

The Bell Telephone Company of Canada Engineering Department

Specifications 3854

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SUBSTATION CONNECTIONS

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APPARATUS TO INSTALL—See SUBSTATION APPARATUS	

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SUBSTATION CONNECTIONS

GENERAL

Connect subscriber's sets and associated apparatus according to these specifications where no switching key or auxiliary equipment for signaling between main and extension stations is required. Where switching key or auxiliary signaling equipment is required connect according to separate specifications covering SUBSTATION WIRING PLANS.

TIP AND RING

Common Battery Central Offices

"Tip" (ground) side of line is connected to ground side of central office battery.

"Ring" (battery) side of line is connected to live side of central office battery.

Except —

Prepayment coin collector lines have "tip" connected to live side of central office battery and "ring" open until operator plugs cord in jack, which connects "tip" to ground side and "ring" to live side of central office battery.

Test for "tip" and "ring" by connecting one terminal of receiver or test set to ground and other terminal alternately to two sides of line. "Ring" side gives louder click in receiver.

With prepayment coin collector lines, have operator plug cord in jack before making test.

COLOR SCHEME

Connect tracers of inside wire as follows—

Red tracer to "ring" side of line.

Green tracer to "tip" side of line.

Use yellow tracer for signaling ground wire or other purpose where a third wire is required.

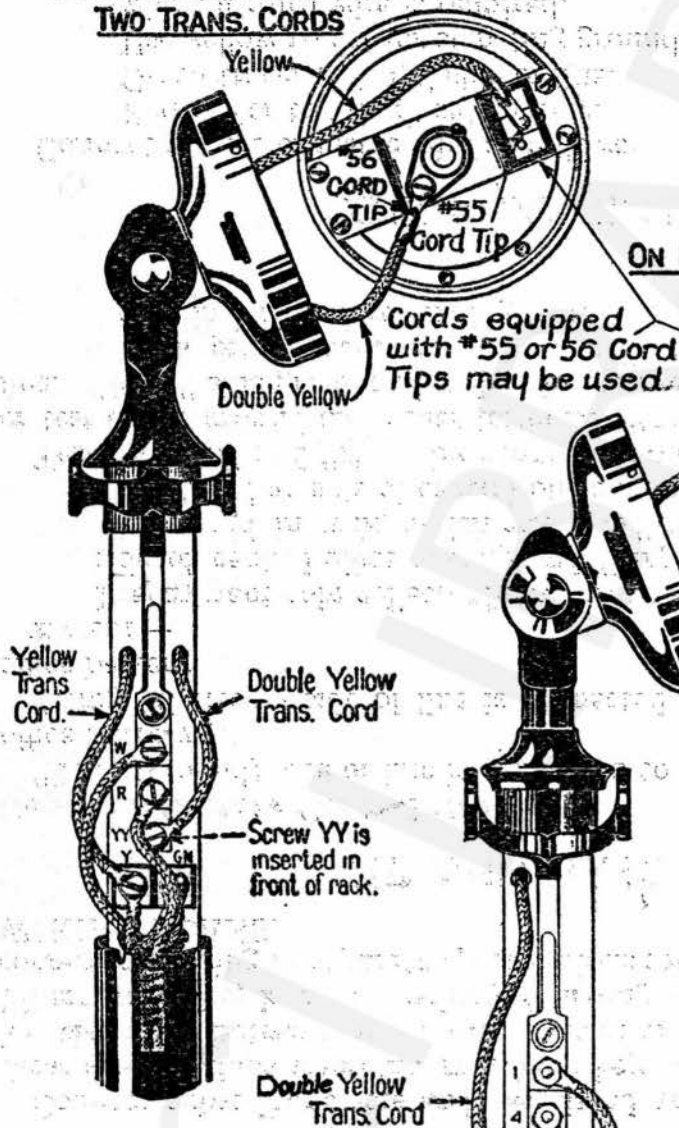
Tracer conductor of outside wire corresponds to red tracer of inside wire and should be connected to "ring" side of line.

In connecting wires and cords, connect like tracers (red to red, yellow to yellow, etc.).

TRANSMITTERS

#323 and #329

ON DESK STANDS HAVING TWO TRANS. CORDS



ON DESK STANDS HAVING ONE TRANS. CORD

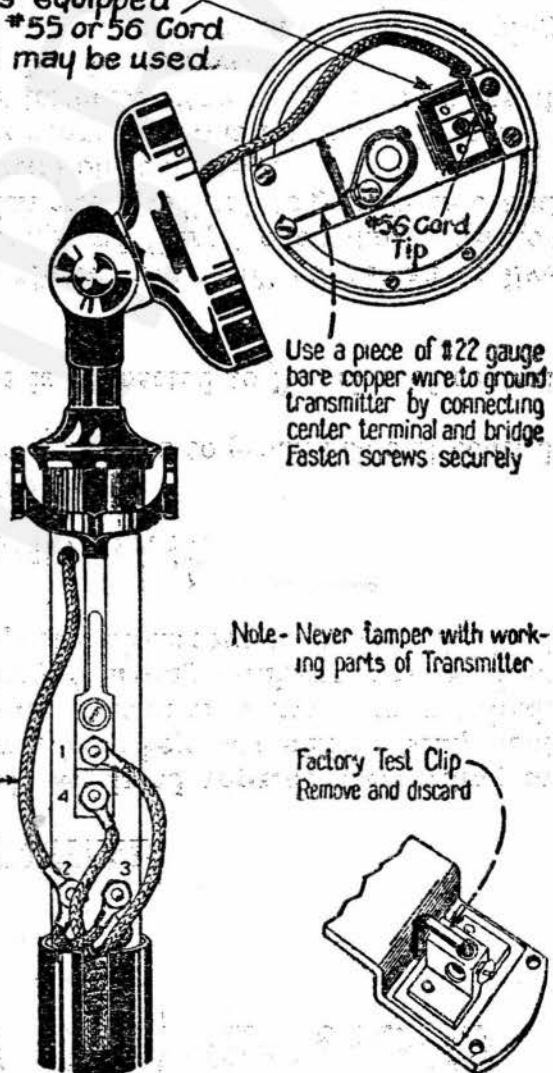
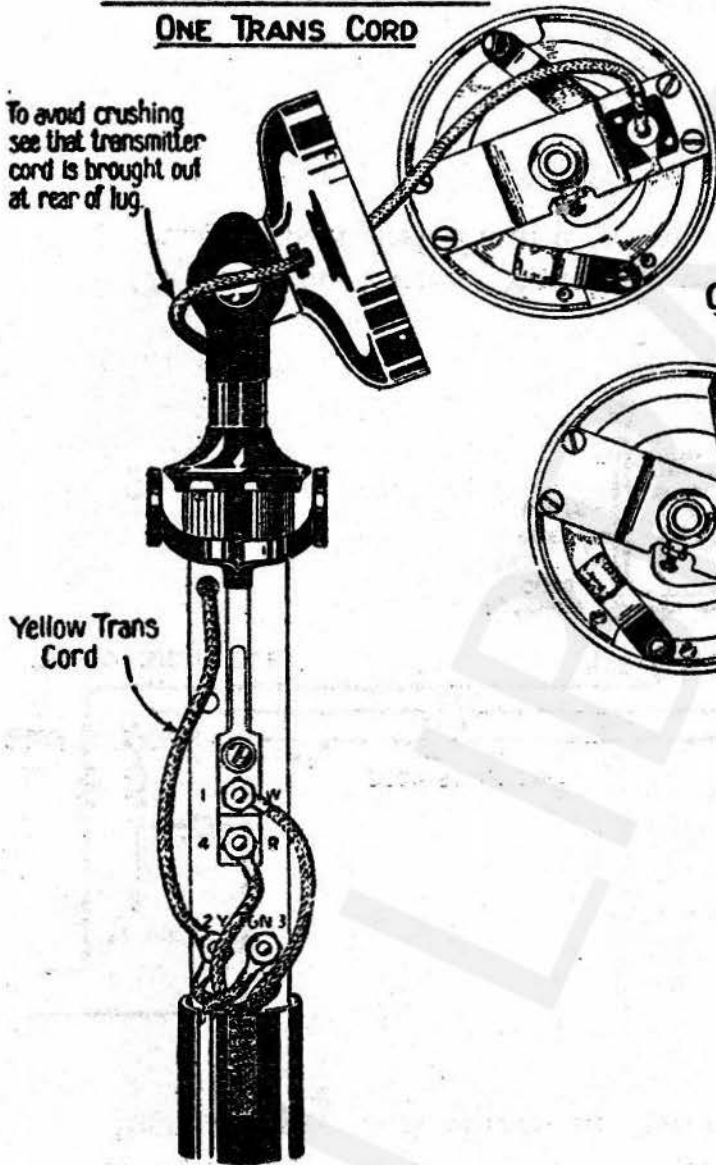
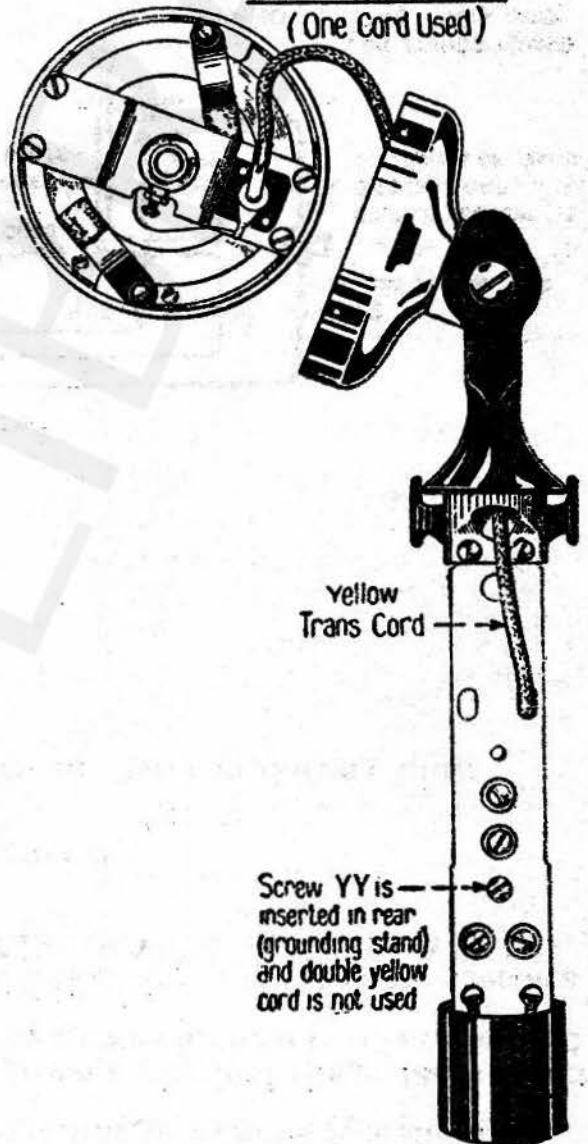


Figure 2
#229 Transmitters
ON DESK STANDS HAVING
ONE TRANS CORD

To avoid crushing
 see that transmitter
 cord is brought out
 at rear of lug.



ON DESK STANDS HAVING
TWO TRANS. CORDS
(One Cord Used)



Screw YY is—
 inserted in rear
 (grounding stand)
 and double yellow
 cord is not used

Connect to transmitters on wall sets same as on desk stands.

DESK STANDS

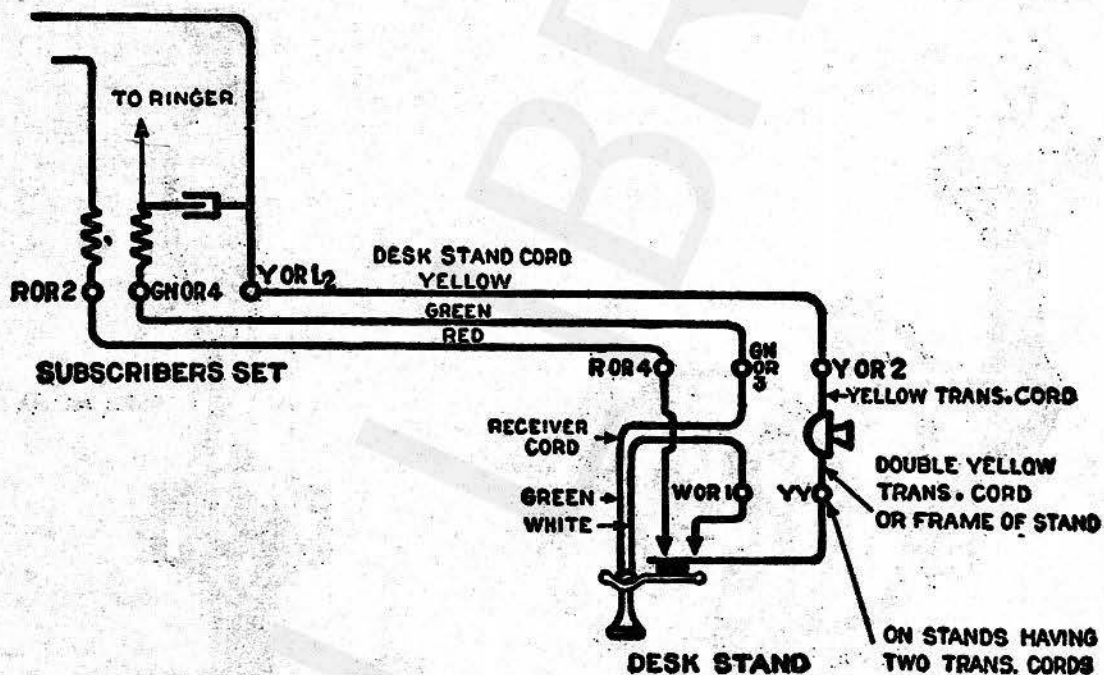
Connect to subscribers' sets according to Figures 3, 4 and 5.

Connect line wires, signaling ground wire and ringer leads to set terminals according to kind of line to which apparatus is connected.

For connection of side tone reduction circuit see separate specifications covering SUBSTATION APPARATUS INSTALLATION.

Figure 3

Regular Type Desk Stands on Common Battery Lines



On common battery signaling and local battery talking lines, connect desk stand to set according to Figure 5.

Figure 4
Jack and Plug Connections for Desk Sets on
Common Battery Lines

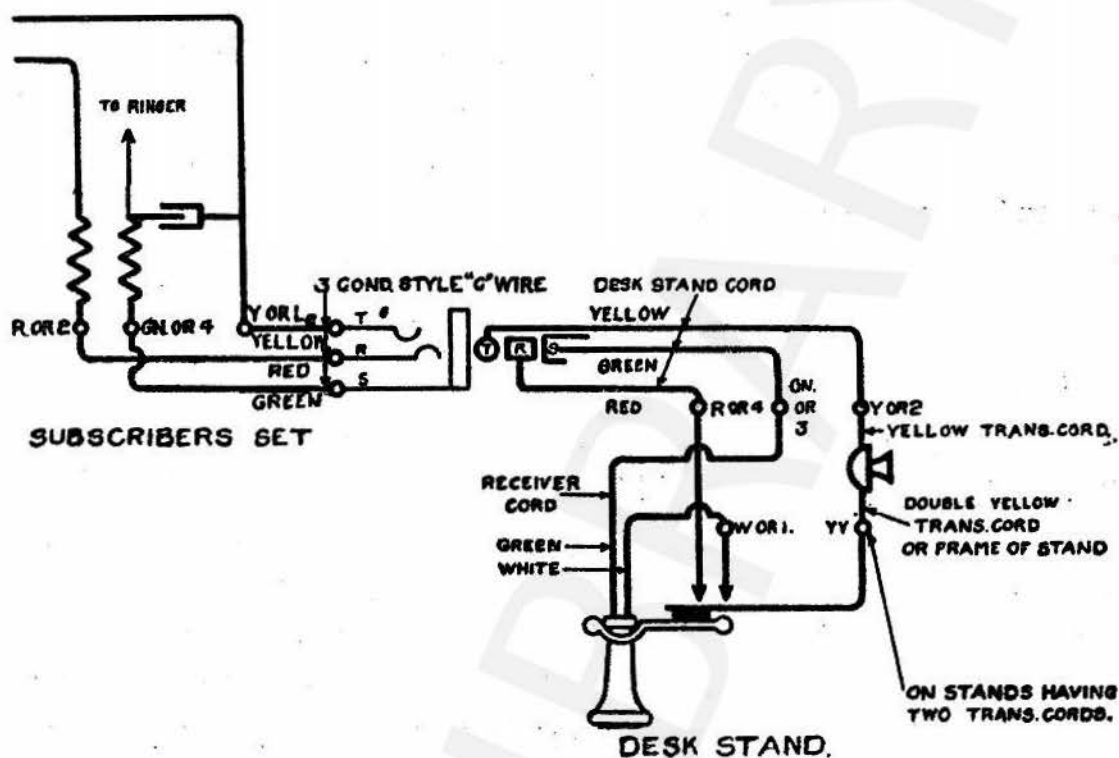
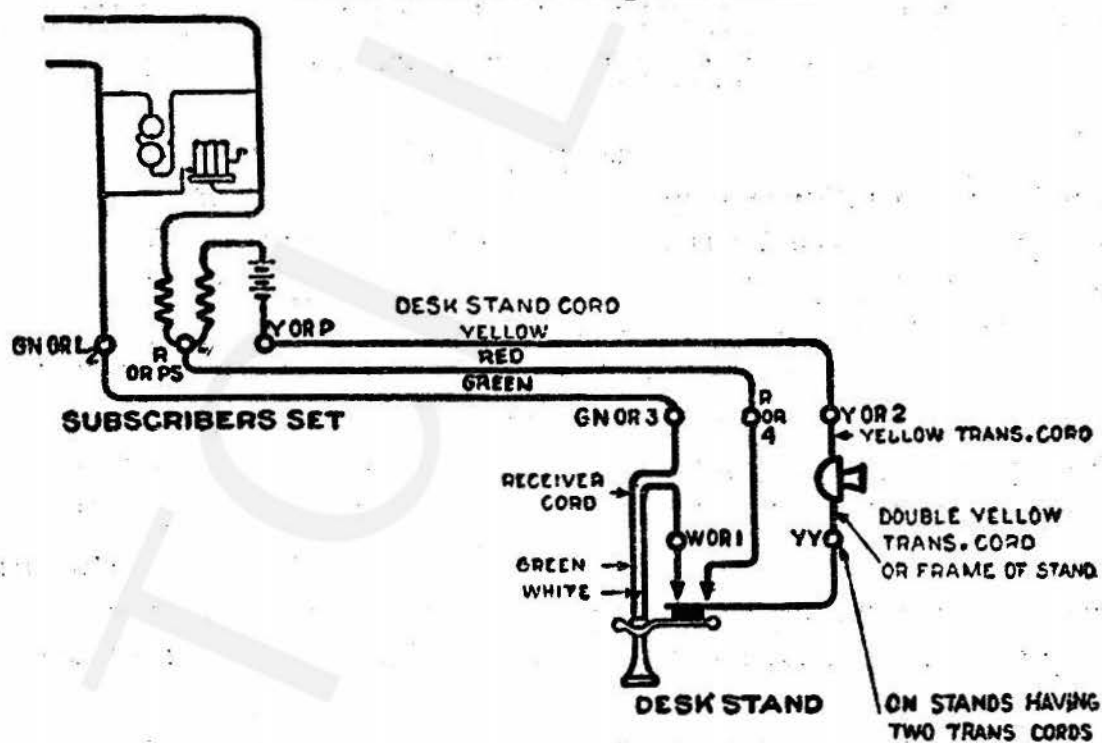


Figure 5
Desk Stands on Magneto Lines



NUMBER OF RINGERS ALLOWED

Do not install for any party on common battery or magneto lines more than following number of ringers (including main station ringer).

Individual lines..... 4 (Figs. 9 and 20)

Non-selective party lines..... 2 (A and B Fig. 9, and Fig. 20)

Two-party selective lines..... 4 (Fig. 15)

Note: In machine-ringing districts, number of ringers must be limited as above to prevent premature operation of tripping relay at Central Office. Because of possibility of adoption of machine ringing in other districts, use standard ringer wiring for all new work and when changes in wiring are made at existing installations.

SELECTION OF APPARATUS FOR COMMON BATTERY EXTENSION STATIONS

Where Ringer is Required at Extension Station, use set with induction coil, condenser and ringer.

Where Desk Set Without Ringer is Required at Extension Station, use desk stand only (See Figure 8), except under the following exceptional conditions, where a set with induction coil and condenser (ringer disconnected) should be used:

- (a) Where wire run between main and extension stations is over 250 feet.
- (b) Where main and extension stations are in different buildings (in accordance with contract order).
- (c) At common battery signaling and local battery talking stations (use set with induction coil, condenser and ringer, disconnecting ringer).

Where Wall Set Without Ringer is Required at Extension Station, use wall set, disconnecting ringer.

COMMON BATTERY INDIVIDUAL LINES

Connect desk stands according to Figure 3.

Main Station

Connect as for main station, Figure 6.

Extension Stations With Ringers

Figure 6
One Extension Station

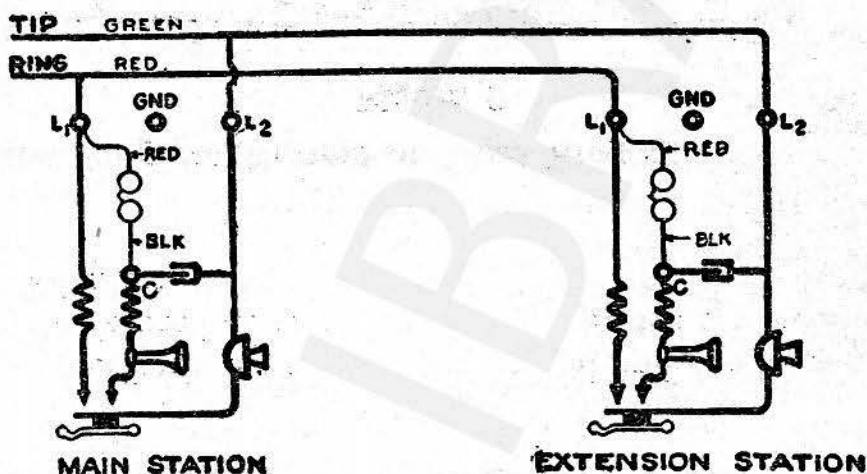
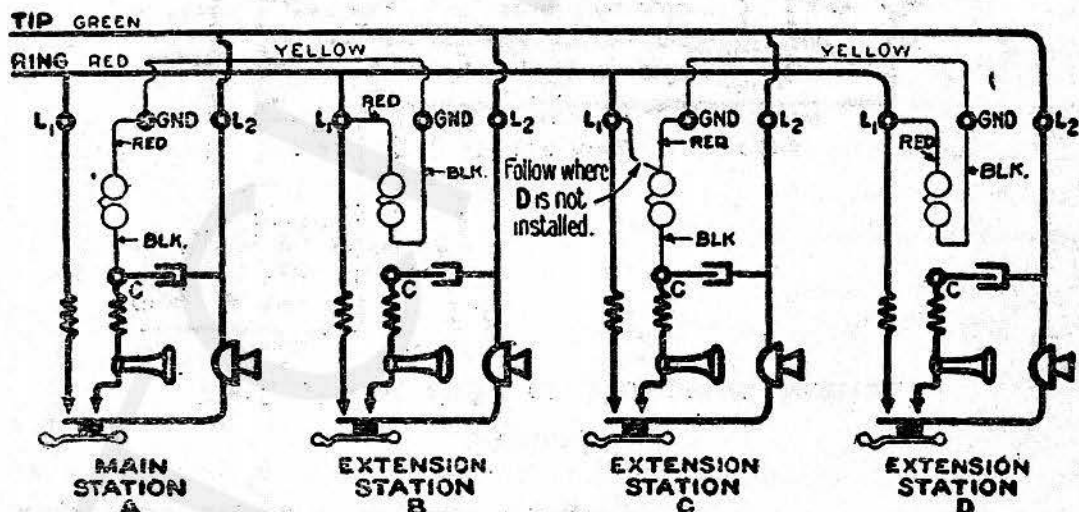


Figure 7
Two or Three Extension Stations

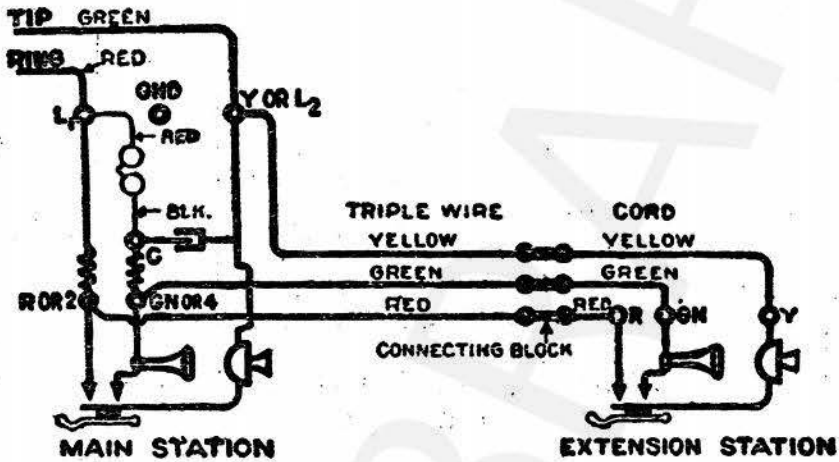


With 2 extension stations connect as shown for A, B and C.
3 A, B, C and D.

COMMON BATTERY INDIVIDUAL LINES

Extension Stations without Ringers

Figure 8
Desk Stand Only at Extension Station



Where subscriber's set with induction coil and condenser (ringer disconnected) is used at extension station, bridge set on line same as main station set.

Extension Ringers (Normal or Loud Ringing)

Figure 9

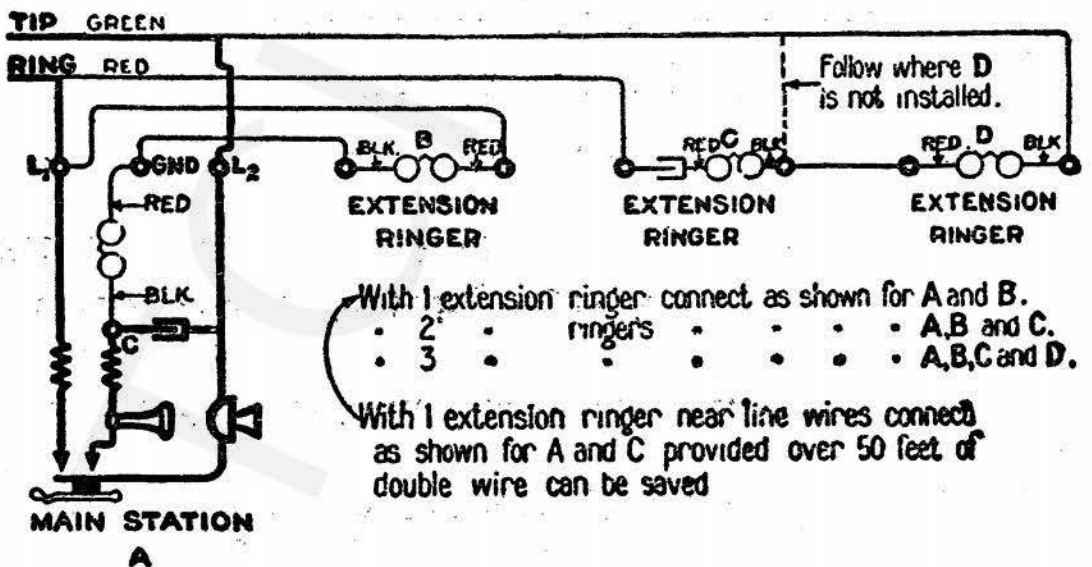
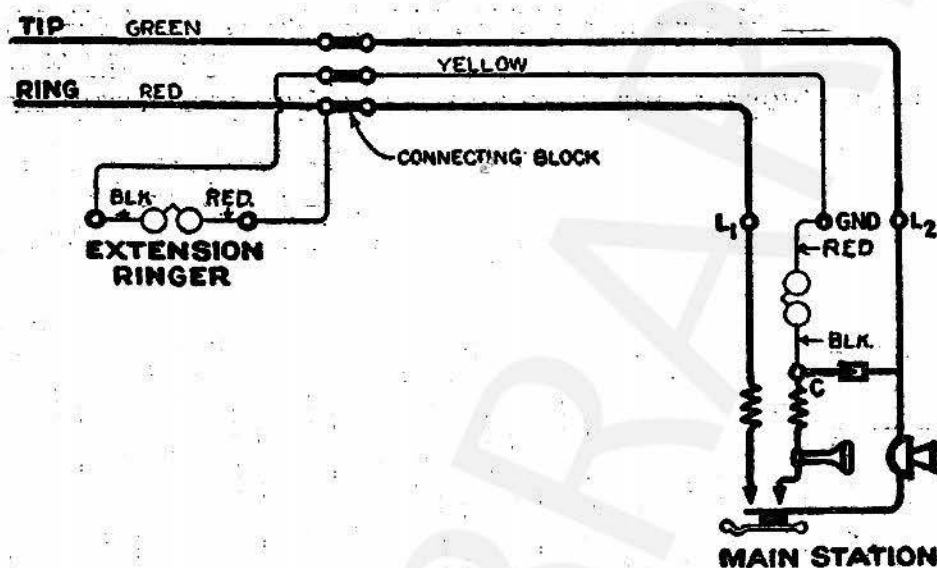
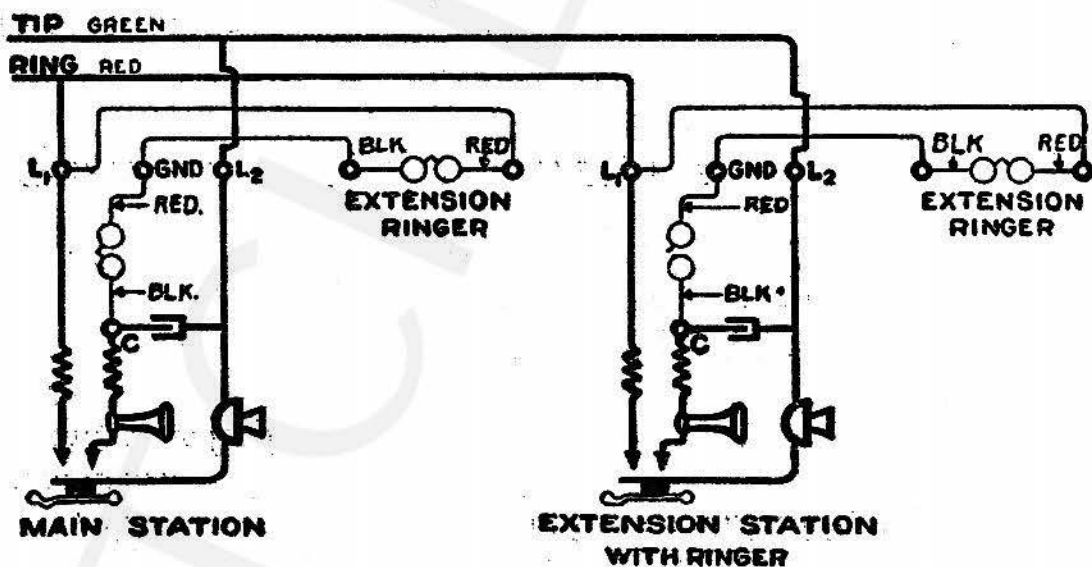


Figure 10
Extension Ringer Near Entrance



Connect as above where it involves less work than B Figure 9.

Figure 11
Extension Ringers Associated with Extension Station having Ringer



COMMON BATTERY P.B.X. STATION LINES

To avoid premature tripping on night connections do not install on any line more than one ringer unless authorized by supplemental instructions.

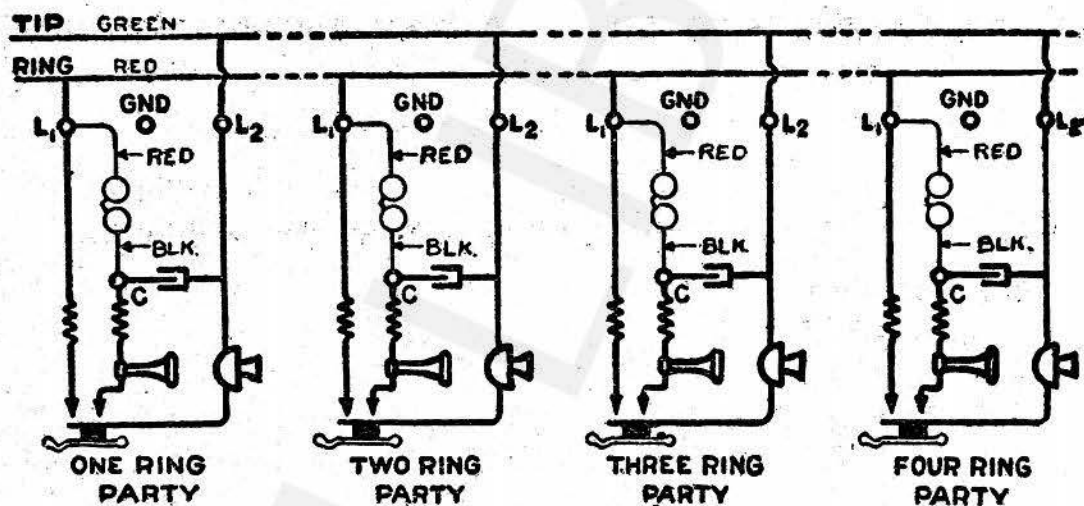
Connect as for individual lines.

COMMON BATTERY NON-SELECTIVE PARTY LINES (CODE RINGING)

Connect desk stands according to Figure 3.

Main Stations

Figure 12



Extension Station With Ringer

Connect as for A and B Figure 7.

Extension Station Without Ringer

Where desk stand only is used at extension station, connect according to Figure 8.

Where subscriber's set with induction coil and condenser (ringer disconnected) is used at extension station, bridge set on line same as main station set.

Extension Ringer (Normal or Loud Ringing)

Connect as for A and B Figure 9.

COMMON BATTERY TWO-PARTY SELECTIVE LINES

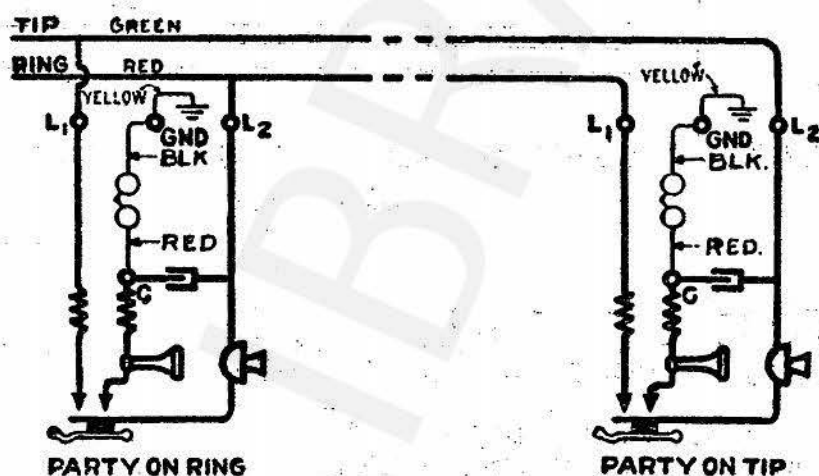
Party on Ring side of line, W or F.

Party on Tip side of line, J or M.

Connect desk stands according to Figure 3.

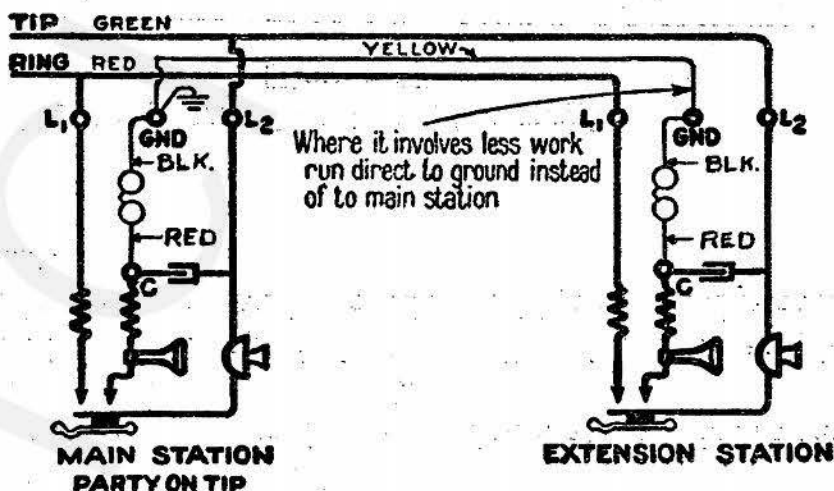
Main Stations

Figure 13



Extension Station with Ringer

Figure 14



COMMON BATTERY TWO-PARTY SELECTIVE LINES

Extension Station Without Ringer

Where desk stand only is used at extension station, wire to terminals of main station set as in Figure 8.

Where subscriber's set with induction coil and condenser (ringer disconnected) is used at extension station, bridge set on line same as main station set.

Extension Ringers (Normal or Loud Ringing)

Figure 15

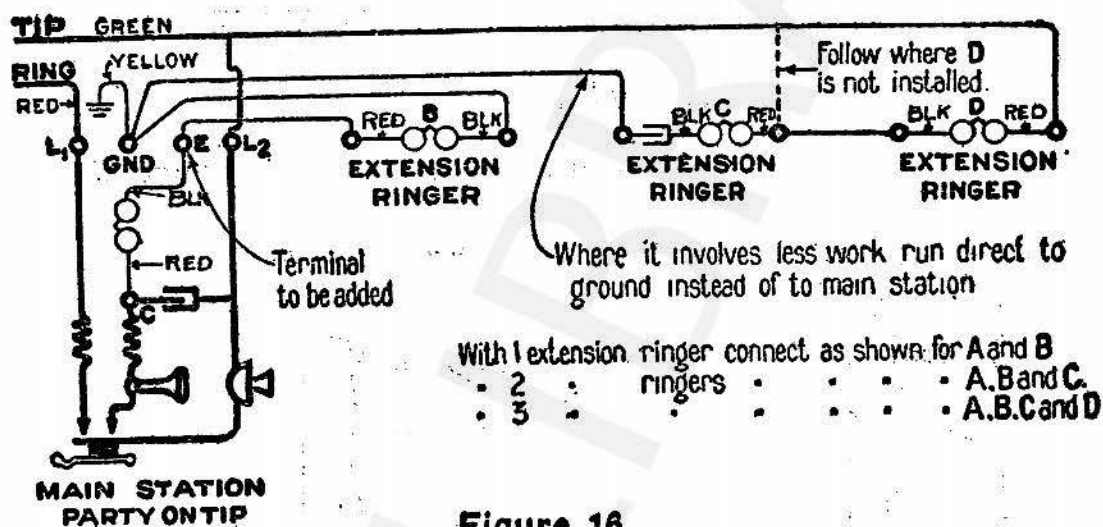
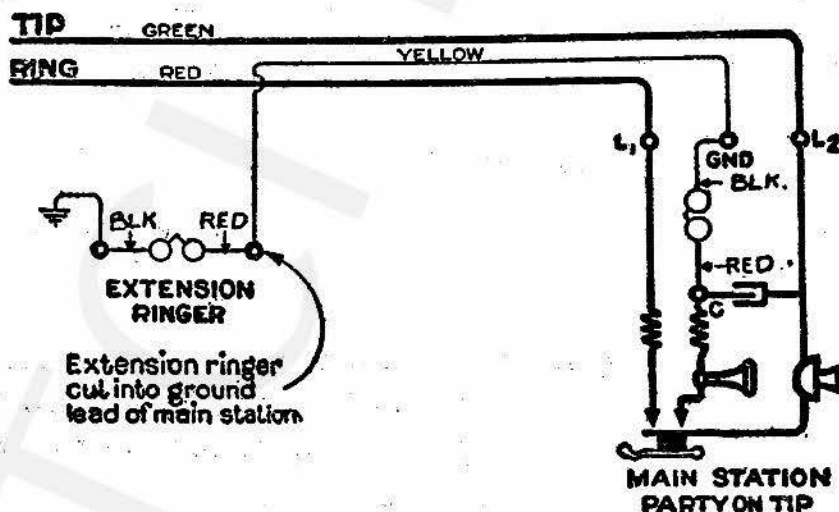


Figure 16

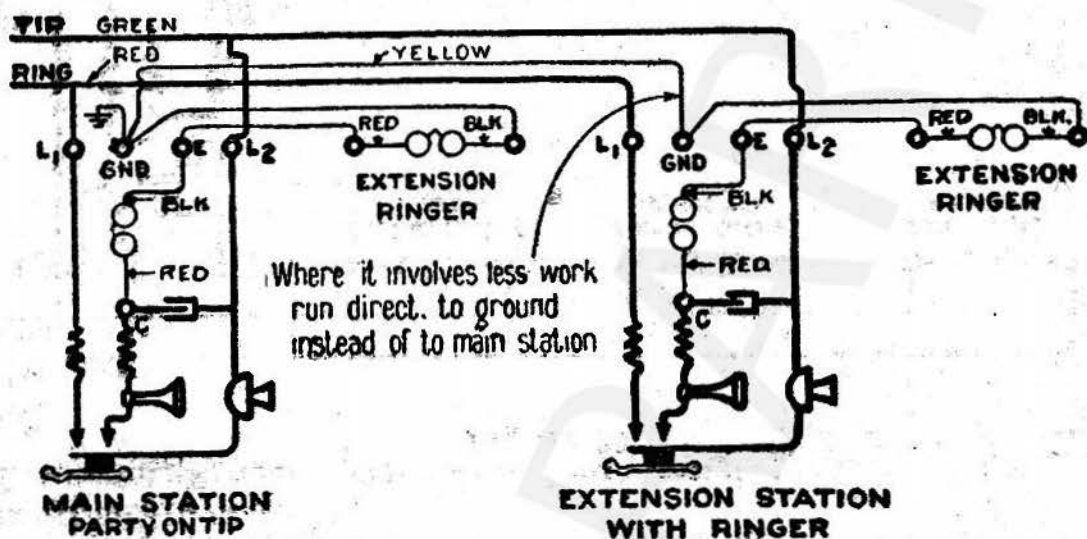
Extension Ringer Cut into Signaling Ground Wire of Main Station.



Wire as above where it involves less work than B,
Figure 15.

Figure 17

Extension Ringers Associated with Extension Station having Ringer



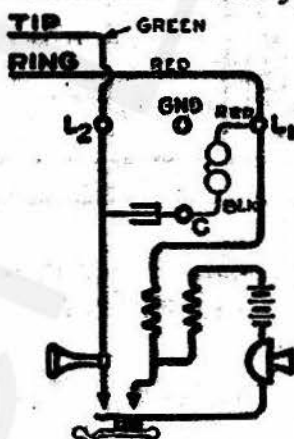
COMMON BATTERY SIGNALING AND LOCAL BATTERY TALKING STATIONS

Connect according to kind of common battery lines on which stations are connected.

Connect desk stands according to Figure 5.

Figure 18

Main Station on Common Battery Individual Line



Pole receiver by connecting so line current increases pull on diaphragm with receiver off hook.

COIN COLLECTOR STATIONS

No. 50 Coin Collectors

See separate specifications covering No. 50 COIN COLLECTOR INSTALLATION.

MACHINE SWITCHING SUBSTATIONS

See separate specifications covering MACHINE SWITCHING SUBSTATIONS.

MAGNETO INDIVIDUAL LINES

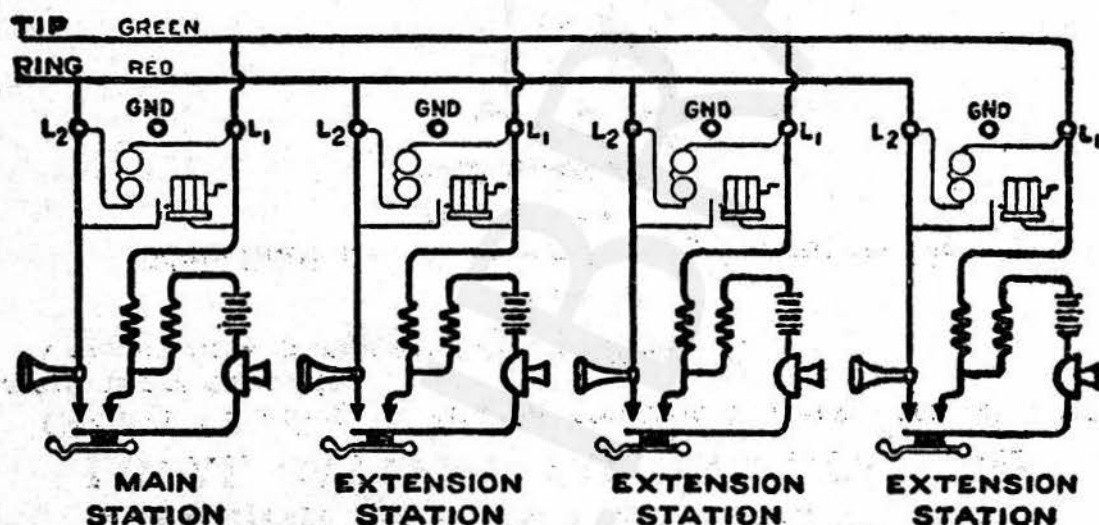
Connect desk stands according to Figure 5.

Main Station

Connect as for main station, Figure 19.

Extension Stations

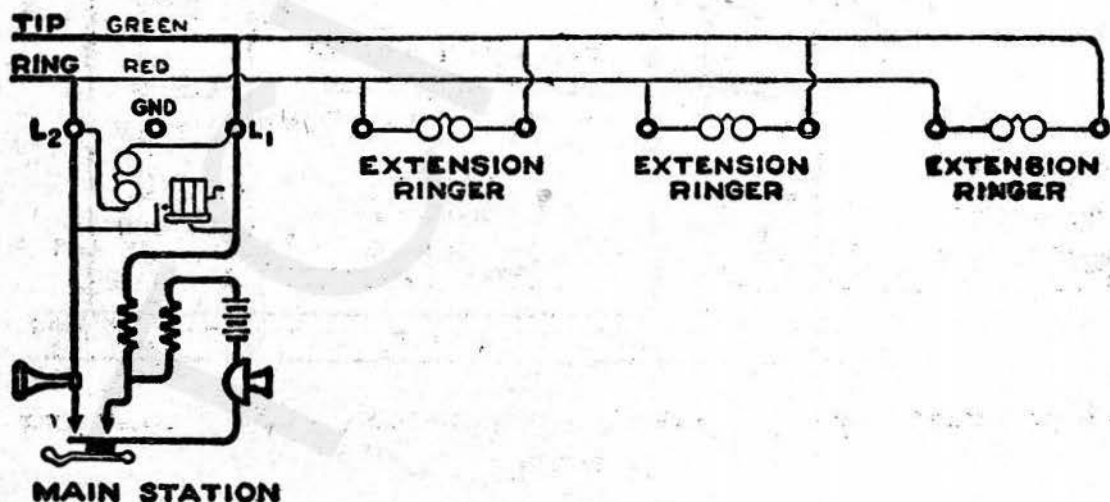
Figure 19
Extension Stations with Ringers



For extension stations without ringers, bridge set on line same as main station set.

Extension Ringers (Normal or Loud Ringing)

Figure 20



MAGNETO P.B.X. STATION LINES

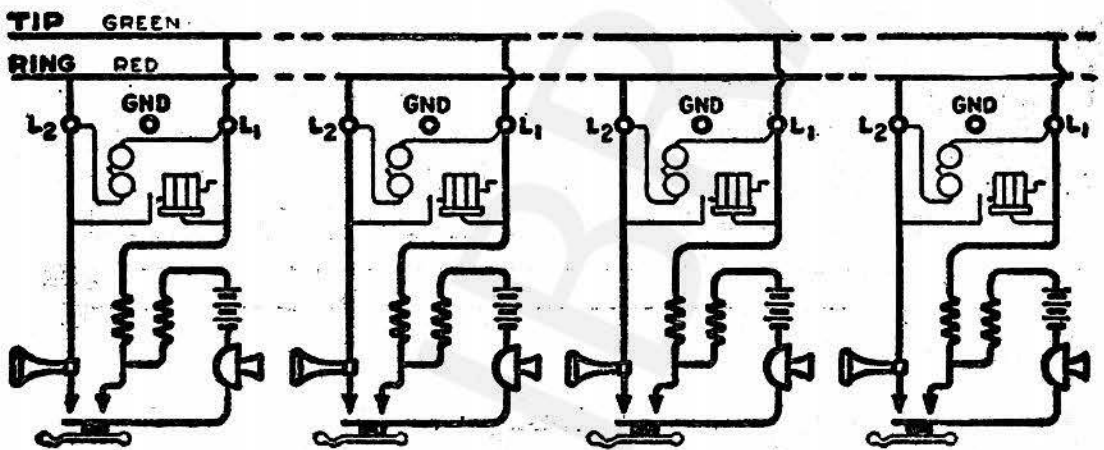
Connect as for individual lines.

MAGNETO NON-SELECTIVE PARTY LINES AND RURAL LINES

Connect desk stands according to Figure 5.

Main Stations

Figure 21



Extension Station

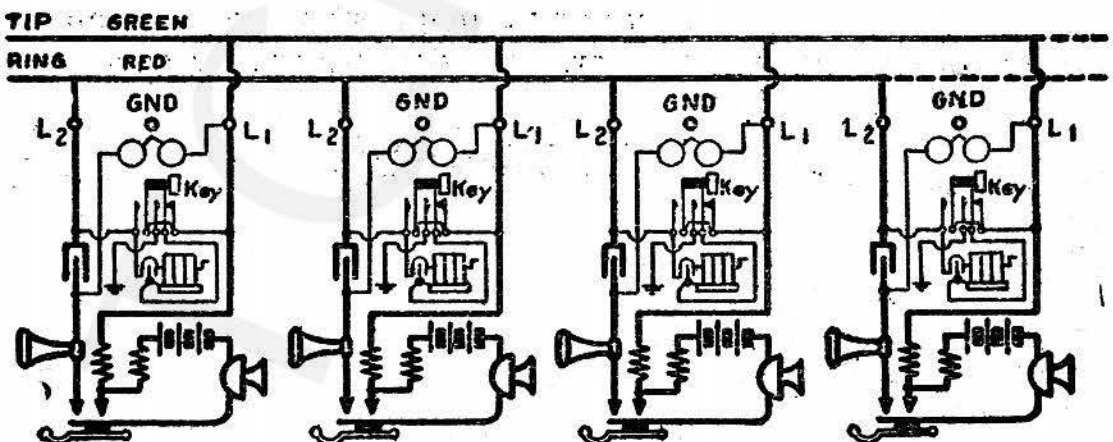
Connect according to Figure 19.

Extension Ringer (Normal or Loud Ringing)

Connect according to Figure 20.

Rural Lines

Figure 22



TRANSMITTER ARMS

Connect subscribers' sets and transmitters to transmitter arms as shown for desk stands (Figures 1 to 5).

KEYS TO SILENCE RINGERS

Keys may be installed for the temporary cutting out of ringers. Connections should insure at least one ringer connected to line at all times.

Figure 23

