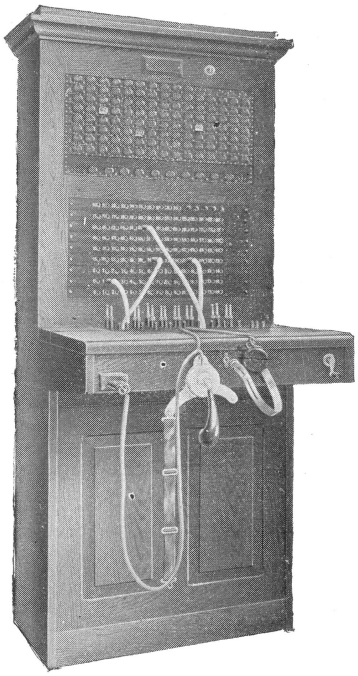
The face of the cabinet is made of mahogany and the unexposed parts of a lighter wood with a mahogany finish. Two or more may be lined up without any change in the woodwork. The trunk circuits are of the call wire type and are arranged for connections between sections. Provision is therefore made for incoming trunks at each section, which will be connected to outgoing trunks at all the other sections. Wiring is always provided for the repeating coils but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A suspended type of transmitter (No. 232-W) is provided unless the chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied, together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. A generator switching circuit is arranged with a key to throw in the hand generator or some other source of ringing current. No cable is provided unless ordered. In ordering specify the number of circuits to be equipped in each section, the type of transmitter and whether two or four party selective ringing is to be provided.



No. 105

Capacity	No. 105 Section
Position	1
Toll lines	15
Subscriber lines	150
Incoming trunk lines	12
Outgoing trunk lines	45
Call wire circuits	5
Cord circuits with repeating coil	5
Cord circuits without repeating coil	7
List price of one section fully equipped less repeating coils	$506.14

Dimensions of cabinet, 5 ft. 9⅜ in. high; 2 ft. 1 in. long; 2 ft. 1 1/16 in. deep.



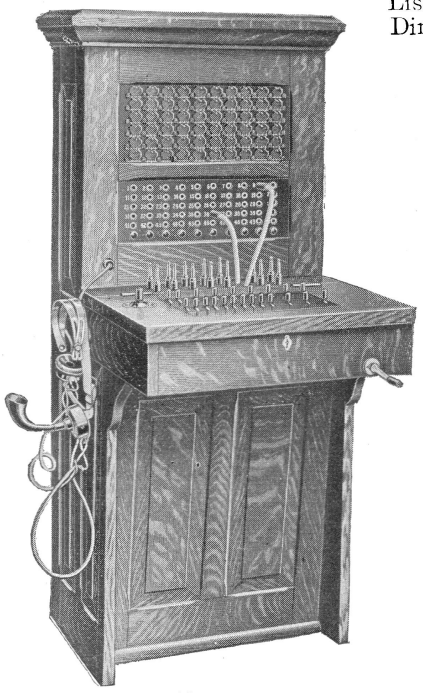
No. 1005.

No. 1005 SWITCHBOARD

The cabinet is made of selected oak with a light finish. Two or more may be lined up to increase the capacity of an exchange. The board is very similar to the No. 105, except that it is designed for smaller exchanges when it is desired to secure an equipment at a low cost. Trunk jacks may be placed in each section to be connected to drops or signals in the others. No provision is ordinarily made for repeating coils. The cord circuits are designed for ringing on the calling cords only. A suspended type transmitter (No. 232-W) is furnished, unless the chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied, together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. A generator switching circuit is arranged with a key to throw in the hand generator or some source of ringing current. No cable is provided unless ordered. In ordering, specify the number of circuits to be equipped in each section, the type of transmitter, and whether two or four party selective ringing is to be provided.

Capacity	No. 1005 Section
Position	1
Toll lines	15
Subscriber lines	100
Trunk jacks	15
Cord circuits	10
List price of one section fully equipped	**$ 272.90**

Dimensions of cabinet, 4 ft. 10 $\frac{9}{16}$ in. high; 2 ft. 3 in. wide; 2 ft. 1 $\frac{7}{8}$ in. deep.



No. 1006

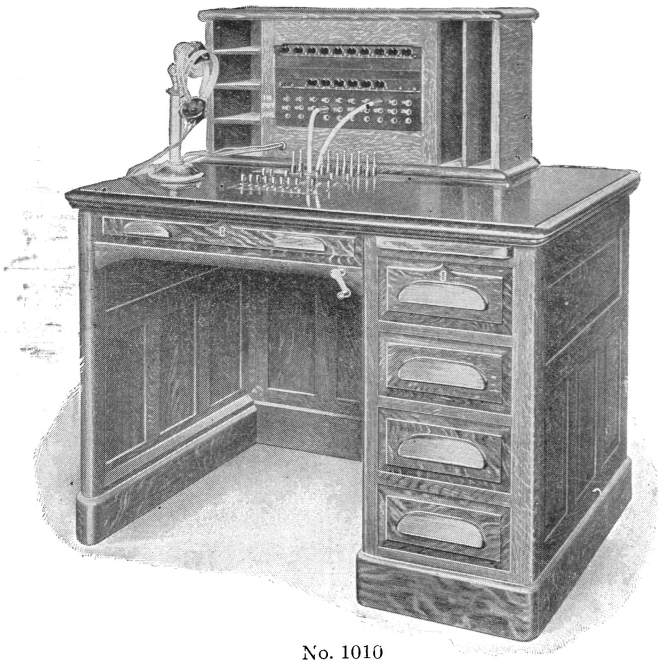
No. 1006 SWITCHBOARD

The cabinet is made of quarter sawed oak with a light finish. Two or more may be lined up to increase the capacity of an exchange. The board is very similar to the No. 105 except that it is designed for a smaller exchange. Any subscriber line may be equipped for toll service. Trunk jacks may be placed in each section to be connected to drops in the others. Wiring is always provided for the repeating coils, but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A suspended type transmitter (No. 232-W) is provided unless a chest type (No. 234-W) is specified. A head receiver is always furnished. A night alarm bell is supplied together with a key to cut it out of service. A five-bar hand generator is mounted in each section. Two or four party selective ringing may be provided. No generator switching key is ordinarily furnished. No cable is provided unless specified. In ordering specify the number of circuits to be equipped in each section, the type of transmitter, and whether two or four party selective ringing is to be provided.

Capacity	No. 1006 Section
Position	1
Subscriber lines	50
Trunk jacks	10
Cord circuits with repeating coils	4
Cord circuits without repeating coils	4
List price of one section fully equipped less repeating coils	**$ 164.38**

Dimensions of cabinet: 4 ft. 4 in. high; 1 ft. 9 $\frac{7}{8}$ in. wide; 2 ft. 1 in. deep.

No. 1010 SWITCHBOARD



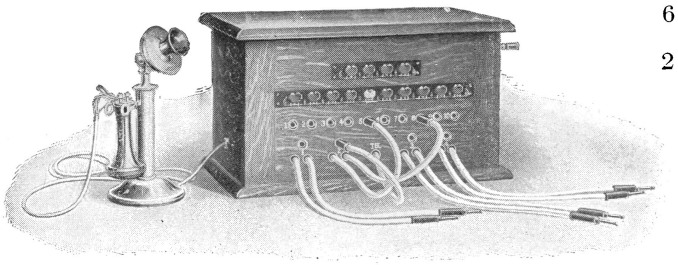
No. 1010

The desk and cabinet are made of oak with a light finish. Any subscriber line may be equipped for toll service. No provision is made for trunks. Wiring is always provided for the repeating coils, but unless otherwise specified the circuits with which these may be used are equipped the same as those without the coils. All cord circuits are arranged for ringing on the answering and calling cords. A No. 1020-J desk stand is provided. A head receiver is furnished in all cases. A night alarm bell is supplied together with a key to cut it out of service. A five-bar hand generator is mounted in each desk. No provision is ordinarily made for selective ringing. No generator switching key or cable is furnished unless specified. In ordering specify the number of circuits to be equipped in each section and the type of transmitter.

Capacity	No. 1010 Section
Position	1
Subscriber lines	30
Cord circuits with repeating coils	3
Cord circuits without repeating coils	3
List price of one section fully equipped less repeating coils.	**$ 140.79**

Dimensions of desk: 2 ft. 4 in. high; 3 ft. 6 in. wide; 2 ft. 8 in. deep.

Dimensions of cabinet: 1 ft. ¾ in. high; 2 ft. 6 in. wide; 10½ in. deep.



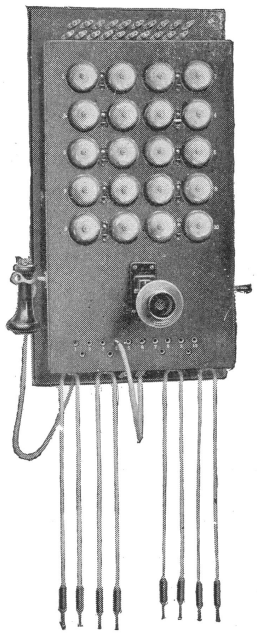
No. 1011

No. 1011 SWITCHBOARD

The cabinet is made of quarter sawed oak with a light finish, and is designed for mounting on a desk or shelf. Any subscriber line may be equipped for toll service. A five-bar hand generator and No. 1020-B desk stand are furnished. The operator answers, listens in and rings with a cord provided for the purpose. Connections are made by the other cords without the use of keys.

Capacity	No. 1011 Section
Position	1
Subscriber lines	10
Cord circuits	4
List price of one section fully equipped	**$ 51.03**

Dimensions of cabinet: 1 ft. high; 1 ft. 7¾ in. wide; 10¾ in. deep.



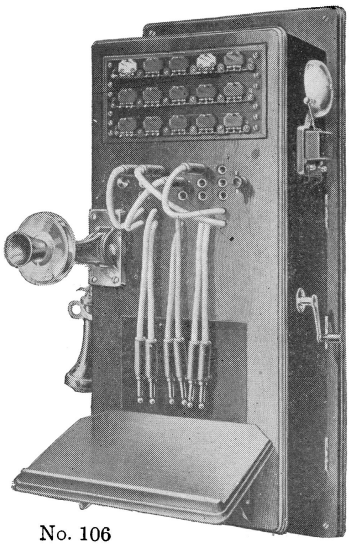
No. 1012

No. 1012 SWITCHBOARD

The cabinet is made of quarter sawed oak with a light finish, and the front is hinged to allow of easy access to the apparatus. A five-bar hand generator, No. 250-W transmitter and No. 122-W receiver are furnished. The ringers are of 1000 ohms resistance, unless otherwise ordered, and are equipped with indicators to show which line is calling. The operator answers, listens in and rings with a cord provided for the purpose. Connections are made by the other cords without the use of keys.

Capacity	No. 1012 Section
Position	1
Line circuits	10
Cord circuits	4
List price, one section fully equipped	**$ 57.36**

Dimensions of cabinet: 2 ft. 5⅞ in. high; 1 ft. 3½ in. wide; 6⅞ in. deep.



No. 106

No. 106 SWITCHBOARD

The cabinet is made of black walnut and the front is hinged to allow of easy access to the apparatus. The cabinet has a capacity of ten subscriber lines, 1 toll line and 4 cord circuits. A five-bar hand generator, night alarm circuit, No. 250-W transmitter and No. 122-W receiver are furnished. The drops are 500 ohms resistance and are bridged across the line. They may be of the No. 19 type to operate whenever one subscriber calls another on the same line or, the No. 57 type may be furnished, the latter operating only when a subscriber wishes to signal central office. If the latter service is desired the telephone sets must be equipped with a key and wired so that normally alternating current is delivered, which will ring the bells of the other telephone sets bridged across the line, but will not operate the drop at the central office. When the key is operated, pulsating current is delivered; this will not ring the bell of the telephone sets, but will operate the central office drop. The operator answers, listens in and rings with either of two duplicate cords provided for that purpose, connections are made by the other cords without the use of keys. Four boards are made differing only in the equipment.

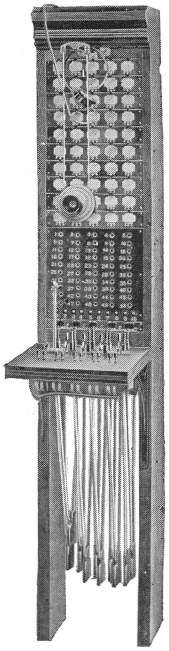
In ordering specify only the code numbers.

No. 106-A has 10 subscriber lines equipped with No. 19 drops, 0 toll lines and 4 cord circuits..... **$ 63.46**

No. 106-B has 10 subscriber lines equipped with No. 19 drops, 1 toll line and 4 cord circuits..... **69.89**

No. 106-C has 10 subscriber lines equipped with No. 57 drops, 0 toll lines and 4 cord circuits..... **86.75**

No. 106-D has 10 subscriber lines equiped with No. 57 drops, 1 toll line and 4 cord circuits..... **93.17**



No. 1002

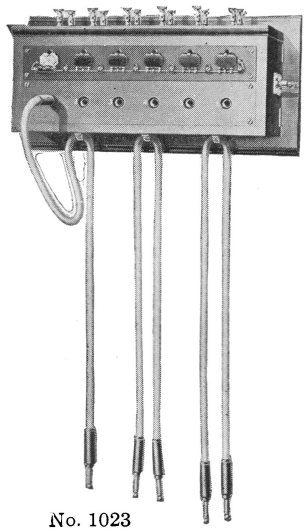
Nos. 1001, 1002 AND 1003 SWITCHBOARDS

These switchboards are of uniform type, varying only in size and capacity; the various capacities being 25, 50 and 100 lines.

The cherry frame is simple in design, and strongly constructed. Each section is equipped with a suspended transmitter, head receiver, hand generator and night alarm circuit. The 100-line switchboard (No. 1001), is equipped with ten pairs of connecting cords; the 50-line switchboard (No. 1002) and the 25-line switchboard (No. 1003) each have five pairs of cords. Any of the subscriber lines may be equipped as toll lines.

In each section space is provided for trunking jacks, the No. 1001 switchboard being drilled for 20, the No. 1002 switchboard for 10, and the No. 1003 switchboard for 5. Two or more of these sections may be easily lined up if desired.

In ordering these boards, it will only be necessary to specify the code number and the number of grounded and metallic lines.



No. 1023

PONY SWITCHBOARDS

The "Pony" switchboards, made in sizes from two to twenty lines, are very simple and inexpensive; and are designed for equipments where it is desired to connect only a few lines; and where the initial expense is an important consideration.

The cabinet is made of black walnut, and is equipped with binding posts on the top, to which the line wires are to be connected.

The board is equipped for either metallic or grounded circuits.

The board is equipped with a night alarm circuit, but not with an operator outfit, as it is intended for use with a seperate telephone set, for which a cord and plug are provided.

Numbers of "Pony" Magneto Switchboards

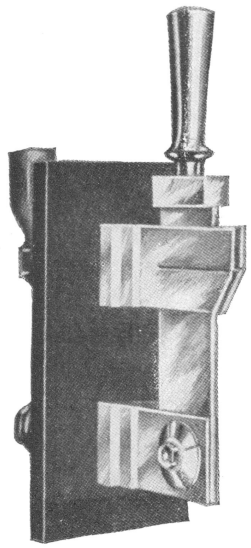
Code No.	Capacity	Code No.	Capacity
1021	2 line magneto switchboard	1026	12-line magneto switchboard
1022	4-line magneto switchboard	1027	14-line magneto switchboard
1023	6-line magneto switchboard	1028	16-line magneto switchboard
1024	8-line magneto switchboard	1029	18-line magneto switchboard
1025	10-line magneto switchboard	1030	20-line magneto switchboard

In ordering these boards, it will only be necessary to specify the code number, with the number of grounded and metallic lines.

SWITCHES

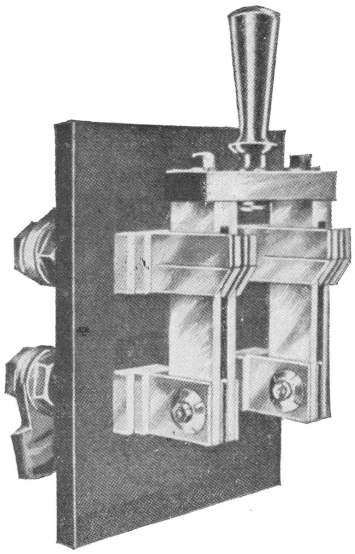
KNIFE SWITCHES

These have a draw file finish and are arranged for rear of board connections. They are mounted on temporary wood bases. Terminal lugs are not provided unless specified. The Nos. 8, 25, 26 and 27 switches are designed for 500 volts, all other knife switches are designed for a maximum of 250 volts. In this list the following abbreviations are used: S. P. single pole; D. P. double pole; 3 P. three pole; 4 P. four pole; S. T. single throw; D. T. double throw.



No. 17-C

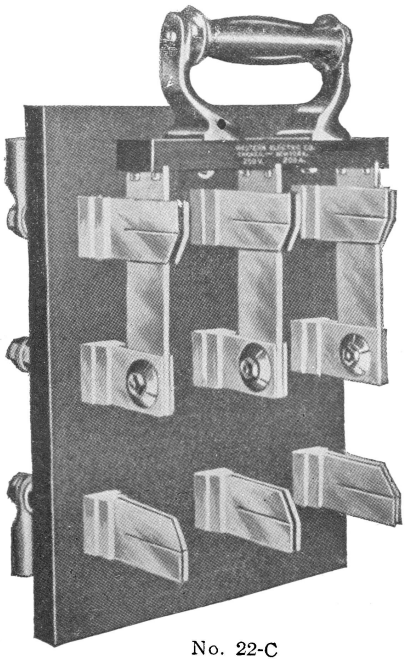
Code No.	Style	Capacity amperes	Use	List Price each
4-A	4-P., D. T.	25	Used with 2 or 3 phase dry auto-starter	$ 34.25
4-B	4-P., D. T.	50	Used with 2 or 3 phase dry auto-starter	51.50
4-C	4-P., D. T.	100	Used with 2 or 3 phase dry auto-starter	65.50
4-D	4-P., D. T.	200	Used with 2 or 3 ph ase dry auto-starter	84.50
4-E	4-P., D. T.	300	Used with 2 or 3 phase dry auto-starter	129.50
8-A	4-P , D. T.	25	Used with 2 or 3 phase dry auto-starter	49.50
8-B	4-P., D. T.	50	Used with 2 or 3 phase dry auto-starter	64.75
8-C	4-P., D. T.	100	Used with 2 or 3 phase dry auto-starter	107.75
14-A	S. P. 3 throw knife switch	25	Used to control counter E. M. F. cells in battery driven ringer sets	30.00
15-A	D. P., D. T.		Used with ammeter with two shunts	18.40



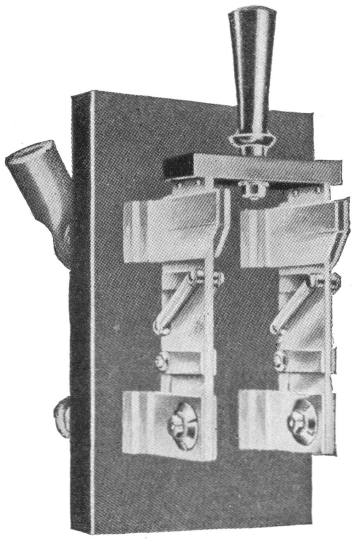
No. 19-H

Code No.	Style	Capacity amperes	List Price each
17-A	S.P., S.T.	25	$ 5.35
17-B	S.P., S.T.	50	6.30
17-C	S.P., S.T.	100	9.10
17-D	S.P., S.T.	200	13.80
17-E	S.P., S.T.	300	17.45
17-F	S.P., S.T.	400	21.60
17-G	S.P., S.T.	600	30.15
17-H	S.P., S.T.	800	38.15
17-J	S.P., S.T.	1200	63.35
18-A	S.P., D.T.	25	7.70
18-B	S.P., D.T.	50	9.40
18-C	S.P., D.T.	100	13.00
18-D	S.P., D.T.	200	19.60
18-E	S.P., D.T.	300	24.50
18-F	S.P., D.T.	400	32.60
18-G	S.P., D.T.	600	41.80
18-H	S.P., D.T.	800	52.00
18-J	S.P., D.T.	1200	87.70
19-A	D.P., S.T.	25	11.30
19-B	D.P., S.T.	50	13.10
19-C	D.P., S.T.	100	18.20
19-D	D.P., S.T.	200	26.60
19-E	D.P., S.T.	300	35.00
19-F	D.P., S.T.	400	47.20
19-G	D.P., S.T.	600	58.30
19-H	D.P., S.T.	800	76.30

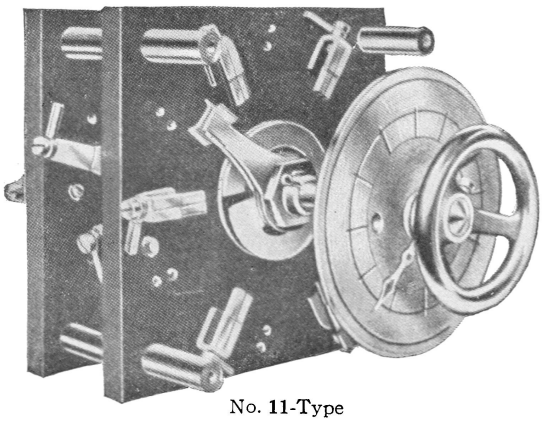
Switches—Continued



No. 22-C



No. 25-B



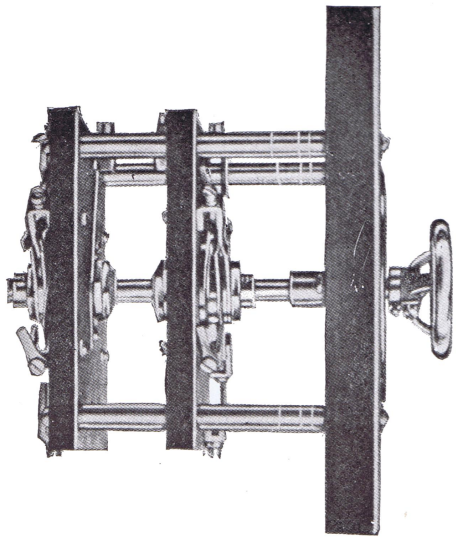
No. 11-Type

Code No.	Style	Capacity amperes		List Price each
19-J	D.P., S.T.	1200		**$ 126.70**
20-A	D.P., D.T.	25		**15.70**
20-B	D.P., D.T.	50		**19.80**
20-C	D.P., D.T.	100		**27.00**
20-D	D.P., D.T.	200		**39.50**
20-E	D.P., D.T.	300		**50.80**
20-F	D.P., D.T.	400		**68.90**
20-G	D.P., D.T.	600		**83.60**
20-H	D.P., D.T.	800		**108.60**
20-J	D.P., D.T.	1200		**181.40**
21-A	3 P., S.T.	25		**18.55**
21-B	3 P., S.T.	50		**21.10**
21-C	3 P., S.T.	100		**27.10**
21-D	3 P., S.T.	200		**40.50**
21-E	3 P., S.T.	300		**50.75**
21-F	3 P., S.T.	400		**63.30**
21-G	3 P., S.T.	600		**85.95**
21-H	3 P., S.T.	800		**106.95**
21-J	3 P., S.T.	1200		**195.55**
22-A	3 P., D.T.	25		**24.10**
22-B	3 P., D.T.	50		**29.00**
22-C	3 P., D.T.	100		**37.20**
22-D	3 P., D.T.	200		**54.50**
22-E	3 P., D.T.	300		**68.20**
22-F	3 P., D.T.	400		**84.10**
22-G	3 P., D.T.	600		**113.90**
22-H	3 P., D.T.	800		**139.40**
22-J	3 P., D.T.	1200		**259.10**
23-A	4 P., S.T.	25		**21.40**
23-B	4 P., S.T.	50		**26.80**
23-C	4 P., S.T.	100		**36.50**
23-D	4 P., S.T.	200		**53.70**
24-A	4 P., D.T.	25		**29.10**
24-B	4 P., D.T.	50		**38.00**
24-C	4 P., D.T.	100		**53.70**
25-A	D.P., S.T.	25	Quick break	**15.20**
25-B	D.P., S.T.	50	Quick break	**15.20**
25-C	D.P., S.T.	100	Quick break	**21.00**
25-D	D.P., S.T.	200	Quick break	**31.00**
26-A	D.P., D.T.	25	Quick break	**24.00**
26-B	D.P., D.T.	50	Quick break	**24.00**
26-C	D.P., D.T.	100	Quick break	**35.50**
27-A	3 P., S.T.	25	Quick break	**24.40**
27-B	3 P., S.T.	50	Quick break	**24.40**
30-A	5 P., D.T.	25		**42.00**

INSTRUMENT SWITCHES

Used with voltmeter or ammeter. The switch includes the hand wheel and index plate. The stamping of the index plate should be specified, except for the No. 11-A.

Code No.	Style	Description	List Price each
11-A	16 circuit double scale instrument switch	One scale has 11 contacts and the other 5. Index plate stamped B-1, B-2, G-1, G-2, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11.	**$ 62.70**
11-D	Two-scale switch for 4 circuits	Two contacts on each scale	**50.70**
11-E	Two-scale switch for 6 circuits	Three contacts on each scale	**52.00**
11-F	Two-scale switch for 8 circuits	Four contacts on each scale	**53.35**
11-G	Two-scale switch for 10 circuits	Five contacts on each scale	**54.70**
11-H	Two-scale switch for 12 circuits	11 contacts on one scale and 1 on the other	**56.00**

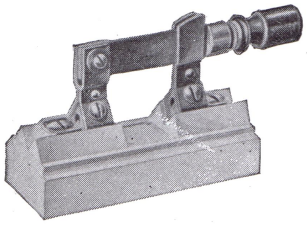


No. 11-Type

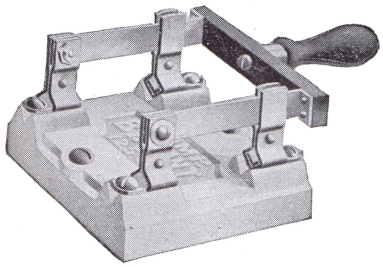
Switches—Continued

Code No.	Style	Description	List Price each
11-J	Two-scale switch for 16 circuits	11 contacts on one scale and 5 on the other	$ 62.70
11-K	Two-scale switch for 20 circuits	16 contacts on one scale and 4 on the other	65.35
11-L	Two-scale switch for 24 circuits	20 contacts on one scale and 4 on the other	68.00
11-M	Two-scale switch for 14 circuits	11 contacts on one scale and 3 on the other	61.35
11-N	Two-scale switch for 18 circuits	11 contacts on one scale and 7 on the other	64.00

Code No.	Style	List Price each	Code No.	Style	List Price each
16-A	Single scale switch for 2 circuits	$ 35.35	16-G	Single scale switch for 14 circuits	$ 45.35
16-B	Single scale switch for 4 circuits	36.70	16-H	Single scale switch for 16 circuits	46.70
16-C	Single scale switch for 6 circuits	38.00	16-J	Single scale switch for 18 circuits	48.00
16-D	Single scale switch for 8 circuits	39.35	16-K	Single scale switch for 20 circuits	49.35
16-E	Single scale switch for 10 circuits	40.70	16-L	Single scale switch for 22 circuits	50.70
16-F	Single scale switch for 12 circuits	42.00	16-M	Single scale switch for 24 circuits	52.00



No. 1436



No. 1438

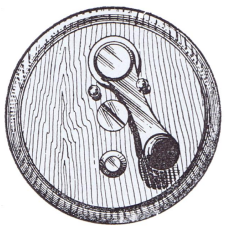
SMALL KNIFE SWITCHES

Single-Pole Porcelain Base

Code Word	List No.	Description	Standard Package	List Price each
Fluidify	1436	15 amp., S.P., S.T	100	$ 0.34
Fluidize	1437	25 amp., S.P., S.T	100	.44
Flying	1454	15 amp., S.P., D.T	100	.60
Flysch	1455	25 amp., S.P., D.T	100	.74

Double-Pole Porcelain Base, 125 Volts.

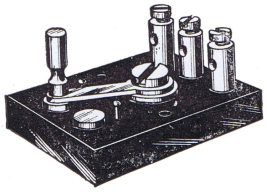
Fluidism	1438	15 amp., D.P., S.T	250	.42
Fluidist	1439	25 amp., D.P., S.T	250	.50
Outlaid	16040	15 amp., D.P., D.T	100	.74
Outlay	16041	25 amp., D.P., D.T	100	.90



No. 11250

ROUND WOOD BASE SWITCHES

Code Word	List No.	Description
Farragut	11250	1-Point
Farrington	11251	2-Point
Farwell	11252	3-Point
Faucett	11253	4-Point
Faukland	11254	5-Point
Fayette	11255	6-Point

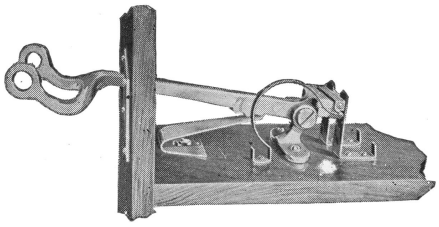


No. 13116

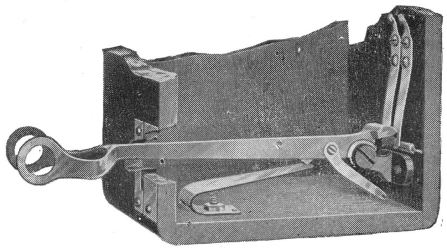
RUBBER BASE SWITCH

Holgate	13115	1-Point
Holland	13116	2-Point
Hollenburg	13117	Neutral point

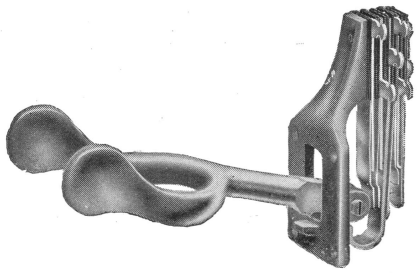
SWITCH HOOKS



No. 120-A

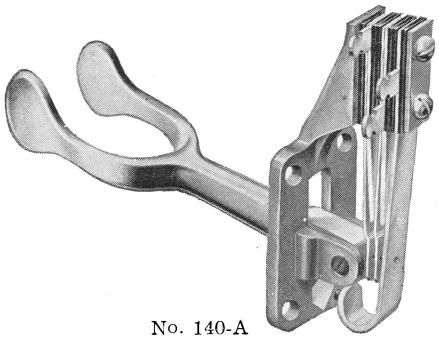


No. 121-A



No. 140-H

Code No.	Description	Contacts	List Price each
120-A	Long lever, restoring spring mounted separately, horizontal mounting	2 front	**$ 0.75**
121-A	Long lever, restoring spring mounted separately, vertical mounting	2 front	**.70**
140-A	Short lever, self-contained, vertical mounting	2 front	**.75**
140-B	Short lever, self-contained, vertical mounting	2 front 1 back opens	**.90**
140-H	Short lever, self-contained, vertical mounting	2 front 1 passing ground	**1.05**
140-F	Short lever, self-contained, vertical mounting	1 front 1 back	**.70**
141-A	Brass wire hook threaded at one end and provided with a cap staked on. For use with No. 1002-A hand set		**.03**



No. 140-A

SIGNALLING SYSTEMS

We give below a brief description of the signalling systems commonly used for giving magneto and central battery telephone service.

MAGNETO SYSTEMS

Code Ringing. In this system a large number of parties may be connected to one line, all of the ringers at the telephone stations and the central office drop being bridged across the line. The ringers are unbiased, and the drop at the central office of the usual type, which is operated by alternating current supplied by the subscribers' hand generators. Whenever a party on the line calls, all of the ringers and the central office drop are operated. When central office rings on the line, likewise, all of the bells are sounded. The proper party is called by a code system made up of various numbers of long and short rings.

2 Party Selective Ringing. In this system two subscribers may be connected to one line. The ringers at the telephone stations are biased and wired to ground, one from each side of the line. The drop at the central office is bridged and operated by alternating current supplied by the subscribers' hand generators. The generators in the subscriber stations are of the two-bar type, and not heavy enough to ring the two bells on the line since these are biased and in series, as far as the ringing current supplied by the hand generator is concerned. The generator, however, is heavy enough to throw the drop at the central office.

Whenever one party calls or is being called the other ringer is not operated. It is impossible for one subscriber to call the other on the same line, except through the central office operator.

The cord circuits at the central office are wired so that alternating ringing current may be sent out on either side of the line to ground by means of a key for each cord circuit, or a master key for all of the cord circuits in a position.

4 Party Selective Ringing. This system is precisely the same as the 2 party selective system, except that there are wired to ground from each side of the line two sets. Both of these sets are biased, and one is so connected to the line that it is operated by positive pulsating current, while the other is operated by negative pulsating current. The cord circuits at the central office are so wired

Signalling Systems—Continued

that positive and negative pulsating current may be sent out over either side of the line to ground by means of a party line ringing key for each cord circuit or a master key for all of the cord circuits in the position.

Center Checking. This system is used on toll lines where it is desired to have several stations on one line, and yet require all of them to secure connections entirely through one office. The ringers at the stations are all biased and bridged across the line in one way, that is, they either operate on alternating current or on pulsating current in one direction only. The generators at the stations are all arranged to furnish pulsating current of the polarity which does not ring the bells; and accordingly it is impossible for one party on the line to call another, except through the center checking operator. The central office has a bridged drop, operated by the pulsating current, and rings the different parties on the line by means of a code system.

Central Office Selective Signalling. This is just the reverse of the center checking system, that is, there may be placed a large number of subscribers on one line, and they can call one another without signalling central office; or they can call central office without notifying the other parties on the line. This is accomplished in two ways.

The first method is to bridge across the line bells which are biased so that they operate on alternating or pulsating current in one direction. The hand generators in the telephone sets normally deliver to the two sides of the lines alternating current; but when a button is depressed there is delivered to the two sides of the line pulsating current of a polarity which will not operate the bells. This current, however, will throw the drop at the central office. This drop is arranged so that it will not operate on alternating current which, as explained before, is ordinarily used to signal the other subscribers on the line. The central office rings the desired party by a code system.

The other method is to use unbiased ringers and alternating current generators at the telephone stations. The generators normally deliver current to the two sides of the line but when a push button at any set is depressed the generator is connected between one side of the line and ground. At the central office a drop of the regular type is wired from one side of the line to ground and accordingly is not operated unless a subscriber rings with the push button in his set depressed.

CENTRAL BATTERY SYSTEMS

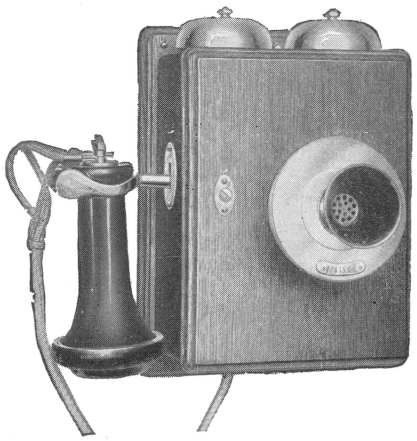
Code Ringing. Several parties may be connected to one line in the central battery system, the bells all being bridged across the line and biased. The line at the central office is wired the same as for single party line service. One party cannot call another on the same line, except through the central office operator, and central office calls the desired party by a code system of ringing.

2 Party Selective Ringing. With this system two parties may be connected to one line, the two bells being biased and connected to ground, one from each side of the line. The line at the central office is wired the same as for single party line service, and the cord circuits are arranged so that alternating current may be sent out over either side of the line by means of a key for each cord circuit, or a master key for all of the cord circuits in the position.

4 Party Selective Ringing. Four parties may be connected to one line, and the line arranged so that any party may be called without signalling the others. There is bridged across the line at each station a high impedance relay, from the local contacts of which the four ringers are wired to ground. These relays are arranged so that when they operate they connect to ground the four ringers, two from each side of the line. These ringers are biased and wired so that one of the pair on each side of the line operates on positive pulsating and the other operates on negative pulsating current. One party cannot call another on the same line, except through the central office operator.

The line circuit at the central office is wired the same as for single party line service. The cord circuits are arranged so that the operator may ring over one side of the line to ground with either positive or negative pulsating current. With either of these currents all four relays on the line operate, connecting to ground all four bells. As the operator rings on only one side of the line with pulsating current of one polarity, only the bell on that side of the line which is connected to respond to that polarity will sound. During conversation all ground connections are open at the substations.

4 Party Semi-Selective Ringing. This is the same as the two party selective system, except that there are connected to ground two stations from each side of the line. The operator thus can ring either pair of bells without operating the other pair. The operator uses a code system of ringing to distinguish between the two parties which form a pair connected to each side of the line.



No. 1293-A

TELEPHONE SETS

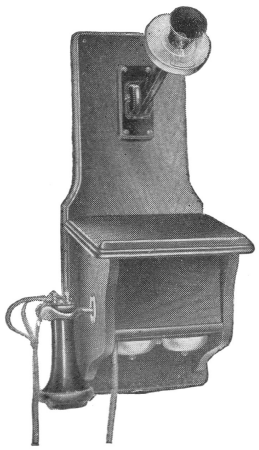
CENTRAL BATTERY WALL TYPE

Regularly furnished in oak or walnut. The No. 122-W receiver and standard high resistance transmitter are furnished with these sets, others will be supplied if ordered.

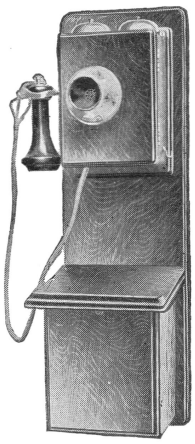
Code No. — List Price each

1293-A For direct, two party selective or four party semi-selective central battery service. 1000-ohm biased ringer and inside binding posts ..... **$ 10.05**

Includes: 1 No. 8-AG ringer; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 140-A switchhook; 1 No. 20 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This set may be used with the Nos. 132-A or 134-A backboards



No. 1294-A



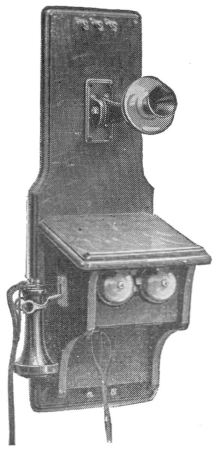
No. 1293-Y
On No. 136-B Backboard

1296-A For four party selective central battery service. 2500-ohm biased ringer, relay and inside binding posts **14.25**

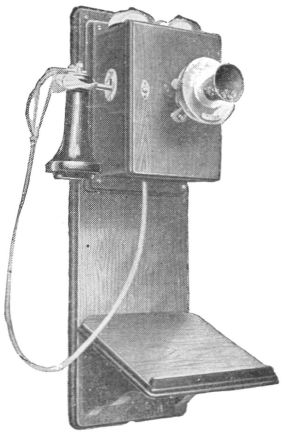
Includes: 1 No. 8-BG ringer; 1 No. 140-A switchhook; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 20 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 85-B relay. This set may be used with the 132-A backboard.

1293-Y For local battery talking and central battery signalling service. 1000-ohm biased ringer and inside binding posts. No provision made for dry cells, but backboard or No. 1 battery box may be provided for them **9.80**

Includes: 1 No. 8-AG ringer; 1 No. 140-A switchhook; 1 No. 21-D condenser; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This set may be used with Nos. 132-A, 134-A or 136-B backboards.



No. 1098-A



No. 1293-A
On No. 132-A Backboard

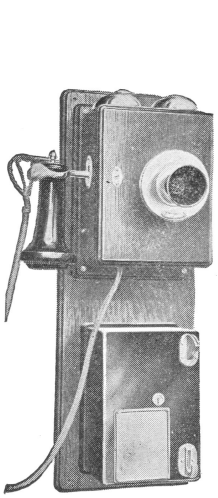
1294-A For direct, two party selective or four party semi-selective central battery service. 1000-ohm biased ringer and inside binding posts .. **11.05**

Includes: 1 No. 7-AG ringer; 1 No. 21-D condenser; 1 No. 140-A switchhook; 1 No. 20 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.

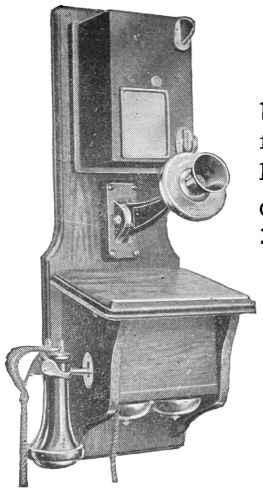
1098-A For four party selective central battery service. 2500-ohm biased ringer and relay **10.15**

Includes: 1 No. 7-BG ringer; 1 No. 120-A switch hook; 1 No. 5-A condenser; 5 No. 2-A binding posts; 2 No. 3-A binding posts; 1 No. 20 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 85-A relay.

Telephone Sets—Continued
Central Battery Wall Type—Continued



No. 1293-J



No. 1294-H

With No. 7 Type Coin Collectors

These are equipped with No. 7–A (for nickels) coin collectors, but others will be furnished if desired. Coin collector sets arranged for four party selective service will be furnished, if specified Regularly furnished in oak or walnut.

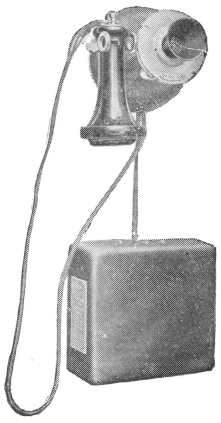
Code No.		List Price each
1293-J	For direct, two party selective or four party semi-selective central battery service with No. 7 type electrically operated coin collector. 1000-ohm biased ringer and inside binding posts	**$ 16.15**
	Includes: 1 No. 8-AG ringer; 1 No. 140-B switch hook; 1 No. 21-D condenser; 1 No. 3–A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 20 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 7-A coin collector; 1 No. 133-A backboard.	
1294-H	For direct, two party selective or four party semi-selective central battery service with electrically operated coin collector No. 7–A, 1000-ohm biased ringer and inside binding posts	**16.45**
	Includes: 1 No. 7-AG ringer; 1 No. 21-D condenser; 1 No. 140-B switch hook; 1 No. 20 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 7-A coin collector.	

Metal Case Wall Type

2002	For direct, two party selective or four party semi-selective central battery service. 1000-ohm biased ringer	
	Consists of: 1 No. 1130-A wall set, which includes: 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 179, 5½ in. cord; 1 No. 196, 3 ft. cord; 1 No. 202, 6 ft. cord and 1 switchhook and 1 No. 1131-J. Desk Set Box, which includes: 1 No. 17-A ringer, 1 No. 21 E condenser, and 1 induction coil. The cases are metal, and regularly furnished with a black finish	**9.75**



No. 2000



No. 2002

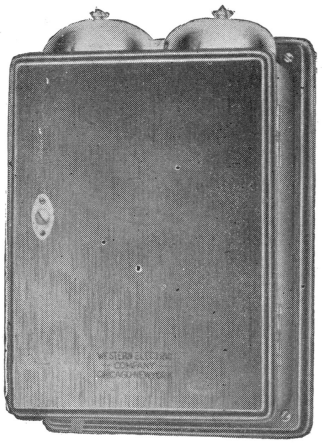
CENTRAL BATTERY DESK TYPE

Regularly furnished in oak or walnut. Can be furnished for four party selective service.

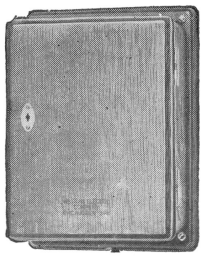
Code No.		Price List each
2000	For direct, two party selective or four party semi-selective central battery service	**11.75**
	Includes: 1 No. 1295-A desk set box, 1 No. 1020–B desk stand.	
2001	For coin collector service	**17.45**
	Includes: 1 No. 1295-A desk set box, 1 No. 7-A coin collector, 1 No. 1020-F desk stand.	

Telephone Sets—Continued

CENTRAL BATTERY DESK SET BOXES



No. 1295-A



No. 1295-AC

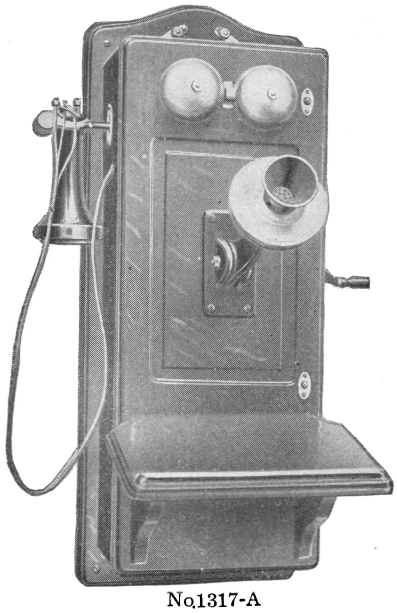
These do not include transmitters and receivers, but are intended for use with desk stands, transmitter arms, or hand sets. Furnished regularly in oak or walnut.

Code No.		List Price each
1131-J	For direct, two party selective or four party semi-selective central battery service. This is used with the No. 1130-A wall set, forming the No. 2002 wall telephone set..... Includes: 1 No. 17-A ringer, 1 No. 21-E condenser, 1 No. 20 induction coil.	**$ 3.35**
1295-A	For direct, two party selective or four party semi-selective central battery service. May be used either with or without the No. 7 type electrically operated coin collector. 1000-ohm biased ringer and inside binding posts.... Includes: 1 No. 8-AG ringer, 1 No. 21-D condenser, 1 No. 20 induction coil.	**4.85**
1297-A	For four party selective central battery service. 2500-ohm biased ringer, relay and inside binding posts..... Includes: 1 No. 8-BG ringer, 1 No. 21-D condenser,1 No. 20 induction coil, 1 No. 85-B relay.	**9.15**
1295-AA	For local battery talking and central battery signalling service. 1000-ohm biased ringer and inside binding posts..... Includes: 1 No. 8-AG ringer, 1 No. 21-D condenser, 1 No. 13 induction coil.	**4.60**
1295-AC	For extension to a main telephone set on a direct, two party selective or four party semi-selective central battery system. No ringer, inside binding posts..... Includes: 1 No. 21-D condenser, 1 No. 20 induction coil.	**3.35**

MAGNETO WALL TYPE

These are regularly furnished in oak, and arranged to accommodate 3 standard size dry cells; but the cells are not included in the telephone set, and when desired they should be ordered separately.

The No. 122-W receiver and standard high resistance transmitter are furnished with these sets. Others will be supplied if ordered.

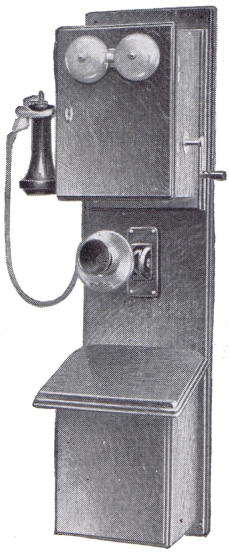


No. 1317-A

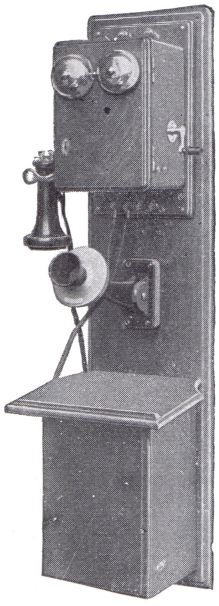
Code No.	Description	List Price each
1317-H	For light load bridging service where code ringing is employed. 3-bar A.C. generator and 1000-ohm unbiased ringer..... Includes: 1 No. 2-AG ringer; 1 No. 22-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This telephone set may be equipped with a condenser wired in the receiver circuit, and will be so furnished if specified on the order.	**$ 12.15**
1317-A	For moderate load rural service where code ringing is employed. 5-bar A.C. generator and 1600-ohm unbiased ringer..... Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**15.60**
1317-E	For heavy load rural service where code ringing is employed. 5-bar A.C. generator and 2500-ohm unbiased ringer..... Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**15.60**
1317-F	For moderate load rural service where code ringing is employed Condenser in series with the receiver. 5-bar A.C. generator and 1600-ohm unbiased ringer..... Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.	**16.35**

Telephone Sets—Continued

Code No	Description	List Price each
1317-G	For heavy load rural service where code ringing is employed. Condenser in series with receiver. 5-bar A.C. generator and 2500-ohm unbiased ringer. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.	**$ 16.35**
1317-J	For two or four party selective service. 2-bar A.C. generator and 2500-ohm biased ringer. Includes: 1 N. 6-BG ringer; 1 No. 22-E generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**12.75**
1317-K	For heavy load center checking service. 5-bar pulsating and A.C. generator and 2500-ohm biased ringer. Includes: 1 No. 6-BG ringer; 1 No. 47-B generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**16.60**
1317-L	For heavy load rural line where selective central office signalling service and code ringing are employed. 5-bar pulsating and A.C. generator and 2500-ohm biased ringer. Includes: 1 No. 6-BG ringer; 1 No. 47-B generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 92, 3 ft. cord; 1 push button; 1 No. 250-W transmitter; 1 No. 122-W receiver. This telephone set may be obtained with a ringer of 1000 or 1600 ohms resistance and with a 3-bar generator and will be furnished with these if specified on the order.	**17.05**
1317-M	For series line. 3-bar A.C. generator and 80-ohm unbiased ringer. Includes: 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 13 induction coil. These are arranged to accommodate 3 standard size dry cells. Regularly furnished in oak or walnut.	**11.70**
1240-A	For light load bridging service where code ringing is employed. 3-bar A.C. generator and 1000-ohm unbiased ringer. Includes: 1 No. 2-AG ringer; 1 No. 22-A generator; 1 No. 121-A switch hook; 4 No. 2-A binding posts; 2 No. 3-A binding posts; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 111-C backboard.	Walnut **14.15** Oak **14.05**
1298-A	For heavy load rural service where code ringing is employed. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 138-A backboard. This telephone set may also be obtained with a 1600-ohm ringer in place of the 2500-ohm ringer, or with a condenser wired in the receiver circuit, and will be furnished with these if specified on the order.	Walnut **16.55** Oak **16.45**
1240-E	For two or four party selective service. 2-bar A.C. generator and 2500-ohm biased ringer. Includes: 1 No. 6-BG ringer; 1 No. 22-E generator; 1 No. 121-A switch hook; 5 No. 2-A binding posts; 2 No. 3-A binding posts; 1 No. 13 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 111-C backboard.	Walnut **14.95** Oak **14.85**



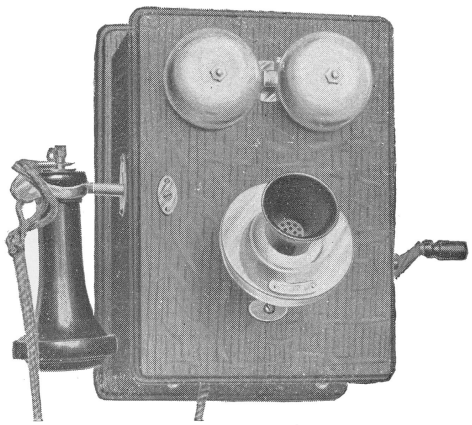
No. 1298-A



No. 1240-A

Telephone Sets—Continued

Magneto Wall Type—Continued

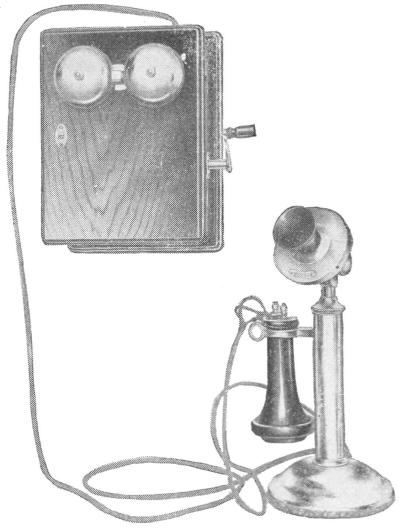


No. 1305-A.

These are not arranged to accommodate the necessary dry cells. It is recommended that the No. 1-A battery box be ordered for this purpose.

Regularly furnished in oak or walnut.

Code No.	Description	List Price each
1305-G	For light load bridging service where code ringing is employed. 3-bar A.C. generator, 1000-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-AG ringer; 1 No. 22-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord. This telephone set may be equipped with a condenser wired in the receiver circuit, and will be so furnished if specified on the order.	**$ 12.30**
1305-H	For moderate load rural service where code ringing is employed. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 13 induction coil; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**15.75**
1305-A	For heavy load rural service where code ringing is employed. 5-bar A. C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**15.75**
1305-J	For moderate load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter, 1 No. 122-W receiver, 1 No. 92, 3 ft. cord; 1 condenser.	**16.50**
1305-K	For heavy load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer; 1 No. 47-A generator; 1 No. 140-A switch hook; 1 No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 condenser.	**16.50**



No. 2004

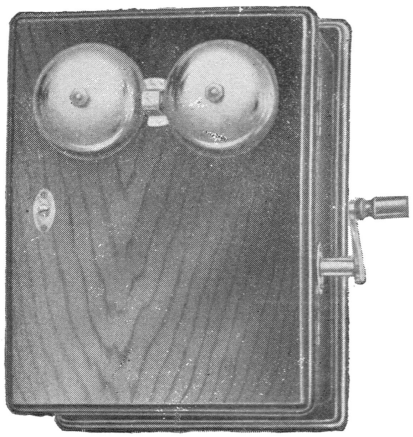
Code No.		
1305-L	For two or four party selective service. 2-bar A.C. generator, 2500-ohm biased ringer and inside binding posts. Includes: 1 No. 6-BG ringer; 1 No. 22-E generator; 1 No. 140-A switch hook, No. 3-A transmitter bracket; 1 No. 179, 5½ in. cord; 1 No. 13 induction coil; 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord.	**12.90**
1305-F	For series line. 3-bar A. C. generator and 80-ohm unbiased ringer. Includes: 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 No. 13 induction coil; 1 No. 92, 3 ft. cord. Regularly furnished in oak or walnut.	**11.85**

MAGNETO DESK TYPE

2003	For light load service. Includes: 1 No. 1315-A desk set box, 1 No. 1020-B desk stand.	**13.75**
2004	For heavy load service. Includes: 1 No. 1300-A desk set box, 1 No. 1020-B desk stand.	**17.35**

Telephone Sets—Continued

MAGNETO DESK SET BOXES

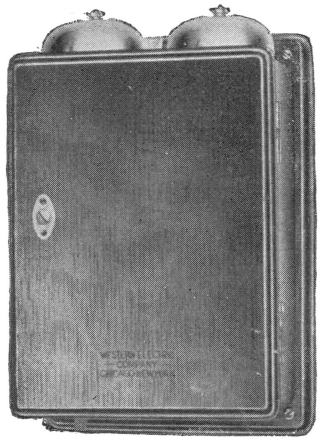


No 1315-A

These do not include transmitters and receivers, but are intended for use with desk stands, transmitter arms or hand sets. No provision is made in these boxes for the dry cells. It is recommended, however, that the No. 1-A battery box be ordered for this purpose.

Regularly furnished in oak or walnut.

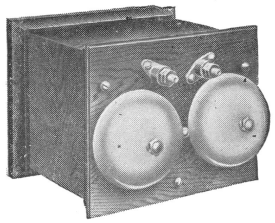
Code No.	Description	List Price each
1315-A	For light load bridging service where code ringing is employed. 3 bar A.C. generator, 1000-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-AG ringer, 1 No. 22-A generator, 1 No. 13 induction coil.	**$ 6.85**
1300-F	For moderate load rural service where code ringing is employed. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer, 1 No. 47-A generator, 1 No. 13 induction coil.	**10.45**
1300-A	For heavy load rural service where code ringing is employed. 5-bar A.C. generator, 2500-ohm unbiased ringer and inside binding posts. Include: 1 No. 2-BG ringer, 1 No. 47-A generator, 1 No. 13 induction coil.	**10.45**
1300-G	For moderate load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generator, 1600-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-FG ringer, 1 No. 47-A generator, 1 No. 13 induction coil, 1 condenser.	**11.20**
1300-H	For heavy load rural service where code ringing is employed. Condenser in series with the receiver. 5-bar A.C. generators, 2500-ohm unbiased ringer and inside binding posts. Includes: 1 No. 2-BG ringer, 1 No. 47-A generator, 1 No. 13 induction coil, 1 condenser.	**11.20**
1315-E	For two or four party selective service. 2-bar A.C. generator, 2500-ohm biased ringer and inside binding posts. Includes: 1 No. 6-BG ringer, 1 No. 22-E generator, 1 No. 13 induction coil.	**7.45**



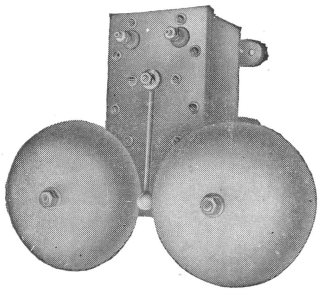
No. 1295-S

These are intended for the purpose of giving extension service to main telephone sets, and are not provided with generators. Regularly furnished in oak or walnut.

1295-S	For light load bridging service where code ringing is employed. 1000-ohm unbiased ringer. Includes: 1 No. 4-AG ringer, 1 No. 13 induction coil.	**3.70**
1295-Y	For heavy load service where code ringing is employed. 2500-ohm biased ringer. Includes: 1 No. 8-BG ringer, 1 No 13 induction coil. This set may be obtained with a 1600-ohm ringer in place of a 2500-ohm ringer, or with a condenser wired in the receiver circuit, and will be furnished with these if specified on the order.	**4.10**
1295-AB	For all classes of bridging magneto service. Condenser in series with receiver. No ringer. Includes: 1 No. 13 induction coil, 1 condenser.	**3.10**



No. 43-A



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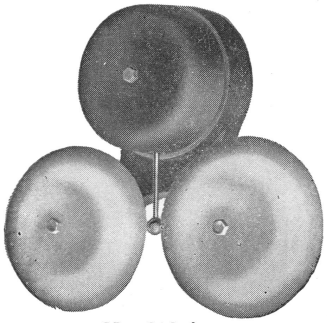

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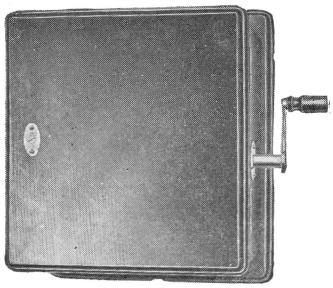

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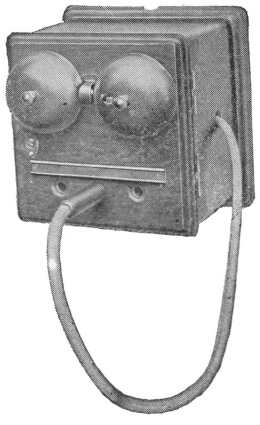


No. 319-A

Telephone Sets—Continued

EXTENSION BELLS

Regularly furnished in oak or walnut.

Code No.	Description	List Price each
43-A	1000-ohm unbiased ringer mounted in box 5⅝ in. x 4⅝ in. x 4⅝ in	**$ 2.55**
43-F	1000-ohm biased ringer mounted in box 5⅝ in x 4⅝ in x 4⅝ in.	**2.55**
43-J	2500-ohm biased ringer mounted in box 5⅝ in. x 4⅝ in. x 4⅝ in.	**3.15**

LOUD RINGING EXTENSION BELLS

These will operate on alterating or pulsating current. They have metal cases finished in black japan. The gongs are nickel plated.

Code No.	Description	List Price each
292-A	1000-ohm unbiased	**$ 5.25**
292-J	1000-ohm biased	**5.80**
292-E	2500-ohm unbiased	**5.65**
292-K	2500-ohm biased	**6.15**

EXTENSION BELL FOR MINES

These operate on alternating current.

Code No.	Description	List Price each
283-A	1000-ohm unbiased. Gongs and case protected by a coating of lead	**$ 15.75**

HAND GENERATOR BOXES

Regularly furnished in oak or walnut.

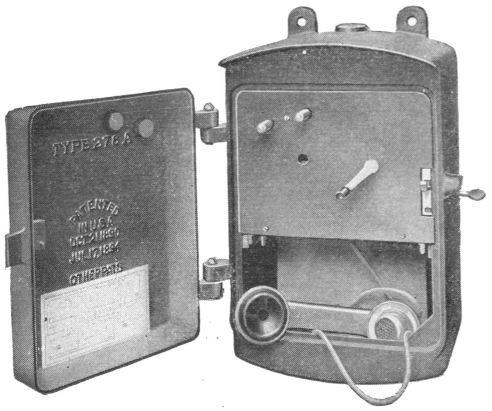
Code No.	Description	List Price each
299-A	5-bar A.C. Generator mounted in box 7½ in. x 9 in. x 5¾ in.	**$ 7.30**
299-E	5-bar Pulsating and A.C. Generator mounted in box 7½ in. x 9 in. x 5¾ in.	**8.25**
303-A	3-bar A.C. Generator mounted in box 6½ in. x 8½ in. x 4½ in.	**4.35**

CUT IN STATION SETS FOR TOLL LINES

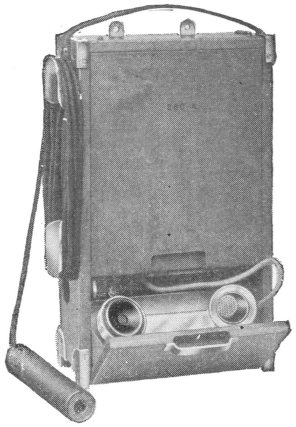
For use at intermediate station on a toll line to cut the line off in either direction.

Regularly furnished in oak or walnut.

Code No.	Description	List Price each
319-A	For series service; equipped with an 80-ohm unbiased ringer, three jacks, a two-conductor cord and plug	**$ 5.00**
319-E	Similar to No. 319-A but for use on a bridging line and equipped with a 1000-ohm unbiased ringer	**5.30**
319-F	Similar to No. 319-E but equipped with a 1600-ohm unbiased ringer	**5.90**
319-G	Similar to No. 319-E but equipped with a 2500-ohm unbiased ringer	**5.90**



No. 1278-A



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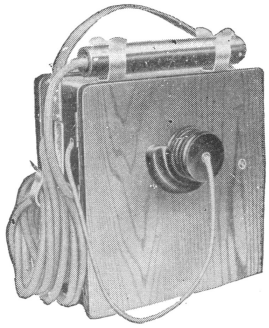


No. 1302-A

LOCAL BATTERY TELEPHONE SETS FOR STREET RAILWAYS

These are particularly well adapted to street railway work where the telephone lines are strung with the trolley and feed wires (on the same poles) and where the need of the best known protective devices is apparent.

Pole Type

Code No.	Description	List Price each
1278-A	Includes: 1 No. 47-G, 5-bar generator; 1 No. 25-E repeating coil; 2, 1-amp. fuses; 2 carbon cutouts; 1 No. 13 induction coil; 1 No. 244-W transmitter; 1 No. 131-W receiver; 1 No. 1 hand-set handle; 1 No. 242, 18 in. cord, 1 No. 243, 8 in. cord; 2 switches for automatically opening the line and battery circuits when the door is closed. Arranged for 2 Blue Bell dry cells, but these are not furnished unless specified.....	**$ 43.75**

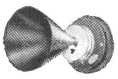
Portable Type

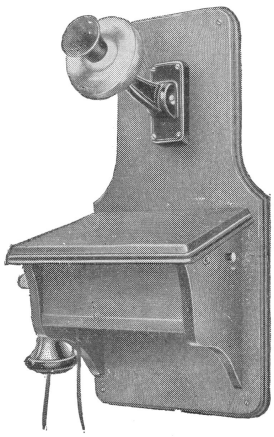
1280-A	Includes: 1 No. 20-B, 5-Bar generator, 1 No. 34-A repeating coil; 1 No. 126 plug; 1 No. 309, 15 ft. cord; 1 No. 70-A protector; 1 No. 13 induction coil; 1 No. 244-W transmitter; 1 No. 131-W receiver; 1 No. 1 hand-set handle; 1 No. 285, 18 in. cord; 1 No. 243, 8 in. cord; 1 switch for automatically opening the battery circuit when the set is closed. Arranged for 2 Blue Bell dry cells, but these are not furnished unless specified. Weight, 33 lbs.....	**43.10**
1302-A	Includes: 1 No. 43-B, 5-bar generator; 1 No. 25-E repeating coil; 1 No. 126 plug; 1 No. 309, 15 ft. cord; 1 No. 70-A protector; 1 No. 13 induction coil; 1 No. 228-W transmitter; 1 No. 133-W receiver; 1 No. 179, 5½ in. cord; 1 No. 311, 3 ft. cord; 1 switch for automatically opening the battery circuit when the receiver is placed in holder. Arranged for 2 Blue Bell dry cells, but these are not furnished unless specified. Weight, 27 lbs.....	**29.00**

TELEPHONE SETS FOR USE ON "RAILWAY COMPOSITE" LINES

Special telephone sets used in railway systems for simultaneous telephony and telegraphy. These are arranged to signal by means of high frequency current which operates a howler, producing a loud tone.

In equipping a line for this service it is necessary to install at each terminal telephone station a differentiator known as the No. 28-B condenser; at each intermediate telegraph station a No. 27-B condenser and No. 31-A resistance coil.





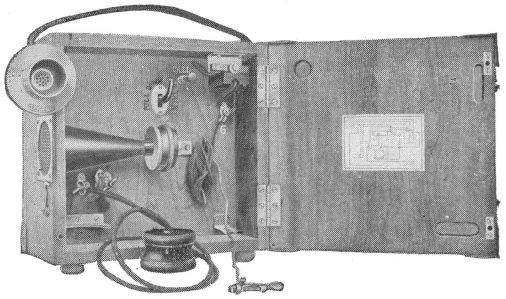
No. 1312-A

Telephone Sets—Continued

Telephone Sets for use on "Railway Composite" Lines—Continued

Wall Type

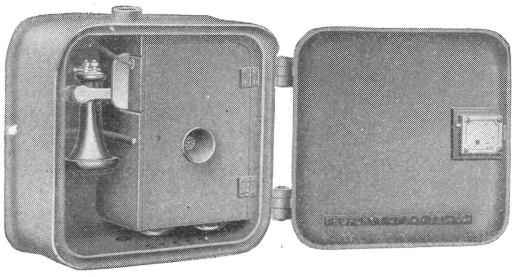
Code No.	Description	List Price each
1312-A	Includes: 1 No. 12-G retardation coil; 1 No. 21-D condenser; 1 No. 21-U condenser; 1 No. 21-H condenser; 1 No. 140-B switch hook; 1 No. 1-A howler; 1 No. 5 induction coil; 1 No. 250-W transmitter; 1 No. 122-W receiver; 1 No. 92, 3 ft. cord; 1 No. 390-B key.....	**$ 28.80**



No. 1314-A

Portable Type

1314-A	Includes: 1 No. 12-M retardation coil; 1 No. 140-F switch hook; 1 No. 390-B key; 1 No. 21-D condenser; 1 No. 21-U condenser; 1 No. 1-B howler; 1 No. 3-B binding post; 3 No. 3-C binding posts; 1 No. 311, 3 ft. cord; 1 No. 179, 5½ in. cord; 1 No. 267, 10 ft. cord, 1 No. 2 line pole; 1 No. 228-W transmitter; 1 No. 133-W receiver; 1 No. 5 induction coil; 4 Blue Bell dry cells; 1 rail clamp.....	**47.45**



No. 1320-A Open

TELEPHONE SETS FOR POLICE SERVICE

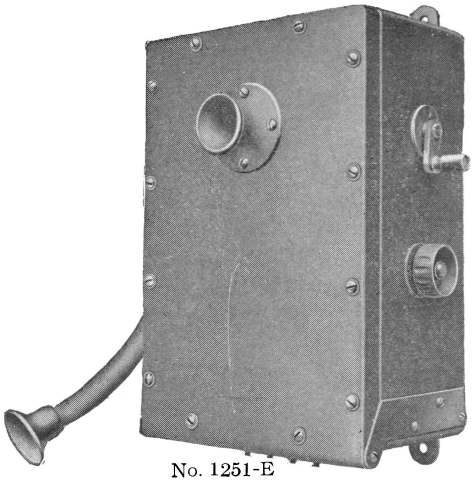
This is a central battery telephone set enclosed in a cast iron case about 12 in. x 12 in. x 6½ in. and especially adapted to police patrol service. The lettering on the case can be arranged as ordered. All the telephone parts are mounted on a frame which can be removed as a unit from the case. The door is flanged to make it weather proof and is provided with a strong spring lock of special design.



No. 1320-A Closed

Code No.		List Price each
1320-A	Furnished with all the necessary apparatus. Includes: 1, 1000-ohm unbiased ringer; 1 No. 21-D condenser; 1 No. 20 induction coil; 2 No. 3-A binding posts; 2 No. 2-A binding posts; 1 No. 92, 12 in. cord, 1 No. 229-W transmitter; 1 No. 122-W receiver; 1 switch hook.....	**$ 40.25**

Telephone Sets—Continued



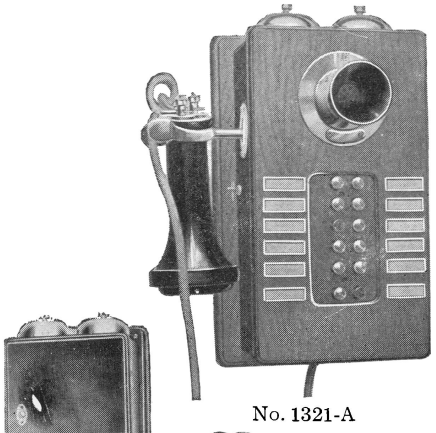
No. 1251-E

TELEPHONE SETS FOR USE IN MINES

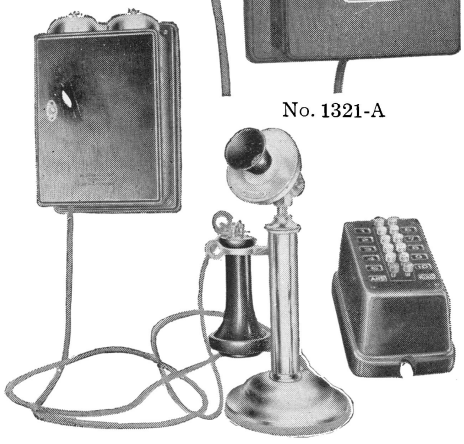
Code No.	Description	List Price each
1251-E	This contains all the apparatus except the extension bell. The case is covered with lead as a protection against corrosion and decay, 5 bar generator	**$ 35.00**

Includes: 1 No. 20-A generator, 1 key for battery ciruit, 1 No. 13 induction coil, 1 No. 228-W transmitter, 1 No. 128-W receiver less head band and cap.

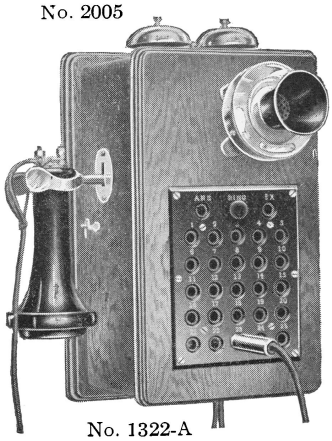
The No. 283-A extension bell is used with this set.



No. 1321-A



No. 2005



No. 1322-A

INTER-COMMUNICATING TELEPHONE SETS

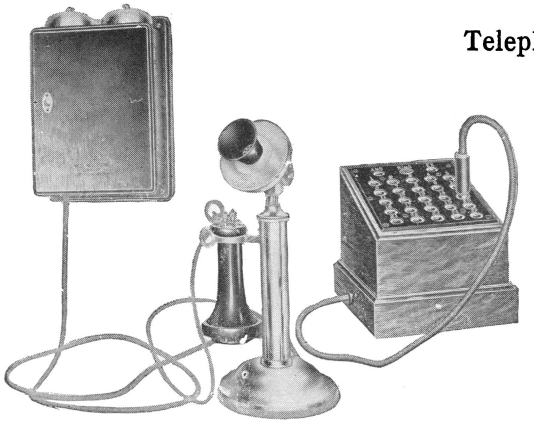
Regularly furnished in oak

These sets are designed for inter-communicating service between different rooms or departments in the same building or adjoining buildings. They are built in two styles, one being equipped with keys for making the desired connections and the other with jacks and a cord and plug. The former is furnished in three sizes, ten, twenty and thirty line capacities and the latter in twenty four line capacity with equipment as specified. Either wall or desk type telephone sets can be furnished. Two groups of dry batteries are necessary, one for ringing and the other for talking. These sets are wired for metallic service but may be used on a common return system if desired.

Code No.	Description
1321-A	10 line wall telephone set equipped with keys for making connections
1321-E	20 line wall telephone set equipped with keys for making connections
1321-F	30 line wall telephone set equipped with keys for making connections
2005	10 line desk telephone set with keys for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 No. 371-A key
2006	20 line desk telephone set with keys for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 No. 371-B key
2007	30 line desk telephone set with keys for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 No. 371-C key
1322-A	24 line wall telephone set equipped with jacks and plug and cord for making connections. Equipment of jacks to be specified.

PRICES ON REQUEST

Telephone Sets—Continued

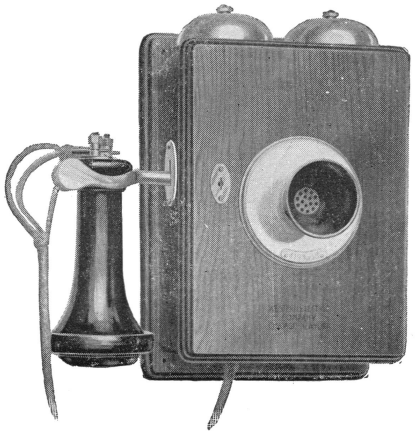


No. 2008

Inter-Comunicating Telephone Sets—Continued

Code No.	Description
2008	**24** line desk telephone set with jacks, plug and cord for making connections. Includes 1 desk set box, 1 No. 1020-H desk stand, 1 jack box. Equipment of jacks to be specified.

PRIVATE LINE TELEPHONE SET



No. 1293-AB

This set is suitable for use on short lines connecting different rooms or departments in the same building, or for connecting house and stable, only two wires between stations being necessary. More than two stations may be connected to the line if desired. The batteries are located at each station and signalling is accomplished by means of a push button which operates direct current ringers at the other stations.

Code No.	
1293-AB	Furnished in oak or walnut as specified.

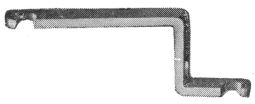
TERMINAL PUNCHINGS



No. 3



No. 6



No. 8



No. 9

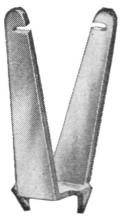


No. 13-A



No. 14

Code No.	Description	List Price per hundred
3	German silver, used on fuse posts and fuse blocks	**$ 0.45**
6	Brass, used for the ground side of the ringing leads	**.90**
8	Heavy brass, used on double sided connecting racks	**2.25**
9	Brass, used on No. 10 switchboard	**.85**
13-A	Brass, used on double sided connecting racks	**1.15**
13-B	Brass, used on double sided connecting rack, similar to No. 13-A only longer	**1.15**
14	Brass, screw connection	**2.65**
15-A	Brass, used on one sided connecting racks	**1.30**
16	Brass, used on repeating coils and retardation coils	**.45**
17-A	Brass, used on induction coils and telephone sets	**.55**



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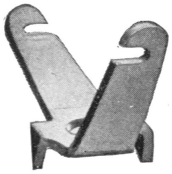
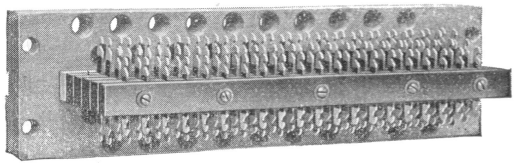


No. 16



No. 17-A



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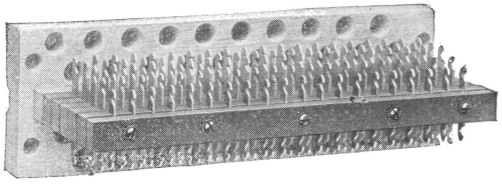

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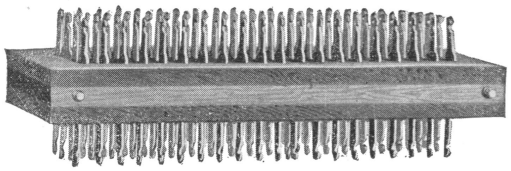

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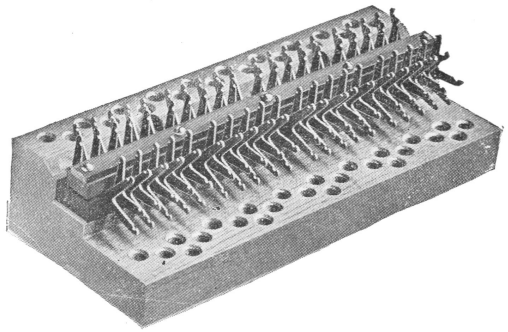

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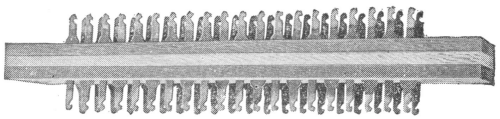

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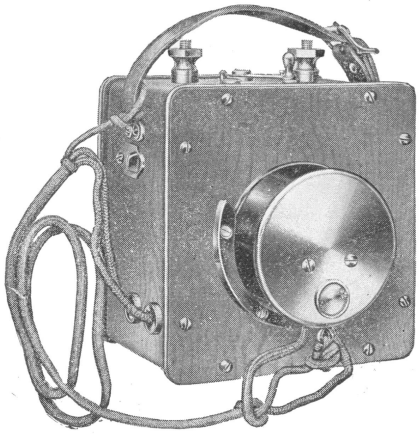
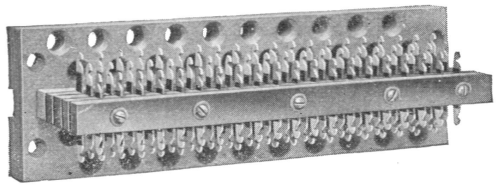


No. 1006-A



No. 35

TERMINAL STRIPS

These strips consist of a maple base drilled for connecting wires and equipped with terminal punchings held in place by hard rubber insulating strips.

Used on Intermediate Distributing Frame

Code No.	Number of Terminals in each Row	Number of Rows of Terminals	Length of Strip inches	List Price each
35	20	3	$7\frac{31}{32}$	**$ 1.50**
36	20	4	$7\frac{31}{32}$	**1.80**
37	20	5	$7\frac{31}{32}$	**2.10**
38	20	3	$6\frac{15}{32}$	**1.20**
39	20	4	$6\frac{15}{32}$	**1.50**
40	20	5	$6\frac{15}{32}$	**1.80**
41	20	6	$6\frac{15}{32}$	**2.10**
43	20	4	$6\frac{15}{32}$ for No. 9 exchange	**.53**
49	20	3	$6\frac{15}{32}$ for No. 9 exchange	**.48**

Used on Main Distributing Frame

65	1 Row of 40 three-way terminals; $7\frac{31}{32}$ in. long			**1.20**

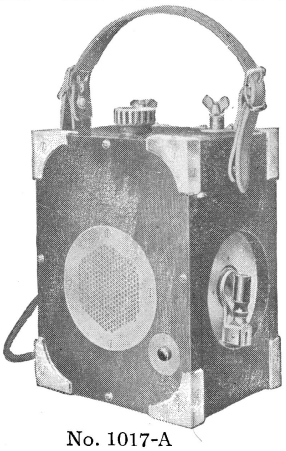
Used on No. 9 Section

53	20	2	10	**.45**

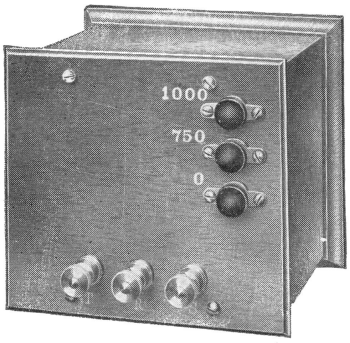
TEST SETS

The No. 125-W receiver on the No. 1006 type sets is used both as transmitter and receiver.

Code No.	Will ring through ohms	Contains	Size of Case inches	Finish	List Price each
1006-A	2500	1 No. 2-A buzzer 1 No. 29-A generator 1 switch 1 No. 125-W receiver with cord. Receiver holder	6x5½x4½	Cherry	**$ 11.05**
1006-B	3500	1 No. 2-B buzzer 1 No. 29-A generator 1 switch 1 No. 125-W receiver with cord. Receiver holder	6x5½x4½	Cherry	**11.35**
1006-C	2500	1 No. 2-A buzzer 1 No. 29-A generator 1 switch 1 No. 125-W receiver with cord	6x5½x4½	Cherry	**10.60**
1006-D	5000	1 No. 2-A buzzer 1 No. 22-B generator 1 switch 1 No. 125-W receiver with cord Receiver holder	6¾x6x4¾	Cherry	**12.55**



No. 1017-A



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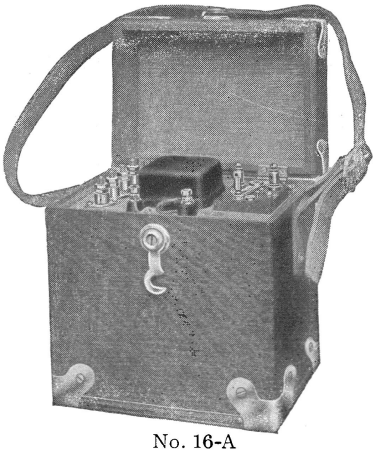
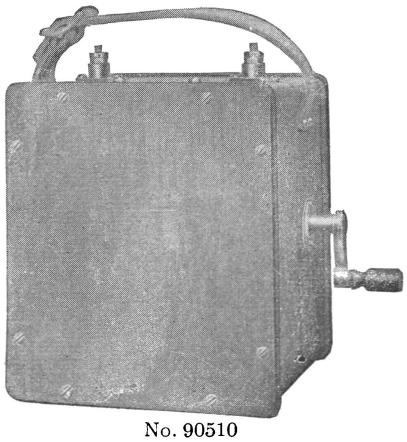


No. 16-A



No. 90510

Test Sets—Continued

Code No.	Will ring through ohms	Contains	Size of Case inches	Finish	List Price each
1006-E	5000	1 No. 2-A buzzer 1 No. 22-B generator 1 switch 1 No. 125-W receiver with cord	$6\frac{3}{4}$x6x$4\frac{1}{4}$	Cherry	**$ 12.10**
1017-A	2500	1 No. 2-D buzzer 1 No. 29-A generator 1 switch 1 No. 337 cord 1 dry battery 1 No. 13 induction coil 1 No. 226-W transmitter 1 No. 128-W receiver less head band	$7\frac{3}{4}$x$6\frac{1}{8}$x$4\frac{3}{4}$	Birch Mahogany	**14.55**
9-A	For testing supervisory relays	1 No. 117 jack 3 No. 89-A keys 1 No. 5-K resistance, (750 ohms) 1 No. 5-S resistance (9000 ohms) 1 No. 5-AH resistance (250 ohms)	$5\frac{3}{4}$x$5\frac{1}{8}$x$4\frac{3}{16}$	Oak nickel trimming	**8.25**
16-A	For cable testing	6 O.K. dry cells No. 2 1 No. 31-A condenser 1 No. 13115 switch 1 buzzer 4 No. 2-A binding posts	$7\frac{1}{16}$x$5\frac{1}{16}$x$7\frac{3}{4}$	Oak nickel trimming	**12.45**

These test sets are $5\frac{3}{4}$ in. x $6\frac{5}{8}$ in. x $5\frac{1}{4}$ in.

Code No.	Will ring through ohms	Contains	Finish	List Price each
90530	10000	1 No. 22-K generator 1 No. 18-A ringer	Birch	**$ 6.00**
90510	35000	1 No. 22-K generator 1 No. 18-B ringer	Birch	**8.50**
90511	50000	1 No. 22-N generator 1 No. 19-A ringer	Birch	**9.50**
90512	100000	1 No. 22-N generator 1 No. 19-B ringer	Birch	**11.00**

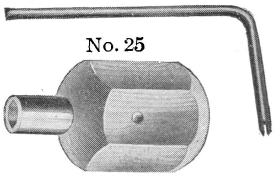


No. E-3200

THE QUEEN ACME PORTABLE TESTING SETS

This is a combined resistance box and galvanometer used for general resistance measurement work.

List No.	Range in ohms	List Price each
E-3200	0.01 to 1,000,000	**$ 100.00**



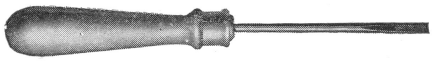
No. 25

No. 28

TOOLS FOR CENTRAL OFFICES



No. 34



No. 35



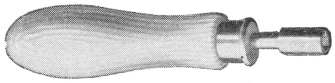
No. 39



No. 40



No. 43



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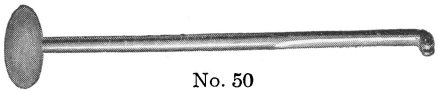

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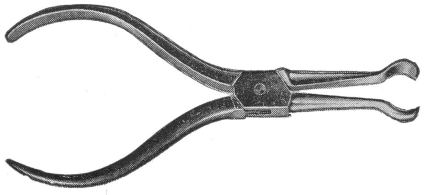


No. 58

Code No.	Used for	List Price each
25	Spring adjustment of horizontal key.....	**$ 0.25**
28	Nos. 4 and 65 protector nuts.....	**.30**
34	Wrench and screw driver for $\frac{7}{16}$ in. hexagonal nuts on No. 7 protector.....	**1.00**
35	Plug and drop screws.....	**.30**
39	Shutter support adjuster, used on drops...	**.30**
40	Double screw driver for drops.....	**.30**
43	Fits $\frac{3}{16}$ in. and $\frac{1}{4}$ in. nuts.....	**.30**
46	Removing cap nuts from relays of No. 122 type.....	**.55**
48	Wrench and screw driver for adjusting armature contacts of No. 185-A relay. Will fit $\frac{1}{4}$ in. and $\frac{7}{32}$ in. nuts.....	**.90**
50	Relay spring adjustment.....	**.40**
58	Handling heat coils of protectors.....	**.75**

Tools—Continued



No. 64



No. 66



No. 68



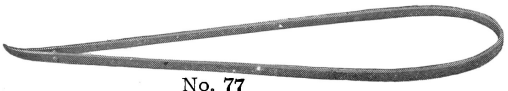
No 67



No. 72



No. 74



No. 77



No. 80



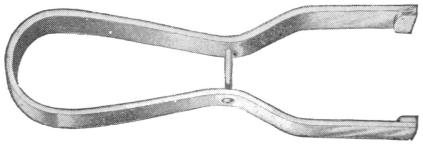
No. 81



No. 85



No. 87



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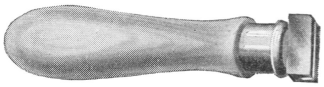

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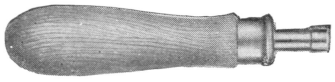

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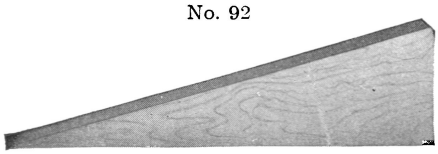
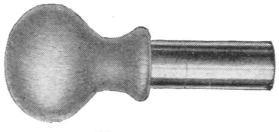


No. 93

Code No.	Used for	List Price each
64	Wrench and screw driver for adjusting Nos. 4 and 16 jack fasteners	$1.90
66	Extracting line and supervisory lamps	.30
67	Adjusting ring springs of No. 49 jacks	.40
68	Adjusting tip springs of No. 49 jacks	.40
72	Wrench and screw driver for adjusting armature contact screws, $\frac{2}{16}$ in. and $\frac{5}{32}$ in. hexagonal nuts	.85
74	Fits $\frac{5}{32}$ in. and $\frac{7}{32}$ in. nuts	.45
77	Holding wires to terminals of jacks for soldering	1.15
80	Extracting Nos 2 and 4 type lamp caps	.30
81	Adjusting tip and ring springs of No. 92 jacks	.40
85	Extracting No. 4 type lamps	.30
87	Extracting No. 8 type lamp caps	.30
90	Removing caps of service meters	.90
91	Removing cover of No. 89 type relay	.55
92	Nuts on Nos. 18 and 19 resistances	.55
93	Multiple cable lifter	.25
97	$\frac{3}{8}$ in. hexagonal nuts on No. 7 type fuses	.45
105	Adjusting springs on No. 453 type keys	.45

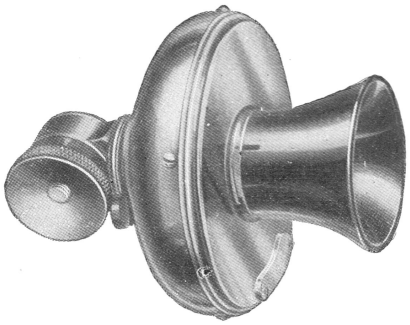


No. 97



No. 105

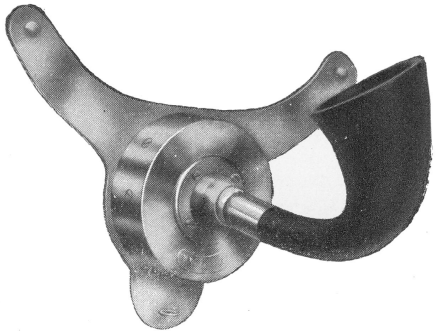
TRANSMITTERS



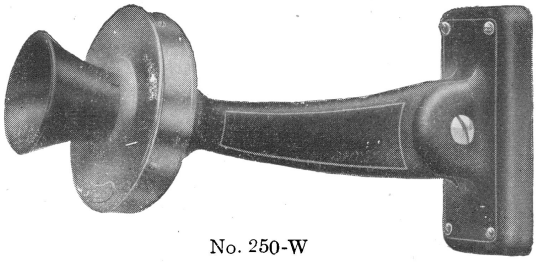
No. 229-W



No. 232-W

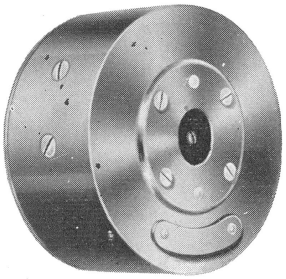


No. 234-W

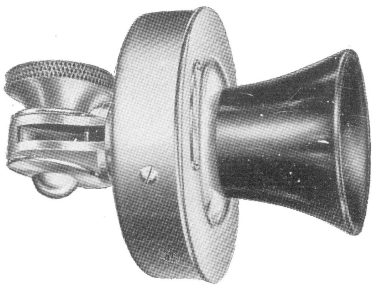


No. 250-W

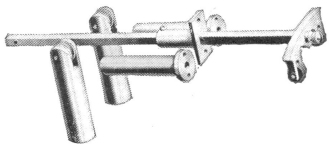
Code No.	Description	Used with	List Price each
226-W	Low resistance transmitter without lug.		**$ 1.40**
227-W	Low resistance transmitter with lug.		**2.00**
228-W	High resistance transmitter without lug.	Nos. 1251-E, 1302-A and 1314-A telephone sets.....	**1.40**
229-W	High resistance transmitter with lug.	Desk stands, transmitter arms and small telephone sets	**2.00**
232-W	High resistance transmitter arranged to be suspended by two cords entering side of case.	Nos. 7 and 19 transmitter arms for switchboards.....	**2.55**
234-W	Operator's chest transmitter arranged to be supported by a band around the operator's neck. This attachment is not furnished with the transmitter.	Switchboards as operator's transmitter. No. 3 type of transmitter attachment used as support.....	**2.95**
244-W	Transmitter arranged to be fixed to No. 1 hand set handle.	No. 1001 hand set..	**2.25**
250-W	High resistance bracket type transmitter.	All wall telephone sets that require bracket type transmitter.....	**2.40**



No. 266-W



No. 269-W



No. 7-A

Transmitters—Continued

Code No.	Description	Used with	List Price each
251-W	Low resistance bracket type transmitter.		**$ 2.40**
266-W	Transmitter to be fastened inside case.	No. 1017-A test set	**1.30**
267-W	Transmitter arranged to be fixed to No. 2 type hand set handle.	No. 1002-A hand set.....	**1.55**
269-W	High resistance transmitter having small insulated case.	Intercommunicating wall telephone sets	**2.00**
270-W	High resistance transmitter of the bracket type having insulated case.	All wall telephone sets that require bracket type transmitter	**2.40**
271-W	High resistance transmitter having insulated case with lug.	No. 1020-P desk stand.....	**2.00**
272-W	High resistance transmitter having insulated case with lug, and equipped with two 5½ in. No. 329 cords.	Wall telephone sets (except intercommunicating) that require transmitter with lug.....	**2.00**

TRANSMITTER ARMS

FOR SWITCHBOARDS

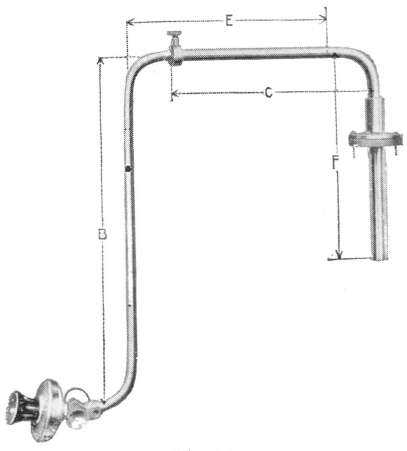
The code number does not include transmitter, receivers or cords.



No. 19-A

Using Suspended Transmitter

Code No.	Description	List Price each
7-A	This includes the two cord escutcheon tubes, hanger and two No. 103 cord weights. Furnished in brass finish unless otherwise specified. In ordering, state whether the tubes through which the cord runs shall be 7 or 13 inches long.	**$ 4.90**
19-A	Nickel plated unless otherwise specified.....	**5.65**

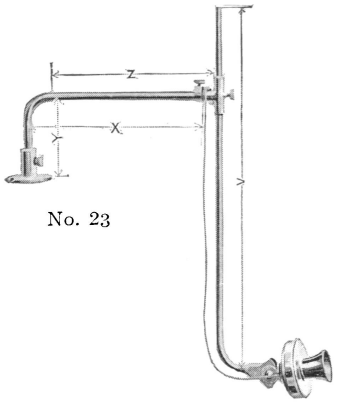


No. 11

Using Transmitter with Lug

No. 11 type is nickel plated unless otherwise specified.

	Dimensions in inches				
	B	C	E	F	
11-A	19	12	12	12	**$ 5.85**
11-B	12	11	11	12	**5.85**
11-C	18	12	12	16	**5.85**
11-D	12	16	16	15	**5.85**
11-E	6	12	12	11	**5.85**



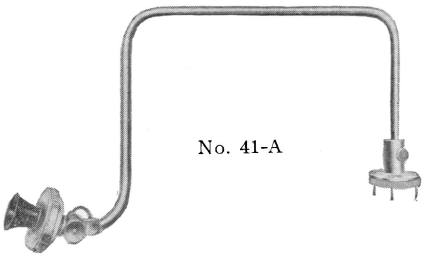
No. 23

Transmitter Arms—Continued

For Switchboards—Continued

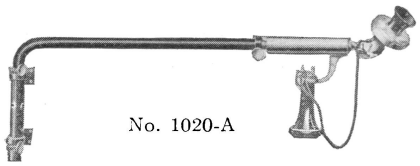
No. 23 type is nickel plated unless otherwise specified.

Code No.	Dimensions, inches V	X	Y	Z	List Price each
23-A	27	11	5	10	**$ 3.60**
23-B	18	11	5	10	**3.60**
23-C	12	8	6	7	**3.60**
23-D	20	14	4	13	**3.60**
23-E	12	14	8	13	**3.60**
23-F	8	14	4	13	**3.60**


No. 41-A

No. 41 type is nickel plated unless otherwise specified.

41-A Used with No. 4 private exchanges..... **5.65**

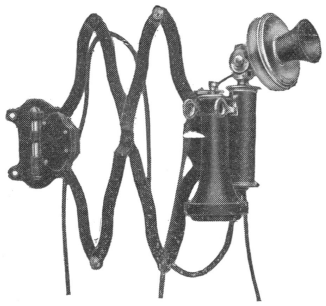

No. 1020-A

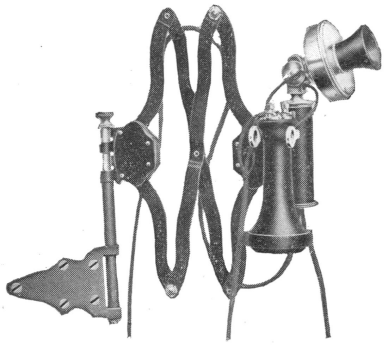
FOR DESKS

With Transmitters, Receivers and Cords

The No. 122-W receiver and standard high resistance transmitter are furnished with these transmitter arms, as specified below. Others will be furnished if ordered.

Code No.	Description	Finish	List Price each
1020-A	For regular local battery bridging or central battery service. *Used on* flat top desks. Includes: 1 No. 20-A transmitter arm 1 No. 229-W transmitter 1 No. 122-W receiver 1 No. 310 cord	Rust *proof* dull black	**$ 12.35**
1040-B	For regular local battery bridging or central battery service. Mounts on wall. Includes: 1 No. 40-B transmitter arm 1 No. 229-W transmitter 1 No. 122-W receiver 1 No. 308 cord	Black enamel	**9.05**
1040-D	For regular local battery bridging or central battery service. Used on roll top desks. Includes: 1 No. 40-D transmitter arm 1 No. 229-W transmitter 1 No. 122-W receiver 1 No. 308 cord	Black enamel	**9.20**


No. 1040-B


No. 1040-D



No. 1040-F

Transmitter Arms—Continued

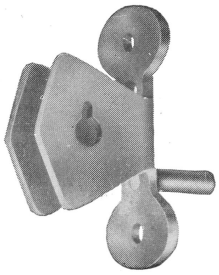
For Desks—Continued

Code No.	Description	Finish	List Price each
1040-F	For regular local battery bridging or central battery service. Used on flat top desks. Includes: 1 No. 40-F transmitter arm 1 No. 229-W transmitter 1 No. 122-W receiver 1 No. 308 cord	Black enamel	**$ 9.15**

Without Transmitters, Receivers or Cords

These are similar to those listed above except that the transmitters, receivers and cords are omitted.

Code No.	Description	Finish	List Price each
20-A	Regular local battery bridging or central battery service. Used on flat top desks.	Rust proof dull black	**$ 7.50**
40-B	Regular local battery bridging or central battery service. Mounts on wall.	Black enamel	**4.35**
40-D	Regular local battery bridging or central battery service. Used on roll top desks.	Black enamel	**4.50**
40-F	Regular local battery bridging or central battery service. Used on flat top desks.	Black enamel	**4.50**



No. 3-A

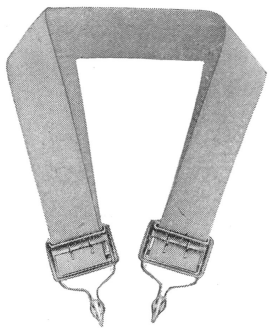
TRANSMITTER BRACKET

Code No.	Description	List Price each
3-A	Nickel plated bracket for mounting transmitter on front of telephone set	**$ 0.18**

TRANSMITTER ATTACHMENTS

Used to Support the Operator's "Chest" Transmitter

Code No.	Description	List Price each
2-A	Buckle only	**$ 0.08**
3-A	Buckles and slate colored tape	**.24**
3-B	Buckles and black colored tape	**.24**
3-C	Buckles and white tape	**.24**

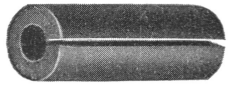


No. 3-A

TROUBLE CAPS

These are split fibre tubes for placing over a plug to designate trouble in the cord circuit apparatus.

Code No.	Color	To be used on Plugs number	List Price each
1-A	Black	109	**$ 0.0225**
1-B	Red	109	**.0225**
2-A	Black	110	**.0225**
2-B	Red	110	**.0225**



No. 1-A

WESTON AMMETERS

For power switchboards; flush mounting; finished in polished copper and black dip; provided with external shunt, scales may have zero at left or at the center as ordered.

Type "F" has a face plate 9½ in. in diameter

Type "K" has a face plate 7¾ in. in diameter

Order thus:

1 Type "F" Weston 200 – 0 – 200 scale ammeter, flush mounted, with external shunt provided with leads .... feet long; finished in polished copper and black dip.

WESTON VOLTMETERS



For Wire Chief's Desk and Telephone Switchboards

These have high resistance coils of 2500- ohms per scale volt; are arranged for flush mounting, and are finished in nickel and black dip. These are used in the testing circuits. Type "F" instruments have face plates 9½ in. in diameter. They are usually provided with 0 to 4 and 0 to 40 scales.

Order thus:—

1 Type "F" Weston flush mounted voltmeter, finished in nickel and black dip; scales 0 to 4 and 0 to 40; resistance of 4 volt coil 10,000- ohms and of the 40 volt coil 100,000- ohms.

For Power Switchboards

Flush mounting, finished in polished copper and black dip; type "F" has a face plate 9½ in. in diameter and the type "K" has a face plate 7¾ in. in diameter.

Order thus:—

1 Type "F" Weston flush mounted voltmeter, finished in polished copper and black dip; scales 0 to 5 and 0 to 50.

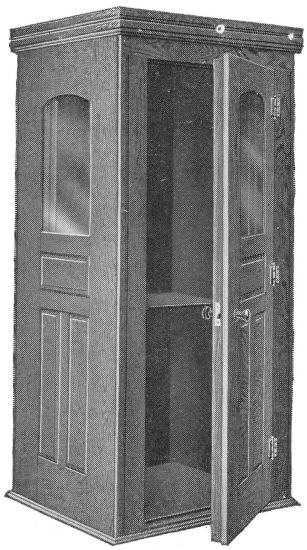
INTEGRATING WATTMETERS

These may be furnished for recording the current consumed, or the current delivered by the power plant. Various styles are carried.

PRICES ON REQUEST

TELEPHONE SUPPLIES



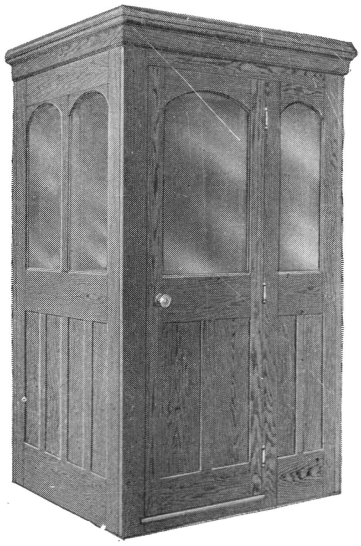


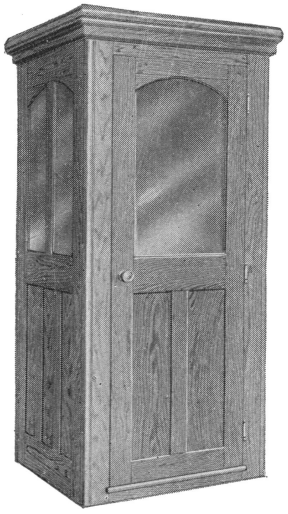
TELEPHONE BOOTHS

Sound Proof

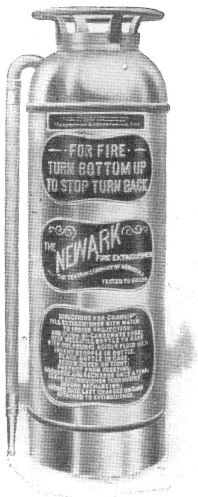
We are prepared to furnish, on request, a complete catalogue illustrating and describing our line of standard sound-proof telephone booths.

All styles, sizes and finishes to match interior fixtures and decorations.





PRICES ON REQUEST



No. 52031



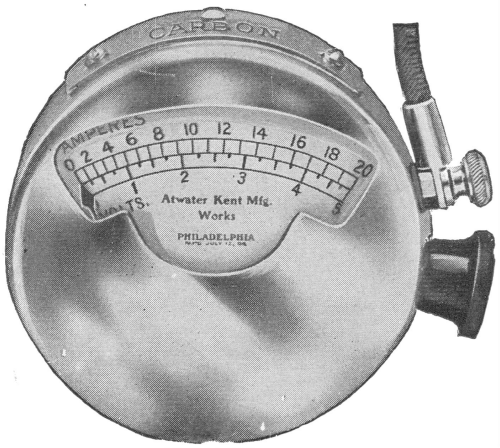
No. 94029

CARBONIC ACID GAS HAND FIRE EXTINGUISHERS

The fire extinguisher, as illustrated, is ready for instant use, being constructed to compel the immediate mixing of the chemicals the instant the extinguisher is turned bottom up. It will throw a stream of fire-killing liquid from 40 to 50 feet, thus enabling the user to reach fires above the surface of the floor, in ceilings, curtains, and elsewhere.

This liquid is heavily charged with carbonic acid gas, and is many times more effective than water, readily extinguishing burning varnish, celluloid, tar, coal-oil, and naphtha.

Code Word	List No.	Name
Hygeian	**52031**	Newark
Mertertjes	**94029**	Accurate



No. 16520

KENT AUTOMATIC POCKET VOLT-AMMETER

This instrument is designed and calibrated especially for testing batteries. The needle is delicately pivoted and the readings are accurate.

Flexible leads of ample capacity are provided with each instrument.

No change is made in the connection to the battery for the two readings, as that in amperes is obtained by simply pressing the button.

Code Word	List No.
Oxhoftstab	**16520**

LEAD SLEEVES

For Making Straight Splices

Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches	Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches
15 pair No. 22	1	16	15 pair No. 19	1	16
20 pair No. 22	1	16	20 pair No. 19	1½	16
25 pair No. 22	1½	16	25 pair No. 19	1½	16
30 pair No. 22	1½	16	30 pair No. 19	2	16
50 pair No. 22	2	16	50 pair No. 19	2	16
75 pair No. 22	2½	16	75 pair No. 19	2½	16
100 pair No. 22	2½	16	100 pair No. 19	3	16
150 pair No. 22	2½	16	150 pair No. 19	3	18
180 pair No. 22	2½	16	180 pair No. 19	3½	18
200 pair No. 22	3	18	200 pair No. 19	3½	18
300 pair No. 22	3½	18	300 pair No. 19	4½	22
400 pair No. 22	3½	22			

For Making " Y " Splices

10 pair No. 22	1	16	10 pair No. 19	1	16
20 pair No. 22	1½	16	20 pair No. 19	1½	16
25 pair No. 22	1½	16	25 pair No. 19	1½	16
30 pair No. 22	2	16	30 pair No. 19	2	16
50 pair No. 22	2½	16	50 pair No. 19	2½	16
75 pair No. 22	3	16	75 pair No. 19	3	16
100 pair No. 22	3½	18	100 pair No. 19	3½	18
150 pair No. 22	4	18	150 pair No. 19	4	18
180 pair No. 22	4	18	180 pair No. 19	4½	18
200 pair No. 22	4	18	200 pair No. 19	4½	22
300 pair No. 22	4½	22	300 pair No. 19	4½	22
400 pair No. 22	4½	22			

PRICES ON REQUEST

Lead Sleeves—Continued

For Pot Heads

Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches	Size and Gauge Cable	Inside Diameter of Sleeve, inches	Length inches
25 and 30 pair No. 22	2	20	25 and 30 pair No. 19	2	20
50 pair No. 22	2½	20	50 pair No. 19	2½	20
60 pair No. 22	3	20	60 pair No. 19	3	20
100 pair No. 22	3½	24	100 pair No. 19	3½	24
120 pair No. 22	3½	26	120 pair No. 19	3½	26
150 pair No. 22	3½	26	150 pair No. 19	4	26
180 pair No. 22	4	26	180 pair No. 19	4	30
200 pair No. 22	4	26	200 pair No. 19	4	30
400 pair No. 22	4½	26			

CABLE PASTERS

Code Word	List No.	
Masseteric	**100000**	Used to limit the length of wiped joint. Sold by thousand

IMPROVED PAPER SLEEVES

Code Word	List No.	Size, inches	Code Word	List No.	Size, inches
Plagiandum	**25944**	⅛ x2½	**Plagiarism**	**25947**	⅛ x18
Plagianthe	**25945**	3/16x3	**Plagiarize**	**25948**	3/16x18
Plagiara	**25946**	7/32x3	**Plagiat**	**25949**	7/32x18

PARAFFINE

Code Word	List No.
Hymnirent	**52002**

BEESWAX

Code Word	List No.
Hyenide	**52003**

W. E. POT HEAD COMPOUND

Code Word	List No.
Escatimeis	**7944**

WIRES

DOUBLE GALVANIZED TELEPHONE WIRE

There are three grades of telephone wire, classified as follows:

EXTRA BEST BEST (E. B. B.)
BEST BEST (B. B.)
STEEL

Extra Best Best (E. B. B.) wire is made from a special stock of great purity, producing wire of absolute uniform quality, in which the elements of softness and elongation are combined with low electrical resistance to a marked degree. It is largely employed in long lines or service where low electrical resistance is both desirable and necessary.

Best Best (B. B.) wire is made from a stock of high quality, producing a wire somewhat less uniform and of higher resistance than E. B. B., but of greater tensile strength. This grade is used almost exclusively for the construction of subscribers' lines in exchanges, and on account of its great tensile strength is best adapted for rural or farmer lines.

Steel wire has a greater tensile strength than either E. B. B. or B. B., but on account of its greater electrical resistance is not very generally used.

As indicated by heading, the different grades of wire are double galvanized, each coat being uniform in its application, thereby insuring uniform durability.

Code Word	List No.	Size	Diameter inches	Breaking Strain in Pounds E. B. B.	B. B.	Steel	Weight Pounds per Mile	Coils
Plaindrons	**25976**	**10**	.135	780	858	962	260	½ mile
Plainly	**25977**	**11**	.120	642	706	792	214	½ mile
Plainness	**25978**	**12**	.105	495	545	611	165	½ mile
Plaintful	**25979**	**14**	.080	288	317	355	96	½ mile

RUBBER-COVERED COPPER WIRE (BRAIDED)

Code Word	List No.	
Hydatide	**52152**	No. 14, B. & S., 5/32 in. rubber insulation, outside distributing wire, double conductor, braided and twisted; for drop wires and outside work.
Hydatiform	**52153**	No. 18, B. & S., 7/64 in. rubber insulation bridle wire, double conductor, braided and twisted; for bridling, entrance or ground wire.
Hydatigere	**52154**	No. 19, B. & S., 3/32 in. rubber insulation interior wire, single conductor, finished braid.
Hydatism	**52155**	No. 19, B. & S., 3/32 in., same as above, double conductor, braided and twisted, finished braid, oak or olive green; for interior use.

PRICES ON REQUEST

Wires—Continued

Rubber Covered Copper Wire (Braided)—Continued

Code Word	List No.	
Hydatoid	**52156**	No. 19, B. & S., $\frac{3}{32}$ in., same as above, triple conductor; for interior use.
Hydatule	**52157**	No. 20, B. & S., rubber insulation flame-proof wire, double conductor, braided and twisted; distributing frame jumper wire.
Hyderode	**52158**	No. 22, B. & S., rubber insulation flame-proof wire, double conductor, braided and twisted; distributing frame jumper wire.
Hyderzahn	**52159**	No. 22, B. & S., same as above, triple conductor; distributing frame jumper wire.

RUBBER COVERED COPPER WIRE (PLAIN)

Code Word	List No.	
Hydnei	**52160**	No. 16, B. & S., $\frac{5}{32}$ in. insulation, double conductor, twisted, no braid; used for pot heads.
Hydnocarpe	**52161**	No. 19, B. & S., $\frac{3}{32}$ in. insulation, double conductor, twisted, no braid; used for pot heads.
Hydnopore	**52162**	No. 20, B. & S., $\frac{3}{32}$ in. insulation, double conductor, twisted, no braid; used for pot heads.

GALVANIZED STEEL WIRE STRAND

(Sometimes called Signal Strand.)

These galvanized steel strands are largely employed as messengers or suspension cables for hanging aerial telephone and other cables.

Composed of seven galvanized wires twisted together.

Code Word	List No.	For Cables: No. 19 Gauge	For Cables: No. 22 Gauge	Diameter inches	Weight pounds per hundred feet	Breaking Strain pounds
Methocampe	**94031**	over 100 pairs	over 200 pairs	$\frac{7}{16}$	40	16,000
Methionate	**94030**	100 pairs	200 pairs	$\frac{3}{8}$	30	10,000
Aboriginal	**3052**			$\frac{1}{2}$	52	8,320
Aborsement	**3054**	50 pairs	100 pairs	$\frac{7}{16}$	40	6,000
Coupe	**3055**			$\frac{3}{8}$	30	4,700
Coupling	**3056**			$\frac{5}{16}$	22	3,300
Abounding	**3059**			$\frac{1}{4}$	13	1,750
Abrade	**3061**			$\frac{3}{16}$	8	1,000
Abraham	**3092**			$\frac{5}{32}$	5	700
Abreast	**3093**			$\frac{1}{8}$	3.50	375
Abridge	**3065**			$\frac{3}{32}$	2.25	320

WEATHER-PROOF IRON LINE WIRE

This is sometimes classified as tree wire. Its use is advised where branches of trees interfere with line.

This wire is guaranteed genuine double galvanized B. B. iron wire.

This wire can be furnished with double or triple braid. In either case the braid is thoroughly saturated with weather-proof compound, which gives it a highly polished finish.

Put up in half-mile coils only.

Code Word	List No.	Size B. W. G.	Pounds per Mile: Double Braid	Pounds per Mile: Triple Braid	Coils
Hydage	**52146**	10	370	400	$\frac{1}{2}$ mile
Hydarnes	**52147**	12	225	250	$\frac{1}{2}$ mile
Hydaspei	**52148**	14	145	165	$\frac{1}{2}$ mile

WEATHER-PROOF COPPER WIRE

Especially adapted for drops or leads from main line to telephone.

This wire is furnished in coils.

Furnished with double or triple insulation, as ordered.

Code Word	List No.	Size B. & S. Gauge	Feet per Pound: Double Braid	Feet per Pound: Triple Braid	Pounds per thousand feet: Double Braid	Pounds per thousand feet: Triple Braid
Hydaspeos	**52149**	14	56	38	18	26
Hydaspeum	**52150**	16	76	48	13	21
Hydatidome	**52151**	18	100	67	10	15

PRICES ON REQUEST

Wires—Continued

ANNUNCIATOR WIRE

Has covering consisting of two wraps of cotton saturated with paraffine. The outer covering is made in solid color or combination of colors. The following sizes can be furnished tinned.

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Hydracid	**52163**	16	9½
Hydraemia	**52164**	18	6½
Hydragogos	**52165**	20	4½
Hydragogue	**52166**	22	4

WEATHER-PROOF ANNUNCIATOR WIRE

Code Word	List No.	
Hydraire	**52167**	No. 18, same as above, saturated with weather-proof compound. Furnished in black only. Weight, per thousand ft., 6⅔ lbs.

DAMP-PROOF OFFICE WIRE

For interior work not exposed to heavy moisture

Single Conductor

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Hydralcool	**52168**	16	13½
Hydraleta	**52169**	18	10
Hydraletes	**52170**	20	8

Double Conductor

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Hydramide	**52171**	16	18½
Hydranos	**52172**	18	12½
Hydranths	**52173**	20	10

GERMAN SILVER RESISTANCE WIRE

Bare

Code Word	List No.	Size B. & S. Gauge	Ohms per thousand feet
Hydraotes	**52174**	16	75.22
Hydragyre	**52175**	17	94.84
Hydrarum	**52176**	18	119.6
Hydraspis	**52177**	19	155.1
Hydrastina	**52178**	20	190.2
Hydratado	**52179**	21	239.8
Hydratant	**52180**	22	302.4
Hydrate	**52181**	23	381.3
Hydraula	**52182**	24	480.8
Hydraules	**52183**	25	606.3
Hydrauliam	**52184**	26	764.6
Hydraulica	**52185**	27	964.1
Hydrazote	**52186**	28	1,215.
Hydreleon	**52187**	29	1,533
Hydrellie	**52188**	30	1,933
Hydreuma	**52189**	31	2,437
Hydreumata	**52190**	32	3,073
Hydriade	**52191**	33	3,875
Hydric	**52192**	34	4,888
Hydridae	**52193**	35	6,163
Hydrinorum	**52194**	36	7,770
Hydriodeux	**52195**	37	9,797
Hydriodico	**52196**	38	12,357
Hypanthe	**52197**	39	15,570
Hypanthium	**52198**	40	19,653

MAGNET WIRE

Single Cotton Covered

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Jean	**1704**	24	1.30
Jears	**1705**	25	1.04
Jeer	**1706**	26	.84
Jeered	**1707**	27	.67
Jeerer	**1708**	28	.53
Jeering	**1709**	29	.42
Jungly	**1710**	30	.34
Junior	**1711**	31	.28
Jockeyism	**1712**	32	.22
John	**1713**	33	.18
Joinder	**1714**	34	.15
Jollify	**1715**	35	.13

Double Cotton Covered

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
Joyously	**1725**	24	1.37
Joyousness	**1726**	25	1.11
Jubilant	**1727**	26	.89
Jubilate	**1728**	27	.72
Jubilation	**1729**	28	.59
Judah	**1730**	29	.47
Judicial	**1731**	30	.39
Judicious	**1732**	31	.32
Josephine	**1733**	32	.26
Joshua	**1734**	33	.22
Josiah	**1735**	34	.19
Jostle	**1736**	35	.17

PRICES ON REQUEST

Wire—Continued

Magnet Wire—Continued

Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet	Code Word	List No.	Size B. & S. Gauge	Pounds per thousand feet
	Single Cotton Covered				Double Cotton Covered		
Jolliment	1716	36	.11	Jostled	1737	36	.15
Jollity	1717	37	...	Jove	1738	37	...
Jonas	1718	38	...	Jovial	1739	38	...
Jonathan	1719	39	...	Jovialty	1740	39	...
Joseph	1720	40	...	Joy	1741	40	...
	Single Silk Covered				Double Silk Covered		
Jervin	1658	24	1.25	Jeweling	1683	24	1.28
Jested	1659	25	1.00	Jewelry	1684	25	1.02
Jester	1660	26	.79	Jewess	1685	26	.81
Jestful	1661	27	.67	Jewish	1686	27	.69
Jesting	1662	28	.50	Jib	1687	28	.52
Jesuit	1663	29	.39	Jibboom	1688	29	.41
Plantensap	1664	30	.31	Jibdoor	1689	30	.33
Plantenwas	1665	31	.25	Jibe	1690	31	.26
Jelly	1666	32	.20	Jibing	1691	32	.21
Jemima	1667	33	.16	Jigger	1692	33	.17
Jennet	1668	34	.13	Jiggish	1693	34	.14
Jenneting	1669	35	.11	Jiggling	1694	35	.12
Jentling	1670	36	.09	Jill	1695	36	.10
Jeopard	1671	37	.07	Jilted	1696	37	.08
Jeoparder	1672	38	.06	Jilting	1697	38	.07
Jeoparding	1673	39	.05	Jingle	1698	39	.06
Jeopardize	1674	40	.04	Jingled	1699	40	.05

ENAMELED MAGNET WIRE

Enameled insulation is an elastic, yet resistant and firmly adherent film, which is applied to the wire by specially constructed machinery of our own design. The insulation is unaffected by chemical re-agents which will not affect the wire itself, diluted acids, alkalis, alcohol, benzine, turpentine, etc., having little or no effect on it. Excessive humidity will cause silk or cotton insulation to become practically useless as insulators, but has little or no effect on the enameled insulation.

A great saving of space required for magnet windings may be made by using this enameled wire, as the insulation is only about one-quarter as thick as that of silk covering affording the same degree of insulation. Consequently, a given winding space will with No. 32 gauge wire hold 30 per cent. more enameled insulated wire than the silk insulated. At No. 40 gauge the increased number of turns is 120 per cent. more than single silk. With wire insulated with No. 100 cotton a saving in favor of the enameled wire is for No. 24 gauge equal to 30 per cent. and for No. 40 gauge equal to 500 per cent.

A saving in the price of the wire is possible, as the cost of the enamel is only a small fraction of that of the silk.

Size B. & S. Gauge	Pounds per thousand feet	Size B. & S. Gauge	Pounds per thousand feet
24	1.24	33	.16
25	.98	34	.12
26	.78	35	.098
27	.62	36	.078
28	.48	37	.062
29	.39	38	.050
30	.31	39	.040
31	.25	40	.031
32	.20		

SWITCHBOARD WIRE

Copper wire with double silk and single cotton paraffined insulation of assorted colors.

Code Word	List No.	Size B. & S. Gauge	
Mezclabais	94056	No. 19	single conductor
Miccianza	94076	No. 22	single conductor
Miccichino	94077	No. 19	twisted pair conductors
Micciebant	94078	No. 22	twisted pair conductors

PRICES ON REQUEST

Wire—Continued

BARE COPPER WIRE
TINNED
For Strapping Apparatus Terminals

Size B. & S. Gauge	Feet per pound	Size B. & S. Gauge	Feet per pound
No. 14	80	No. 18	203
No. 16	127	No. 20	323
		No. 22	513

HABIRSHAW INSULATED CONDUCTORS

Solid Copper, Tinned, Double Coated, Rubber Insulation, Braided and Waxed

White Core Code Word	White Core List No.	Red Core Code Word	Red Core List No.	Size B. and S.	Diameter over Braid, inches	Thickness of Insulation without Braid inches	Weight per mile pounds
Platmaken	27040	Plasmabunt	26080	18	.136	3/64	84.48
Platole	27041	Plasmadora	26081	16	.162	3/64	110.88
Platometer	27042	Plasmados	26082	14	.203	3/64	168.96
Platon	27043	Plasmammo	26083	12	.225	3/64	221.76
Platonical	27044	Plasmando	26084	11	.235	3/64	253.44
Platonis	27045	Plasmarian	26085	10	.246	3/64	311.52
Platonize	27046	Plasmarono	26086	9	.256	3/64	359.04
Platschelp	27047	Plasmassi	26087	8	.272	3/64	422.40
Platt	27048	Plasmata	26088	7	.288	3/64	501.00
Platteland	27049	Plasmatic	26089	6	.328	3/64	654.72
Plattgarn	27050	Plasmatori	26090	5	.387	1/16	839.52
Platthaupt	27051	Plasmavate	26091	4	.409	1/16	997.92
Platthin	27052	Plasmogony	26092	3	.434	1/16	1209.12
Platthuf	27053	Plasmome	26093	2	.463	1/16	1457.28
Plattlack	27054	Plassabat	26094	1	.494	1/16	1789.92
Plattnarbe	27055	Plassabor	26095	0	.530	1/16	2164.80

Stranded Copper Conductors, Tinned Double Coated Insulation, Rubber Braided and Waxed

White Core Code Word	White Core List No.	Red Core Code Word	Red Core List No.	Size B. and S.	Strand	Diameter over Braid inches	Thickness of Insulation without Braid inches	Weight per mile pounds
Plaudebat	27072	Platanine	27012	14	7–.025	.226	3/64	174.24
Plaudendum	27073	Plataninos	27013	13	7–.028	.232	3/64	211.20
Plaudit	27074	Plataniste	27014	12	7–.032	.247	3/64	253.44
Plauditory	27075	Platanonis	27015	11	7–.035	.256	3/64	290.40
Plaudunt	27076	Platanorum	27016	10	7–.038	.265	3/64	337.92
Plaumorato	27077	Platband	27017	9	7–.043	.280	3/64	385.44
Plausible	27078	Platearas	27018	8	7–.048	.295	3/64	454.08
Plausisset	27079	Platessa	27019	7	7–.053	.313	3/64	528.00
Plausisti	27080	Platessis	27020	6	7–.063	.365	3/64	686.40
Plausitabo	27081	Platform	27021	5	7–.069	.412	1/16	887.04
Plausitavi	27082	Platheid	27022	4	7–.077	.436	1/16	1024.32
Plausuram	27083	Platiasme	27023	3	19–.052	.465	1/16	1209.12
Plausuri	27084	Platicos	27024	2	19–.059	.500	1/16	1525.92
Plautarum	27085	Platifillo	27025	1	19–.066	.535	1/16	1890.24
Plautia	27086	Platija	27026	0	19–.074	.575	1/16	2212.32
Plautianos	27087	Platille	27027	00	19–.083	.620	1/16	2740.32
Plautidis	27088	Platillos	27028	000	19–.093	.670	1/16	3379.20
Plautilla	27089	Platinage	27029	0000	19–.104	.788	5/64	4329.60

Copper Conductors Stranded, Tinned, Two Coatings, Rubber Insulation, Taped, Braided and Waxed

White Core Code Word	White Core List No.	Red Core Code Word	Red Core List No.	Circular Mils	Strand	Diameter over Braid inches	Weight per Mile pounds	Wall of Insulation inches
Pleiteas	28032	Playground	28000	200000	37–.073	.772	4065	5/64
Pleitesia	28033	Playhouse	28001	210000	37–.075	.786	4292	5/64
Pleitkunst	28034	Playless	28002	220000	37–.077	.800	4519	5/64
Pleitos	28035	Playones	28003	230000	37–.078	.807	4688	5/64
Pleitvogel	28036	Playsome	28004	240000	37–.080	.821	4873	5/64
Plejaden	28037	Plaything	28005	250000	37–.082	.835	5047	5/64
Plejadis	28038	Playtime	28006	260000	37–.083	.842	5216	5/64
Pleminius	28039	Playwright	28007	270000	37–.085	.856	5401	5/64
Plemmyrium	28040	Pleadable	28008	280000	37–.086	.863	5570	5/64
Plemnaeus	28041	Pleading	28009	290000	37–.088	.877	5739	5/64
Plempe	28042	Pleadingly	28010	300000	37–.089	.884	5924	5/64
Plenarias	28043	Pleasance	28011	325000	37–.092	.908	6367	5/64

PRICES ON REQUEST

Wires—Continued

Habershaw Insulated Conductors—Continued

White Core Code Word	List No.	Red Core Code Word	List No.	Circular Mils	Strand	Diameter over Braid inches	Weight per mile pounds	Wall of Insulation inches
Plenarily	28044	Pleasedly	28012	350000	37–.096	.933	6811	5/64
Plenarty	28045	Plebaglia	28013	375000	37–.100	.958	7260	5/64
Plendorum	28046	Plebamus	28014	400000	37–.103	.982	7703	5/64
Plengfeest	28047	Plebe	28015	425000	37–.106	1.003	8120	5/64
Plenilune	28048	Plebeity	28016	450000	37–.110	1.031	8627	5/64
Plenipos	28049	Plebejorum	28017	475000	37–.112	1.045	8986	5/64
Plenishing	28050	Plebejum	28018	500000	37–.115	1.066	9435	5/64
Plenisme	28051	Plebitatem	28019	525000	37–.118	1.087	9847	5/64
Plenitas	28052	Plebitatis	28020	550000	37–.121	1.108	10311	5/64
Plenitatis	28053	Plechtig	28021	575000	37–.123	1.122	10755	5/64
Plenitude	28054	Pledgeless	28022	600000	61–.098	1.143	11172	5/64
Plenteous	28055	Pleegkind	28023	700000	61–.106	1.245	13110	3/32
Plentiful	28056	Plegaberes	28024	750000	61–.110	1.275	14013	3/32
Platineux	27030	Plegadoras	28025	800000	61–.114	1.317	14868	3/32
Platinic	27031	Plegmation	28026	850000	61–.117	1.344	15734	3/32
Platinides	27032	Plegueis	28027	900000	61–.120	1.371	16595	3/32
Platinise	27033	Pleister	28028	1000000	61–.127	1.443	18448	3/32
Platinmohr	27034	Pleitdag	28029	1250000	61–.141	1.580	22820	3/32
Platinous	27035	Pleitdagen	28030	1500000	61–.155	1.718	27192	3/32
Platinoxyd	27036	Pleiteabas	28031	2000000	91–.148	1.900	36141	7/64

ENAMELED STEEL CONDUIT AND FITTINGS

The enameled steel conduit is made from mild drawn steel tubing, which is thoroughly freed by a special process from scales, burrs and silicates before the enamel is applied.

The enamel forms a homogeneous coating, adhering closely to the surface pores of the metal, and retaining its flexibility under all changes of temperature. It is acid-proof, water-proof, rust-proof, and forms a glass smooth coating to both the outside and inside of the tubing, allowing wires to be pulled through it very easily.

This conduit is soft, and may be easily bent, without danger of breaking the tubing or injuring the protecting enamel. It is manufactured in lengths of ten feet, threaded on each end, and furnished with one coupling for each length.

As this conduit has the same outside diameter as the standard gas pipes, no special dies or tools are necessary when it is being installed.

CONDUIT

Code Word	List No.	Nominal Size inches	Inside Diameter inches	Outside Diameter inches	Weight per hundred feet pounds
Kohaerenz	96581	1/2	.62	.84	85
Kohautee	96582	3/4	.82	1.05	112
Kohlacker	96583	1	1.04	1.31	167
Kohlenader	96584	1 1/4	1.38	1.66	224
Kohlenbett	96585	1 1/2	1.61	1.90	268
Kohlenerz	96586	2	2.06	2.37	361
Kohlenhaus	96587	2 1/2	2.46	2.87	574
Kohlenholz	96588	3	3.06	3.50	754
Kohlenkalk	96589	3 1/2	3.54	4.00	900
Kohlenloch	96590	4	4.02	4.50	1066

ELBOWS

Code Word	List No.	Size inches	Weigh pounds per hundred	Radius inches	Offset inches
Legumaio	98358	1/2	73	4.25	7.50
Leguminoso	98359	3/4	132	5.37	9.25
Leguminous	98360	1	200	5.75	10.12
Leguminum	98361	1 1/4	300	7.25	11.50
Lehenrecht	98362	1 1/2	415	8.50	12.62
Lehensherr	98363	2	700	9.50	15.25
Lehensstab	98364	2 1/2	1138	10.50	17.75
Lehenstaxe	98365	3	1885	13.00	19.37
Lehmmuehle	98366	3 1/2	2100	15.00	21.00
Lehmmergel	98367	4	2160	16.00	22.50

PRICES ON REQUEST

Enameled Steel Conduit and Fittings—Continued

COUPLINGS

Code Word	List No.	Sizes inches	Weight in pounds per hundred	Code Word	List No.	Size inches	Weight in pounds per hundred
Lehmsandes	98368	½	15½	Lehnsessel	98373	2	132
Lehmziegel	98369	¾	25½	Lehnstreue	98374	2½	185
Lehnbauer	98370	1	40½	Lehnstueck	98375	3	300
Lehngueter	98371	1¼	57½	Lehnzins	98376	3½	400
Lehnhoefen	98372	1½	71¼	Lehrbild	98377	4	412

BUSHINGS

Code Word	List No.	Size inches	Standard Package	Code Word	List No.	Size inches	Standard Package
Laetaverit	97759	½	1000	Laetitatem	97766	3	25
Laetice	97760	¾	100	Laetorio	97767	3½	20
Laeticorum	97761	1	100	Laetorius	97768	4	20
Laeticos	97762	1¼	100	Laetzlein	97769	4½	20
Laetificet	97763	1½	50	Laeusebaum	97770	5	20
Laetiscet	97764	2	50	Laeutete	97771	6	15
Laetiscunt	97765	2½	25				

GALVANIZED FLEXIBLE STEEL CONDUIT

Code Word	List No.	Inside diameter inches	Approximate Feet in Coil
Koppelhaak	96729	5/16	250
Koppelhout	96730	3/8	250
Koppeljagd	96731	½	100
Koppelriem	96732	¾	50
Koppelseil	96733	1	50
Koppelstuk	96734	1¼	50
Koppeltjes	96735	1½	50
Koppeltouw	96736	2	50

FITTINGS

In ordering by telegraph specify two code words, one for style and one for size.

Code Word	Description	Code Word	Description
Ladierinha	Couplings.	Ladezeiten	Pipe hooks.
Ladenzeug	Lead bushings.	Ladhoelzer	Bushing tools

Sizes

Code Word	Size inches	Code Word	Size inches
Ladholz	3/8	Ladrasemos	1¼
Ladislao	½	Ladrillazo	1½
Ladogasee	¾	Ladroasso	2
Ladrao	1		

PIPE STRAPS

Code Word	List No.	
Kruitvaten	97294	For ½ in. conduit
Kruitwagen	97295	For ¾ in. conduit
Garcia	11485	For 1 in. conduit
Kruitzak	97297	For 1¼ in. conduit
Kruitzakje	97298	For 1½ in. conduit

SIZE IN INCHES OF ENAMELED STEEL CONDUIT

Size of Wire	For 1 Wire	For 2 Wires	For 3 Wires	For 4 Wires
14	½	¾	¾	1
12	½	¾	1	1¼
10	½	1	1	1¼
8	½	1	1¼	1½
6	¾	1	1¼	1½
5	¾	1¼	1¼	1½
4	¾	1¼	1¼	1½
2	1	1½		
0	1	1½		
00	1¼	2		
000	1¼			
0000	1¼			

PRICES ON REQUEST

Enameled Steel Conduit and Fittings—Continued

SIZE IN INCHES OF ENAMELED STEEL CONDUIT

Circular Mils	1 Wire	Circular Mils	1 Wire
250,000	1½	650 000	2
300,000	1½	700,000	2
350,000	1½	750,000	2½
400,000	1½	800,000	2½
450,000	2	850,000	2½
500,000	2	900,000	2½
550,000	2	950,000	2½
600,000	2	1,000,000	2½

SIZE IN INCHES OF FLEXIBLE STEEL CONDUIT

Size of Wire	For 1 Wire	For 2 Wires	For 3 Wires	For 4 Wires
14	½	½	¾	1
12	½	¾	1	
10	½	1	1	
8	½	1		
6	¾	1		
4	¾			
2	1			
0	1			
00	1			

MICHIGAN CEDAR POLES

Poles up to and including 30 feet in length may be loaded on cars taking a 24000 pounds minimum; 35s require a car taking 30000 pounds minimum; double loads (45s and longer) require cars taking a 30000 pounds minimum or 60000 pounds for the double load. We do not advise shipment by the small cars taking 24000 pounds minimum as the railroads will not use them except under certain restrictions and thus shipments are delayed.

The Northwestern Cedarman's Specifications govern all inspections.

Write us for our pamphlet on poles.

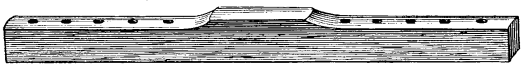
Code Word	List No.	Length feet	Top inches	Weight pounds	Number per Load
Hygrograph	**52042**	20	4	100	240 to 420
Hygrologia	**52043**	20	5	130	185 to 325
Hygrometer	**52044**	20	6	175	137 to 250
Methodical	**94032**	22	5	175	137 to 250
Hygrometry	**52045**	25	4	150	160 to 280
Hygrophile	**52046**	25	5	200	120 to 210
Hygroscope	**52047**	25	6	250	100 to 170
Hygroskop	***52048***	25	7	350	70 to 130
Hygrusine	**52049**	30	5	275	80 to 150
Hylacides	**52050**	30	6	350	70 to 120
Hylacion	**52051**	30	7	450	55 to 95
Hylactor	**52052**	35	6	450	70 to 90
Hylaeorum	**52053**	35	7	600	50 to 70
Hylaeum	**52054**	40	6	625	50 to 65
Hylatae	**52055**	40	7	800	40 to 55
Hylemide	**52057**	45	7	1000	60 to 70
Hylicus	**52059**	50	7	1250	48 to 45
Hylism	**52061**	55	7	1550	39 to 42
Hylithe	**52062**	60	7	2000	30 to 33
Hylleer	**52063**	65	7	2700	23 to 25

PRICES ON REQUEST

CROSS ARMS

YELLOW OR WHITE PINE AS ORDERED

Standard Cross Arms—Size, 3¼ in. x 4¼ in., bored for 1¼ in. or 1½ in. pins; two ½ in. lag screws or one ⅝ in. machine bolt and two ⅝ in. brace bolts. Painted red.



No. 23573

Code Word	List No.	Length feet	Number of Pins	Spacings End, inches	Spacings Center inches	Spacings Sides inches	Weight each pounds
Otley	**23563**	3	2	4	28	..	12
Otesgo	**23564**	4	4	4	16	12	16
Ottawa	**23565**	5	4	4	18	17	20
Otto	**23566**	6	4	4	22	21	24
Ottumwa	**23567**	6	6	4	16	12	24
Overton	**23568**	8	6	4	18	17½	32
Ovid	**23569**	8	8	4	16	12	32
Owego	**23572**	10	8	4	17	15¾	40
Oxford	**23573**	10	10	4	16	12	40

Light Weight Cross Arms—Size, 2¾ in. x 3¼ in., bored for 1¼ in. pins; two ½ in. lag screws and two ⅝ in. brace bolts 28 in. apart. Painted red.

Code Word	List No.	Length inches	Number of Pins	Spacings End inches	Spacings Center inches	Spacings Sides inches	Weight each pounds
Newburn	**15460**	24	2	3	18	..	6
Newburg	**15461**	30	2	3	24	..	7
Newton	**15462**	36	2	3	30	..	9
Niagara	**15463**	42	4	3	16	10	10
Phynonis	**24668**	48	4	3	16	10	12
Niantic	**15464**	62	6	3	16	10	16
Phypes	**24669**	72	6	3	16	10	18
Nichols	**15465**	82	8	3	16	10	21
Physalia	**24670**	96	8	3	16	10	24
Nicolleti	**15466**	102	10	3	16	10	25
Niles	**15467**	120	12	3	16	10	30

WASHINGTON FIR

The use of Washington fir is recommended, owing to its clear, straight-grained quality and its freedom from defects.

The life of these arms is greater than those of other woods.

Washington fir arms have been adopted for use by the American Telephone and Telegraph Co., the Western Union, and Postal Telegraph Companies.

Standard Cross Arms—Size, 3¼ in. x 4¼ in.; bored for 1¼ in. and 1½ in. pins; two ½ in. lag screws or one ⅝ in. machine bolt and two ⅝ in. brace bolts. Unpainted.

Code Word	List No.	Length feet	Number of Pins	Spacings Center inches	Spacings Sides inches	Spacings End inches	Weight each pounds
Massstabes	**100005**	3	2	28	..	4	10
Massvoller	**100006**	4	4	16	12	4	13
Massylorum	**100007**	5	4	18	17	4	17
Masteiche	**100008**	6	4	22	21	4	20
Mastennoch	**100009**	6	6	16	12	4	20
Masterhood	**100010**	8	6	18	17½	4	27
Mastfutter	**100011**	8	8	16	12	4	27
Mastgelder	**100012**	10	8	17½	15¾	4	34
Masthafer	**100013**	10	10	16	12	4	34

PRICES ON REQUEST

Cross Arms—Continued

Washington Fir—Continued

Light Weight Cross Arms—Size, 2¾ in. x 3¾ in., bored for 1¼ in. pins, two ½ in. lag screws or one ⅝ in. and two ⅝ in. brace bolts 28 in. apart. Unpainted.

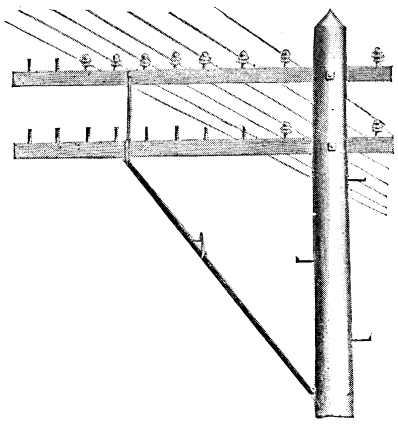
Code Word	List No.	Length inches	Number of Pins	Spacings: Center inches	Spacings: Sides inches	Spacings: End inches	Weight each pounds
Masticine	**100014**	24	2	18	..	3	5
Masticinos	**100015**	30	2	24	..	3	6½
Masticinum	**100016**	36	2	30	..	3	7
Masticorum	**100017**	42	4	16	10	3	9
Mastigacao	**100018**	48	4	16	10	3	10
Mastixoel	**100019**	62	6	16	10	3	12½
Mastkeilen	**100020**	72	6	16	10	3	15
Mastkorf	**100021**	82	8	16	10	3	17
Mastknehen	**100022**	96	8	16	10	3	20
Mastochsen	**100023**	102	10	16	10	3	21½
Mastoideal	**100024**	120	12	16	10	3	25

CROSS ARM BRACES

Plain: Code Word	Plain: List No.	Galvanized: Code Word	Galvanized: List No.	Size inches	Weight pounds per hundred: Plain	Weight pounds per hundred: Galvanized
Ajaja	**6630**	**Ajun**	**6626**	20x1 x 3/16	100	107
Plagiadas	**25941**	**Plagiandos**	**25942**	22x1 x 3/16	110	117
Ajabe	**6629**	**Ajugis**	**6625**	24x1 x 3/16	120	129
Plassor	**26052**	**Plantadora**	**26066**	20x1 7/32 x 7/32	141	148
Plateful	**26053**	**Planquetas**	**26067**	22x1 7/32 x 7/32	154	164
Plateau	**26054**	**Platbekkig**	**26068**	24x1 7/32 x 7/32	168	175
Platine	**26055**	**Platylophe**	**26069**	26x1 7/32 x 7/32	182	190
Platkop	**26056**	**Platypalpe**	**26070**	28x1 7/32 x 7/32	196	205
Platrant	**26057**	**Platypyges**	**26071**	30x1 7/32 x 7/32	210	220
Playbill	**26058**	**Platybune**	**26072**	32x1 7/32 x 7/32	224	235
Playbook	**26059**	**Platyholme**	**26073**	20x1¼ x¼	175	183
Plauso	**26060**	**Platylobes**	**26074**	22x1¼ x¼	188	195
Platschig	**26061**	**Platygenie**	**26075**	24x1¼ x¼	200	210
Platschaaf	**26062**	**Platyonyx**	**26076**	26x1¼ x¼	213	223
Platbek	**26063**	**Platypus**	**26077**	28x1¼ x¼	225	238
Plasmavamo	**26064**	**Platynemes**	**26078**	30x1¼ x¼	238	250
Plasmodium	**26065**	**Plattstitch**	**26079**	32x1¼ x¼	250	265

CROSS ARM BACK BRACES

This back brace is punched at the center for a ⅝-inch cross arm bolt. The ends of the brace are bolted to the arm by carriage bolts or lag screws.



No. 52134

Code Word	List No.	
Hybridity	**52140**	Flat Braces, galvanized
Hybridous	**52141**	Angle Braces, galvanized

Made in 3 ft., 3 ft. 6 in., 4 ft., 4 ft. 6 in., 5 ft., and 6 ft. lengths.

ALLEY ARM BRACES

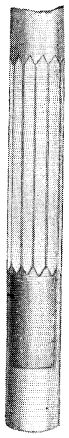
The side or alley arm braces, as illustrated, are made of angle iron—stiffer and lighter than pipe or rod braces. A step is placed so that the end pins may be conveniently reached. Angle iron upright braces are used to support arms above the bottom one. In the table below, "A" is the distance between the center of the pole and the point on the arm where the brace is bolted—thus a 5-ft. brace hits the cross arm 5 ft. from the pole. The foot of the brace meets the pole 5 ft. below the cross arms.

"A," 4 ft., 5 ft., 6 ft., 7 ft., 8 ft.

Number of arms.....2, 3, 4, 5, 6, 7, 8, 9, 10

Code Word	List No.	
Hydruntina	**52134**	Uprights, galvanized, 18 in. gain spacing
Hydrureto	**52135**	Uprights, galvanized, 24 in. gain spacing

PRICES ON REQUEST



Nos. 52138
52139

BUTT GUARDS AND BUTT PROTECTORS

Made of $\frac{3}{16}$ in. steel plate, 18 in. high x 22 in. long, bent into half circle. These are finished in black.

Code Word	List No.	
Hyempsal	**52138**	Butt Guards

Made of No. 24 sheet iron, 4 ft. long x 2 in. wide, galvanized Clipped to points at both ends and punched with nail holes.

Hybridists	**52139**	Pole Protectors

MACHINE BOLTS

FURNISHED PLAIN OR GALVANIZED

With Square Heads and Square Nuts, Finished Points.



Weight in Pounds per 100. Not Galvanized

Diam. inch	Length inches 1½	2	2½	3	3½	4	4½	5	5½
¼	3.75	4.33	4.91	5.50	6.21	6.92	7.63	8.35	9.06
5/16	6.12	7.10	8.08	9.06	10.14	11.22	12.30	13.38	14.46
⅜	9.3	10.9	12.5	14.1	15.5	16.9	18.3	19.7	21.1
7/16	14.7	16.6	18.4	20.3	22.4	24.4	26.5	28.5	30.6
½	20.2	22.8	25.3	27.9	30.4	32.9	35.4	37.9	40.4
⅝	36.5	40.8	45.0	49.3	53.6	57.9	62.2	66.4	70.7
¾	58.0	63.9	69.9	75.8	81.7	87.7	93.6	99.6	105.5
⅞	....	88.5	98.0	107.5	117.0	126.5	136.0	145.5	155.0
1	....	142.	152.	162.	172.	182.	192.	202.	212.

Diam. inch	Length inches 6	6½	7	7½	8	9	10	11	12
¼	9.77	10.48	11.19	11.90	12.62	....	....	....	....
5/16	15.54	16.62	17.70	18.78	19.87	....	....	....	....
⅜	22.5	23.9	25.3	26.7	28.1	30.9	33.8	36.6	39.4
7/16	32.6	34.7	36.7	38.8	40.8	44.9	49.0	53.1	57.2
½	42.9	45.4	47.9	50.4	32.9	57.9	62.9	67.9	72.9
⅝	75.0	79.3	83.4	87.6	91.8	100.	109.	117.	126.
¾	111.5	117.5	123.6	129.6	136.	148.	160.	172.	184.
⅞	164.5	173.0	181.0	189.0	....	....	....	....	....
1	222.	232.	243.	253.	....	....	....	....	....

Diam. inch	Length inches 13	14	15	16	17	18	19	20
¼	....	....	....	....	....	....	....	....
5/16	....	....	....	....	....	....	....	....
⅜	....	....	....	....	....	....	....	....
7/16	....	....	....	....	....	....	....	....
½	77.9	82.9	87.9	92.9	97.9	102.9	107.9	112.9
⅝	134.	143.	151.	160.	168.	176.	185.	193.
¾	196.	208.	220.	232.	244.	256.	268.	280.

PRICES ON REQUEST

LAG SCREWS

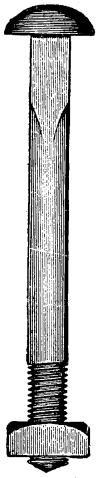
FURNISHED PLAIN OR GALVANIZED

Weight in Pounds per 100. Not Galvanized



Diam. inches	Length inches: 1½	2	2½	3	3½	4	4½	5
5/16	**3.5**	**4.4**	**5.3**	**6.2**	**7.1**	8.0	**9.**	10.
3/8	5.8	7.1	8.5	9.8	11.1	12.5	13.8	14.9
7/16	9.1	**11.**	12.9	14.8	16.5	18.2	19.9	21.8
1/2	....	**15.**	17.3	19.5	21.6	23.8	26.3	28.8
5/8	....	26.3	29.9	33.5	37 1	40.7	44.5	48.3
3/4	....	....	....	46.1	51.5	57.1	62.9	68.8
7/8	....	....	....	71.8	78.5	85.3	92	98.6
1	....	....	....	**103.**	**112.**	**121.**	130	141

Diam. inches	Length inches: 5½	6	7	8	9	10	11	12
5/16	11	12	....	....	....	....	....	....
3/8	16	17.2	....	....	....	....	....	....
7/16	23.5	25.2	....	....	....	....	....	....
1/2	31.3	33.8	38.9	44	48.5	53	57.5	62
5/8	52.0	55.7	63.2	69.3	76.4	83.5	90.6	97.8
3/4	74.7	80.5	92.3	104	115.4	126.8	138.2	149.5
7/8	105.3	112	125.4	138.8	156.3	173.8	191.3	208.8
1	153	164	185	205	225	245	265	285



CARRIAGE BOLTS

FURNISHED PLAIN OR GALVANIZED

Weight per 100. Not Galvanized

Diam. inches	Length inches: 1½	2	2½	3	3½	4	4½	5	5½	6
1/4	3.7	4.2	4.9	5.6	6.2	7	7.7	8.5	9.2	9.9
5/16	6.2	7.2	8.2	9.2	10.2	11.2	12.3	13.5	14.7	16
3/8	9.7	11.2	12.7	14.5	16	18	19	21	22	24
7/16	14	16	18	20	22	24	26	28	30	32
1/2	20.2	23.2	26	28	30	33	36	39	41	44
5/8	....	38	42	46	50	55	59	63	67	71

DOUBLE ARMING BOLTS

Furnished with 2 nuts and 3-inch threads on each end of bolt, but no washers; plain or galvanized.

Code Word	List No.	Size inches	Weight pounds per hundred	Code Word	List No.	Size inches	Weight pounds per hundred
Hylogenie	**52067**	½x12	172	**Hylonomous**	**52072**	½x17	202
Hylognosie	**52068**	½x13	178	**Hylophile**	**52073**	½x18	208
Hylogyne	**52069**	½x14	184	**Hylotheist**	**52074**	½x19	214
Hyloist	**52070**	½x15	190	**Hylotome**	**52075**	½x20	220
Hylology	**52071**	½x16	196	**Hylotropie**	**52076**	½x22	232

PRICES ON REQUEST

ROUND WASHERS

Furnished Plain or Galvanized

Code Word	List No.	For Size Bolt inches	Weight pounds per thousand Plain	Galvanized
Hylozoic	**52077**	$\frac{3}{8}$	$13\frac{3}{4}$	15
Hylozoical	**52078**	$\frac{1}{2}$	$34\frac{1}{2}$	37
Hylozoism	**52079**	$\frac{5}{8}$	77	$82\frac{1}{2}$

SQUARE WASHERS

Furnished Plain or Galvanized

Code Word	List No.	Size inches	For Size Bolt inches	Number in one hundred pounds Plain	Galvanized
Hylozoists	**52080**	2 x2 x $\frac{1}{8}$	$\frac{1}{2}$	500	450
Hymeas	**52081**	$2\frac{1}{4}$x$2\frac{1}{4}$x$\frac{3}{16}$	$\frac{5}{8}$	410	380
Hymenaeal	**52082**	$2\frac{1}{4}$x$2\frac{1}{4}$x $\frac{1}{4}$	$\frac{3}{4}$	315	295
Hymenaicos	**52083**	$2\frac{1}{2}$x$2\frac{1}{2}$x $\frac{1}{4}$	$\frac{7}{8}$	165	150
Hymenaicum	**52084**	3 x3 x $\frac{1}{4}$	1	87	80
Hydriote	**52085**	$3\frac{1}{2}$x$3\frac{1}{2}$x $\frac{3}{8}$	$1\frac{1}{8}$	65	60
Hydroarion	**52086**	4 x4 x $\frac{3}{8}$	$1\frac{1}{4}$	48	44
Hydrobate	**52087**	$4\frac{1}{2}$x$4\frac{1}{2}$x $\frac{3}{8}$	$1\frac{1}{4}$	40	36
Hydrobryon	**52088**	5 x5 x $\frac{3}{8}$	$1\frac{3}{8}$	28	26
Hydrocampe	**52089**	6 x6 x $\frac{3}{8}$	$1\frac{1}{2}$	24	22

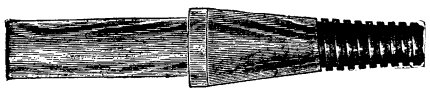
POLE STEPS



No. 15480

Plain			Galvanized		
Code Word	List No.	Size inches	Code Word	List No.	Size inches
Norton	**15480**	$\frac{9}{16}$x 9	**Norwolk**	**15481**	$\frac{9}{16}$x 9
Plage	**25938**	$\frac{9}{16}$x$10\frac{1}{2}$	**Plagellis**	**25939**	$\frac{9}{16}$x$10\frac{1}{2}$
Norway	**15482**	$\frac{5}{8}$x 9	**Norwich**	**15483**	$\frac{5}{8}$x 9
Boom	**3533**	$\frac{5}{8}$x10	**Bootless**	**3539**	$\frac{5}{8}$x10

PINS AND BRACKETS



No. 52090



No. 52093



No. 19310

PAINTED OAK PINS

Code Word	List No.	Size inches	Weight pounds per thousand
Hydrochere	**52090**	$1\frac{1}{4}$x8	280
Hydrochous	**52092**	$1\frac{1}{2}$x9	350

UNPAINTED LOCUST PINS

Hydrocleis	**52093**	$1\frac{1}{4}$x8	280
Hydrocoque	**52094**	$1\frac{1}{4}$x9	300
Hydrocyn	**52096**	$1\frac{1}{2}$x9	350

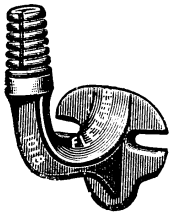
WESTERN UNION STEEL PINS

Essandole	**19310**	$\frac{1}{2}$x$9\frac{1}{2}$	640
Essayames	**19311**	$\frac{5}{8}$x$9\frac{1}{2}$	880

PRICES ON REQUEST



No. 52097



No. 1028



No. 01020



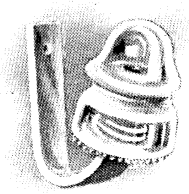
No. 01029



No. 18836



No. 18840



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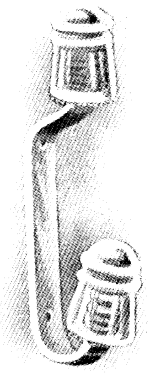


No. 52102

Pins and Brackets—Continued

OAK BRACKETS

Code Word	List No.	
Hydrocyste	**52097**	No. 1 Bracket, 12 in. long; 1⅝ in. wide; 1⅝ in. deep at shoulder; ⅜ in. thick tail end. No. 1 packed 100 in crate. Weight, 80 lbs. per 100.
Hydroecie	**52098**	No. 2 Bracket, 12 in. long; 1⅝ in. wide; 2 in. deep at shoulder, ⅜ in. thick tail end. No. 2. Packed 100 in crate. Weight 110 lbs. per 100.
Hydroecium	**52099**	No. 3 Bracket, 12 in. long; 1⅝ in. wide; 2¼ in. deep at shoulder, ⅜ in. thick tail end. No. 3. Packed 150 in bag. Weight, 90 lbs. per 100.
Hydrogala	**52100**	No. 4. Packed 200 in bag. Weight 75 lbs. per 100.

FLETCHER BRACKETS

Code Word	List No.		Weight per hundred pieces pounds
Knoud	**1028**	Curved back bracket	200
Phradates	**18838**	Fletcher iron bracket	205
Phrasing	**18845**	Fletcher iron bracket	180
Solely	**01020**	Short wall bracket	85
	Butt, 1½ in.; 3⅞ in. below shoulder, 4⅞ in. above shoulder		
Certified	**01018**	Short wall bracket	190
Certify	**01019**	Short wall bracket	215
Kontow	**01029**	Heavy malleable bracket	285
Photophobe	**18833**	Fletcher iron pin	125
Photopsie	**18835**	Fletcher iron pin	100
Phototype	**18836**	Fletcher iron pin	80
Phragmitem	**18840**	Fletcher iron bracket	90

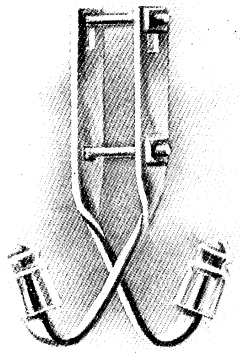
GALVANIZED STEEL HOUSE BRACKETS

These Brackets are strong, non-corrosive, and very quickly attached. There is an adjustable wood cushion for the insulator which decreases the liability of glass breakage.

Code Word	List No.	
Hydrogarum	**52101**	One point telephone bracket
Hydrogene	**52102**	Two point telephone bracket
Mastreacao	**100025**	Four point telephone bracket

PRICES ON REQUEST

Pins and Brackets—Continued

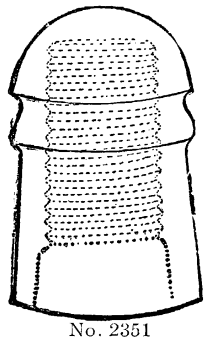


No. 52103

GALVANIZED UNDERHANG BRACKET

Used for temporarily or permanently doubling the capacity of cross arms. They do not weaken the arms with bolt holes. They are adjustable for any size arm; are easier put up than porcelain knobs, and afford the best of insulation. These brackets are used principally for temporary work, and the ease with which they may be put up and taken down recommends them for this use. Only a small stock is necessary, as they may be used over and over again.

Code Word	List No.	
Hydrogeton	**52103**	Complete with bolts, washers and split pins



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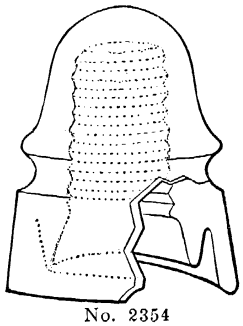

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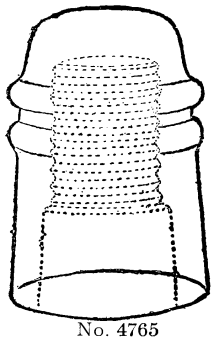

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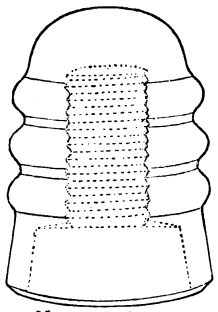

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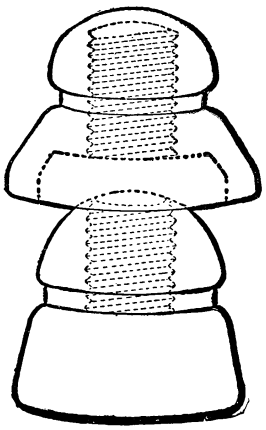

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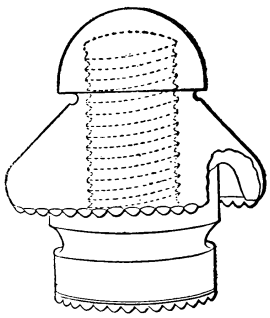
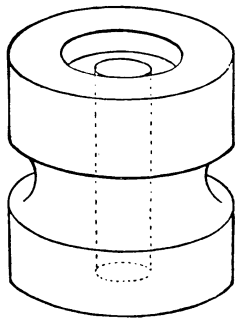


No. 4780

INSULATORS

Code Word	List No		Number in Barrel	Weight per thousand Packed Pounds
Eloquence	**2351**	No. 9 pony glass	400	800
Elsewhere	**2354**	Pony double petticoat	300	930
Hydrolico	**52106**	No. 4 pony	300	650
Foreseen	**4765**	Long distance regular	300	1100
Foreseer	**17476**	No. 11 double groove pony	400	800
Forestless	**4780**	Single piece transposition	100	2400
Foresty	**4781**	Two-piece transposition	125	2025

PRICES ON REQUEST



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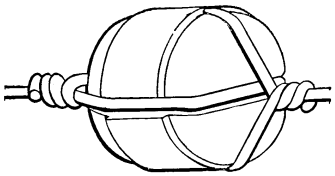

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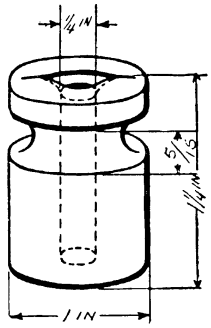

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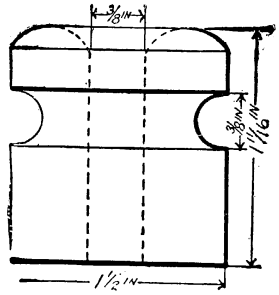

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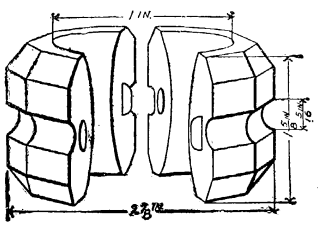


No. 9266

Insulators—Continued

GLASS BREAK KNOBS

Code Word	List No.		Standard Package	Weight per thousand Packed pounds
Empty	**2337**	No. 1 Break knob 1½ in. long, 1½ in. wide, ⅜ in. hole	500	220
Phrynes	**24606**	No. 2 Break knob 1¾ in. long, 2 in. wide, ⅜ in. hole	500	510
Forestry	**4786**	No. 10, for guy wires	500	720
Phrygibus	**24605**	No. 15, for guy wires	250	1260

PORCELAIN KNOBS

Code Word	List No.	Standard Package	Pounds per thousand
Accipient	**25444**	500	69
Accipenser	**25443**	1800	200
Empress	**9266**	1300	342

PORCELAIN TUBES

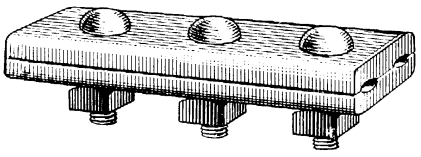
The following sizes listed measure $\frac{5}{16}$ in. inside diameter and $\frac{9}{16}$ in. outside diameter:

Code Word	List No.	Length inches	Standard Package	Pounds per thousand
Hymnidici	**52016**	3	6200	67
Hymnidicos	**52017**	4	3600	83
Hymnidicum	**52018**	6	1900	150
Hymniebant	**52019**	8	500	175
Hymnientem	**52020**	10	500	210
Hymnientis	**52021**	12	500	260
Hymnificas	**52022**	14	500	295

We can furnish any size tube from $\frac{5}{16}$ in. inside diameter to 2½ in. inside diameter, and from 3 in. to 24 in. in length of the standard sizes.

PRICES ON REQUEST

GALVANIZED GUY CLAMPS

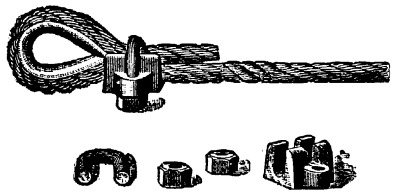


No. 25603

Rolled steel with high carbon steel bolts.

Code Word	List No.	
Acquittal	25603	Large size, 3 bolts
Pillottava	25604	Small size, 2 bolts

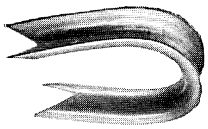
CROSBY CLIPS



No. 15484

Code Word	List No.	Diameter of Strand inches
Oakville	15484	$\frac{3}{8}$
Oakland	15485	$\frac{1}{2}$
Oaklawn	15486	$\frac{5}{8}$
Oakdale	15487	$\frac{3}{4}$
Oakfield	15488	$\frac{7}{8}$
Oakford	15489	1
Oakwood	15490	$1\frac{1}{8}$
Obeida	15491	$1\frac{1}{4}$
Oconto	15492	$1\frac{3}{8}$
Ocean	15493	$1\frac{1}{2}$

THIMBLES



No. 26023



No. 52108

Code Word	List No.	Diameter of Strand inches
Meterschap	94012	$\frac{1}{4}$
Plangent	26022	$\frac{5}{16}$
Plangimur	26023	$\frac{3}{8}$
Plangorum	26024	$\frac{7}{16}$
Planhammer	26025	$\frac{1}{2}$
Planheid	26026	$\frac{5}{8}$
Planiforme	26027	$\frac{3}{4}$

TELEPHONE GROUND RODS



No. 94039

Code Word	List No.	
Hydrologo	52108	$\frac{1}{2}$ in. x 5 ft. Galvanized. Pierced for ground wire with soldered connection.
Hydrolure	52109	$\frac{1}{2}$ in. x 6 ft. Galvanized. Pierced for ground wire, but no soldered connection. Approximate weight, $4\frac{1}{2}$ lbs.
Methymnaeo	94033	$\frac{1}{2}$ in. x 5 ft. Not galvanized. Pierced for ground wire with soldered connection.
Meticuloso	94034	$\frac{1}{2}$ in. x 6 ft. Not galvanized. Pierced for ground wire but no soldered connection.

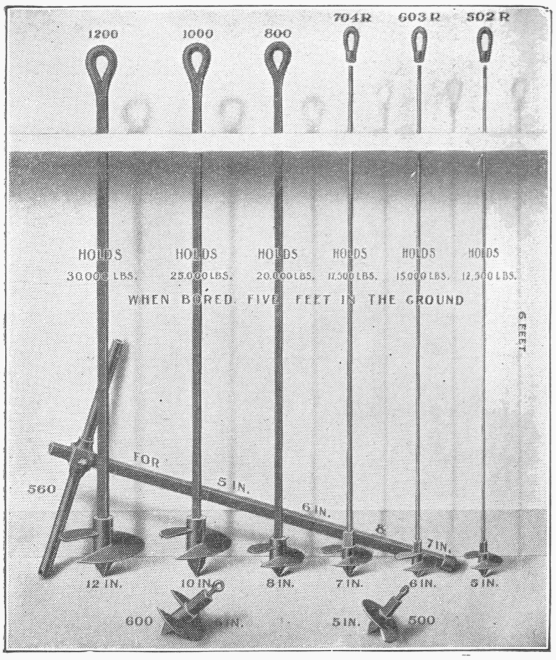
ROCK GUY BOLT

Metitionis	94039	1 in. x 18 in., 2 in. eye galvanized.
Metochite	94040	1 in. x 18 in., 2 in. eye plain.

PRICES ON REQUEST



No. 2998



Nos. 2899 to 2997

ANCHOR OR GUY RODS

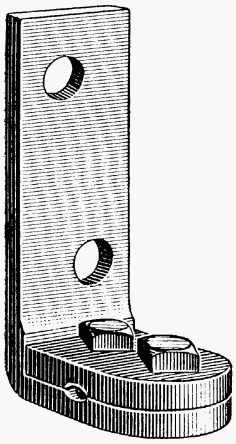
Code Word	List No.	
Metieramos	94035	1 in. x 10 ft. galvanized
Metiliorum	94036	$\frac{5}{8}$ in. x 8 ft. galvanized
Forebode	2998	$\frac{5}{8}$ in. x 6 ft. galvanized
Massstab	100004	$\frac{1}{2}$ in. x 6 ft. galvanized
Meliosedum	94037	1 in. x 10 ft. plain
Metitionem	94038	$\frac{5}{8}$ in. x 8 ft. plain
Mastrinder	100026	$\frac{5}{8}$ in. x 6 ft. plain
Mastschrot	100027	$\frac{1}{2}$ in. x 6 ft. plain

STOMBAUGH GUY ANCHORS

Rods are 6 ft. long.

Trade numbers	Diameter of Anchor inches	Class of Work	Diameter of Rod inches	Weight pounds
500	5	Light Strains	No rod	$2\frac{1}{2}$
600	6	Medium Strains	No rod	$4\frac{1}{4}$
502R	5	Light Strains	$\frac{1}{2}$	$6\frac{1}{2}$
603R	6	Medium Strains	$\frac{5}{8}$	10
704R	7	Medium Strains	$\frac{3}{4}$	15
800	8	Heavy Strains	$1\frac{1}{8}$	38
1000	10	Heavier Strains	$1\frac{1}{4}$	50
1200	12	Heaviest Strains	$1\frac{1}{2}$	80

560 Wrench for 5 in. and 6 in. anchors, weight 18 lbs.
707 Wrench for 7 in. anchor, weight 24 lbs.
No wrench required to install 8 in., 10 in. or 12 in. anchors

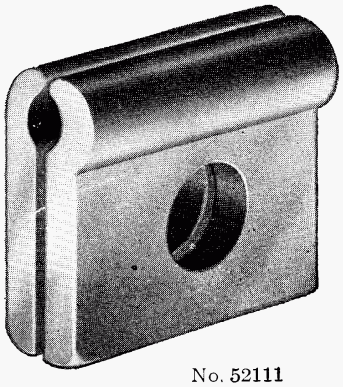


No. 52110

GALVANIZED MESSENGER CLAMPS

Code Word	List No.	
Hydromancy	**52110**	6 in. x 2 in. x $\frac{3}{8}$ in., weight 42 ozs.

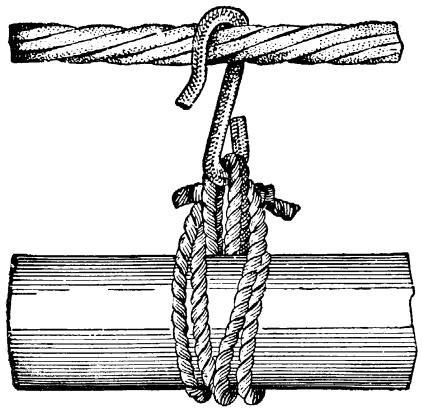
Will take strand up up to and including $\frac{3}{8}$ inch.



No. 52111

Hydromania	**52111**	Clamp

PRICES ON REQUEST



No. 52116

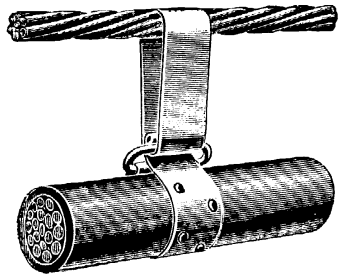
MARLINE CABLE HANGER

Furnished galvanized and regalvanized (the wire hooks galvanized a second time after they have been cut and formed). Size of cable in pairs which different size loops will hold.

Code Word	List No.	Length of Loop inches	Will Support Cables No. 19 B. & S.	No. 22 B. & S.
Metoecien	**94041**	9	24 pairs	49 pairs
Metoecorum	**94042**	11	49 pairs	99 pairs
Hydrophora	**52116**	14	99 pairs	199 pairs
Hydropismo	**52118**	16	150 pairs	300 pairs
Metoleic	**94043**	19	above 150 pairs	above 300 pairs

CABLE CLIP

Code Word	List No.
Meublasses	**94044**



No. 94044

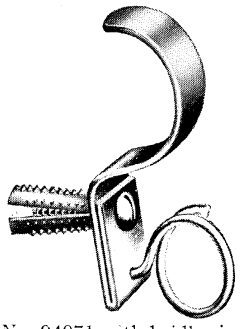
"LONG SAUT" COMBINATION CABLE CLAMP AND BRIDLE RING

GALVANIZED CLAMPS

Does not include bridle ring or expansion bolt. The Nos. 94064 and 94065 are not drilled for bridle rings.

Code Word	List No.	Diameter of Cable, inches
Mezzaiolo	**94064**	$\frac{1}{2}$
Mezzananza	**94065**	$\frac{5}{8}$
Mezzanetto	**94066**	$\frac{3}{4}$
Mezzina	**94067**	1
Mezzissimo	**94068**	$1\frac{1}{8}$
Mezzotint	**94069**	$1\frac{1}{2}$
Miagolando	**94070**	2
Miargyrite	**94071**	$2\frac{5}{8}$

Made also in other sizes and with nickel plate finish.



No. 94071 with bridle ring and expansion bolt



No. 94046

BRIDLE RINGS

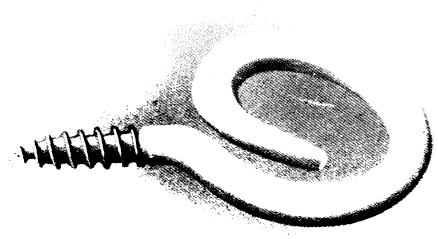
Threaded to Fit the Galvanized Straps

Code Word	List No.	
Miaveritis	**94072**	No. 10 wire, $\frac{3}{4}$ in. eye, brass
Micaceous	**94073**	No. 10 wire, $1\frac{1}{4}$ in. eye, brass
Micaiah	**94074**	No. 10 wire, $\frac{3}{4}$ in. eye, galvanized
Mication	**94075**	No. 10 wire, $1\frac{1}{4}$ in. eye, galvanized

BRIDLE OR DISTRIBUTING RINGS

Enameled or Galvanized

Code Word	List No.		
Hydrotheca	**52126**	Style A	$1\frac{5}{8}$ in. eye, $1\frac{1}{4}$ in. shank
Hydrous	**52127**	Style C	$1\frac{1}{4}$ in. eye, $1\frac{1}{4}$ in. shank
Hydroxyde	**52128**	Style E	$\frac{5}{8}$ in. eye, $\frac{7}{8}$ in. shank
Hydrozoal	**52129**	Style F	3 in. eye, $1\frac{1}{4}$ in. shank



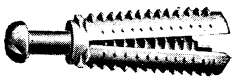
No. 52126

Without Screw, Type "DX"

Meubleront	**94046**	1 in. eye, galvanized
Meurtrier	**94047**	$1\frac{3}{8}$ in. eye, galvanized
Meurtriras	**94048**	$1\frac{3}{4}$ in. eye, galvanized
Mevaniensi	**94049**	1 in. eye, enameled
Mevaniola	**94050**	$1\frac{3}{8}$ in. eye, enameled
Mevrouw	**94051**	$1\frac{3}{4}$ in. eye, enameled

PRICES ON REQUEST

EXPANSION BOLTS



COMPOSITION ONE-PIECE SHIELD, COMPLETE WITH BRIGHT IRON SCREWS

Shield Not Over 1 in. Long

Size of Screw	Length of Screw
No. 5 or 6	$\frac{3}{4}$ in., 1 in., $1\frac{1}{2}$ in.
No. 9, 10 or 11	$\frac{3}{4}$ in., 1 in., $1\frac{1}{2}$ in., 2 in.
No. 12, 13 or 14	$\frac{3}{4}$ in., 1 in., $1\frac{1}{2}$ in., 2 in.
No. 15, 16, 17 or 18	1 in., $1\frac{1}{2}$ in., 2 in., $2\frac{1}{2}$ in.

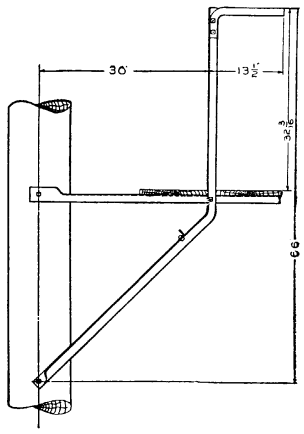


Shields $1\frac{1}{2}$ in. Long

No. 9, 10 or 11	2 in., $2\frac{1}{2}$ in., 3 in.
No. 12, 13 or 14	2 in., $2\frac{1}{2}$ in., 3 in., $3\frac{1}{2}$ in.

MALLEABLE TWO-PIECE SHIELD COMPLETE WITH LAG SCREW

Length of Lag Screw	Diameter of Lag Screw
2 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in.
$2\frac{1}{2}$ in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
3 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
4 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
5 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.
6 in.	$\frac{1}{4}$ in., $\frac{5}{16}$ in., $\frac{3}{8}$ in., $\frac{1}{2}$ in., $\frac{5}{8}$ in., $\frac{3}{4}$ in.

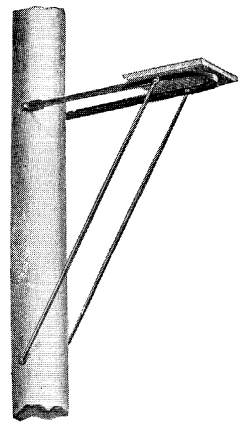


No. 1-A

COMPOSITION ONE-PIECE SHIELD

For Screw	Length of Shield inches	Outside Diameter inches
Nos. 5, 6, 7	$\frac{5}{8}$	$\frac{1}{4}$
Nos. 8, 9, 10, 11	$\frac{3}{4}$	$\frac{5}{16}$
Nos. 9, 10, 11	$1\frac{5}{8}$	$\frac{5}{16}$
Nos. 12, 13, 14	$\frac{3}{4}$	$\frac{3}{8}$
Nos. 12, 13, 14	$1\frac{1}{2}$	$\frac{7}{16}$
Nos. 12, 13, 14	$2\frac{1}{2}$	$\frac{7}{16}$
Nos. 15, 16, 17, 18	1	$\frac{7}{16}$
Nos. 22, 23, 24	$1\frac{1}{4}$	$\frac{9}{16}$

No. 1-A CABLE POLE BALCONY



No. 94045

As an adjunct to the No. 15 cable terminal, a pole balcony as inconspicuous as possible has been designed to be used on poles carrying cable terminals of such height as to require linemen to stand while at work upon them.

While the feature of appearance has been an important one affecting the design, the necessity for substantial construction has been by no means disregarded. The framework is of angle iron to secure ample strength and the flooring is of oak. A permanent guard-rail is provided.

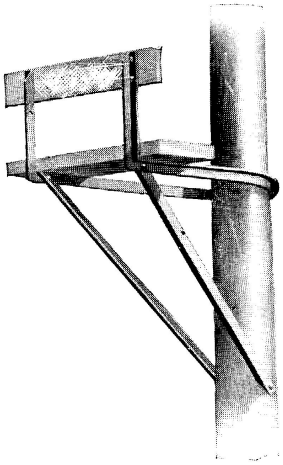
All parts are given a coating of asphaltum paint.

WESTERN ELECTRIC COMPANY POLE SEAT

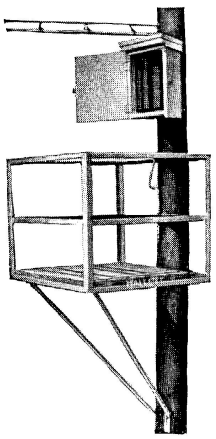
The frame is made of $1\frac{1}{4}$ in. x $1\frac{1}{4}$ in. x $\frac{1}{8}$ in. angle iron with a brace of $\frac{5}{8}$ in. round iron. The frame is 2 ft. $7\frac{3}{4}$ in. long and has a pine seat 11 in. x 13 in. bolted to it. All parts are given a coat of asphaltum paint.

Code Word	List No.
Meubleriez	**94045**

PRICES ON REQUEST



No. 52132



No. 52136

POLE SEAT

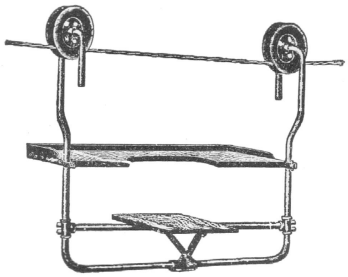
For use at small terminals or in places where a platform would be too conspicuous our pole seat cannot be surpassed. Its angle frame is rigid. Its back and seat board are of oak. We can furnish this seat, fitted with an over balance weight that will keep it tipped up when not in use—clear of snow and sleet.

Code Word	List No.	
Hydrusa	**52132**	Black
Hydurilate	**52133**	Galvanized

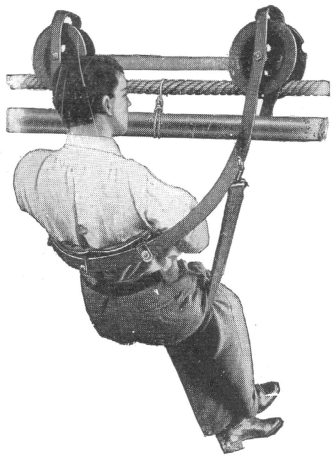
POLE PLATFORM

This platform has two strong angle rails, an oak floor on an iron frame, and two round rod braces. This is the platform to use on important terminal poles—where a good deal of work is done—the sense of security imparted by the railing makes it possible for the lineman to give his entire attention to his work.

Code Word	List No.	
Hyemated	**52136**	Galvanized
Hyemation	**52137**	Painted



No. 1 Car



No. 3 Car

CABLE CARS

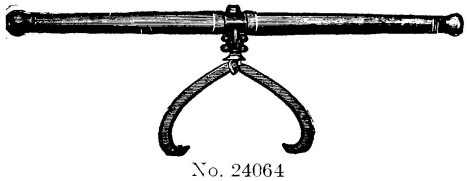
Cable car No. 1 is a combined seat and table. The framework of the car is continuous, without joints. The seat is of wood, and the rollers of malleable iron. The table is adjustable. Tested for 1000 pounds.

Car No. 3 is lighter than No. 1 and is not equipped with a table. It is intended for use with a lineman's safety belt. The height of the seat is adjustable.

Code Word	List No.	
Massiccio	**100002**	Cable car No. 1
Massicoter	**100003**	Cable car No. 3

TOOLS

CARRYING HOOKS



No. 24064

Code Word	List No.	
Skill	**24064**	With swivel bearing, 4 ft. handle
Maro	**15010**	Extra heavy, 7 ft. handle
Marquan	**15011**	Heavy, 6 ft. handle
Marquette	**15012**	Medium, 5 ft. handle
Feign	**4402**	Standard weight, 4 ft. handle

CANT HOOKS



No. 15007

Merwin	**15007**	Length, 4 ft.
Penonne	**24890**	Length, 4½ ft.

TAMPING BARS



No. 24075

Skinch	**24075**	Hardwood, iron shoe, length 7 ft.
Piovendo	**25770**	Heavy hardwood 7 ft.

PRICES ON REQUEST



No. 4412



No. 25093



No. 4421



No. 4423



No. 4407



No. 4410



No. 3869



No. 3870



No. 14928

Tools—Continued

SPLITWOOD HANDLE DIGGER

Code Word	List No.	Length feet
Felbovinum	4412	5 ft. handle
Feld	4413	7 ft. handle

THE ELECTRIC SPUD

Songstress	25093	With tamping end. 9 ft. long

TAMPING AND DIGGING BARS

Felician	4421	1⅛ in. octagon tool steel, 8 ft. long, weight, 30 lbs.
Felicify	4422	1 in. octagon tool steel, 8 ft. long, weight, 25 lbs.
Ejerzo	5924	1 in. round tool steel, 7 ft. long, weight, 19 lbs.

CROW AND DIGGING BARS

Ejointage	5925	1 in. round steel, 7 ft. long, weight, 17 lbs.
Felicitate	4423	1 in. octagon steel, 7 ft. long, weight, 17 lbs.
Felicitous	4424	1⅛ in. octagon steel 8 ft. long, weight, 28 lbs.

LONG-HANDLED SHOVELS

Pioveva	25771	5 ft. or 6 ft. shovel, 9 in. strap
Pipabimus	25772	7 ft. shovel, 9 in. strap
Pipabunt	25773	8 ft. shovel, 9 in. strap
Feisty	4407	5 ft. or 6 ft. shovel 18 in. strap
Metcalf	14912	7 ft. shovel, 18 in. strap
Metropolitan	14913	8 ft. shovel 18 in. strap

LONG-HANDLED SPOONS

Piparote	25776	6 ft. solid spoons, 9 in. strap
Pipaste	25777	7 ft. solid spoons, 9 in. strap
Pipavisset	25778	8 ft. solid spoons, 9 in. strap
Felanders	4410	6 ft. spoon, 18 in. strap
Beefall	3782	7 ft. spoon, 18 in. strap
Befit	3783	8 ft. spoon, 18 in. strap

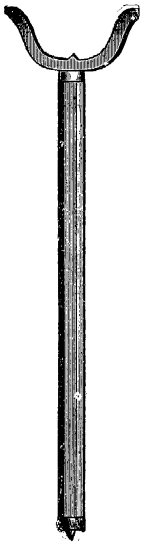
GRADING SHOVELS

Binocular	3869	Round point
Binoculate	3870	Square point

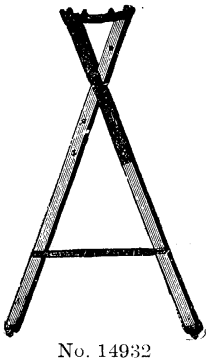
PIKE POLES

		Length feet
Millerton	14928	12
Millenburg	14929	14
Millar	14930	16
Millerburg	14931	18
Piously	25768	20

PRICES ON REQUEST



No. 24078



No. 14932

Tools—Continued

POLE SUPPORTS

Mule Pattern

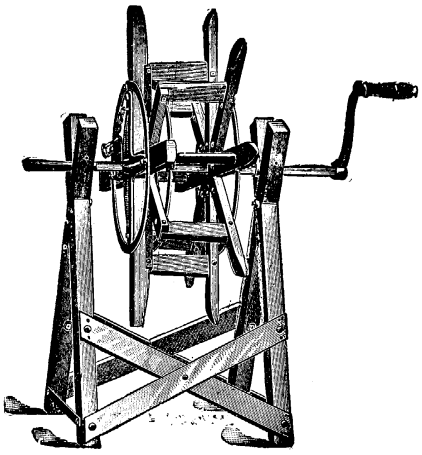
Code Word	List No.	Length feet
Skink	24078	4½
Skinless	24079	6
Skinner	24080	7½

Jenney Pattern

Pilanga	14932	height, 6 ft.
Millercan	14933	height, 7½ ft.

RAISING FORKS OR GUARDED PIKE POLES

Feliform	4427	10 ft. handle, 1¾ in. thick
Millanvill	14925	12 ft. handle, 1¾ in. thick
Millanfeld	14926	14 ft. handle, 2⅛ in. thick
Millervill	14927	16 ft. handle, 2⅛ in. thick
Felinal	4428	18 ft. handle, 2⅛ in. thick



No. 15015

REELS

Take-Up Reels

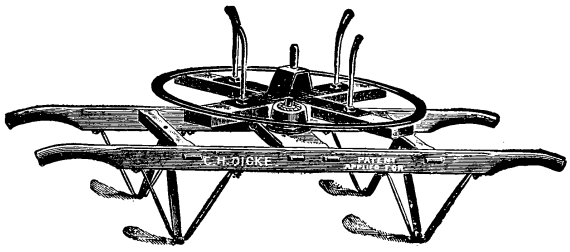
Martel	15015	Improved take-up reel

Common Pay-Out Reel

Pilantium	2544	Pay-out reel

Ball-Bearing Pay-Out Reel with Carrying Handles

Pilanorum	2545	Pay-out and take-up reel, heavy
Piove	25769	Same, but much lighter
Pilaremus	2546	Reel straps, per set

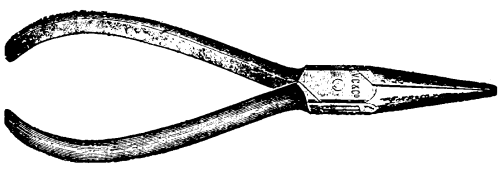


No. 2545

VOM CLEFF'S LONG NOSE CHAIN PLIERS

Not Side Cutting—First Quality

Code Word	List No.	Length inches
Fense	4517	3
Fensible	4518	3½
Fensome	4519	4
Fensucked	4520	4½
Fensure	4521	5
Fent	4522	5½
Fenugreck	4523	6



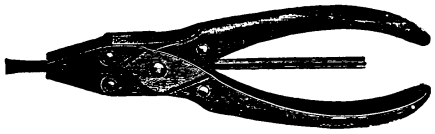
No. 4517

VOM CLEFF'S ROUND, LONG NOSE

Cordovan	2879	3
Corduroy	2880	3½
Cordwain	2881	4
Corelation	2882	4½
Corinne	2883	5
Corinthian	2884	5½
Cork	2885	6

PRICES ON REQUEST

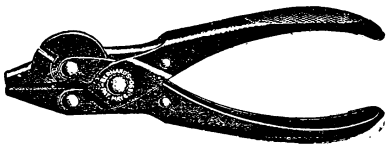
Tools—Continued



No. 2688

BERNARD'S PARALLEL PLIERS

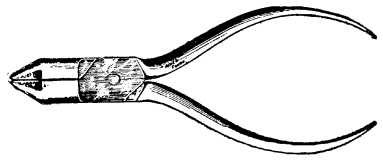
Code Word	List No.	Length inches
Consummate	2688	4½
Pingres	2689	5½
Pianguamen	2690	6½
Contact	2691	7½



No. 3789

BERNARD'S COMBINED PARALLEL AND CUTTING PLIERS

Code Word	List No.	Length inches	Will Cut Wire	Width between plying jaws when open, inches
Beholder	3789	4½	No. 9 B. & S.	¼ in.
Beholding	3790	5½	No. 7 B. & S.	⅜ in.
Behoove	3791	6½	No. 5 B. & S.	½ in.
Belabor	3792	7½	No. 3 B. & S.	¾ in.



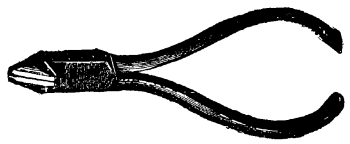
No. 3746

VOM CLEFF'S LINEMAN'S PLIERS

Code Word	List No.	Length inches
Forefend	3746	3½
Forefinger	3747	5
Forefoot	3748	5½
Forefront	3749	6

STUBS' SIDE CUTTING PLIERS

Anarchist	3663	4
Anarchy	3664	4½
Anatomist	3665	5
Anatomy	3667	6
Anatron	3668	7
Ancestor	3669	8
Milbrook	2523	9
Pilunno	25744	10



No. 2869

VOM CLEFF'S DIAGONAL CUTTING PLIERS

Corant	2869	3
Corcule	2870	3½
Cord	2871	4
Cordage	2872	4½
Cordate	2873	5
Corded	2874	5½
Cordelia	2875	6
Cordial	2876	6½
Cordially	2877	7
Cordon	2878	8



No. 8633

STUBS' DIAGONAL CUTTING PLIERS

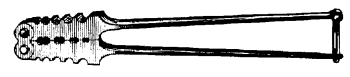
Foregaff	3750	5
Foreganger	3751	5½
Foregather	3752	6

SPLICING CLAMPS

Contagious	8633	For Nos. 8, 10, 12, 14 B. & S. gauge wires and finer.
Pingendos	5109	For wire connectors on Nos. 8, 10, 12 and 14 B. & S. gauge wires.
Forelay	3769	For wire connectors on Nos. 8, 10, 12, 14 B. & S. gauge or Nos. 10, 12, 16 British gauge copper wire on one side and No. 6 and finer iron wire on the other side.



No. 5109



No. 3769

FRY'S PATENT LINEMAN'S SPLICING PLIERS

Code Word	List No.	Length inches
Ejulatuum	5927	7 in.
Eclairage	5090	8 in.

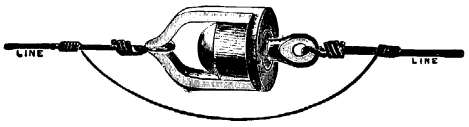
PRICES ON REQUEST

Tools—Continued

WIRE JOINTS

For splicing wires together. Made to accommodate two wires of the same or different sizes and in two lengths—full and half—the former being about 4 in. long for No. 14 wire, and the latter about 2¼ in. long for the same size wire. Made of plain copper for use with copper wires and of tinned copper for use with galvanized iron wires. Splicing clamps are used to twist the joints.

Orders should state size and kind of wire to be accommodated and whether full or half length joints are desired.

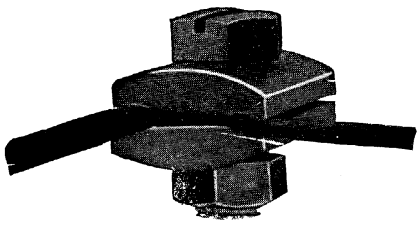


No. 24578

THE ANTI-HUM

Humming of line wires easily and cheaply remedied

Code Word	List No.
Ossiopia	**24578**



No. 52130

COPPER TEST CONNECTOR

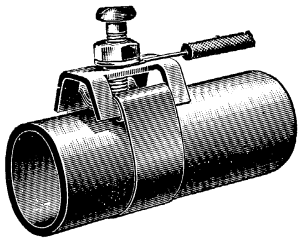
It securely grips wires of the same or different sizes. The convex surface allows the clamp to readily adjust itself.

Code Word	List No.
Hydrozoon	**52130**

NEW YORK GROUND CLAMP

For connecting telephone and telegraph ground wires to pipes or cables

Code Word	List No.
Pillottano	**25711**



No. 25711

STEEL LAG SCREW WRENCH

This wrench is very convenient for drawing up lag screws through cross arms. The jaw is made tapering to accommodate variations in bolt heads.

Code Word	List No.
Mekers	**15078**



No. 15078

COMBINATION LAG SCREW AND NUT WRENCH

Will take lag screws and nuts for ⅜ in., ½ in., and ⅝ in. bolts.

Code Word	List No.
Medway	**15077**

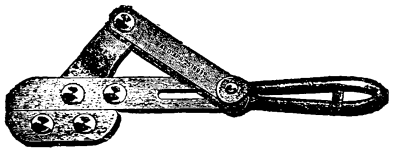


No. 15077

STEEL TIE WRENCH

The purpose of this tool is to make the tie around the line wire, where it is fastened to the insulators. It will wind the tie around line smoothly, without marring the hard drawn copper wire on which it is intended for use.

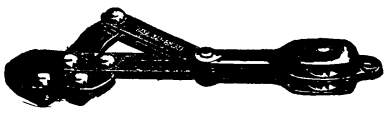
Code Word	List No.
Medora	**15076**



No. 14946

BUFFALO GRIPS

Code Word	List No.	
Milesburg	**14946**	No. 1, extreme opening .22 in., holding wire from the smallest to No. 6, inclusive.
Forborn	**2519**	No. 1, with pulley; will accommodate rope ⅜ in.
Milipitus	**14945**	No. 2, extreme opening .35 in., holding all sizes from the smallest to No. 0, inclusive.
Forby	**2565**	No. 2, with pulley; will accommodate rope 7/16 in.
Acosmism	**25594**	No. 3, extreme opening .48 in., holding all sizes of wire from the smallest to No. 0000 inclusive.
Forcause	**2663**	No. 3, with pulley; will accommodate rope ⅝ in.
Force	**2664**	No. 4, extreme opening .52 in.; for insulated wire.



No. 2519

PRICES ON REQUEST



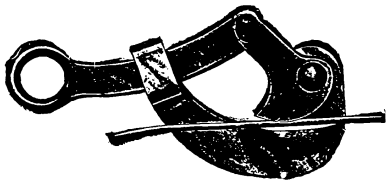
No. 2667

Tools—Continued

BUFFALO LINEMAN'S TOOL

Latest adaptation to needs of line construction men. Self-adjusting brake, which holds securely under severest tension.

Code Word	List No.	
Forcedly	2667	Lineman's tool, with No. 1 grip, .22 in. opening
Forcedness	2677	Lineman's tool, with No. 2 grip, .35 in. opening
Piomesi	25762	Lineman's tool, with No. 4 grip, .52 in. opening



No. 3494

HAVEN'S CLAMP

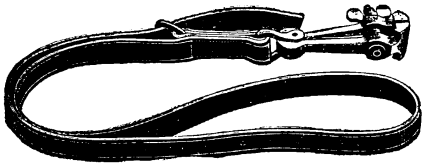
Blundering	3494	Small size, for No. 8 wire and finer
Blunt	3495	Large size, for ½ in. and finer

ECCENTRIC CLAMPS

Skeed	24099	For No. 9 wire and finer

KLEIN'S PLAIN ECCENTRIC

Beauty	3705	Brass, for No. 8 wire and finer
Beautyspot	3706	Steel, for No. 8 wire and finer



Nos. 1109 and 2548

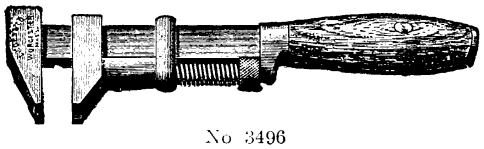
CAST STEEL VISES

Bilking	2547	5½ in.
Billbrook	2548	6 in.
Billet	2549	5½ in. copper-faced jaws
Milville	2538	6 in. copper-faced jaws

VISE OR ECCENTRIC STRAPS

Milroy	1109

WRENCHES



No 3496

Code Word	List No.	Length inches
Blunted	3496	6
Blunting	3497	8
Bluntly	3498	10
Blur	3499	12
Blurred	3500	15
Blurring	3501	18
Elfjarig	6187	21

8-INCH COLD CHISEL

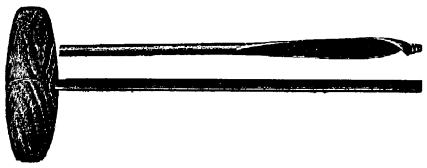


No. 15180

Code Word	List No.	Width inches
Momence	15180	⅜
Mona	15181	½
Moncure	15182	⅝
Monclova	15183	¾
Pinuelos	25757	⅞

PRICES ON REQUEST

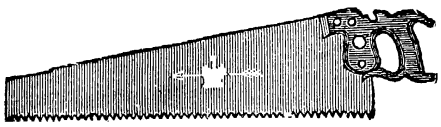
Tools—Continued



No. 15152

BELL HANGER'S GIMLET

Code Word	List No.	Length inches	Diameter inches
Minedosa	15152	15	$\frac{8}{32}$
Mineota	15153	15	$\frac{10}{32}$
Minewakan	15154	15	$\frac{12}{32}$
Minock	15155	24	$\frac{8}{32}$
Minuka	15156	24	$\frac{10}{32}$
Minster	15157	24	$\frac{12}{32}$
Mishawaka	15158	36	$\frac{8}{32}$
Misoula	15159	36	$\frac{10}{32}$
Missoura	15160	36	$\frac{12}{32}$



No. 1750

SAWS

Connive	1750	18
Connivency	1751	20
Connivent	1752	22
Conniver	1753	24



No. 15085

DRAW KNIVES

Melborn	15085	12
Melvin	15086	14



No. 15116

NAIL HAMMERS

Plain Eye

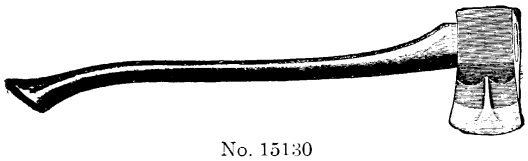
Code Word	List No.	Weight ounces
Mewdota	15116	12
Menlo	15117	15
Mento	15118	18



No. 15122

HATCHETS

Meridan	15122	$3\frac{3}{4}$ in. cut
Meridia	15123	4 in. cut



No. 15130

LINEMAN'S AXE

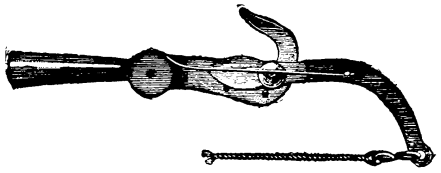
Merillian	15130	With handle



No. 15125

HAND AXES

Merigold	15124	$4\frac{1}{2}$ in. cut
Merom	15125	5 in. cut
Merian	15126	$5\frac{1}{2}$ in. cut
Merricourt	15127	6 in. cut



No. 2520

TREE TRIMMERS

Minburne	2520	Small size, 18 in. over all
Minden	2521	Large size, 21 in. over all
Pinguesco	5177	18 ft. handles for above
Melton	15080	Best cast steel; length, 12 in., 2 in. cutters

PRICES ON REQUEST



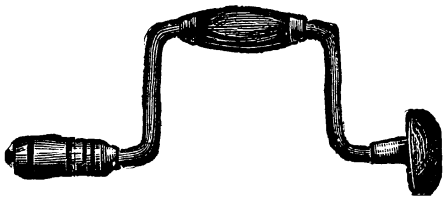
Dicke Type



No 5168



No. 15185



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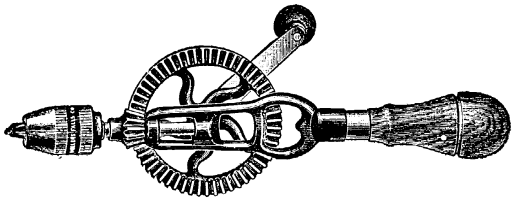

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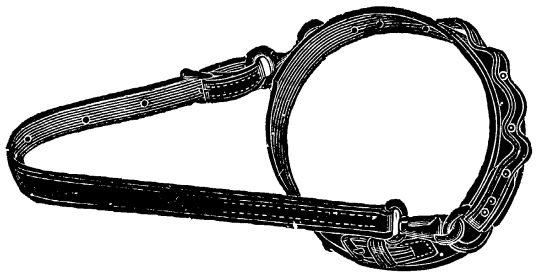


Nos. 5033 and 5034

Tools—Continued

DICKE LOCK FERRULE SCREW DRIVER

Blades forged from finest tool steel, polished malleable ferrules, fluted handles.

Cabinet—Length of blade..$2\frac{1}{2}$ $3\frac{1}{2}$ $4\frac{1}{2}$ $5\frac{1}{2}$ $6\frac{1}{2}$ $8\frac{1}{2}$ $10\frac{1}{2}$ $12\frac{1}{2}$

Machinists—Length of blade.$2\frac{1}{2}$ 3 4 5 6 7 8 9 10 11 12

Blades and handles of the Dicke screw driver are warranted not to turn in the ferrule.

" YANKEE " RATCHET SCREW DRIVER

No. 10

Right and Left Hand, and Rigid

Code Word	List No.	Length of Blade inches
Economicas	**5166**	2
Pilcrow	**5167**	3
Economique	**5168**	4
Economist	**5169**	5
Economizar	**5170**	6
Pildish	**5171**	8
Pildora	**5172**	10
Pildanthe	**5173**	12

SOCKET FRAMING CHISEL

Code Word	List No.	Width inches
Pinulam	**25758**	$\frac{1}{2}$
Pinus	**25759**	$\frac{3}{4}$
Monster	**15185**	1
Mondamin	**15186**	$1\frac{1}{2}$
Mondola	**15187**	2

RATCHET BRACE

Code Word	List No.	Sweep inches
Pinfeather	**2917**	8
Conjunctly	**2918**	10

BITS

Diameters by thirty-second inch from $\frac{3}{32}$ in. to $\frac{32}{32}$ in.

Diameters by sixteenth inch from $\frac{3}{16}$ in. to $\frac{24}{16}$ in.

No. 4491 expansion bit bores from $\frac{1}{2}$ in. to $1\frac{1}{2}$ in.

No. 4492 expansion bit bores from $\frac{7}{8}$ in. to 3 in.

HAND DRILL

The chuck will hold twist drills from $\frac{1}{32}$ to $\frac{1}{8}$ inch. Six drill points are furnished with each drill. The drills are made of malleable iron, nickel plated; with steel spindle and rosewood head and handle.

Code Word	List No.	
Feminate	**4485**	Single gear, hollow handle
Pingadouro	**4486**	Double gear, same chuck

BREAST DRILL

Pinetorum **6216**

We furnish Miller's Falls No. 13, which is similar to cut.

TOOL BELTS

Code Word	List No.	
Monongah	**15200**	Plain tool belt
Pindenisso	**5033**	Tool belt, for use with safety strap
Pindonga	**5034**	Safety strap to attach to tool belt; heavy snap on each end

LINEMAN'S TOOL BAG

Pindariser	**15201**	Canvas, 20 in., with leather bottom
Pindarismo	**6227**	12 in., with leather bottom
Pindemonte	**5031**	Leather, best russet, with shoulder stay

PRICES ON REQUEST

Tools—Continued



No. 15165

INSPECTOR'S TOOLS

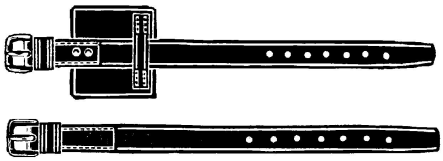
Code Word	List No.	
Modena	**15165**	Complete set in morocco case, containing everything necessary for adjusting telephone apparatus, telegraph and stock-printing instruments, etc.
Modesta	**15166**	Case only.



No. 24093

KLEIN EASTERN CLIMBERS

Skittish	**24093**	Without straps
Skittishly	**24094**	Straps, with pads
Pintiparo	**25752**	Nickel plated



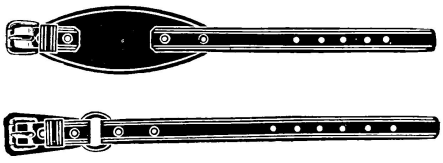
EASTERN

DICKE EASTERN CLIMBERS

Pintoja	**25753**	Without straps
Pintojos	**25754**	Straps



No. 24091



WESTERN

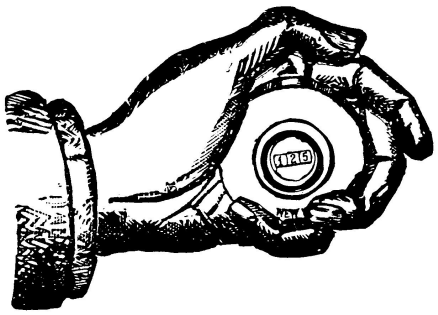
KLEIN WESTERN CLIMBERS

16 in. to 18 in.

Skirt	**24091**	Without straps
Skirting	**24092**	Straps
Pintamonos	**25750**	Nickel plated
Pintiparar	**25751**	Pads for above

DICKE WESTERN CLIMBERS

Pintonas	**25755**	Without straps
Pinturas	**25756**	Straps



No. 15218

POLE COUNTER OR TALLY REGISTER

Montevale	**15216**	Records to 100
Pilobole	**25718**	Records to 1000
Pilofora	**25719**	Records to 10000

PRICES ON REQUEST

Tools—Continued



No. 15165

INSPECTOR'S TOOLS

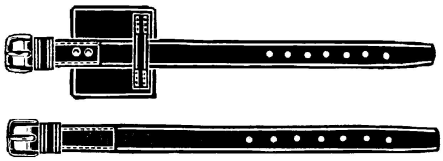
Code Word	List No.	
Modena	**15165**	Complete set in morocco case, containing everything necessary for adjusting telephone apparatus, telegraph and stock-printing instruments, etc.
Modesta	**15166**	Case only.



No. 24093

KLEIN EASTERN CLIMBERS

Skittish	**24093**	Without straps
Skittishly	**24094**	Straps, with pads
Pintiparo	**25752**	Nickel plated



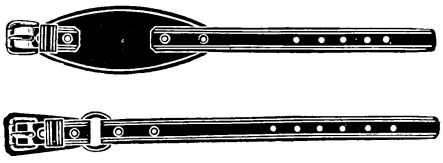
EASTERN

DICKE EASTERN CLIMBERS

Pintoja	**25753**	Without straps
Pintojos	**25754**	Straps



No. 24091



WESTERN

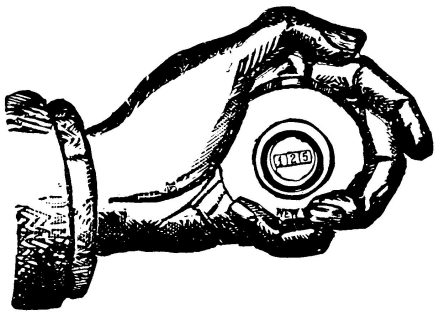
KLEIN WESTERN CLIMBERS

16 in. to 18 in.

Skirt	**24091**	Without straps
Skirting	**24092**	Straps
Pintamonos	**25750**	Nickel plated
Pintiparar	**25751**	Pads for above

DICKE WESTERN CLIMBERS

Pintonas	**25755**	Without straps
Pinturas	**25756**	Straps



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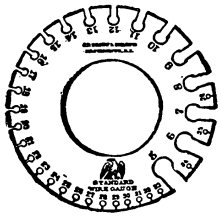
POLE COUNTER OR TALLY REGISTER

Montevale	**15216**	Records to 100
Pilobole	**25718**	Records to 1000
Pilofora	**25719**	Records to 10000

PRICES ON REQUEST

Tools—Continued



No. 8625

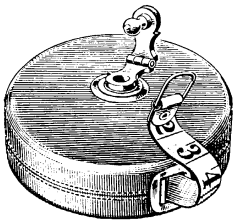
GAUGES

Standard Wire Gauge

Code Word	List No.	
Pindongueo	8624	American, Nos. 0 to 36.
Constrain	8625	American, Nos. 5 to 36.
Pindust	8626	English, Nos. 1 to 36.
Pinenchyma	8627	English, Nos. 6 to 36.

TAPE LINES

Linen tape reinforced with wire; hard leather case.



No. 15205

Code Word	List No.	Length Feet
Monrovia	15205	25
Monsin	15206	50
Pilogyne	25720	75
Montague	15207	100

Steel Tape

Pilosisme	25725	25
Pilosorum	25726	50
Pilostyle	25727	75
Pilotage	25728	100

VULCAN ELECTRIC SOLDERING IRON



No. 52030

Excellent for telephone work. Consumes minimum of energy. Heats quickly. Removable tips, no screws.

Code Word	List No.
Hyetology	52030

SOLDERING COPPERS

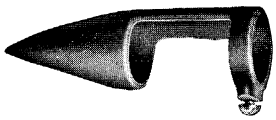
Pointed



No. 3513

Code Word	List No.	
Pignattini	24876	1 lb. to the pair.
Pignattone	24877	1½ lb. to the pair.
Pignolato	24889	2 lb. to the pair.
Blustrous	3513	2½ lb. to the pair.

RITTER SOLDERING COPPER



No. 4532

This soldering copper is designed to be attached to any gasoline blow torch. This is an exceedingly convenient soldering iron for linemen, inside wiremen, or for shop use. The temperature of the copper is maintained constant when the torch is in operation.

Code Word	List No.
Feral	4532

EXCELSIOR SOLDERING COPPERS



No. 4711

Code Word	List No.	
Fiberd	4711	For joints on No. 12, 14, 16 wire.
Fibration	4712	For joints on No. 9, 12, 14 wire.
Fibrillous	4713	For joints on No. 4, 6, 8 wire

PRICES ON REQUEST



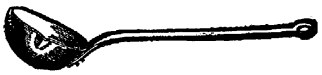
No. 3338



No. 3339



No. 17481



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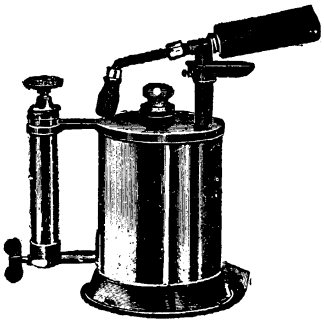

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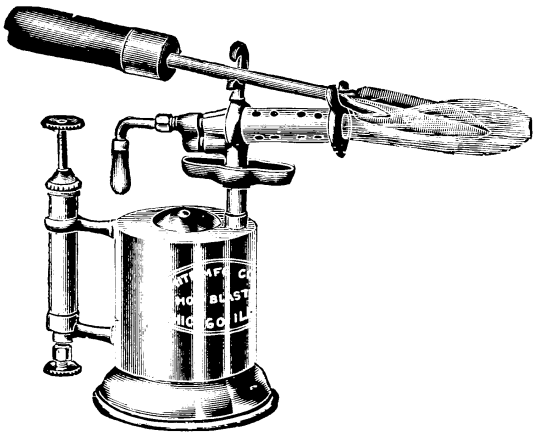


No. 23118

Tools—Continued

ALLEN SOLDERING STICK

Code Word	List No
Solemnnees	24459

SOLDER

Concord	3340	Resin core solder
Concoler	3338	Strictly half and half
Pinillosie	3339	Wire solder

SOLDER POTS

Code Word	List No.	Diameter inches
Pinonates	17481	5
Blushfully	3507	6
Blushless	3509	8

SOLDER LADLES

Carabine	2550	2½
Caravan	2551	3
Cardine	2552	4
Careen	2553	5

VICTOR SOLDERING SALTS

Code Word	List No.	Package
Arbitrate	3205	In ½ lb. bottles
		In 1 lb. bottles
		In 5 lb. bottles

BURNLEY SOLDERING PASTE

Pipitanas	25799	In 2 oz. boxes
Plangence	26021	In 4 oz. boxes

HIGHLAND SOLDERING PASTE

Ferant	4534	In boxes containing 2 ozs.
Planetule	26019	In boxes containing 1 lb.
Plangebat	26020	In boxes containing 5 lbs.

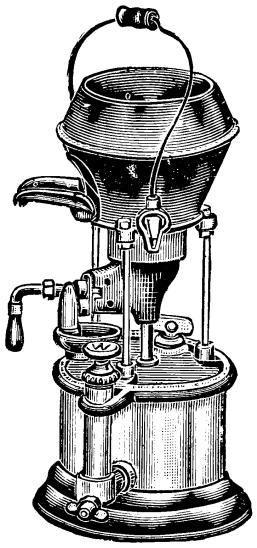
THE COMBINATION "HOT BLAST" BLOW TORCH

Code Word	List No.
Simply	23118

GASOLINE BLOW TORCH

Pinnipedes	5148

PRICES ON REQUEST



No. 15220

Tools—Continued

FURNACES

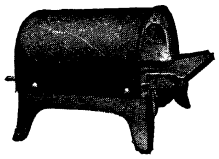
Code Word	List No.	
Montevideo	**15220**	Combination hot blast furnace holds one gallon of oil.

COMBINATION SOLDERING TORCH

For Alcohol

Code Word	List No.
Montcell	**15225**

This torch can be carried in the pocket or tool bag. The handle contains a vial for acid, doing away with carrying an extra acid bottle. The blow pipe is adjustable and the wick large. It is made entirely of brass. and highly polished.



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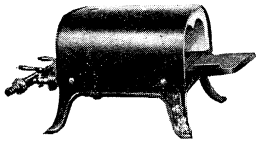

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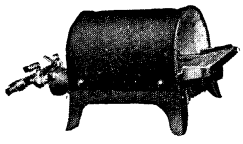

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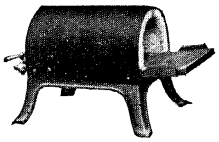


No. 94063

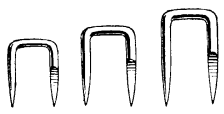
SOLDERING IRON FURNACES

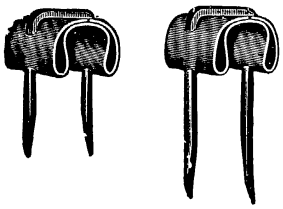
Code Word	List No.	
Mezereum	**94060**	No. 1 Soldering Furnace (American Meter Co.)
Mezinheira	**94061**	No. 2 Hercules Furnace
Meziriac	**94062**	No. 2 Fire King Furnace
Mezzabout	**94063**	No. 3 Superior Furnace

DOUBLE-POINTED TACKS

Code Word	List No.	Length inches
Grafton	**11950**	$\frac{3}{8}$
Grayson	**11951**	$\frac{1}{2}$
Ossiculo	**11952**	$\frac{5}{8}$

BLAKE INSULATED STAPLES





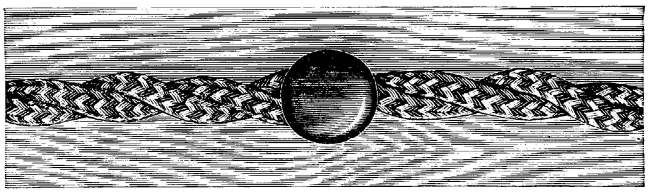
For use on all low voltage circuits of interior wiring, such as telephone work.

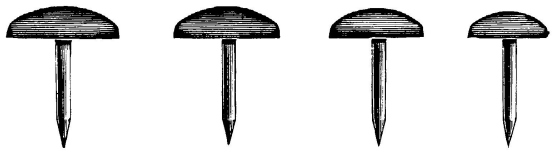
These are a standard, square shouldered staple having good driving qualities the upper part of which is so protected by a sheet fibre insulation as to prevent the covering on the wire coming in contact with the metal of the staple.

Code Word	List No.	Length inches
Placammo	**18879**	$\frac{1}{2}$
Mevrouwen	**94052**	$\frac{5}{8}$
Hyetograph	**52029**	$\frac{3}{4}$
Mevrouwtje	**94053**	$\frac{7}{8}$

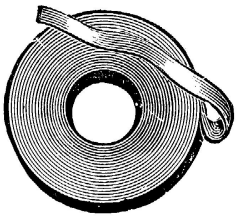
PRICES ON REQUEST

MILONITE NAILS





No. 22 No. 20 No. 18 No. 15



No. 94055

Used in installing twisted pair wires. The head is of insulating material and the shank is covered with an insulating paint. The heads are made in four sizes as shown full size herewith and may be obtained in gray, dark green and dark brown.

TAPE

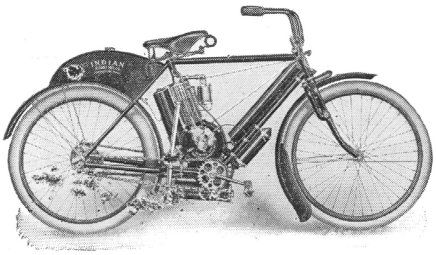
Code Word	List No.	
Mexericada	**94054**	Amazon, black
Mexerufada	**94055**	Victor, black
Beamlet	**3638**	Grimshaw, black
Beamtree	**3639**	Grimshaw, white
Pigorada	**24891**	Competition
Beancaper	**3642**	Okonite
Beancod	**3643**	Manson, black
Beanfed	**3644**	Manson, white
Creased	**8746**	Kerite, black
Escatimado	**7943**	P. & B.



No. 15150

ELECTRICIAN'S SCISSORS

Code Word	List No.	
Mingo	**15150**	Nickel plated.



Indian Motor Cycle

WEBBING

For wrapping multiple cables in switchboards.

Code Word	List No.	
Mezclarian	**94057**	Cotton, 1⅛ in. wide, slate.
Mezeillade	**94058**	Cotton, 1⅛ in. wide, black.



Tandem Attachment

TWINE

For sewing switchboard cables in runs.

Code Word	List No.	
Mezereine	**94059**	12 strand linen.

INDIAN MOTOR CYCLE

These are offered in following styles with attachments:
Single cylinder 2¼ horsepower
Double cylinder, 4 horsepower
Tandem attachment
Luggage carrier attachment (capacity 50 pounds)

PRICES ON REQUEST

DIFFERENCE BETWEEN WIRE GAUGES IN DECIMAL PARTS OF AN INCH

No. of Wire Gauge	American or Brown & Sharpe	Birmingham or Stubs	Washburn & Moen Mfg. Co., Worcester, Mass.	Trenton Iron Co., Trenton, N. J.	New British	Old English from Brass Mfrs. List	No. of Wire
000000	.....	....	.46	.....	.....	.....	000000
00000	.....	....	.43	.45	.....	.....	00000
0000	.46	.454	.393	.4	.4	.....	0000
000	.40964	.425	.362	.36	.372	.....	000
00	.3648	.38	.331	.33	.348	.....	00
0	.32495	.34	.307	.305	.324	.....	0
1	.2893	.3	.283	.285	.3	.....	1
2	.25763	.284	.263	.265	.276	.....	2
3	.22942	.259	.244	.245	.252	.....	3
4	.20431	.238	.225	.225	.232	.....	4
5	.18194	.22	.207	.205	.212	.....	5
6	.16202	.203	.192	.19	.192	.....	6
7	.14428	.18	.177	.175	.176	.....	7
8	.12849	.165	.162	.16	.16	.....	8
9	.11443	.148	.148	.145	.144	.....	9
10	.10189	.134	.135	.13	.128	.....	10
11	.090742	.12	.12	.1175	.116	.....	11
12	.080808	.109	.105	.105	.104	.....	12
13	.071961	.095	.092	.0925	.092	.....	13
14	.064084	.083	.08	.08	.08	.083	14
15	.057068	.072	.072	.07	.072	.072	15
16	.05082	.065	.063	.061	.064	.065	16
17	.045257	.058	.054	.0525	.056	.058	17
18	.040303	.049	.047	.045	.048	.049	18
19	.03589	.042	.041	.039	.04	.04	19
20	.031961	.035	.035	.034	.036	.035	20
21	.028462	.032	.032	.03	.032	.0315	21
22	.025347	.028	.028	.027	.028	.0295	22
23	.022574	.025	.025	.024	.024	.027	23
24	.0201	.022	.023	.0215	.022	.025	24
25	.0179	.02	.02	.019	.02	.023	25
26	.01594	.018	.018	.018	.018	.0205	26
27	.014195	.016	.017	.017	.0164	.01875	27
28	.012641	.014	.016	.016	.0148	.0165	28
29	.011257	.013	.015	.015	.0136	.0155	29
30	.010025	.012	.014	.014	.0124	.01375	30
31	.008928	.01	.0135	.013	.0116	.01225	31
32	.00795	.009	.013	.012	.0108	.01125	32
33	.00708	.008	.011	.011	.01	.01025	33
34	.006304	.007	.01	.01	.0092	.0095	34
35	.005614	.005	.0095	.009	.0084	.009	35
36	.005	.004	.009	.008	.0076	.0075	36
37	.004453	....	.0085	.00725	.0068	.0065	37
38	.003965	....	.008	.0065	.006	.00575	38
39	.003531	....	.0075	.00575	.0052	.005	39
40	.003144	....	.007	.005	.0048	.0045	40

EQUIVALENTS OF WIRES

Brown & Sharpe Gauge

0000	2 No. 0	4 No. 3	8 No. 6	16 No. 9	32 No. 12	64 No. 15
000	2 No. 1	4 No. 4	8 No. 7	16 No. 10	32 No. 13	64 No. 16
00	2 No. 2	4 No. 5	8 No. 8	16 No. 11	32 No. 14	64 No. 17
0	2 No. 3	4 No. 6	8 No. 9	16 No. 12	32 No. 15	64 No. 18
1	2 No. 4	4 No. 7	8 No. 10	16 No. 13	32 No. 16	64 No. 19
2	2 No. 5	4 No. 8	8 No. 11	16 No. 14	32 No. 17	64 No. 20
3	2 No. 6	4 No. 9	8 No. 12	16 No. 15	32 No. 18	64 No. 21
4	2 No. 7	4 No. 10	8 No. 13	16 No. 16	32 No. 19	64 No. 22
5	2 No. 8	4 No. 11	8 No. 14	16 No. 17	32 No. 20	64 No. 23
6	2 No. 9	4 No. 12	8 No. 15	16 No. 18	32 No. 21	64 No. 24
7	2 No. 10	4 No. 13	8 No. 16	16 No. 19	32 No. 22	64 No. 25
8	2 No. 11	4 No. 14	8 No. 17	16 No. 20	32 No. 23	64 No. 26
9	2 No. 12	4 No. 15	8 No. 18	16 No. 21	32 No. 24	64 No. 27
10	2 No. 13	4 No. 16	8 No 19	16 No. 22	22 No. 25	64 No. 28
11	2 No. 14	4 No. 17	8 No. 20	16 No. 23	32 No. 26	64 No. 29
12	2 No. 15	4 No. 18	8 No. 21	16 No. 24	32 No. 27	64 No. 30
13	2 No. 16	4 No. 19	8 No. 22	16 No. 25	32 No. 28	
14	2 No. 17	4 No. 20	8 No. 23	16 No. 26	32 No. 29	
15	2 No. 18	4 No. 21	8 No. 24	16 No. 27	32 No. 30	
16	2 No. 19	4 No. 22	8 No. 25	16 No. 28		
17	2 No. 20	4 No. 23	8 No. 26	16 No. 29		
18	2 No. 21	4 No. 24	8 No. 27	16 No. 30		
19	2 No. 22	4 No. 25	8 No. 28			
20	2 No. 23	4 No. 26	8 No. 29			
21	2 No. 24	4 No. 27	8 No. 30			

BARE COPPER WIRE

Am. Gauge B.&S. No.	Diam. mils.	Area: Circular Mils. (d2) 1 mil.-.001 inch	Area: Square in. (D^2x.7854)	Weight and Lg'th Sp. Gr. 8.9: Lbs. per 1000 ft.	Pounds per mile	Feet per pound	Resistence at 75° F: R. Ohms per 1000 feet	Ohms per mile	Feet per ohm	Ohms per pound
0000	460.000	211600.00	166190.	639.33	3375.7	1.56	.04906	.25903	20383.	.000076736
000	409.640	167805.00	131790.	507.01	2677.0	1.97	.06186	.32664	16165.	.00012039
00	364.800	133079.40	104520.	402.09	2123.0	2.49	.07801	.41187	12820.	.00019423
0	324.950	105592.50	82932.	319.04	1684.5	3.13	.09831	.51909	10409.	.00030772
1	289.300	83691.20	65733.	252.88	1335.2	3.95	.12404	.65490	8062.3	.00048994
2	257.680	66373.00	52130.	200.54	1058.8	4.99	.15640	.82582	6393.7	.00078045
3	229.420	52634.00	41399.	159.03	839.68	6.29	.19723	1.0414	5070.2	.0012406
4	204.310	41742.00	32784.	126.12	665.91	7.93	.24869	1.3131	4021.0	.0019721
5	181.940	33102.00	25998.	100.01	528.05	10.00	.31361	1.6558	3188.7	.0031361
6	162.020	26250.50	20617.	79.32	418.81	12.61	.39546	2.0881	2528.7	.0049868
7	144.280	20816.00	16349.	62.90	332.11	15.90	.49871	2.6331	2005.2	.0079294
8	128.490	16509.00	12966.	49.88	263.37	20.05	.62881	3.3201	1590.3	.012608
9	114.430	13094.00	10284.	39.56	208.88	25.28	.79281	4.1860	1261.3	.020042
10	101.890	10381.00	8153.2	31.37	165.63	31.38	1.	5.2800	1000.0	.031380
11	90.742	8234.00	6467.0	24.88	137.37	40.20	1.2607	6.6568	793.18	.050682
12	80.808	6529.90	5128.6	19.73	104.18	50.69	1.5898	8.3940	629.02	.080585
13	71.961	5178.38	4067.0	15.68	82.792	63.78	2.0037	10.5798	499.06	.127788
14	64.084	4106.76	3225.4	12.44	65.658	80.42	2.5266	13.3405	375.79	.203180
15	57.068	3256.76	2557.8	9.86	52.069	101.40	3.1860	16.8223	313.87	.323079
16	50.820	2582.67	2028.4	7.82	41.292	127.87	4.0176	21.2130	248.90	.513737
17	45.257	2048.20	1608.6	6.20	32.746	161.24	5.0660	26.7485	197.39	.816839
18	40.303	1624.33	1275.7	4.92	25.970	203.31	6.3880	33.7285	156.54	1.298764
19	35.890	1288.09	1011.6	3.90	20.594	256.39	8.0555	42.5329	124.14	2.065312
20	31.961	1021.44	802.2	3.09	16.331	323.32	10.1584	53.6362	98.44	3.284374
21	28.462	810.09	636.2	2.45	12.952	407.67	12.8088	67.6302	78.07	5.221775
22	25.347	642.47	504.6	1.95	10.272	514.03	16.1504	85.2343	61.92	8.301819
23	22.571	509.45	400.1	1.54	8.1450	648.25	20.3674	107.540	49.10	13.20312
24	20.100	404.01	317.3	1.22	6.4593	817.43	25.6830	135.606	38.94	20.99405
25	17.900	320.41	251.6	.97	5.1227	1030.71	32.3833	170.984	30.88	33.37780
26	15.940	254.08	199.5	.77	4.0623	1299.77	40.8377	215.623	24.49	53.07946

PRICES ON REQUEST

THE METRIC SYSTEM

Metric Denominations and Values	Equivalents in Denominations in use

WEIGHTS

Name	No. Grams	Weight of what quantity of water at max. density
Millier or tonneau	= 1,000,000 =	1 cubic meter.
Quintal	= 100,000 =	1 hectoliter.
Myriagram	= 10,000 =	10 liters.
Kilogram or Kilo	= 1,000 =	1 liter.
Hectogram	= 100 =	1 deciliter.
Dekagram	= 10 =	10 cubic centimeters.
Gram	= 1 =	1 cubic centimeter.
Decigram	= .1 =	.1 cubic centimeter.
Centigram	= .01 =	10 cubic millimeters.
Milligram	= .001 =	1 cubic millimeter.

Name	No. Grams	Avoirdupois Weight
Millier or tonneau	= 1,000,000 =	2,204.6 pounds.
Quintal	= 100,000 =	220.46 pounds.
Myriagram	= 10,000 =	22.046 pounds.
Kilogram or Kilo	= 1,000 =	2.2046 pounds.
Hectogram	= 100 =	3.5274 ounces.
Dekagram	= 10 =	0.3527 ounce.
Gram	= 1 =	15.432 grains.
Decigram	= .1 =	1.5432 grains.
Centigram	= .01 =	0.1543 grain.
Milligram	= .001 =	0.0154 grain.

MEASURES OF LENGTH

Myriameter	= 10,000 meters	= 6.2137 miles.
Kilometer	= 1,000 meters	= 0.62137 m. or 3,280 ft. 10 in.
Hectometer	= 100 meters	= 328.feet and 1 inch.
Dekameter	= 10 meters	= 393.7 inches.
Meter	= 1 meter	= 39.37 inches.
Decimeter	= .1 meter	= 3.937 inches.
Centimeter	= .01 meter	= 0.3937 inch.
Millimeter	= .001 meter	= 0.0394 inch.

MEASURES OF SURFACE

Hectare	= 10,000 square meters =	2.471 acres.
Are	= 100 square meters =	119.6 square yards.
Centare	= 1 square meter =	1.550 square inches.

MEASURES OF CAPACITY

Name	No. Liters	Cubic Measure	Dry Measure
Kiloliter	= 1,000 =	1 cu. meter	= 1.308 cubic yards.
Hectoliter	= 100 =	.1 cu. meter	= 2 bush. 3.35 pks.
Decaliter	= 10 =	10 c. decimet.	= 9.08 quarts.
Liter	= 1 =	1 c. decimet.	= 0.908 quart.
Deciliter	= .1 =	.1 c. decimet.	= 6.1022 cubic in.
Centiliter	= .01 =	10 c. centim.	= 0.6102 cubic in.
Milliliter	= .001 =	1 c. centim.	= 0.061 cubic in.

Name	No. Liters	Cubic Measure	Wine Measure
Kiloliter	= 1,000 =	1 cubic meter	= 264.17 galls.
Hectoliter	= 100 =	.1 cubic meter	= 26.417 galls.
Decaliter	= 10 =	10 c. decimeters	= 2.6417 galls.
Liter	= 1 =	1 c. decimeter	= 1.0567 qts.
Deciliter	= .1 =	.1 c. decimeter	= 0.845 gill.
Centiliter	= .01 =	10 c. centimeter	= 0.388 fluid oz.
Milliliter	= .001 =	1 c. centimeter	= 0.27 fluid oz.

PRICES ON REQUEST

TABLE
of
DECIMAL EQUIVALENTS

of 8ths, 16ths, 32ds and 64ths of an Inch

FOR USE IN CONNECTION WITH THE MICROMETER CALIPERS

8ths.	64ths.
$\frac{1}{8}$ = .125	$\frac{1}{64}$ = .015625
$\frac{1}{4}$ = .250	$\frac{3}{64}$ = .046875
$\frac{3}{8}$ = .375	$\frac{5}{64}$ = .078125
$\frac{1}{2}$ = .500	$\frac{7}{64}$ = .109375
$\frac{5}{8}$ = .625	$\frac{9}{64}$ = .140625
$\frac{3}{4}$ = .750	$\frac{11}{64}$ = .171875
$\frac{7}{8}$ = .875	$\frac{13}{64}$ = .203125
16ths.	$\frac{15}{64}$ = .234375
$\frac{1}{16}$ = .0625	$\frac{17}{64}$ = .265625
$\frac{3}{16}$ = .1875	$\frac{19}{64}$ = .296875
$\frac{5}{16}$ = .3125	$\frac{21}{64}$ = .328125
$\frac{7}{16}$ = .4375	$\frac{23}{64}$ = .359375
$\frac{9}{16}$ = .5625	$\frac{25}{64}$ = .390625
$\frac{11}{16}$ = .6875	$\frac{27}{64}$ = .421875
$\frac{13}{16}$ = .8125	$\frac{29}{64}$ = .453125
$\frac{15}{16}$ = .9375	$\frac{31}{64}$ = .484375
32ds.	$\frac{33}{64}$ = .515625
$\frac{1}{32}$ = .03125	$\frac{35}{64}$ = .546875
$\frac{3}{32}$ = .09375	$\frac{37}{64}$ = .578125
$\frac{5}{32}$ = .15625	$\frac{39}{64}$ = .609375
$\frac{7}{32}$ = .21875	$\frac{41}{64}$ = .640625
$\frac{9}{32}$ = .28125	$\frac{43}{64}$ = .671875
$\frac{11}{32}$ = .34375	$\frac{45}{64}$ = .703125
$\frac{13}{32}$ = .40625	$\frac{47}{64}$ = .734375
$\frac{15}{32}$ = .46875	$\frac{49}{64}$ = .765625
$\frac{17}{32}$ = .53125	$\frac{51}{64}$ = .796875
$\frac{19}{32}$ = .59375	$\frac{53}{64}$ = .828125
$\frac{21}{32}$ = .65625	$\frac{55}{64}$ = .859375
$\frac{23}{32}$ = .71875	$\frac{57}{64}$ = .890625
$\frac{25}{32}$ = .78125	$\frac{59}{64}$ = .921875
$\frac{27}{32}$ = .84375	$\frac{61}{64}$ = .953125
$\frac{29}{32}$ = .90625	$\frac{63}{64}$ = .984375
$\frac{31}{32}$ = .96875	

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