

REMINISCENCES OF
THE TELEPHONE IN BOSTON

1877-1914

BY

NATHANIEL W. LILLIE

1932



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Nathaniel W. Lillie.
December 21, 1932.

PREFACE

It is, I am sure, very gratifying to Mr. Lillie that the first suggestion for these "Reminiscences of the Telephone in Boston" came from Gen. Carty, his associate in the early days and his life-long friend. From the very beginning of this historical work Gen. Carty was deeply interested in it. On January 31, 1923, not four months after the American Telephone Historical Collection was started, Gen. Carty called me into his office and introduced me to Mr. Lillie. He told me that Mr. Lillie knew a great deal about the early days of the Telephone in Boston and that I ought to get his story. Mr. Lillie said he had given a number of early papers to the New England Company. Accordingly Gen. Carty wrote to Carl T. Keller to ask if these papers, or some of these papers, could not be sent on here for preservation. On March 29th I received a number of them from Mr. M. B. Jones. From that time on Mr. Lillie has been closely associated with our work.

The vivid and retentive character of Mr. Lillie's memory and the specific and convincing quality of his statements was borne in on me in 1926. Miss Emma M. Nutt had recently died and the question of whether she was in fact the first woman telephone operator came up. I wrote to Mr. Lillie for an authoritative statement. His immediate reply was replete with the details and circumstances of the matter. He said that Miss Nutt was without question the first woman employed as a telephone operator in Boston and possibly in the United States.

The spreading interest in this historical work brought more and more of the early men to the American Telephone Historical Collection and as they became interested they willingly agreed to give us their Reminiscences. It was therefore some time before I again turned to Mr. Lillie and in a letter dated November 11, 1931, again asked him to give us the story of the Telephone in Boston as he personally remembered it. In a reply dated November 16, 1931, he wrote, "I will cheerfully comply with your request for recollections and reminiscences of those early days when all concerned constituted one happy family engaged in an enterprise, the magnitude of its future not appearing to us in our most optimistic thoughts." And this is what the following pages reveal, -- a happy family all engaged together in a great enterprise.

On December 14, 1931, I called on Mr. and Mrs. Lillie at their home in Brookline and had the great pleasure of talking this historical enterprise over with them. Mr. Lillie said he would get to work on the writing in the summer, when he and Mrs. Lillie went up to their camp in New Hampshire. But Mrs. Lillie interposed, "No, Nat, begin now. You can do a lot of it this winter, right here." "All right; I will." And he did. We received the first installment from him on January 9, 1932 with a letter in which he said:-

"Here is a specimen of my first attempt at writing a book. Is it Shakespeare who wrote, 'Oh that mine enemy would write a book.'? I wish the pronoun I could be deleted, but it seems impossible in a thesis of this description. Now please cut out any passages you wish, which do not appear to be germane or desirable in a work of this kind."

Needless to say I cut out not a single passage. The last installment came

on December 21st. How great and steady a help to him Mrs. Lillie was, probably only he knows, but we in the American Telephone Historical Collection can imagine a great deal. Gen. Carty advised our going up to Boston and getting Mr. Lillie's Reminiscences by dictation, but Mr. Lillie preferred to write. So he wrote his manuscript and sent it on to me by installments. This long-hand original is preserved here as one of our historical treasures. The manuscript was typed here in the American Telephone Historical Collection and returned to Mr. Lillie for possible revision; sometimes more than once.

How the drawings of the Telephone Despatch Company offices were made is of interest. (See pages 13-15, with illustrations.) Mr. George K. Thompson told me that Mr. Lillie had made a rough sketch of those premises for him and sent it to him with a letter dated April 2, 1930, and that I would find it in the files of the Development and Research Department. Considering it would be well for there to be a more accurate and more finished picture, I took the matter up with Mr. Lillie. He kindly said he would supply the information if I could arrange for the drawing. Mr. W. H. Copithorne kindly assigned a draughtsman, Mr. C. W. Holt, to make a drawing for me from Mr. Lillie's previous sketch and his descriptions. Fortunately Mr. Holt proved to be more than a draughtsman; an artist and an etcher of ability who entered with creative interest into his work. So Mr. Holt drew again. This was repeated several times until on March 31, 1932, Mr. Lillie could attest by his signature that the drawings gave a true picture of the place in 1877 when he first went to work in the Telephone Despatch Company. I showed these drawings also to Gen. Carty. He looked at them with approval and keen interest, confirming Mr. Lillie's authentication of them and noting certain minor differences in the appearance of the place between the time when Mr. Lillie went there in 1877 and when he himself went to work there in 1879.

Mr. and Mrs. Lillie came to New Rochelle to spend the Christmas season of 1932 with their grandson and the boy's mother. Mr. Lillie came down to 195 Broadway on December 21st to sign the title pages of his book, and bring the last installment of his manuscript, which he wished to talk over with me. I purposely arranged the table and had a photograph taken so that he should be shown signing his book in front of the bust of Alexander Graham Bell and the photograph of his old friend, Gen. Carty.

Two copies only of these "Reminiscences of the Telephone in Boston, 1877-1914" have been made here in the American Telephone Historical Collection, one for Mr. Lillie and one for permanent preservation here in the American Telephone Historical Collection.


William Chauncy Langdon
Historical Librarian

August 21, 1933.

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REMINISCENCES OF THE TELEPHONE IN BOSTON

1877 - 1914

In a humble home at the north end of Boston, under the shadow of Copp's Hill burying ground, noted in history, and in easy hearing distance of the chimes of the Old North Church, famous as the structure from which a friend of Paul Revere hung the lanterns as a signal of the approach of British troops, - in the early morning hours during a terrific lightning and thunder shower, the writer of what follows was born June 14, 1856.

His parents, Nathaniel S. and Mary E. ^{Hook}~~(Cook)~~ Lillie, were of old New England stock, - his grandfather Daniel Lillie, proprietor of a small store on Tileston Street near the Old North Church; and his grandmother, Leah Wilder of Hingham, Massachusetts. His grandfather on the maternal side, Dudley Watson Hook, and his maternal grandmother, Mary N. Hook, were natives of New Hampshire.

What happened during the first three years of my infancy has come to me from my dear mother who related to me among other stories that my father on various mornings would go to Charles River bridge near our home and with the aid of a rope and pail would obtain salt water from the river for use in my baths, thus helping to lay the foundation for a vigorous youth.

My sister, Mary Wisner, born in Boston February 4, 1854, was a

pupil at the Ingraham School on Sheafe Street, and when I had reached the age of three years my mother had an interview with the teacher which resulted in her consent to allow me to attend the school in the custody of my sister. My memory of what I learned at this school during the two years I attended it is somewhat misty. However, at the age of five I became a pupil at the Eliot School on North Bennet Street, my teacher a Miss Sargent. This school was known as a grammar school, the Ingraham School as a primary.

I do not remember how long I had been a pupil of Miss Sargent, but one night when Mother was preparing me for bed she called Father and showed him my back which was a mass of black and blue stripes. On being questioned I admitted that I had been beaten by Miss Sargent with a rattan for some misdemeanor of which I have not the slightest recollection. But I do remember that my mother had an interview with the head master, a Mr. Mason, and that prosecution was threatened, and after other interviews and apology from Miss Sargent, conditions became more harmonious. At the close of the term I was advanced to a Miss Blodgett, thence to a Miss Steele, thence to a Miss Welch, thence to a sub-master by the name of Daniells, thence to a sub-master by the name of Newell, in each case having double promotion and I have since thought perhaps they were letting me go through as fast as possible on account of the Miss Sargent incident. My recollection of my school life is that in deportment I was no better nor worse than the average boy at that time. If there was any mischief going on, or any fights, I was no doubt in with the rest. When I entered the Eliot School the Civil War had started the same year, and a year or two afterward every scholar was given a piece of soft cotton



N. W. LILLIE
AT THREE YEARS AND NINE MONTHS

Taken April 5, 1860

cloth from which to pick the threads to be made into lint for binding the wounds of the soldiers. I remember standing on Court Street in Boston and seeing the soldiers march by on their way to the front, each man with a leather knapsack on his back, and a rolled blanket, knife, fork, spoon and tin plate and dipper attached, and a canteen hung over his shoulder. I remember also visiting Camp Cameron in Readville in company with my father.

On May 27, 1863 a brother was born, Edward Everett. During the summer school vacation of 1866 I obtained employment with Browning, Pickett and Company, milliners on Washington Street on the site (at this writing) of Gilchrist and Company. My pay was \$2.00 per week. I was ten years of age. I was a cash boy and worked about the store.

My next job in 1867 was with a pocketbook manufacturer located up one flight in a building near the corner of Washington and Water Streets. Here I was obliged to carry from the street up a long flight of stairs large heavy bundles of white paper as the "boss" was also in the stationery business. I have often wondered in later life how I ever did it. This man was one of the stingiest, meanest critters I have know in my life. My job was to be at work at seven A.M., sweep out, clean out, the rubbish left by the workmen, empty the paste pots and put in fresh paste and run errands. The paste in these pots during the hot weather would mold and the stench was frightful. Many a morning I had to get rid of my breakfast on account of the nausea.

I finally decided to leave this job for which I was paid \$1.50 per week, and on receiving my pay, which was in scrip, the boss gave me a counterfeit script half dollar. I protested against taking it,

stating it was a counterfeit but it was no use so I left him. To my father, who was employed in the vicinity, I told my story. He directed me to take it to the Post Office then on State Street where the Stock Exchange now is. I passed the piece of currency in the window, asked if it was genuine, and it was immediately returned to me with "counterfeit" stamped on it with steel letters cutting through the paper. I returned to the boss, showing the currency to him but keeping it in my possession and demanding a genuine fifty cent scrip. He told me to come in at a later date. I again talked with my father, who grabbed the scrip, said something not entirely audible, put on his hat and directed me to wait. When he returned his face was very red and he handed me a genuine half dollar scrip. This man died some years ago. I am not going to write his name. I met him once since I arrived at manhood and was obliged to exert some will power to refrain from saying to him what I had in mind. I returned to school at the opening of the term. I was then a pupil in the room of sub-master Newell and when school closed, I left never to return as a pupil.

I found employment with the firm of Allen, Hawes and Company at 15 Federal Street. My recollection is that I was paid four dollars per week. They sold by mail orders, offering prizes to persons who would form clubs, and send a consolidated order for different articles selected by the members of the clubs, no article to cost more than one dollar. They did a large business, principally in the western states. One day Lucius Allen, senior partner, George H. W. Bates, shipper, and Solomon Atwood, bookkeeper, left very suddenly. They had set up a competing concern on Exchange Place. Bates, the shipper, had for a long time been making a list of customers and with this information set up a concern

called Allen, Atwood and Bates. A few months afterward they were called into court and also the Hawes Brothers, who were still running, on the charge of maintaining a lottery. It was really only a mail order business with premiums; it would not nowadays be considered in any sense a lottery. I never knew of any penalty or whether they were found guilty of the offense, but the firm of Allen, Hawes and Company then moved to 128 Federal Street and set up a business under the name of Hawes Brothers. These gentlemen were named respectively Jabez S., Newell B. and William G. Their home was in Reading, Massachusetts. They were all high grade men; their business was honestly conducted.

My job was to sweep out the office, build the fires in the store, do some clerical work under the direction of a Mr. Ben Freeman, bookkeeper, afterwards a jeweler on Court Street. My recollection is that in 1869 the Hawes Brothers opened the first dollar store in Boston. This was located on Washington Street nearly opposite the Old South Church, and was a success from the start, largely due to the ideas and efforts of William G. Hawes. The store was called the St. Joachim Dollar Store. I worked at the St. Joachim Store also, until I left the employ of the Hawes Brothers. My memory is faulty as to why or when I left the employ of the Hawes Brothers, for my relations with them were most pleasant.

Later, after I left, Morris Brothers, Pell and Trowbridge, minstrels, who were located in a theatre on the ground floor of a building opposite the Boston Transcript on Washington Street, failed. Mr. William G. Hawes then gave up the St. Joachim store, took possession of this theatre and made it over into another dollar store.

My next place was with Lee and Shepard, publishers of Oliver Optic's works, and many others. My job was called pick-up boy. I was given a book in which were written titles of books, and sent out to other book stores to "pick them up". I learned how to carry books on one arm, and on my rounds would gather as many as ten or twelve according to size. I had to record in my book the price at which it would be billed to Lee and Shepard. At a book store on Cornhill one day the proprietor took a book off my arm, opened it, looked at the front page, handed it to me and said, "How much did you pay for it?" Without stopping for thought I replied "money". He drove me from the store, said he would report me to Mr. Lee. Some time later Mr. Lee called me, and asked me regarding this incident, and after hearing my story commended me, and said it was none of the man's business. Before I left his employ he presented me with two bound volumes of Oliver Optic's Magazine which I have retained to this day.

One day walking down Washington Street, I saw a paper posted on a sign, "Boy Wanted". On the sign was painted "E. T. Holmes and Company, Burglar Alarms". I went upstairs, had a talk with Mr. Holmes and was engaged at four dollars per week. This was in the summer of 1869. I was then thirteen years of age. Mr. Holmes was a son of Edwin Holmes of New York, a former dry goods merchant on Tremont Row, Boston. The elder Holmes had obtained control of a patent burglar alarm and was introducing the device to an appreciative New York public. To his son he gave the right to introduce and exploit the burglar alarm to the people of New England, and also electric call bells, hotel and house annunciators. I arrived at an opportune time as Mr. Holmes was able, energetic and resourceful



EDWIN T. HOLMES

and was building the foundation of a successful business. He was then about twenty-three years of age, and was married the same year (1869) I went to work for him, and I delivered most of his wedding invitations. While he had an abrupt, stern manner, he was a gentleman in his deportment and conversation, and in my long acquaintance with him there developed a very close friendship.

I had been with Mr. Holmes over three years when I had an opportunity to go into the express business. He was paying me six dollars *per week and in addition to that I was earning two dollars* and fifty cents per week delivering morning newspapers over a route in the north end of Boston, making it necessary to arise at four A.M., deliver my papers, return home for breakfast, and get to Mr. Holmes' office at eight A.M. In addition to this I had a job Saturday nights in a provision store near my home, so when the job with the express company came to me at fifteen dollars per week I took it, though not without regret at leaving Mr. Holmes. My Saturday night job was continued, but I gave up my newspaper route. During my school term the reading of books was a great pleasure, and books by Oliver Optic, Horatio Alger, Jr., Cooper's tales, Pilgrim's Progress and other stories dear to the boy were read with avidity. At the age of twelve I was librarian of the Sunday School which I attended and where my mother was a teacher. A circulating library on Cornhill known as Halliday's was well patronized by me during the Civil War and I would read one of Oliver Optic's in an afternoon and evening and return it next day for another. I continued reading books at every opportunity, the authors changing as I grew older.

At the end of three months I left the express company for an inside job with the Boston and Albany Railroad, this corporation at that

time having an express department on its own line between Boston, Milford, Worcester and way stations. My job was to tally or record each parcel of merchandise, its destination, etc., hence I was known as tally clerk. The sheets on which this information was placed were handed to a way-bill clerk who copied the record to a so-called way-bill, which was a Worcester way-bill, or a Milford or Saxonville, or other destination. In a short time my duties were changed to way-bill clerk and counter man, that is, in addition to making way-bills I must wait on patrons bringing their articles for shipment to the office direct.

In the latter part of October, 1872, what was known as the epizootic or horse distemper became prevalent in Boston and in spite of medical skill there were few horses on the street in the first ten days of November. Some of the near Boston wagon expresses drew their wagons with merchandise to and from Boston by man power with the aid of ropes.

This was the condition on the night of November 9, 1872. I was on my Saturday night job when Box 52 was sounded. In accordance with previous arrangement every able-bodied man and boy available had agreed to run with the steam fire engine as there were no horses to do it. I therefore ran with the rest of the crowd to Steamer 8 on Salem Street and "held on to the rope." There were probably a hundred boys besides the firemen and others dragging this heavy steam fire engine and before Summer Street was reached it seemed that my legs would give way and my heart stop beating, but I was husky and determined. The great fire in Boston has passed into history. The loss was \$100,000,000.

In 1874 my father moved his household to Chelsea, a suburb of

Boston, across the Charles River. At the same time I gave up my Saturday night job.

The Boston and Albany Railroad express was located on the ground floor of a building known as Barristers' Hall, the tenants above the first floor being attorneys-at-law. The location was 8 and 10 Court Square; the Suffolk County Court House was located across the street. Barristers' Hall building was subsequently removed and replaced by an addition to Young's Hotel which was afterwards sold and is now occupied by a branch post office during the erection of a new post office building. At the time of which I write (1872) the premises at 8 and 10 Court Square were leased as a general express office by William Gibbs, Jr., who in turn leased certain spaces to numerous tenants, and acted as agent for various expresses in receiving money, valuables and merchandise for shipment over their lines. In addition to the office run by Mr. Gibbs there were general express offices each with an agent at 32-33-34-35-36 Court Square, 15 and 26 Devonshire Street, 15 Merchants' Row, 75, 77 and 91 Kilby Street, 77 Bedford Street, 79 Kingston Street; also Adams, American, United States and Canada, in offices under their own supervision. During my employment at 8 and 10 Court Square I acquired information as to the location of every express running out of Boston which afterwards proved of great value. I will state that no competing expresses could be tenants of the same office, - for example Abbott's Lawrence Express ran from 8 and 10 Court Square; Cogswell's Lawrence ran from 32 Court Square. Each general express office had a counter behind which the agent or his clerk transacted business. On this counter was arranged a rack of pigeon holes, each tenant having a pigeon hole assigned for the reception of pieces of paper on which was written a request for

the wagon to call at the address given.

The large expresses used a book in which each "call" was written. The driver for a certain express would take the calls from his box and make the "call". The majority of these calls were sent from business houses by shippers who used boys as messengers for this purpose and this method consumed a great deal of time as the messenger was obliged to go to the particular office whether in Court Square, Kilby Street, Bedford Street, all widely separated areas. Thus grew up a system of call cards which were hung at the entrances of houses in the wholesale district. These cards were furnished by the express companies, and each had a distinctive mark and the name of the express: - the American Express had a shield with stars. These call cards were made of heavy pasteboard and printed in colors. At the door of a wholesale house a half dozen or more would be on display at the same time, each bearing the name of a different express, and a driver must be on the alert to be sure he did not pass a store where a wagon was desired.

On May 11, 1876 my father died suddenly leaving my mother a widow with no income except what I was earning, fifty dollars per month, and the proceeds of a small life insurance fund. After her school days were over, my sister had remained at home. My brother thirteen years of age was at school. Well, I had to go on.

In 1874 or 1875 the Boston and Albany Railroad had made an agreement with Adams Express whereby the latter took over the express business of the railroad. I had secured a job with a Boston-Providence local express company having an office at 8 and 10 Court Square. In

fact it conducted its business behind the same counter at which the Boston and Albany Railroad had been doing its express business. One day in July, 1877, some workmen were engaged behind the counter of Mr. Gibbs, the General Agent of the expresses. This counter was some distance from where I was employed and I was not interested, or too busy to know what they were about, but on the ringing of an electric vibrating bell, I with others went to the counter, and screwed to the wall was a small backboard with two hooks and in each of the hooks was an instrument which I was told was a telephone.

These telephones were in mahogany cases with two binding posts at one end in which a wire was fastened. There was much talk as to how it worked; one man said the wire was hollow like a speaking tube, but my apprenticeship with Mr. Holmes had taught me that was not so. I said, "It is electricity, but I do not know how it works." It was a nine days wonder. Every time the bell rang Mr. Gibbs would place one of the telephones to his ear and the other to his lips and talk to what he called the central office. Both hands being engaged he would be obliged to drop the telephone used as a speaker while he wrote what was said to him, which was a list of expresses to call at stores in the business district, and after writing these calls on separate pieces of paper he would place them in their respective boxes on the counter.

And so the summer of 1877 drew to a close. Meantime my sister had found employment, my brother had left school and was at work in a department store.

Now to return to the telephone. No one but Mr. Gibbs and his

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brother John were allowed to use these telephones. And then one day when the bell rang I vaulted over the counter where I was and ran across to John Gibbs and said, "John, let me take the call, will you?" He looked at me and said, "Go to hell". I said, "All right; some day I'll have a chance at it."

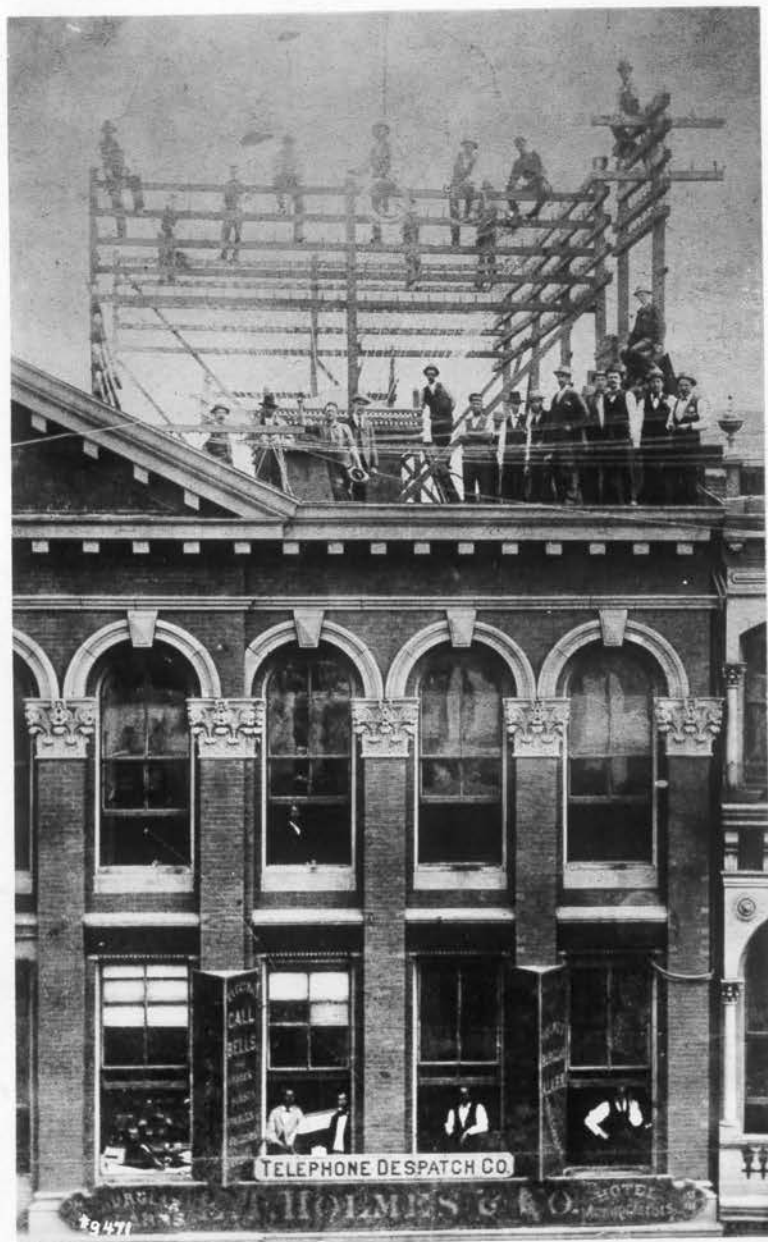
I inquired around and found out where the office of the Telephone Company was located. At this time every general express office in Boston was connected and the big express companies too. On the fifth of October I walked into the office of the Telephone Despatch Company at 342 Washington Street and again met Mr. Holmes. He did not send for me as written on page 76 of "A Wonderful Fifty Years". I went of my own accord. He was sitting on a carpenter's saw horse repeating express calls to a couple of young men who were shouting into a box with a hard rubber mouthpiece. There were three of these boxes on a shelf. Well, Mr. Holmes was some busy man, and some time elapsed before he could converse with me, but at the end of the conversation I had agreed to report to him on the following Monday for a compensation of twelve dollars per week. That was October 8, 1877, and my age 21 years.

My first day with the Telephone Despatch Company was a busy one, with a half hour for luncheon, and plenty to do after six o'clock arrived. I made the acquaintance of Frank Moore, Will Alden, a brother-in-law of Mr. Holmes, a Miss Hodges who sat at a desk and wrote the "calls" as they were received and handed the sheets to the sending operators, - Moore, Alden and myself, although Alden was most of the time at the tele-

phones used for receiving calls from the subscribers. Some time later Frank Meserve came into the service and was permanently stationed at the receiving end. I also made the acquaintance of Mr. Andrew Moore, father of Frank. The elder Moore was in charge of the central office burglar alarm apparatus. A Mr. Sam Perry and a Mr. Sawyer, old employees of Mr. Holmes, were now engaged in placing telephones with subscribers. Later acquaintances were Charlie Oliver, Charlie King, Ed Backus, Paul Just, Clarence Bodwell, the brothers Lockwood, Will and Robert, Clarence "Pete" Elden, Harry Kellogg, J. Cheever Fuller, William T. Logan and many others in the first two years I was in the business, but their names can not now be recalled.

Two pictures of the operating room of the Telephone Despatch Company about as it looked to me on the first day I went to work are shown herewith.* The original six-line switchboard first used by Mr. Holmes to connect by telephone four banks and a stock broker's office is shown next to the burglar alarm galvanometer case. Mr. Holmes used his burglar alarm central office wires for this purpose. He was the first man to introduce the telephone commercially to the world. The length of this switchboard was thirty-six inches. Reference is made to these pictures at this time as the writer will later on refer to the use made of this space on the wall. The windows in the sketch are on the Washington Street end of the building. At this writing (1932) the entire building is occupied by Wright and Ditson, athletic and sporting goods. In 1877 there was a retail store on the street floor, Louis Prang and Company, art goods,

* These pictures are drawings by C. W. Holt made in the Draughting Room of the American Telephone and Telegraph Company, 195 Broadway, New York City in 1932 from descriptions and measurements sent by Mr. Lillie from Boston. W.C.L.



TELEPHONE DESPATCH COMPANY

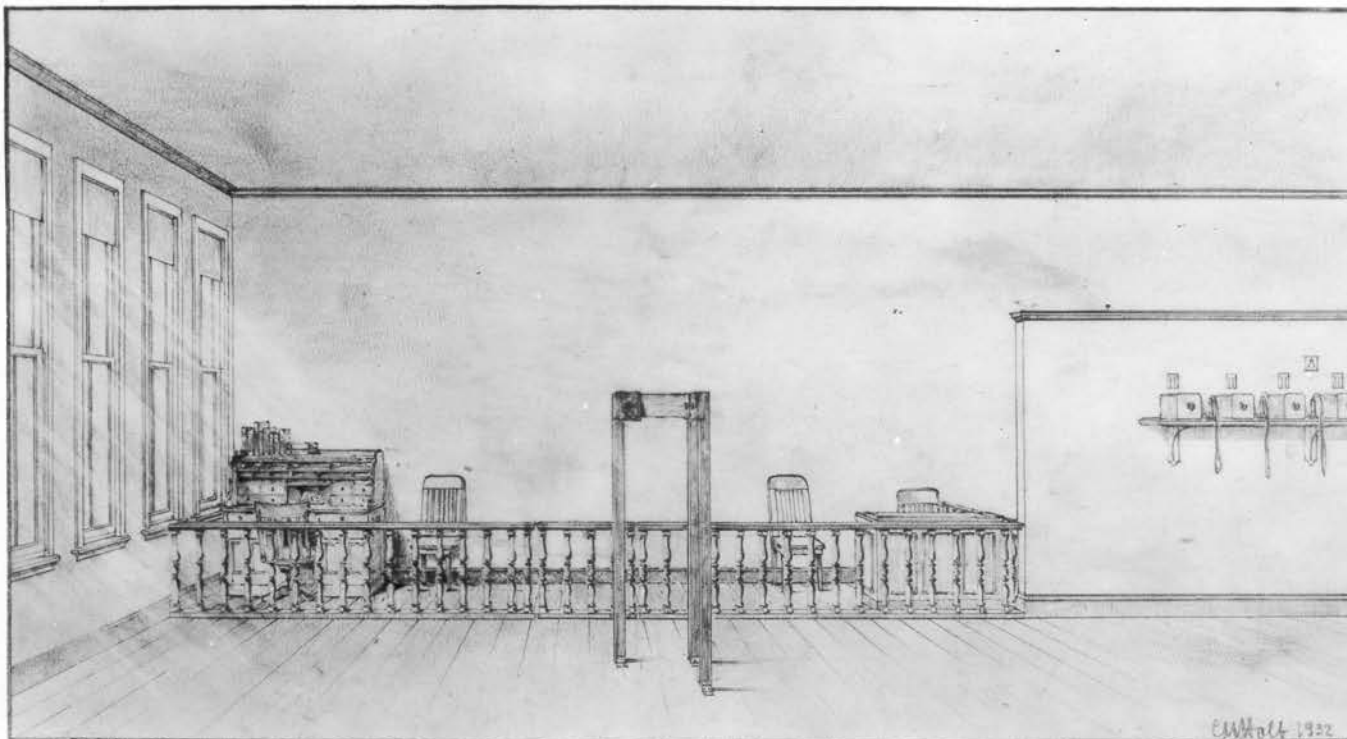
342 Washington Street,
Boston, Massachusetts.

July, 1879.



These two drawings of the
 Central Office of the Telephone Dispatch Company
 on the third floor at 342 Washington Street, Boston,
 made by C. H. Holt in accordance with my descriptions
 and criticisms, give, to the best of my remembrance, an
 excellent and correct idea of how this place looked when
 I was there in 1877, with changes noted in my auto-biography.
 March 31, 1932. Nathaniel Wilder Lillie.

M.R. #42075



These two drawings of the
Central Office of the Telephone Dispatch Company
on the third floor at 342 Washington Street, Boston,
made by C. W. Holt in accordance with my descriptions
and criticisms, give, to the best of my remembrance, an
excellent and correct idea of how the place looked when
I was there in 1877, with changes noted in my auto-biography.
March 31, 1932. Nathaniel Wither Lellie.

chromos, picture frames, etc; on the second floor, Holmes Burglar Alarm; the Telephone Despatch Company on the third floor; and the Christian Register, a religious newspaper, on the fourth floor; the roof above that. It is through the courtesy of Mr. William H. Cook of Wright and Ditson that I was able to go up into the old room and make the measurements which were so important for the correct drawing of these pictures.

Two long flights of stairs brought one to the landing on the third floor. Turning to the right, there was a plaster partition on the left side of the narrow hall, and a railing on the right hand side to prevent falling into the stairway. A door near the stairway opened into the rear of Mr. Holmes' quarters, and here was set up a bedroom with five beds for the accommodation of night-watchmen for the central office burglar alarm. Some of these watchmen also worked for the Telephone Despatch Company in the day-time. Walking along the hall a door with a ground glass panel on which was painted "E.T. Holmes and Company, Burglar Alarms, Etc., Telephone Despatch Company, E. T. Holmes, Manager" caught the eye. On opening this door the other side of the partition shown in the sketch was on the left, a large show case or cabinet on the right containing electric bells, switches, press knobs, and other devices used in the burglar alarm outfit. At the end of this area was a black walnut railing with a gate giving access to Mr. Holmes who had a desk alongside the window. It will be noted that the partition shown in the sketch did not reach the ceiling, hence on opening the hall door any conversation except in a subdued tone could be easily heard by anyone.

Fastened to the partition on the entrance side was a magneto bell worked by a crank, and having a manual switch which could be moved



ORIGINAL TELEPHONE EXCHANGE SWITCH BOARD.
PROPERTY OF E.T. HOLMES.
DESIGNED AND USED BY HIM IN THE
FIRST TELEPHONE EXCHANGE.
BOSTON, MAY, 1877.

THE E. T. HOLMES SWITCHBOARD - BOSTON, MAY, 1877.

M.R. #37761



E. T. HOLMES SUBSTATION EXPRESS SET
WITH WOODEN HAND TELEPHONE

1877

to either of the two metallic buttons at the bottom of the front of the bell. This style of call bell was afterwards referred to as the coffin magneto. The switch was moved by hand to one button to ring, the other to talk, and there were times when the speaker forgot to move the switch arm when through talking and then no signal could be given. A wire connected this magneto to the office of Charles Williams Jr., 109 Court Street, Boston. When I arrived on the scene Mr. Williams was using it to send his express calls every day, and Mr. Holmes was having them telephoned to the expresses.

Well, things were moving fast and history was in the making. Mr. Holmes had canvassers soliciting subscriptions to the express system and they were bringing in new orders every day, and this necessitated hiring more young men for operators, and more linemen. As for my duties, which seemed to increase very quickly, I was continually answering questions as to what express runs to Fitchburg, or Springfield, Massachusetts, or what office is Stone's Chelsea Express in and similar questions. I took a turn at receiving express calls, and then at sending them, and could not restrain a chuckle and a grunt of satisfaction when I heard John Gibbs at 8 and 10 Court Square: "Hello, John, this is Nat Lillie at the Central Office; I finally got there."

At the end of the operating room there was a partition not shown in the picture. One end of this partition was against the fire wall ten or twelve feet beyond the galvanometer case, the other end was a few feet beyond the three box telephones shown at the extreme right and in this end was a door giving access to this room, which was made part of the entrance hallway. The room which was made out of these four

partitions was used as a battery room for gravity batteries for the burglar alarm central office apparatus, and there were a number of shelves on which these batteries were placed and also for LeClanche batteries used for express calls. There was a door to this room from the hall, in line with the hall door to the sleeping room. Thus there was access from the operating room and to the sleeping room without going into the hall. The three box telephones at the extreme right were used to talk with the various express offices. Under each box telephone was a board with a manual switch which could be moved to a brass button connected with an express office, a livery stable, or hotel and underneath is shown a press knob to ring a bell in the express office, stable, or hotel. The connections with the stable and hotels were for the purpose of ordering carriages. At the left of the door are shown six boxes in each of which was an annunciator drop, also six box telephones. These were used to receive the calls for expresses, carriages and messengers. Above is shown a two-button switch and above that a vibrating bell so that if an operator were obliged to leave his post temporarily, by throwing the switch the bell would ring to attract attention, but the switch was seldom used. These six receiving box telephones were connected each with a separate wire running over the roofs of buildings, fastened with a corner iron to a chimney or a wooden fixture and ending at some store or factory, at which a connection was made to a water or gas pipe for a ground or return wire. Between the Central Office and the end of the wire (or circuit) connection was made with various business houses, so that when I came into the business, there were as many as twenty concerns on one wire, each equipped with one telephone receiver through which to talk and hear. Later on in the business this shelf was made



BOX TELEPHONE - 1877

FIRST COMMERCIAL FORM

-11-

longer and had box telephones connected with fourteen circuits. A desk was placed at the end of the partition inside the railing.

It was at the desk Miss Hodges sat and wrote the telephone calls as they were repeated back to the sender, i.e., "Isaac Fenno and Company", "Adams Express". Calling the Central Office was accomplished by the subscriber when a push button was pressed, thus releasing the annunciator drop. As the subscribers increased, it became difficult at times to receive these calls, as with fifteen or more on a circuit, each with only a telephone receiver, there were times as many as six shippers all talking at once. They had pressed the button, put the receiver to their ear and when Central said "Hello", they would each put the receiver to their lips and repeat their messages. It required considerable patience and skill to straighten out a case of this kind, which on busy days were of frequent occurrence, but the operator would hear the name of one firm, or one express and would say, "There are four or five speaking; who wants Abbotts Lawrence?" and after waiting on that concern, then he would say, "Now the other man", and of course all of the others would talk and he would have to do as before until they were all waited on. In the meantime the other circuits would be calling, and I would go over there and help out until the rush was over. At other times some of the other men would go on when I was busy somewhere else. Mr. Holmes was paying ten dollars a year rental to the Bell Telephone Association for each telephone receiver and he could not afford to place two receivers (one to be used as a transmitter) at a cost of twenty dollars per year, when he was getting thirty-six dollars per year from his subscribers, using his income for rent, labor, supplies, and other expenses.

The so-called box telephones were made on the same principle as the hand telephones, the difference being they were equipped with large horse-shoe magnets, and large sheet iron diaphragms.

Before December first we were obliged to remove the lumber from the hallway on account of complaints from Mr. Hastings, our overhead tenant. This lumber was being used for roof structures on buildings where we could get permits and the carpenter work was being done in the hallway and the battery room. Mr. Holmes hired a place on the street level in an old building on Harvard Place opposite the Old South Church, hired a carpenter, equipped the place with tools, made it headquarters for the linemen. The inside men still reported at 342 Washington Street. My memory is that Ed Backus was made foreman of the construction men. Forms had been printed to be used on new construction, placing of overhead wires and extensions, and for instrument setters. All of this detail work came to me, and in addition the record by number of each telephone instrument where and when placed, record of all tools issued to linemen and others, badges of identification to all employees including messenger boys, a circuit book with record of each subscriber on each circuit, ordering supplies locally and from New York and other cities. It was impossible to do all of this in the day time so memoranda were made, and the permanent records made after six P.M., and I would start in the next day at seven A.M. Before the end of December there were connected on the express circuits the Sherman House, Union Club, Young's Hotel and others who became connected with the service so they could order carriages and messengers. We had a wire to the carriage stand at the Parker House, one to Clark and Brown, 22 Charles Street. During the month

" Telephone Dispatch Co. 1879

Rates for Telephone service.

Monthly rental (including Blake Transmitter ^{for exchange system}) 6 -
" " ^{for cipher system} 3.85 -

Subscribers can talk with others free of charge -

Non-subscribers 1.15

Talking with Lowell subscribers, anybody .25

To talk with a non-subscriber at Lowell .50

Messengers, per hour. .30

In cases where messengers require carfare
that will be charged also

Messages ten words 1.5

Each additional word .01

Subscribers sending messages will be
charge for the messenger's time.

A. N. Lillie

of December there were 53 orders for carriages.

Our messenger corps was growing fast. The boys wore a dark green uniform trimmed with orange braid on the cap and cuffs of the coat and orange stripes on the trousers. They were required to be polite, courteous, clean, boots blacked, white collars, etc. The charge for their service was 30 cents per hour. The color of the uniform and trimmings was selected to distinguish our boys from those of the American District Telegraph Company whose regular uniform was a dark blue, but at this time there was not much attention being paid to their appearance, the discipline being lax. Later, when they realized we were real competitors, there was a change.

Well, the care of these boys fell to my lot, and believe me I had a job, but not with all of them. Some there were who were gentlemen by instinct or breeding, and by their influence acted as a balance for the unruly ones. One of the gentlemen was a Julius Goulston who afterwards was an operator on the express system. There grew up between us a warm friendship. Other boys were later employed as operators on the express system and also on the exchange when it was started in 1878. John Grossman was one of these, and a boy by the name of Bryant. Severe discipline, prompt discharge for serious infraction of the rules served to keep most of the boys in line, but I gained a reputation which was not desirable or warranted. All of this period Mr. Holmes was a busy man, - laying out plans for extensions, frequent conferences with Mr. Gardiner G. Hubbard and Charles Williams, Jr., looking after the personnel of his force, and innumerable details of his rapidly growing business.

While I was in the express business I made the acquaintance

of a young lady and had been paying her considerable attention. We decided to be married. Her name was Martha L. Vialle. She was born in Hyde Park, Massachusetts, July 24, 1858. On Christmas night, 1877, we had a simple, quiet wedding at the home of her parents. While I was a school boy I had opened an account at the Boston Five Cents Savings Bank and now had a deposit of three hundred dollars, so with that as a back log we started out. Mr. Holmes went to Brooklyn to spend the holiday with his folks, but he did not forget to send me a pair of beautiful vases which we have to this day, in spite of several changes in residence.

The day before Christmas I received a communication from Mr. Edward A. Taft, General Manager of the New York and Boston Despatch, doing an express business between Boston and New York through the medium of the boats running on Long Island Sound. Mr. Taft requested me to call on him at his office, 220 Devonshire Street, on Christmas Day. He was running a general express office recently opened on his own personal account in addition to his official connection with New York and Boston. He had an up-to-date general express office with plenty of room for his tenants, and the building being in Winthrop Square, abundance of room for their wagons. Frank Moore and Will Alden were in charge that day and I was taking a holiday, so I called on Mr. Taft. We were already acquainted. Mr. Taft inquired how I was getting on, and how I liked my new job, and finally offered me the position of manager of the new general express office. I was very much surprised; he said, "You will be right in your element here, and I will give you fifteen dollars per week as a starter." Well, there was a jump of 25% in wages; I was to be married that night; I was putting in a lot of time for Mr. Holmes after



MR. AND MRS. LILLIE WORKING ON THESE TELEPHONE REMINISCENCES
IN THEIR HOME, 1090 BEACON STREET, BROOKLINE, MASSACHUSETTS
March 10, 1932

hours. I told Mr. Taft I would consider it, and advise him later. The next day I had a talk with Mr. Holmes about my conversation with Mr. Taft; he said, "Nat, you stay with me. I will pay you fifteen dollars per week and you keep out of the express business." I called on Mr. Taft that day, thanked him for his kind offer, and told him I had decided to stay with Mr. Holmes.

Early in 1878 the cash books were turned over to me, and if I was busy before, I was now on the go every minute of the day and late at night. The teaching of Mr. Ben Freeman at Hawes Brothers and my clerical work in the express business now proved to be a great help.

One day Mr. Holmes walked in to the office just at the time there was a lively scrap going on with two of the new operators; there was a lot of loud talking and a general scrimmage taking place. On his appearance conditions became normal. He questioned two or three of the boys, but gained little information. The whole affair had lasted but a few seconds. Coming to where I was at work on the books, he said, "How did this happen, and why did you allow it?" My reply was that I did not know how the quarrel originated, that it was all over before I could have reached there, and I was without authority, but would have tried to prevent it if I had been near. He replied, "I give you authority, you are superintendent, and from now on I shall hold you responsible for the discipline of all employees."

Well, I now had something more to think about. Later, Mr. Holmes gave me authority to hire and discharge all classes of employees, which up to that time had been confined to messenger boys, but I fre-



Photostat of Badge Presented to N. W. Lillie When He Was Made
Superintendent of the Telephone Despatch Company by Mr. Holmes.

quently consulted him relative to letting a lineman, operator, or instrument setter go, if there were circumstances connected with the case of which he might be ignorant. The hiring of canvassers for service and their routine of duty were left with Mr. Holmes, and he continued to hire other classes of help.

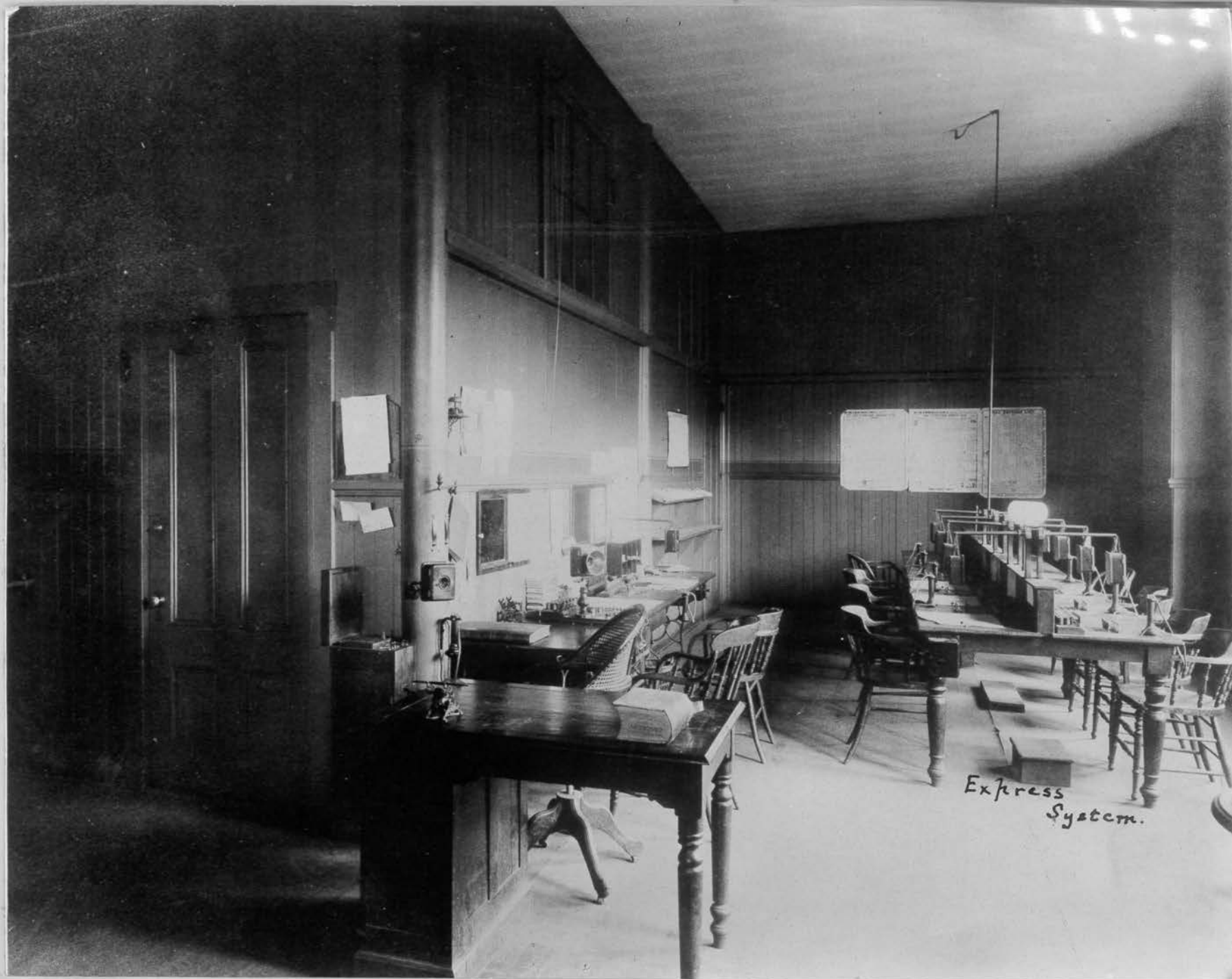
It is unfortunate the leaves from the Cash Book used by Mr. Holmes have been removed as otherwise certain dates could now be used, instead of guessing, as my memory is faulty as to the time in 1878 when the first telephone exchange was opened to the public. I am quite sure however, that there was an exchange at 10 Brattle Street, Cambridge in the office of Sawin's Express early in 1878 and that subscribers in that exchange could not talk with subscribers in Boston as there was only one trunk line from the Cambridge Exchange to the Telephone Despatch Company and that line ended in a box telephone and receiver, and coffin magneto bell fastened to the partition previously referred to as being beyond the galvanometer case. Over this grounded wire we received orders for groceries, fish, etc., from subscribers in Cambridge, and relayed them from our office to S. S. Pierce, McDewell and Adams, Shattuck and Jones and others as specified by the subscriber.

All of the leading-in wires at this time to subscribers and central office were of cotton covered copper wire and no other insulator, the result being that in damp or rainy weather it was sometimes impossible to hear what was spoken. The Cambridge subscribers were equipped with a box telephone and a receiver. Our orders for carriages in January, 1878, were 45, in February 72, and for 23 days in March 80, and our messenger business was popular and increasing. During the last three months of

1877 and early in 1878 we had many visitors, some of whom were considering the opening of new places to start exchanges. One of these gentlemen was Mr. F. O. Vaille who had a number of talks with me regarding the operation of the business both mechanical and financial. He finally informed me he had obtained rights for Colorado, was leaving soon and would I go with him? For family reasons my decision was to stay in Boston. Mr. Vaille some years later sold his rights, and property for a considerable amount and returned east, living in Lexington, Massachusetts, in retirement. Among other visitors was a comparatively young man who was a stock broker and afterwards became a substantial owner of telephone shares, reputed to have made a fortune.

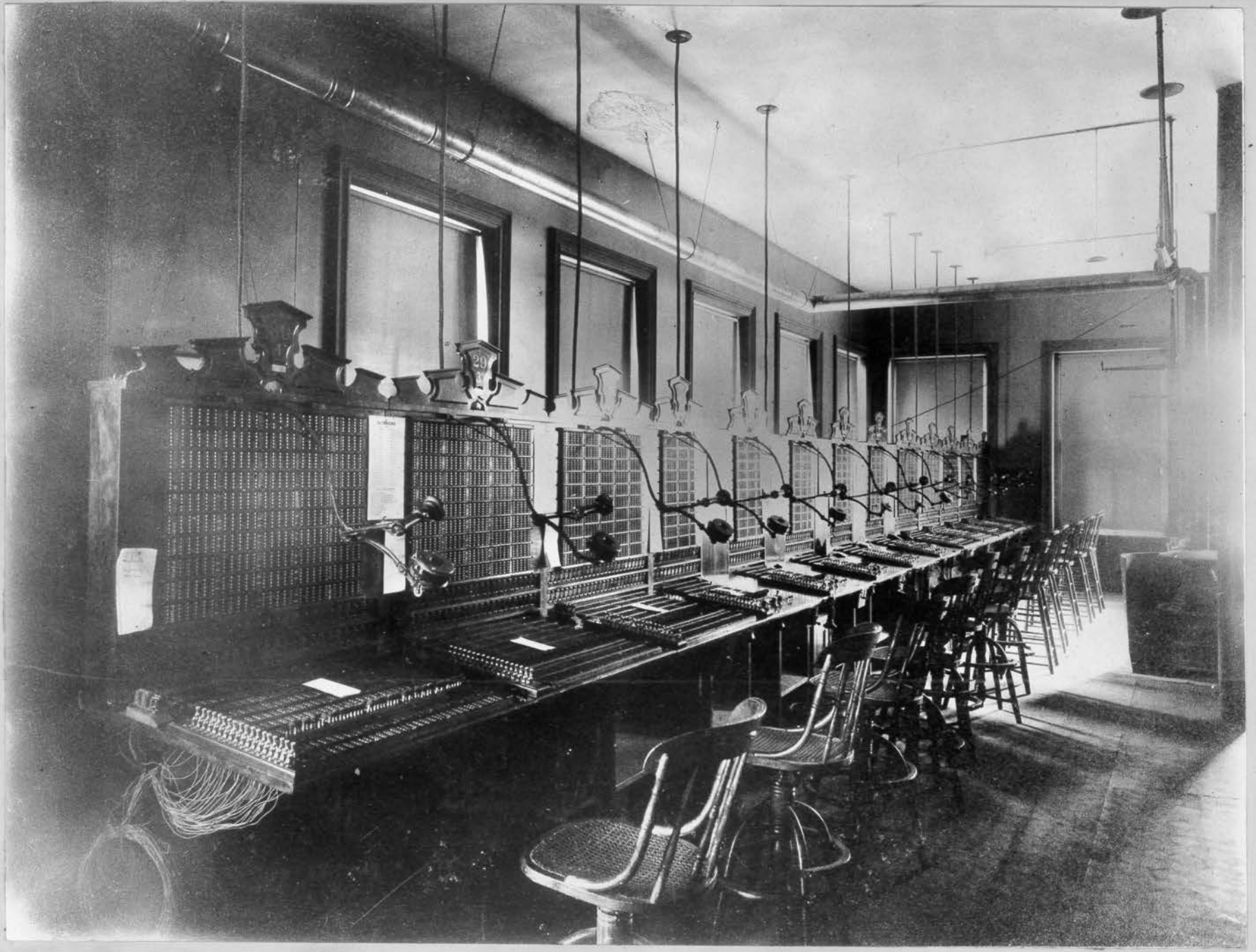
During the year 1878 a structure was built on a roof of 342 Washington Street to fasten the open wires now spreading in all directions, and cotton covered copper wires were spliced to them and brought to the switchboard on the third floor by means of rubber hose, and this hose is shown in a photograph on page 24 of this book. It is at the extreme right of the photograph, which was taken in the summer of 1879 when Mr. Holmes obtained possession of the upper floor, and after the roof structure just referred to had been rebuilt to the size shown in the photograph. During the latter part of the year 1878 there were placed on the wall, in the space shown in the sketch between the window on the left and the galvanometer case, two pin (or plug) switchboards of a capacity of 35 lines each. These boards were fastened end to end. The cotton covered wires contained in the lengths of rubber hose were brought in over the window at the left and connected to these switchboards. These wires connected subscribers to the exchange system. This was the

M.R. #23595



TELEPHONE DESPATCH COMPANY, 40 PEARL STREET, BOSTON. June 1, 1883.

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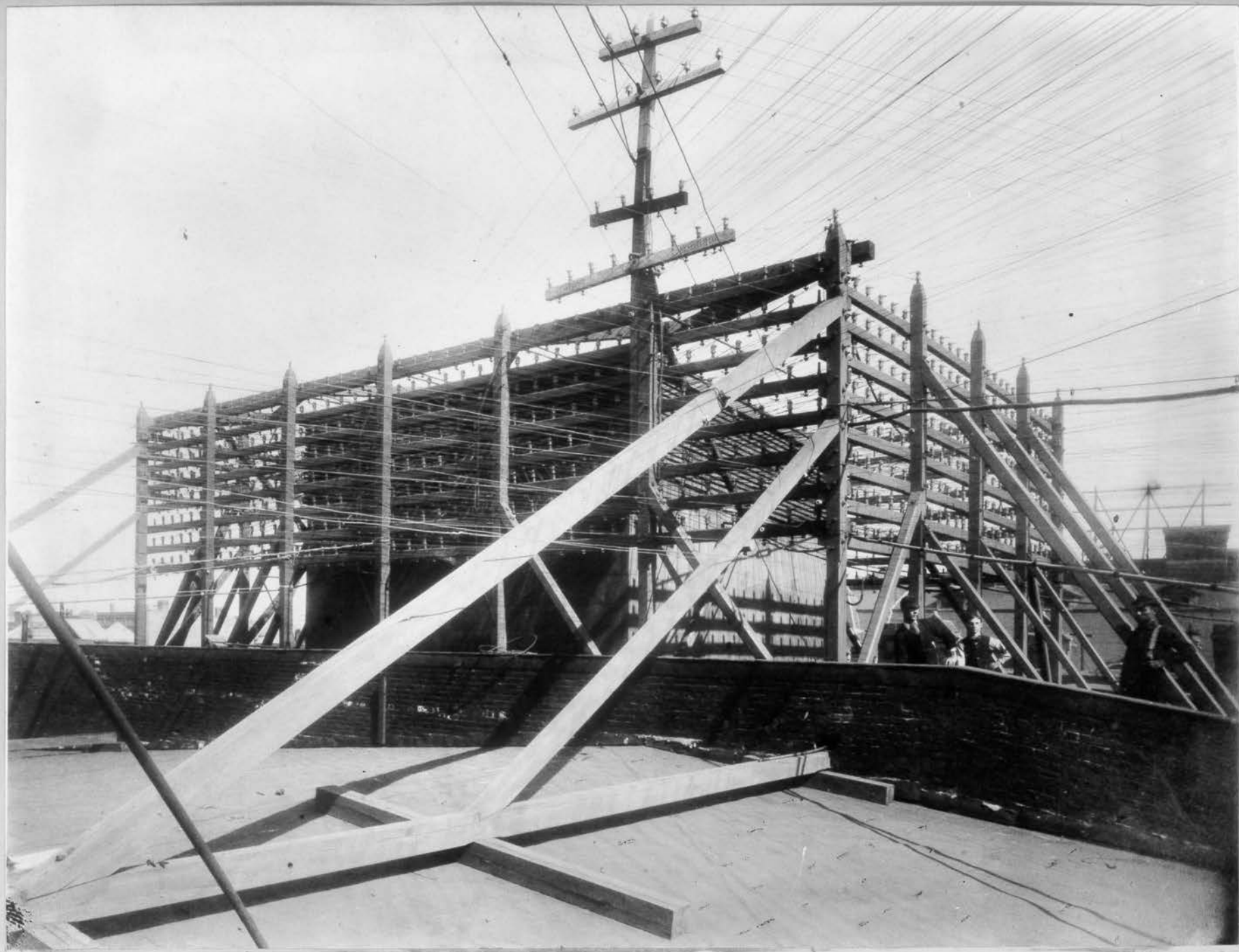


Above and Below: TELEPHONE DESPATCH COMPANY, 40 PEARL STREET, BOSTON. June 1, 1883.

M.R. #23593



M.R. #23592



TELEPHONE DESPATCH COMPANY, 40 PEARL STREET, BOSTON. June 1, 1883.

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beginning of the exchange system in Boston, as a differential from the express or so-called district system.

Each subscriber's station had a call bell, known as a Doo-little Bell. There was a handle through this bell which on pulling down on one side would signal the central office; on pulling down the other side the subscriber could talk. Battery power at the central office provided the means for calling. These subscribers had a small box telephone and a receiver. Over these two 35-line boards were wooden shelves on which were placed electric (battery) bells, with hammers that would tap instead of vibrating. Each circuit had a bell. As the business grew we were obliged to tie a little wig-wag to the hammers to identify the circuit calling as so many were calling at one time. Subscribers had no numbers; it was therefore necessary to memorize the names and the circuit on which they were located, and the call on their bell, - whether two, three, four, etc.

There were three wooden posts with a bar across at the top erected on the floor in front and on one side of these switchboards, and on this bar were placed three box and three hand telephones, and on the tapping of one of the bells a plug was removed from one place on the board to another hole and connection made with one of the box telephones, the message of the subscriber received and shouted to the boy at the switchboard who would make the desired connection. These box telephones were replaced by Blake Transmitters soon after they were available, or about March 4, 1879. As the calls increased the shouting became louder, and added to the yelling of the boys on the express system a stranger would think bedlam had broken loose. All this period I was supervising

as best I could the issuing of line and equipment orders, box and hand telephones, inside wire, tools, badges, making records in the Cash Book, and other records, going to the assistance of the operators when they would be unable to answer the calls promptly and so on, ad infinitum. A list of subscribers dated October 15, 1878 shows a total of fifty-one.

After the Blake Transmitters had replaced the box telephones on the frame or bar above referred to, we had a distinguished and famous visitor with ladies one day. He stood behind me while I was engaged in talking through one of the transmitters, and I heard him remark to his guests, "It looks funny to see that young man talking into that box." The speaker was Alexander Graham Bell.

I have previously referred to the private line connected with Mr. Charles Williams Jr.'s office over which he was accustomed to send his calls for expresses each day. Mr. Holmes had designated this duty to me almost from the first day of my employment. One day he came to me and said, "When Mr. Williams calls today you are to reply to him that you are forbidden to receive calls for expresses over this wire." Sure enough, the call came late in the afternoon. Mr. Williams was in the habit of saying "Hoy, hoy", so on answering I knew he was listening. He named the expresses to call and on my telling him I was forbidden to take his message, he inquired who gave me the order. "Mr. Holmes", I replied. "Well, that was a damn smart thing to do." It rather astounded me as I knew Mr. Williams was a churchman. I learned after this incident that Mr. Holmes had sent a canvasser to get Mr. Williams' subscription for an express telephone over which he could order expresses, and that he advised the canvasser he would be a fool to pay three dollars

per month when he could order expresses over his private line to Holmes' office. Well, he had an express telephone put in.

Sometime in the fall of 1878 Mr. Holmes requested me to get a half a dozen of the day force together for duty after six o'clock. That night he took us over to the Milliken House which was at the end of a passageway across the street from 342, gave us each a supper and then we started for the Back Bay. Each had a small hand bag in which were folded circulars descriptive of the telephone service then being built in Boston. On arriving at Beacon Street we separated, each taking a certain district, and on arriving at our destination, rang the door bells and presented a circular to the maid. Some of the maids would look through the glass in the door and retire without opening it. This circularizing continued for a number of nights, not consecutively, but until the desired field had been covered. Our doorbell ringing was discontinued about nine-thirty P.M. as we did not desire to discommode families who were potential subscribers.

We were now faced with a stiff competition with the so-called American Speaking Telephone Company backed by the powerful Western Union Telegraph Company. Its office and operating room were in the Sears Building, Court and Washington Streets. Fixtures on roofs of buildings all through the business district made their appearance, in some instances on the same roofs on which we had fixtures. They used two wires to the subscriber, one a calling wire, the other a talking wire. Mr. Holmes was frantic; the American Speaking Telephone Company, known by us as the Edison Company, was placing its telephone instruments alongside ours, and making no charge for service. It was furnishing a battery

TELEPHONE DESPATCH CO.

OF BOSTON.

E. T. HOLMES, MANAGER.

Please connect

*with your office, giving _____ all the advantages of the Exchange System, viz :
direct speaking communication with all Subscribers to the different offices of the Com=
pany, for which service _____ agree to pay Six Dollars per month, and to
continue subscription for one year. Messenger service at the rate of (30) thirty cents
per hour when such service is required.*

SUBSCRIPTION BLANK FOR TELEPHONE SERVICE IN USE 1879.

transmitter, Edison, and we were using the magneto or box transmitter. One day Mr. Williams sent over a Blake Transmitter. It had binding posts, six or eight, around the outside; its front was concave. Soon this device was connected with some of the batteries in the battery room, and it was tried out on the express offices, but it was not satisfactory. It needed something else. On April 4, 1877, Emile Berliner filed a caveat covering a telephone transmitter and the combined skill of Blake and Berliner brought the Blake Transmitter into use to save the day for the New England Telephone Company and its successor, the National Bell Telephone Company.

But the fight with the Edison Company continued to be a hard one with some dramatic and otherwise disagreeable incidents. We had a large structure on the roof of the Sherman House in Court Square. One day several of our circuits attached to this structure ceased to work. I despatched linemen to look for the trouble. A little while afterwards one after another of these circuits came clear. The linemen reported to me that they had been deliberately cut. I had a deep-seated conviction as to the man who did this, as he was a former Western Union lineman then with the Edison Company, and we had some previous cases where our wires had been crossed. They were not the only sinners by any means. Our wires were frequently crossed with theirs. Some of our boy operators would hear messages going over their wires, and would order carriages sent to their subscribers, which created a great deal of dissatisfaction. I was not supposed to know anything about this, but the news would leak. Right here, we had the most loyal, faithful, happy family of employees any concern could wish, and most of the boy operators were paid

six dollars per week, and the linemen two dollars per day.

This competition with the Edison Company continued for over a year, when an agreement was made between the National Bell Telephone Company and the Western Union Telegraph Company, and signed on November 10, 1879, by which the Western Union agreed to keep out of the telephone business and the Telephone Company to keep out of the telegraph business. The Telephone Company was also penalized to the extent of agreeing to pay the Western Union twenty per cent of the amount received for rentals and royalties for seventeen years. Not satisfied with this enormous tribute the Western Union Company, after the expiration of the contract, sued the Telephone Company for a further payment of twenty per cent of the dividends it had received from its licensee companies. The evidence was taken before a master, Mr. Everett W. Burdett, who after three years of examination, awarded the Western Union Company three millions of dollars. During this time there had been a decline of considerable proportions in values on the stock exchange, Western Union Telegraph reaching a price of forty dollars per share. It was gossip at the time the case was settled that Mr. Vail had purchased a substantial amount of Western Union stock for the Telephone Company; therefore part of the award finally reached the Telephone Company again.

Now, we must get back to 342 Washington Street. The service over the covered wires coming through the hose was abominable. During rainy weather or dampness the cross-talk of subscribers who were now supplied with Blake Transmitters (battery), at least many of them, was such as to interfere in some instances with direct conversation.

There was introduced at this time a bell called the Anders

TO THE PUBLIC.

Nearly two years have elapsed since the first Bell Telephones were introduced to the public. Since then nearly twenty thousand have been manufactured and are now in successful operation in every part of the country. District systems have been introduced in Boston, Cambridge, Lowell, New Haven, Bridgeport, and other places in New England. Also in New York, Albany, Troy, Buffalo, Detroit, Chicago, St. Louis, New Orleans, Louisville, Cincinnati, Washington, Baltimore, Philadelphia, Nashville, and other cities.

The prices charged for the use of the Bell Telephone are so moderate in proportion to the great advantages gained by their use that their general introduction into all places of business and dwellings is only a question of time, and a few facts in relation to the first exhibition and introduction of the Telephone may be of interest to our patrons and the public.

Mr. Bell received his first patent on the Speaking Telephone, March 7, 1876.

The Bell Articulating Telephone and the Gray Musical Telephone were both exhibited on June 25, 1876, at the Centennial, to some of the Judges of the Group relating to telegraphic instruments, in the presence of the Emperor and Empress of Brazil. Mr. Bell exhibited his Multiple Telegraphy and Telephonic Organ and three forms of Speaking Telephones. Mr. Gray exhibited a Musical Telephone, but made no reference in the explanation of his invention to even the possibility of transmitting speech electrically.

Subsequently Sir William Thomson and Prof. Watson, two of the Judges, made a second examination in private of the operation of the speaking telephone in the absence of Mr. Bell. Mr. Gray was not present, but on hearing of the results assured Prof. Watson that "it was impossible," "you have been deceived in some way," "the transmission was by actual metallic contact through the wires."

This appears in the letter of Prof. Watson in "Nature" of Dec. 5, 1878.

Sir William Thomson, in his official report thus refers to these exhibits: "Mr. Alexander Graham

"Bell exhibits apparatus by which he has achieved a result of transcendent scientific interest, the
"transmission of spoken words by electric currents through a telegraph wire."

"This, perhaps the greatest marvel hitherto achieved by the electric telegraph, has been obtained by
"appliances of quite a home-spun and rudimentary character. With somewhat more advanced
"plans, and more powerful apparatus, we may confidently expect that Mr. Bell will give us the
"means of making voice and spoken words audible, through the electric wire, to an ear hundreds
"of miles distant."

In 1877, Mr. Prescott, the electrician of the Western Union Telegraph Co., published his work entitled "Electricity and the Electric Telegraph." We quote the following from page 881, of the third edition: "Taking the invention of Reiss as a starting point, Prof. Bell conceived, as early as 1874, and
"has since constructed an apparatus by which the sound of the human voice can be reproduced at
"the receiving end of a telegraph line, with some degree of distinctness."

Mr. Gray, in a public lecture delivered in Chicago, Feb. 27, 1877, made the following reference to Mr. Bell as the inventor of the speaking telephone. After explaining his own inventions for transmitting musical tones, he went on to say, that "another development of the telephone was interesting in a scientific point of view. Prof. Bell, in his investigations, has gone a step beyond composite tones, although they were embraced in it, and developed the transmission of vocal sounds." In the same connection he explained the apparatus for transmitting vocal sounds as consisting "of a hollow tube, on one end of which was stretched a metal membrane, with a thin iron or a steel armature glued to it, the membrane swinging back and forth in the air, and copying the voice in all its forms — assuming exactly the motion of the air when a word is uttered." This was evidently intended as a description of Mr. Bell's telephone.

Mr. Bell received his second patent on the Speaking Telephone, January 30th, 1877.

Mr. Bell and those associated with him commenced the manufacture of telephones soon after, and in May, 1877, the first telephones were leased to Messrs. Stone & Downer, of Boston.

The great success of the Speaking Telephone brought infringers into the market under various pretences. Many of them endeavored to escape liability by selling parts of the instrument ready to be made up into Telephones. Others relied upon their pecuniary irresponsibility or upon the secrecy of their operations. The Gold & Stock Telegraph Company entered this company of infringers under the pretence that there was nothing patentable in this wonderful invention, or that it had been invented in secret by other parties. But no one has pretended that these parties or any one else ever in fact made a Speaking Telephone before Mr. Bell actually exhibited it in public.

In July, 1877, the Western Electric Telegraph Co., (of which General Anson Stager, vice-president, of the W. U. Tel. Co., was president, and Mr. Elisha Gray, electrician,) became the agent for the Bell Telephone Co., for Chicago. Up to that time no rival claim had been made to the invention of the Speaking Telephone.

In the fall of 1877, a year and a half after the granting of Mr. Bell's first patent, the Gold & Stock Telegraph Co. first offered telephones to the public, and advanced the claims of Gray, Edison, Dolbear, Phelps and others.

Mr. Edison, who says in Prescott's book that "he can lay no claim to have discovered that conversation could be carried on between one receiver and the other upon the magneto principle," commenced experimenting on the Telephone in the spring or summer of 1876, after knowledge of the invention had been given to the world in Mr. Bell's first patent.

It was not till after months of labor, that he brought out his Carbon Transmitter, which in 1878, was transferred to the Western Union Telegraph Co., and is now added to the list of instruments advertised by the Gold & Stock Telegraph Co. But even this instrument can be used only in connection with Bell's Telephone as a receiver.

Having no patents of an earlier date than Mr. Bell's making the slightest reference to the Speaking Telephone, or which could justify their use of it, this company, and the parties claiming under Mr. Gray, have resorted to the expedient of reissuing a patent granted to Mr. Gray, in July, 1875, for the purpose of obtaining claims which they might assert, covered some part of what is embraced in the Speaking Telephone. There was not in this patent the slightest reference to the Speaking Telephone. Even in the reissued patents based upon it there is not the slightest reference to the Speaking Telephone. There is no claim that the apparatus described could be used for transmitting speech, and the company cannot under these reissues give the slightest protection to those who infringe the Bell patents. We are advised by our counsel that the reissues will undoubtedly be declared void by the courts, as not being for the same invention as that embraced in the original patent, and also that the claims will be so construed as not to embrace anything to be found in the instruments made by the Bell Telephone Company.

The Bell Telephone was exhibited at the Paris Exposition, in 1878, as was the Edison Carbon Transmitting Telephone, and the Gray and Phelps modification of the the Bell Telephone. After the awards were made, but before they became public, the Gold & Stock Telegraph Co. advertised that they were the sole manufacturers of Telephones made under the patents and inventions of Thomas A. Edison and Elisha Gray, to whom had been awarded, for Telephones, the only grand prizes granted for electrical inventions, and that Mr. Bell had been an unsuccessful competitor for the prizes, and that these awards morally settled the question that Mr. Bell was not the inventor of the Speaking Telephone.

The facts are these: The Grand Prize was given to Mr. Bell as the original inventor of the Speaking Telephone. A grand prize was also given both to Mr. Gray and Mr. Edison. That to Mr. Gray for a Musical Telephone, and that to Mr. Edison for his combined exhibit of the Phonograph, Carbon Transmitting Telephone and Electric Pen.

At the Thirteenth Exhibition of the Massachusetts Charitable Mechanics Association, held in Boston, in the fall of 1878, the Bell Telephone, the Edison Carbon Transmitting Telephone, and the Phelps-Duplex, Crown and Double Crown Telephone were exhibited. The judges, of whom Prof. John Trowbridge, of Cambridge, was chairman, awarded to Mr. Bell for this great discovery, a gold medal for the "Bell Telephone," and to Mr. Edison the same award for his "Transmitter." No recognition of merit or award was made to Mr. Phelps.

The invention of Mr. Bell, as claimed in his first patent No. 174,465, is "a method of, and apparatus for transmitting vocal or other sounds telegraphically, by causing electric undulations, similar in form to the vibrations of the air accompanying the said vocal or other sounds."

All other Telephones now in use are infringements of the patents granted to Mr. Bell.

Suits have been commenced in the Circuit Courts of the United States, in Boston and New York against the Gold & Stock Telegraph Co. for damages, for the violation of the patents granted to Mr. Bell, and for an injunction against the further infringement thereof. These suits are being pressed to trial, without delay.

Suits against other infringers have been commenced, and injunctions obtained against them in Cincinnati and Boston.

The Bell Telephone Company respectfully notify all users of Telephones that are not manufactured by the Bell Telephone Company, that they will be held liable as infringers.

BELL TELEPHONE COMPANY,

MUTUAL LIFE BUILDING,
BOSTON.

bell. It was a small battery bell designed for subscribers' use, with a step by step or ratchet in order to individualize the ringing. It was a cause of much trouble. These bells were first placed on a circuit which had four subscribers, one of them being the National Bell Telephone Company, 95 Milk Street.

Mr. Holmes had purchased the lease of the tenant on the fourth floor. Mr. Williams was making a number of sections of the "Williams" switchboard and by June, 1879, the structure on the roof had been rebuilt and enlarged with a good-sized cable house in which to enter the wires to end on lightning arrester strips and thence to the switchboard on the floor below the roof, by the way of a hole in the roof, and cleats fastened to the ceiling of the new operating room. This Williams board was a cord and plug board, with Leland spring jacks. Boys and young men received the calls at the switchboard, made connection with one of a number of sewing machine tables at which a man sat who completed the operation by pressing a key which rang a bell in the subscribers' place who was wanted. If it was noisy on the floor below, this floor was pandemonium let loose. I remember the names of Henry Kellogg, James E. Wilson, Arthur Phippen, Henry L. Hoyt, Alfred Lyon, Edward E. Lillie, (who had left his department store job), Kimball, Pettingill, Coates as among those who were first on this new exchange outfit.

Meanwhile the express system was growing rapidly, so that we were having increasing difficulty in getting an answer from the express offices, and when they did answer many calls had collected, with the result that the service was slowed down. One day Mr. Holmes advised me that there would probably be trouble the next day in getting the offices

to answer, and I should be prepared to get the calls to their respective offices by messenger. In the afternoon of that day, I selected certain of the boys in whom I had confidence to take the calls to the express offices. One boy was to go to 32-33-34-35-36-39 Court Square. Another boy was to go to Bedford and Kingston Streets, one to 8 and 10 Court Square, 15 Devonshire Street, Merchants Row and the Kilby Street offices, until all were covered. I relied on there being no trouble with Adams, American or New York and Boston Despatch, but made a wrong guess on the latter as Mr. E. A. Taft was general manager, and the Despatch was in his general express office at 220 Devonshire Street and he was one of the group of four who were directing this opposition or refusal to receive the calls by telephone. Well, the next morning came and at eight o'clock no general express office would answer, and after trying for fifteen minutes without result, the boys were started for the various offices. We kept this up for three days, at the end of which time Mr. Holmes agreed to the terms laid down by the various agents which were that certain offices be paid for receiving their tenants' calls each month a flat rate according to the calls going to their respective offices and this custom was in effect for many years or until the express system was abandoned by the New England Telephone and Telegraph Company, December 1, 1921. At that time all the general express offices had exchange telephones and could not refuse to receive calls over exchange wires from customers of their tenants. Therefore the necessity for a separate express call system vanished. Thus passed out of existence "the goose that laid the golden eggs."

When we started our new exchange quarters on the top floor

June 11 - 1911
E. T. Holmes Esq.

Manager Telephone Dispatch Co.

Dear Sir,

The undersigned proprietors of stores using your instruments would state that Five Dollars per month is a greater rental than they are willing to pay. They would state that to a certain extent they feel obliged to try the experiment of introducing them but that the result has not been any considerable increase of business - in short that it does not pay. They feel that instead of paying more than occupants of houses they should pay less considering that you have been able to obtain many subscribers by holding out as an inducement that the public would find it a great convenience to be able to order goods without the trouble of making a visit in person.

The locality being one of small retail business only they find no special use for the Telephone except for the purpose of receiving orders. The amount of orders thus far received in excess of those which would ordinarily come does not justify a rental for your instruments of even Three dollars per month.

They therefore offer to pay you the sum of ~~two~~ ^{two} dollars per month each which they trust you will see the propriety of accepting. Should you not do so you will please remove the instruments at the close of the present month.

Yours (2)

John H. Hubbard
Wm. L. Entwistle
James H. Metchie
J. Brewer
Alex Millan
H. L. Benson, Jr.
Alfred Wood

of 342, the express and messenger service remained on the third floor. We built a room on the fourth floor, and here we placed supplies, telephone receivers, transmitters, LeClanche batteries, cords, plugs, magneto bells, inside wire, and accessories used by inside wire men, and here I issued supplies, instruments and such as was required by each man as he started out in the morning, as Mr. Holmes desired that proper records should be made, and was not in favor of this work being delegated. When the men completed their work and reported, I must drop my occupation in order to set them at work on new orders for telephone service.

Our Cambridge exchange was growing slowly. Each subscriber station was equipped with a box telephone and hand receiver, the rates for service being four dollars per month for residences, and five dollars per month for stores, factories, warehouses, etc. Under date of July 12, 1878 certain Cambridge subscribers sent a communication to Mr. Holmes advising him that unless the rate was reduced to two dollars per month he could remove the telephones. (See photostat copy.) As Mr. Holmes was paying the Bell Company a rental of \$1.67 per month for two instruments, there was only one thing to do, which was to disconnect the stations. All of the stations but one are listed in the List of Subscribers dated September 1, 1879 and as they were then equipped with Blake (battery) Transmitters they were paying six dollars per month. They could not get along without telephone service even in those days. Before January, 1879, we had branch offices at 30 Charles Street, Hotel Berkeley, Berkeley Street and at 12 Worcester Street with young men in charge. We had branches at 22 Charles Street, Hotel Berkeley and 12 Worcester Street in 1878, but they were district offices for calling carriages, messenger boys,

etc. New subscribers were coming in fast and the voices of the boys on the upper floor were louder than ever.

One day Mr. Holmes said to me, "We must do something to reduce this shouting." The result was a decision to engage girls as operators. I told him of a young lady of my acquaintance who was a neighbor and I would speak to Mrs. Lillie about her when I arrived home that night, which I did. Mrs. Lillie requested the lady to come over and have a talk with me, which she did, and Miss Emma M. Nutt was engaged as the first woman telephone operator at a weekly wage of six dollars and reported for duty the next morning. She was a Western Union operator and was at that time out of employment. Mr. Holmes was satisfied and pleased to have Miss Nutt in his employ, and from that time girls were taken on as fast as vacancies could be found for them. Boys were used to do the work of receiving calls and switching these connections to tables at which the girls sat and did the ringing and actually got the correspondents to the talking stage. This system was only at 342 Washington Street. Then followed rapidly the replacing of boys with women at branch exchanges, and on September 1, 1879, there were besides Cambridge, branches at 30 Charles Street; Hotel Berkeley, Berkeley Street; 12 Worcester Street, south end; 52 Warren Street, Roxbury District; 395 Broadway, South Boston. At these offices the women managers answered all calls, did the switching, looked after the messenger boys, and waited on the patrons who frequently called to telephone. There were also offices at Suffolk Court House, Boston; and Middlesex Court House, East Cambridge, but these two were not switching offices, but for convenience of lawyers in reaching their offices when they were at court, and were in charge of young men.



EMMA M. NUTT

1849 - 1926

First Woman Telephone Operator



EMMA M. NUTT

About 1895

We were now maintaining a day and night service, and our night operators were men. Our messenger boys were also on duty nights by an arrangement whereby they reported later in the next day for duty. My duties were such that I could not maintain a supervision of these night operators, except by an occasional visit to these branch offices. Mr. Holmes was residing in Newton and there seemed no possibility of telephone service at Newton for a long time. We had a talk about conditions covering this night service, and he said he was going to put a telephone in my house at Chelsea, which he did. This line was built on house tops and some street poles, and it was necessary to lay three submarine cables to cross three drawbridges. It was the intent of Mr. Holmes that I should call the night operators through the night to ascertain if they were on duty, but this idea was not carried out except for a short period, as I could not stand the strain of being deprived of sleep, and it was finally arranged that the operators were to call me in an emergency.

The first telephone in Chelsea was placed in my house, and the fact was soon known, and Mr. Holmes was importuned to allow the City Marshal of Chelsea, William P. Drury, to have a telephone placed in his office and connected with my wire. He was unable to have this done, until the latter part of 1880. Later on Chief Wade of the district police, a neighbor of mine, requested that he should have a telephone on my line, and he carried his point. Some time after this line was built Mr. Holmes decided to open a branch office in Lynn which was within the ten mile radius of Boston allowed him by the Bell Telephone Company under date of August 10, 1877. After obtaining rights of way through Boston it became



MISS STELLA A. NUTT

About 1880

Second Woman Telephone Operator

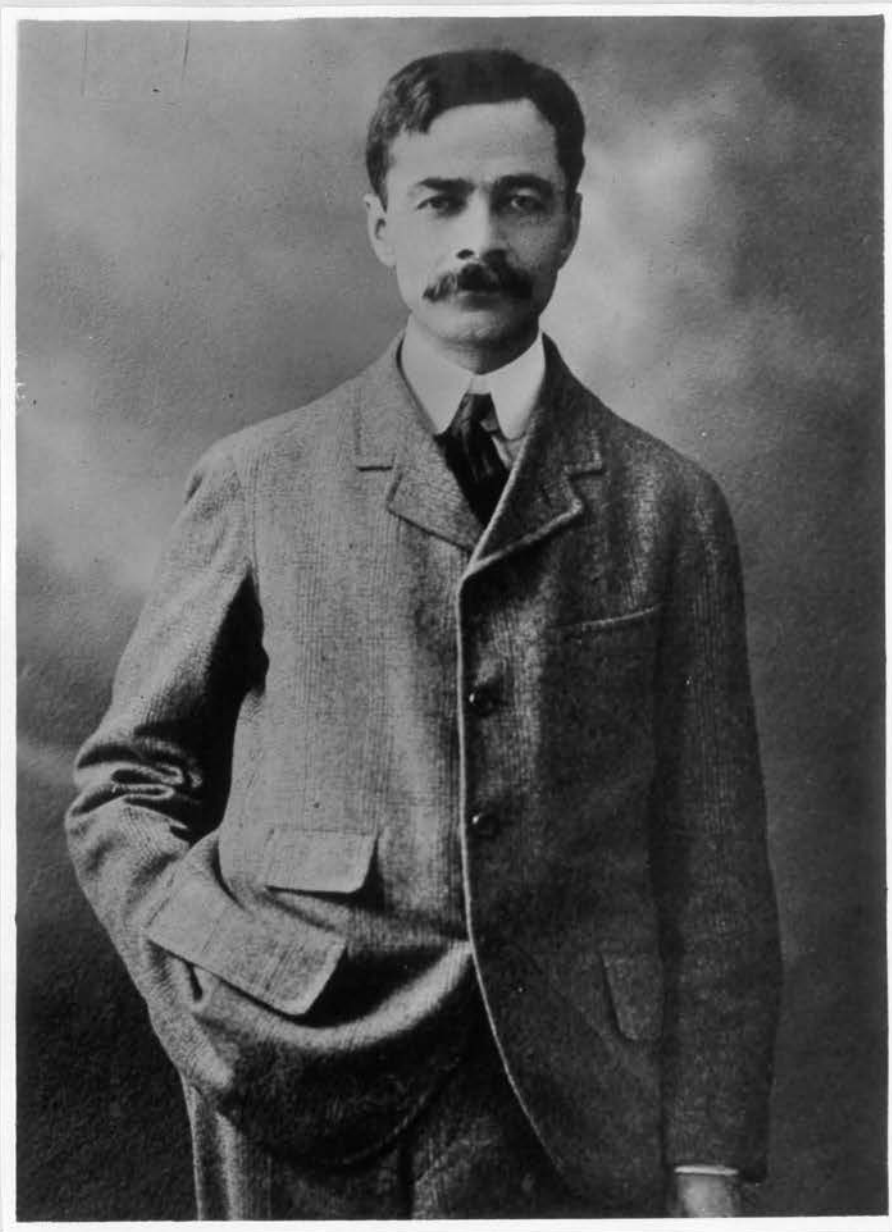
necessary to obtain rights through the city of Chelsea where I was a resident. A petition to the Board of Aldermen was prepared and sent, and a hearing before the Board was called. Mr. Holmes advised me that on a certain date I was to appear before this honorable board in support of this petition. The streets named in the petition on which we desired to set poles covered the shortest and most direct route to the Boston, Revere Beach and Lynn Railroad, a narrow gauge steam road over which Mr. Holmes had obtained a right of way in exchange for telephone facilities for the railroad. Mr. E. H. Whorf was superintendent, and he was a wonderful character and very enthusiastic over the telephone system. My acquaintance with the gentlemen serving the city as Aldermen was limited; there were two or three who happened to be passengers on the ferry between Chelsea and Boston whom I met occasionally but I had no intimates, and this meeting was to be my first appearance before a public body of men. So I decided, "If Mr. Holmes has confidence in me, I should have confidence in myself." I attended the hearing, and was called on to state my case and the necessity which called for the granting of this right of way. I was congratulating myself on the absence of any hostility, when I was asked, "Why do you ask for rights through our streets and say nothing about when we are to have telephones in Chelsea?" Well, that was a poser, as I knew nothing about Mr. Holmes' plan for Chelsea, or whether he had contemplated opening a branch office in that city. I replied that the chances for a branch office in Chelsea were very good in the near future, but the merchants of Lynn had solicited the Telephone Despatch Company to open a branch office in their city and we had considered their application favorably, and we hoped the honorable board would not deny our petition at this time.

The petition was granted, and the line was built. The rates for service were six dollars per month, including the Boston exchange and branch offices. Telephones were quickly installed, but Mr. Holmes received a notice from the National Bell Telephone Company that Lynn was an extra-territorial locality and a charge of fifteen cents should be made for all calls to Boston and vice versa. This ruling was put into effect and brought a storm of protest from Lynn subscribers as they had subscribed for telephone service in good faith with the distinct understanding that Boston connections would be free of toll charges. Many of the telephone stations were disconnected, but were later restored when the merchants were shown that a considerable investment had been made in erecting poles and wires to give them service. Later in 1881 Lynn was sold to the Boston and Northern Telephone Company.

Among the early applicants for territory to introduce the telephone was Charles J. Glidden who was a Western Union Telegraph operator in Manchester, New Hampshire, in 1876. I met Mr. Glidden when I was in the express business, as his desk was in Hill and Company's express office and the Boston office of Hill and Company was in 8 and 10 Court Square and I wrote their way-bills, as their headquarters was behind the same counter where I was employed, and once in a while I was allowed to go to Manchester with the Hill and Company messenger, riding in the express car with him. Mr. Glidden had the right to do a telephone business in Lowell, Massachusetts. He was a worker but it took some time to get capital interested. Among others who were willing to invest and take a chance was Mr. William A. Ingham, a grocer in Lowell. They organized The Lowell District Telephone Company, January 1, 1878. During the summer of 1879 they organized a company called the Pioneer Telephone Com-

pany and this company built a line from Lowell to the office of the Telephone Despatch Company, Boston. The line was brought to a desk or table placed against the north wall on the fourth floor, and was equipped with Morse telegraph apparatus and Blake Transmitter and telephone receiver. A gentleman by the name of Holden, a Morse operator, was engaged, but there was little for him to do with the telephone apparatus as the line was built with No. 12 iron wire, 26 miles long, grounded at both ends and so noisy at times it was impossible to hear any conversation. But the telegrams were frequent, the charge of fifteen cents including delivery by messenger, was attractive and we were doing a good business when Mr. Holmes was notified by the Bell Company that he must quit sending or receiving telegrams over this wire, but we continued sending and receiving messages by telephone when line conditions were favorable. I have never heard it disputed that this was the first long distance telephone wire used for commercial purposes. I am under the impression at this writing (1932) that negotiations were in progress which finally led to the agreement between the Western Union Telegraph Company and the National Bell Telephone Company, and this fact the reason for the discontinuance of the telegrams.

We were constantly receiving applications for employment from boys and young men and secured some who were of excellent character and disposition, and placed them as operators on the fourth floor. About the first of October, 1879, a young man applied to me for a position. He was a slender chap, dark complexion, quite modest in his manner, and withal he seemed to me the kind of boy, (he was seventeen or eighteen years of age), suited for our business. He told me he had been employed



JOHN J. CARTY

1904

by Thomas Hall and Son, 19 Bromfield Street, Boston, dealers in electrical and astronomical instruments, that there had been a disagreement with Mr. Hall and he was through and in a quiet way urged me to hire him, which I did, at a wage of six dollars per week. I placed him with Holden, the Lowell operator who at this time had more than he could do. This young man was John J. Carty. Quoting from a letter written by General Carty to me under date of January 22, 1932, in reply to one I wrote him January 13, 1932, he writes as follows:

"The next question you ask is, 'Who hired you?' The answer to this question I am always proud to state and to volunteer. I was hired by N. W. Lillie, to whom I shall be forever grateful. I have often wondered what would have happened to me if on the day I applied to you for a job, you had rejected me. It was the turning point of my life, and I am forever indebted to you for what you did for me on that day, as well as for what you have done for me on many other days afterwards."

It seems superfluous for me to write that a strong attachment grew up for each other from the day he entered the employ which ripened as the years passed into a very sincere friendship. This young man became Chief Engineer of the American Telephone and Telegraph Company, later a Vice President of the same Company. He was decorated with the Order of the Rising Sun by the Emperor of Japan. In the World War he was commissioned by the President of the United States a Major in the Reserve Signal Corps and was in actual service on the battle fields of France. He is a past President of the American Institute of Electrical Engineers, and has received many honors and degrees from organizations and institutions of learning, both at home and abroad. Thus by his own efforts this young man, quiet and unassuming, with a determination to succeed, overcame the handicap of a limited education and reached the

goal of his ambition. Now, in the twilight hours of his life, he can rest on his laurels and enjoy the happy reflections of a well-spent life. Opportunity knocked, and he was started on his long career. Was it fate or just a coincidence?

My duties were constantly increasing. Keeping books, issuing line orders, and inside equipment, giving out stock, telephones, transmitters, supervision of messengers, operators, linemen and other employees, ordering supplies, etc. It was necessary to be on the job from early in the morning until late at night. Mr. Holmes had sold his plant and goodwill shortly before the New England Telephone Company was merged with the National Bell Telephone Company organized March 17, 1879, and was now employed as Manager of the Telephone Despatch Company (not incorporated). He doubtless felt he could spend a little money now, so on May 1, 1879, a gentleman named Edmund S. Willard was employed as bookkeeper and he was a good one. After the New England Telephone and Telegraph Company was organized in 1883 he became Assistant Treasurer. He was a man of excellent character, genial in his manner and we became firm and steadfast friends, which continued up to his death a few years ago.

It was a great relief to me to turn the books over to Mr. Willard, as I could now give more of my time to operating and supervisory details. Frank Moore was in charge of the operating room on the fourth floor, and I could start on the important subject of numbers for subscribers. Every morning the sheets of paper in front of the operators on which I had written the names of subscribers had to be corrected up to the minute, and the symbol, red or blue, marked against the name so the

operator would know which key on her table should be used. On September 1st, 1879, the first pamphlet list of subscribers was issued by the Telephone Despatch Company of Boston. Previous lists of subscribers were printed on cards. That is my recollection. On that date there were subscribers in the several offices as follows:-

342 Washington Street	299
Hotel Berkeley, Berkeley St.	41
30 Charles Street	27
12 Worcester Street	13
52 Warren Street	2 (Opened Sept. 8, 1879)
395 Broadway, South Boston	14
10 Brattle Square, Cambridge	42
A total of	438

This was a considerable number to be memorized by girl and boy operators as to location, whether branch office, or main office, the number of the wire each was connected with, and other details. We must have a number system and put the subscriber in possession of the necessary information, or our service would slow down, or perhaps collapse. Many of our subscribers, if not all, were now on a single line. There were trunk lines from 342 to all branch offices and the women managers in those offices were familiar with the names of their subscribers and their connections on the switchboards, as were the men night operators. It was decided to first number the subscribers at 342 Washington Street. Taking the circuit book as a basis the numbering was started. This circuit book recorded each subscriber, by name, location and the number of the wire (or circuit) by which the connection was made. On October 27, 1879, a supplementary list of subscribers was issued, adding 128 to the total, making a grand total on that date of 566. We were not ready to put our number system in the hands of our subscribers, but were placing numbers against the names on our alphabetical lists on the operators'

**THE NEW ENGLAND
TELEPHONE COMPANY,**

BELL'S PATENT

NO. 43 SEARS BUILDING, BOSTON.

THOMAS SANDERS, Pres't. G. L. BRADLEY, Treas. and Gen'l Agent.

THE DISTRICT BUSINESS OF THE

NEW ENGLAND TELEPHONE CO., IN BOSTON,

Is conducted under the title of the

TELEPHONE DESPATCH CO.

PRINCIPAL OFFICE,

No. 342 WASHINGTON STREET, BOSTON

BRANCH OFFICES:

No. 12 WORCESTER STREET, under Commonwealth Hotel.

No. 30 CHARLES STREET.

HOTEL BERKELEY, Corner Berkeley and Boylston Streets.

SUFFOLK COURT HOUSE.

No. 10 BRATTLE STREET, CAMBRIDGE.

E. T. HOLMES, Manager of the Telephone Despatch Company.

The TELEPHONE DESPATCH COMPANY has been in successful operation for the past year, during which time it has introduced, for District purposes, over six hundred Telephones into the principal business houses and residences of this city.

Parties who have adopted this District Telephone system speak in the highest term of its promptness, certainty, and many advantages over the old system.

The same Company is now introducing a new system of Telephonic intercommunication by which any subscriber can, at any time, by notifying the Central Office, be placed in direct speaking communication with any other subscriber, and their conversation can not be overheard by a third party.

Over one hundred of the leading business houses of this city are already connected with this system, and as many more have applied for such connection.

A complete list of the subscribers is issued fortnightly by the Company.

Telephones are introduced at the Company's expense, and a monthly rental (for the new system) of \$4.00 is charged for the use of the same

For Express and District system, \$3.00 a month.

From the above, without further detail, the advantages of the Telephone system can be readily seen. Also, from the fact that the same system has been successfully introduced in many of the larger cities. Parties desiring to become subscribers are respectfully solicited to either call at, or send word to, the Company's principal office,

342 WASHINGTON STREET.

tables and the girls and boy operators were gradually memorizing them.

In November and December there were added 358 subscribers, making a total of 924 connected with the exchange system on January 1st, 1880, as follows:-

342 Washington Street	656
Hotel Berkeley, Berkeley St.	82
10 Brattle St., Cambridge	67
12 Worcester St.	38
30 Charles St.	37
52 Warren St.	25
395 Broadway, South Boston	19
	<u>924</u>

Of this total 586 had numbers and the list of subscribers under date of January 1st, 1880, was issued with a request to subscribers to use numbers when possible, "viz: 286 for 94, naming your own number last."

The express system had continued to expand, making it necessary to run more circuits and there were now about 450 subscribers on this system and eighteen box telephones on the shelf for receiving express calls, and one additional operator.

In April or May, 1880, Mr. Holmes resigned as Manager of the Telephone Despatch Company and Mr. J. N. George succeeded him. Orders were placed for new Gilliland cordless switchboards and premises leased at 40 Pearl Street. The exchange was located on the top floor. It was necessary to erect a large structure on the roof for our open wires. Some delay resulted in the delivery of the new switchboards and it was June before we could cut out 342 and cut in 40 Pearl. The express system remained at 342, but it was removed from the third to the top floor which was necessary in order to turn over the premises to the Holmes Burglar business. Mr. George engaged a gentleman by the name of Richie DeLan as a Chief Operator in charge of the exchange and operators.

Mr. Frank Moore became a stock clerk, (storekeeper), in charge of supplies and Mr. John J. Carty was his assistant. The offices and storeroom were on the second floor. A large room in which the Superintendent had a desk, also had desks for bookkeepers and a desk for Mr. Walter O. Whitcomb, who had a position as Cashier. We were getting organized. The Manager had a private office on the Pearl and Franklin Streets corner. This large room was used to receive the public and after we were settled, pay stations were built in the form of booths for use by patrons. There was set up a switchboard designed by Mr. Thomas A. Watson (who was an assistant to Professor Alexander Graham Bell in his successful invention of the Telephone), which was connected with the exchange upstairs and Mr. Carty was placed in charge of this board and to receive and serve patrons. This switchboard was a small affair and was known as a Watson Slide Switchboard. It had no cord or plug and connection was made by sliding on upright brass bars a handle with flexible brass springs which moved on these bars and had bearings on flat brass strips.

The express system continued at 342 in charge of a young man operator. One day Mr. George called me into his office and said, "There is a strike on at 342; all the boys but two have quit. Go up there and see what it is all about." I do not recall the cause of the boys leaving their jobs, but I got busy and located several of our former boys who had left us for other employment, got permission from their employers to give them temporary leaves of absence and put them at work on the express system, then engaged some others and once more we were going along as usual. One of the boys who helped us out was Julius Goulston, another E.C. Bryant.



JOHN J. CARTY

1925

Subscribers were rapidly increasing, the telephone was demonstrating its usefulness, our force of linemen and instrument setters grew larger than in the same month of 1879 (see photograph of 342 Washington Street roof, July, 1879), and everything looked rosy. But the increasing use of the service by bona-fide subscribers, and their neighbors and friends who were not connected, - "Bill, let me use your telephone," - brought about a condition which temporarily created an antagonistic attitude on the part of the telephone using public. A circular under the heading of the Telephone Despatch Company prepared and worded by direction of the American Bell Telephone Company, successor to the National Bell Telephone Company, was mailed to subscribers the latter part of July, 1880, announcing a radical change in rates for service. (See photostat.) I have no list of subscribers between January 1st, 1880, and February, 1881, to refer to for information showing the total number of subscribers at the date of issuance of the circular. There was a total of 924 on January 1, 1880, and in six months many had been added. At any rate, as a result of the circular there was a revolt, telephone connections were ordered out, and in six weeks we had removed six hundred and sixty stations. The terms laid down in this circular contained the germ of the present measured service rate, but they were wrongly set up. See photostat copies of anonymous postal card, and communications sent by mail to subscribers by Rand, Avery & Company, and Gunn, Bliss & Company, two well-known and highly respected firms in the printing business. The almost universal opposition brought out a circular dated August 26, 1880. (See photostat copy.)

Between the issuance of the July circular and the one dated August 26th a campaign of education was started through the medium of

OFFICE OF THE

Telephone Despatch Company,

NO. 40 PEARL STREET.

Boston, July 1880.

In order to increase the efficiency of the Telephone Exchange System by obviating the unnecessary use of instruments, which seriously interferes with the rendering of a satisfactory service, it has been considered advisable to reduce the present annual rental to subscribers, and to make a moderate charge for each connection, as it may be required by them.

It is thought that this change will result in affording greater convenience and satisfaction to all who have need of telephonic communication, and for this purpose the following schedule of rates has been adopted:

For BUSINESS HOUSES, \$60.00 per annum, payable in advance.

For RESIDENCES, One subscriber on a line, \$50.00 per annum, payable in advance.

For RESIDENCES, Two or More subscribers on a line, \$35.00 per annum, payable in advance.

*In addition to the above, a charge of **Five Cents** for each connection will be made, subject to the following percentages of discount in case of extensive use:*

First, 100 and not exceeding 200 connections per month, 20 per cent.

Second, 200 and not exceeding 300 connections per month, 30 per cent.

Special contracts will be made when more than 300 connections per month are required.

This connection charge applies only to the present limits of the Boston Exchange, which includes Brookline and Cambridge.

An extra charge will be made for connection with offices beyond the limits of the Boston Exchange, as follows:

Worcester, 35 cents.

Offices between Boston and Worcester, 25 cents.

Lynn District, including Nahant and Swampscott, to subscribers, 15 cents; to the public, not subscribers, 25 cents.

These rates apply to all new subscribers, and those whose contracts have expired; also to subscribers holding instruments without contracts.

Existing contracts will be executed by the Company, but all renewals will be subject to the above rates.

J. N. GEORGE,

Manager.

BOSTON, Aug. 17, 1880.

Gentlemen :

Considering the **NEW TARIFF** as demanded by the Telephone Despatch Company, to be exorbitant, we have **DISCONTINUED** its use from this date

Respectfully yours,

GUNN, BLISS & CO.

OFFICE OF
RAND, AVERY & CO.
PRINTERS,
117 FRANKLIN ST.

Boston, August 20, 1880.

The increase of charges proposed by the Telephone Despatch Company seem to us so much out of proportion to the value of the Telephone, that (unless the circular is withdrawn announcing the advance), we shall have no further occasion for its use after the 31st inst.

Rand, Avery & Co.

*You are earnestly
to discontinue
the use of the Telephone
and thereby cooperate with
merchants of all classes
resisting the exorbitant
demands of the Telephone Co.*

Presented to the Museum March 21/07
A. H. Lillie

OFFICE OF

THE TELEPHONE DESPATCH COMPANY,
No. 40 Pearl Street.

Boston, Aug. 26, 1880.

TO THE SUBSCRIBERS TO THE TELEPHONE DESPATCH COMPANY:

As numerous inquiries are being received regarding the change in our system of charges, it is desirable that the subscribers should be more fully informed of the reasons upon which the Directors base their judgment that the change is necessary and for the interest of both the subscribers and the Company.

The principles which govern the telephone exchange business are not yet fully ascertained, and the questions of charges and of giving effective service in a great city are complicated, and have been the subject of careful study by our officers.

Comparison with the experiences of telephone exchanges in other cities shows that two errors of importance have been generally made:

First. The systems were established without sufficient provision for the rapid growth which followed. The service required with increased numbers largely exceeded the calculations of the companies, and the result was unsatisfactory service.

Second. It was supposed that with increased numbers no additional charge need be made, but it was soon found that the increase of cost of operating an exchange was out of proportion to the increased number of subscribers, — that to operate an exchange of two hundred subscribers cost more than twice what it would to operate one of one hundred, and that calculations based on an exchange of one hundred were of no value as a basis to go upon in establishing one of one thousand.

The reason of this is apparent. The second hundred subscribers can reach not only the first hundred which the system before afforded, but the second hundred also; two hundred can reach each of them, and the number of calls increases far more rapidly than the number of subscribers; every increase in the number of calls demanding a larger force at the operating room, and new and expensive fixtures for handling the business.

If an exchange is built in Lynn or Worcester, and connection afforded to Boston subscribers, it is evident that an additional charge would have to be made to pay for the new service. If forty miles of wire and one hundred new subscribers are added within the limits of Boston, the same thing is true.

In Chicago and New York there are already twenty-three hundred and twenty-six hundred subscribers respectively, and the number is rapidly increasing. In Boston the demand for connection has shown that the Directors must prepare for a system of nearly equal size, and should now determine the proper permanent basis for charges.

The following difficulties are met in the present method:—

First. To those who wish to use the instrument little, the uniform annual charge is unjust, and would become altogether excessive with the growth of the business. Yet the smaller users want the telephone and should have it, and under this system of charges can have it. Many of them only care for connection with a small part of the system, and do not wish to pay for new facilities which they will not use, nor to be forced to pay a large price for telephones because of the constant use made of them by others.

Second. The unlimited use of the telephone leads to a vast amount of unnecessary occupation of the wires, and to much borrowing of telephones by parties who are not subscribers. Thus the telephone system is so encumbered with calls which are unnecessary, and largely illegitimate, that the service is greatly impaired, and subscribers, to whom prompt connection is essential, become dissatisfied.

In all the large cities the telephone managers now see that, to give efficient service, idle and unnecessary use of the telephone system must be checked; and in San Francisco, where the system now proposed has always been in use, the proportion of calls is less than one-half that of other cities, and no difficulty is found in keeping the service at a high standard.

In Boston, the defect in quick connection is partly due to the fact that two or more subscribers have been upon the same wire.

It is now intended to give the subscriber connection from his store or office to the exchange by means of a private wire, at a fixed charge of \$60 per annum and the switching charge; or connection by means of a wire common to two or more at a fixed charge of \$40 per annum and the switching charge. From residences, where the cost of building and maintenance is less than in the business part of the city, the fixed charges are \$50 and \$35 per annum, for a private and a common wire respectively. The switching charge is as follows: For connections actually made, five cents each, with a discount of twenty per cent. in cases where over one hundred and not over two hundred, and thirty per cent. where over two hundred and not over three hundred, connections are required per month. With those wishing to use the system still more largely, special arrangements for a fixed annual rate will be made. *These rates do not affect any subscriber to the system until the expiration of his existing contract.*

In making this new tariff, it is intended to make an annual charge sufficient to cover the cost of maintaining the wire and apparatus in good order, a fair margin for the risk of discontinuance of the subscription and the removal of the fixtures, and a reasonable margin of profit; also to make a charge for each connection sufficient to pay for the cost of making the connections and a reasonable profit upon the same.

There appears to be an impression among those who object to the new tariff, that the Telephone Despatch Company has already reaped a handsome profit from its business, and is now striving to double it by an exorbitant charge.

This is entirely without foundation. Over \$120,000 has now been expended in Boston and vicinity, and a considerable further amount must be spent before the system will fully meet the public demand.

Much of this property is of precarious tenure, as the right to remain upon house-tops depends upon the consent of the householders, and it may be expedient to place the entire system under ground whenever a practicable method is found of accomplishing it.

No profit has yet been received from this outlay, and it is now apparent that, with the further growth of the Boston exchange, either a fixed annual charge must be adopted, which a large part of the present subscribers would feel that they could not pay, or that the plan of charging each for the service he receives must be substituted.

The Company does not look for a large increase of revenue from the new tariff, but expects, by cutting off needless use of the wires, to save in expense, while increasing the efficiency of the service; and by bringing the expense as nearly as possible into proportion with the service rendered, to make the business profitable without imposing an unjust burden upon any one.

An examination of the connections made at the Central Office indicates that the average cost to the majority of the subscribers will, under the new system, be less than under the old, and that only those who make frequent use of the telephone will have their rate increased.

In view of these facts, the Directors believe that, in the tariff now established, they only cover the expenses and margins required by prudent business management, and that they have adopted the only system which will work justly between the different subscribers. They trust that this full statement will make it apparent that, in the comments and objections that have been made, the difficulties, expenses, and risks of the Company have not been appreciated. Any further information desired will be given at the office, 40 Pearl Street.

Yours truly,

J. N. GEORGE, *Manager.*

canvassers and the public having had a taste of telephone service gradually responded to the arguments of the solicitors and by calling at the main office was convinced that the Telephone Company was not engaged in a game of "grab"; but the measured service "five cents a call" was for the time practically abandoned. The Boston press commented on the new rates. The Boston Herald had a column article under date of August 18, 1880. The Boston Transcript printed an editorial on the subject. The Edison Company had by this time ceased to be a competitor, and we had the telephone field to be developed.

Among those who had obtained the right to exploit the telephone was Charles W. Holtzer of Brookline, Massachusetts, and he was at this time building up a small exchange in that town. The Boston and Northern Telephone Company was operating from Lynn, Massachusetts, along the north shore up to the New Hampshire and Maine line; the National Bell Telephone Company of Maine was operating in the state of Maine; the Granite State Telephone Company was developing New Hampshire; the Bay State Telephone Company was operating in eastern Massachusetts with South Framingham as a centre; a company had been set up to operate in western Massachusetts, and the ten-mile radius from Boston was being set up to be operated by the Suburban Telephone Company. All of the companies named, except the Suburban Company, were controlled by a group of gentlemen having headquarters at Lowell, generally known as the Lowell Telephone Syndicate. The principals were William A. Ingham, a Lowell grocer, Charles J. Glidden, previously referred to, Loren N. Downs, a telegraph operator, and Alonzo A. Coburn, cashier of a Lowell bank.

Our branch office at 30 Charles Street was removed to Brimmer

Street, corner Chestnut Street, and a new office opened on Green Street, Jamaica Plain, (Boston district). The Inter-State Telephone Company was organized this year, 1880, by a group of gentlemen interested in the Providence Telephone Company, its purpose to build a trunk line between Providence and Boston. This was an ambitious undertaking for those days of grounded wires, when it was very difficult to talk even short distances at times on account of "cross talk", static, sometimes called "fat frying", and the tendency of the feeble telephone current to make its way to the ground between stations. The Interstate officials decided to overcome these difficulties by a novel method, viz: to place in the pinhole of the crossarm a metallic (zinc) sleeve before the pin was driven in and by means of a wire fastened to each of these sleeves (6) on a crossarm, and fastening this wire to the pole and putting the wire into the ground at the bottom of the pole, it was believed the result would be satisfactory. General Barney, a gentleman of ability, courteous, kindly and genial in manner, was in charge of these operations.

I can not recall the date of the opening of this line, which was attended by his Excellency, the Governor of Rhode Island, his Excellency the Governor of Massachusetts, representatives of the press of both states, scientific men, business and professional men and other notables. To write there was disappointment would be the truth. Here was an investment of several thousand dollars which for the time seemed to be in jeopardy. From a scientific view the addition of the metallic sleeve connected with the ground was an additional avenue of escape to the earth of the feeble electric current sent over the telephone circuit,

reducing the volume of sound at the receiving end. But these men did not lose courage; they had all these metallic sleeves removed, and although the lines were noisy, it was possible to talk over them with success when conditions were favorable.

Before January 1, 1881, the Brookline, Massachusetts, exchange had been purchased and added to the Telephone Despatch Company, and connections were now being made with cities and towns north, south, east and west of Boston by trunk lines into the territory of connecting companies as far north as Manchester, New Hampshire; south to Providence, Rhode Island; east to Portsmouth, New Hampshire; and west to Worcester, Massachusetts. The Edison Company's exchange had been taken over and our subscribers were placed in communication with those on the Edison list and vice versa. There were 183 Edison subscribers on February 1, 1881. On that date there were subscribers connected as follows:

40 Pearl Street	778
Hotel Berkeley, Berkeley St.	88
Brimmer Street	34
Cambridge	43
52 Warren St.	32
Springfield St., removed from	37
Worcester St.	
Jamaica Plain	22
South Boston	18
Total of	<u>1052</u>

This was a net gain of 128 over the total of January 1, 1880 notwithstanding the fact that we had disconnected in July and August, 1880, over six hundred on account of change in rates. Of this total 756 had numbers, the balance were called by name, with the exception of those connected with the Brookline exchange, of which there were 83, and due to the foresight of the former owner of that exchange, Charles W. Holtzer,

all were numbered.

The first general order of Manager J. N. George was sent out under date of November 12, 1880, signed by myself as superintendent and there followed one on November 30th, one on December 7th, December 11th, and December 14th. These orders were to operators and inside wire men respectively. From my records it appears that some date prior to December 14, 1880, Mr. Richie DeLan had retired from a position as supervisor or chief operator at 40 Pearl Street, and had been succeeded by Mr. E. C. Coolidge for on that date an order from Manager George was sent to Mr. Coolidge relative to certain routine to be followed by operators and switchmen, and this was followed by an order to Mr. Coolidge on February 25, 1881, which indicates that Mr. George decided to continue in indirect control of the operating room at 40 Pearl Street and direct control of all branch offices. During this year Mr. Frank Moore left us to become manager of the Holmes Electric Protective Company at Boston. He was succeeded by Mr. Fred Smith as stock clerk. The number system was being closely followed, each new subscriber having a number as soon as connected to be used at once when calling the central office or branches.

Some time in the fall of 1881 I made the acquaintance of a gentleman of whom I became, during our comparatively short fellowship, a devoted admirer. He was of striking physique, full beard, tall, well proportioned and attractive. He came from Dayton, Ohio, to Boston as Assistant General Manager of the American Bell Telephone Company, having direct supervision of the Telephone Despatch Company. His name was George L. Phillips. As soon as he had possession of a residence on Marlboro Street, he came to me with a bill of lading for a carload of



ALEXANDER GRAHAM BELL

1847 - 1922

Inventor of The Telephone

furniture and inquired if I could see to the delivery of it, which I did, taking care to have the furniture placed in rooms where it was to be used. He came to me and expressed his thanks and compliments. He was a strict disciplinarian, requiring that his orders and instructions be carried out to the letter and proved to be a good teacher for myself. He sent for a young man who was in Dayton to come to Boston and he was placed in charge of the operating room at 40 Pearl Street. His name was Walter D. McKinney. Mr. Coolidge left the employ and I have not heard of him since. On January 2, 1882, Mr. J. N. George resigned as Manager and was succeeded by Henry B. Lytle. The resignation of Mr. George was very much regretted by me. He was a kindly, courteous gentleman, and we had pulled together without any friction whatever. He had introduced Mrs. Lillie and myself into his family circle and we were strongly attached to each other. I had a feeling of sadness when he left us. Mr. Lytle was a telegraph operator by profession and had some telephone experience in Providence.

On March 1, 1882, a list of subscribers was issued, each and every subscriber having a number. These numbers were apportioned among the several offices, 40 Pearl Street having from 1 to 3999; Brimmer 4000 to 4199; and so on, according to present and prospective subscribers. Strange it did not occur to us at that time to prefix the name of the office to the number and then go on indefinitely although we had an example right before us, as in the case of Brookline. In our list of February, 1881, we requested subscribers in making calls for Brookline Exchange to use the word "Brookline", thus: "36 Brookline with", etc., or "76 with 36 Brookline."

Now, in our list of March 1, 1882, we had specified certain

numbers for subscribers in Brookline, as we had in other branch offices. And another strange feature is that we were using this same number system in 1885, three years later. Mr. Walter O. Whitcomb had resigned as Cashier, and was succeeded by Mr. Charles B. Wells. Mr. Wells was a very lovable man, an unfortunate victim of rheumatism and a great sufferer. He came to the office frequently on crutches and I have seen the joints of his hands swollen so badly it was difficult for him to hold a pen in his fingers, but he never complained, at least, in my hearing.

Meanwhile a strong attachment had grown between Mr. Phillips and myself. I was receiving a good salary for those days and was devoted to the tasks assigned me. Mr. Carty had been sent to the operating room at 40 Pearl Street and was making good. The Suburban Telephone Company previously referred to was developing the cities and towns around Boston, and the exchanges at Cambridge and Brookline had been turned over to that Company, leaving Boston proper to the Telephone Despatch Company. Our March 1, 1882, list contained, each listed separately, subscribers in Cambridge, Jamaica Plain, Milton, Brookline, Chelsea, Newton and Waltham.

One hot summer day in 1882 Mr. Phillips called me to his office at 95 Milk Street. On my arrival he said I was to go that night to the office of the Lawrence, Massachusetts, Eagle, a newspaper with correspondents at Boston. Mr. Phillips explained that the newspaper editors were having trouble in receiving press news from Boston by telephone, and I was to report the cause and the remedy, if any. On arriving in Lawrence I went at once to the Eagle office and found they were

using Phelps duplex and pony crown instruments issued by the American Speaking Telephone Company. I also learned that these instruments were connected with a number nine iron wire leased from the Western Union Telegraph Company. Explaining the purpose of my call, I was invited to take charge of the receiving of press despatches from Boston, which I did, and remained on the job all night. The result was very unsatisfactory to me. At times it was impossible to hear what was said at Boston, and only fragments of conversation during that long night. I reported in writing to Mr. Phillips and suggested that if two wires could be used and the ground discontinued, it seemed to me the trouble could be partially eliminated. In other words, I was unconsciously recommending the metallic circuit in universal use today. I never learned what, if anything, was done in this case.

I now come to an episode in my life which I would like to pass over as briefly as possible. There were three men concerned in this (I was about to write conspiracy), all of whom have joined the silent majority. By promises, inducements and rewards I was led to leave my position on November 1, 1882.

On October 31st, as I was about to leave my office, on opening the door into the main office, I was face to face with a large group of employees, and presented with a magnificent Elgin watch in a handsome gold case. The inscription on the inside cover reads as follows:

"Presented to Nathl. W. Lillie, Supt. of the Telephone Despatch Co. upon his retirement from that position Nov. 1st, 1882, by the Officers, employees and friends."

The monogram, "N.W.L." on the face is a fine specimen of the skilled en-

graver. The plush case in which the watch was placed was a gift of the Dennison Manufacturing Company, with whom I had the most cordial relations. The case was made to order by the firm of Margot Brothers, jewelers on Water Street. This tribute of affection came as a great surprise and I was deeply affected. I have carried it more than fifty years, and prize it most highly.

No one regretted my leaving the Telephone Despatch Company more than Mrs. Lillie. In less than two weeks the facts were in my possession, and were imparted to Mr. Phillips who acted promptly, and the design of one of the men to make a place for a relative was blocked. I was succeeded by Mr. McKinney. On March 6, 1883, I became an employee of all the telephone companies located at Lowell, Massachusetts, under the supervision of what was popularly known as the Lowell Telephone Syndicate.

At the time of my arrival in Lowell the Syndicate had just completed the purchase of the Northwestern Telephone Exchange Company operating in Minnesota and five counties of Wisconsin, under date of February 27, 1883. Mr. Arthur S. Temple of the Boston and Northern Telephone Company at Salem, Massachusetts, was selected as General Manager of this new addition. It did not take very long to float on the market much of the stock of the Northwestern as the public appetite was whetted with other purchases of companies which had been recapitalized and sold.

My duties were to look after the correspondence of Mr. Downs, General Manager, make transfers of stock and such other clerical work as I was called upon to do. I made some delightful acquaintances among whom were H. Fred Stevens, then Cashier of the Lowell Telephone Company; Charles

A Grant, who later became connected with the Western Telephone and Telegraph Company, and afterwards was Assistant Secretary of the American Bell Telephone Company and remained with that Company until his death in 1929. Charlie Grant and I found something in each other which caused a deep and abiding friendship between us. There were also Grant M. Palmer, a stenographer, studying law and now practicing in Boston, a sterling fellow whom it is good to know; and Fred J. Boynton, afterwards Auditor and Chief Travelling Auditor for the New England Telephone and Telegraph Company. While I was in Lowell in 1883 Mr. Boynton was married to a Miss Foster, and the wedding ceremony performed in church was a grand affair. Mr. Boynton is now retired and is Secretary and Treasurer of Thomas Sherwin Chapter, Telephone Pioneers of America. Long life to Fred and Mrs. Boynton! Another acquaintance was Mr. William H. Bent, Attorney for the various companies, and known familiarly by the Syndicate members as Squire Bent. He was a typical New Englander of large frame and striking figure.

And now I am to record the death of a dear friend in July, 1883, Mr. George L. Phillips, who succumbed to an epidemic of typhoid fever which raged in Chicago during the summer. It was a sad message to me. He was a man of great promise and would have been a wonderful executive had he lived.

I had been making week end trips to my home in Chelsea where Mrs. Lillie had remained, and in June we decided it would be advisable for her to go to Lowell. We engaged a room in a house on Tyler Street with a Mrs. Solomon Wilder, who was a most agreeable lady, and she and my wife became very friendly. We had a very desirable room, the house

was surrounded by trees and the summer was now with us, and everything was most pleasant. We also found that Mr. Wilder was connected with the Wilders of eastern Massachusetts of which I was one, and perhaps this established a little stronger feeling of sympathy between us for he had been a paper manufacturer, had met with adversity, was feeling the advance of years and withal was a lovable old gentleman. I tried to be happy, but deep down in my heart was a longing for good old Boston and a chance to be something else, in short ambition was egging me on. My wife, dear soul, would encourage me with the thought that conditions would change and I must be patient, but the active and exciting days of '77 and '83 were almost constantly in mind and I chafed under the restraint and occupation of a more quiet life. One rule of the Syndicate was to allow us an hour and a half for luncheon, (most of us worked for two or three hours ^{at night}) and after luncheon was over, Charlie Grant would come to our room and play the fife and I the banjo, and these times helped to smooth out the rough places.

Then came the purchase by the Syndicate of the Southwestern Telephone and Telegraph Company operating in Texas and Arkansas, and the Cleveland Telephone Company operating in Cleveland, Ohio and Cuyahoga County. These companies were recapitalized and the stock offered to the public. All of the vouchers for plant construction, operating expenses, etc., were sent to Lowell, and I soon had business enough to keep me employed.

Then the Erie Telephone and Telegraph Company was organized, June 28, 1883, with a capital of \$5,000,000, taking in the Southwestern and the Cleveland with some more recapitalization. I was talking with a man in Lowell one day and incidentally inquired why it was that the

Lowell people seemed to be so possessed to have telephone shares.

"Why", he said, "Lowell is the greatest place on earth; you can organize a company to sell a cook stove and every share will be taken." The Lanson Cash Carrier Company was organized by Lowell men.

Some days after the Erie organization was made public, I met on the stairs on his way to the offices, Mr. Alonzo Coburn, one of the Syndicate, Cashier of the Prescott Bank. I said to Mr. Coburn, "Is the Erie stock going to be placed successfully?" I saw at once by his countenance that I had made a mistake. He replied, "Why do you ask?" I said, "It seems that Lowell is pretty well saturated now." He replied, "We can float a dozen companies just like the Erie." Messrs. Ingham, Glidden and Downs had erected very fine homes in Lowell and had private carriages driven by hired men. Mr. Coburn enjoyed driving through the streets with a tandem rig, russet harnesses and all that implies. He died a few years ago at the Masonic Home in Charlton, Massachusetts. The Syndicate had direct personal connection with a stock brokerage house in Boston, Fred W. Brown & Company, and through this house many of its shares were sold. Early in September it was definitely known by people close to the inside that Erie stock was not selling as rapidly or at as high prices as had been expected, and appearances indicated there was an effort to "peg" it at sixty dollars.

On October 18, 1883 Mr. Downs advised me to prepare to go to New York for a day or two and that night we went aboard the boat at Fall River. There was quite a party including Messrs. Ingham, Glidden, Downs, Bent, Boynton and others whose names I do not recall. We had a fine dinner in the saloon, as it was then called, and arrived in New York on

time in the morning. After breakfast we went to the offices of Butler, Stillman and Hubbard, 111 Broadway, and there The New England Telephone and Telegraph Company of New York was organized with a capital of \$12,000,000, Friday, October 19, 1883. It was a consolidation of the Telephone Despatch Company, the National Bell Telephone Company of Maine, Boston and Northern Telephone Company, Granite State Telephone Company, Bay State Telephone Company, Suburban Telephone Company.

I was elected a director and a certificate of ten shares was handed me by Mr. Glidden, which I very carefully put away in my inside pocket. We returned to Lowell. Meetings of stockholders in the various companies were called to vote on the question of consolidation. Mr. Ingham made a vigorous appeal for an affirmative vote, stating that he was convinced the new company could easily earn and pay six per cent. on the par value of the stock, and I sincerely believe he was honest and truthful in his statement. The result of the vote was to consolidate. The total number of subscribers in the new company was around fifteen thousand. On November 1, 1883, the offices of the New England Company were moved to 40 Pearl Street, Boston. Just a year to a day since I left the Telephone Despatch Company, I was back in the building, renewing old acquaintances and making new. Changes were made in the arrangement of the offices, Mr. Downs having one, Mr. Ingham, Mr. Glidden and Mr. Bent each having one, but there was very little privacy as the partitions did not go to the ceiling and conversation was carried on in a moderate or low voice.

We were located but a few days when Mr. Glidden requested me to turn over my ten-share certificate duly endorsed, and suggested my

resignation as a director would be accepted, and I promptly acceded to his request. I was given the tin box in which Mr. Downs had placed his securities and made an inventory of its contents and it was placed in a vault at the rear end of the office floor. The Boston Advertiser, under date of April 20, 1883, printed quotations as follows of various telephone stocks:

Bay State	\$120
Suburban	139.25
Boston and Northern	145

These three companies were component parts of the New England Company organized as noted above. Other quotations in the same issue were:

American Bell	\$224
Rights	40.25
Northwestern, a company absorbed by the Erie	56.50
Southern Bell	110

Now in November, 1883, it was difficult to dispose of Erie stock at 60, or New England at 70. My duties were to take care of Mr. Downs' correspondence and the contents of the tin box. Photographs of the operating room at 40 Pearl Street, June 1, 1883, are shown on adjacent pages. The winter of 1883-4 was an uneventful one except for a fire at 40 Pearl Street which started in the tower on the roof on the night of January 12, 1884, and which caused some damage to wire connections requiring several days to repair. The alertness of the night operator who used a fire extinguisher promptly prevented a serious disaster.

One day in the spring of 1884, Squire Bent was using the telephone in his office; the partitions not being closed, every word could be heard distinctly. He was talking with Fred Brown, the broker for the Syndicate, and directing him to sell Erie stock. He continued this

practice for several days, at the same time giving orders to purchase various railroad bonds. Then one day there was an explosion. The conversation between the Squire and Messrs. Ingham and Glidden could be heard distinctly outside the private offices. Objection to holding the bag was met by a statement from the Squire that he did not care a damn, and his sales would continue so long as there was a market for them, and he did continue.

On September 1, 1884, I moved from Chelsea to the city of Somerville. Mr. Downs issued an order for a telephone connection at my house, and I first saw Mr. George H. Dresser, who was a lineman and made the wire connection. Mr. Dresser rose to the position of Vice President of the New England Telephone and Telegraph Company by study, hard work and natural ability and at this writing is retired after fifty years of faithful service.

In November, 1884, the presidential elections brought me to the polls in Chelsea. My poll tax for the year 1884 was paid as well as all preceding years. The candidates for President were James G. Blaine and Grover Cleveland. I had received information that morning that one of my friends had been arrested at the polls in Chelsea on the charge of illegal voting, and had a talk with Squire Bent on my own status as a voter. I had not acquired a residence in Somerville and all my effects had been removed from Chelsea. He advised me to attempt to vote but not to insist if I was challenged. Well, I gave my name and street and number of my former location in Chelsea. At once the United States Marshal challenged my vote, and on being questioned by him, "Do you claim a residence in Chelsea?", I replied that my personal property had been removed,

but it was a very poor law which deprived a man from voting in one place without giving him a right in another, and withdrew. Grover Cleveland was elected President of the United States largely by the mugwump vote of which I was one. I had up to that time voted the Republican ticket but I could not see my way clear to vote for Mr. Blaine after reading his famous, "Burn this." My friend went into court. He was living in Everett, but at his mother's house in Chelsea he had a trunk and outer clothing and had been sleeping there occasionally and he was acquitted. He moved to Everett about the same time we went to Somerville. I talked with Squire Bent when I returned from the polls and he explained it was the wisest course I had taken, as otherwise I would have been very much inconvenienced.

In February, 1885, the New England Company moved to 50 Pearl Street, the opposite corner from its then location. These offices were not so commodious as those vacated. There was an office for the General Superintendent, John T. Wheeler, in which I had a desk, and one for the Secretary and Auditor. The market for telephone stocks had declined substantially, New England reaching eighteen dollars and Erie fifteen dollars per share. Squire Bent had gone back to his law practice. Messrs. Ingham, Glidden and Downs had offices in the Equitable Building where they had set up a concern called the New England Trade and Finance Corporation. This concern was set up to trade in stocks listed on the New York Stock Exchange. Its foundation was a scheme using the law of averages invented by a man named Somers of New York. He had been at the office of Fred Brown for three months making imaginary trades, and recording them in order to show the Syndicate what could be done with real money, and it must have impressed them or they would not have set up those fine offices. I

March 7 "1940.

To the best of my knowledge I am the only
living man shown in this group March
seventh 1940.

N. W. Lillie

Herald 3/7/40
**Salem Leader
Dies at 79**
**Smith Official of
Electric Company**

S. Fred Smith, 79, vice-president of the Salem Electric Lighting Company and a pioneer in the telephone and electric lighting fields, died yesterday at his home, 145 Elmwood road, Swampscott, after a long illness.

He was born in Salem and was educated in the public schools and at a commercial high school in Salem. Later, he became manager of the North Boston Telephone Company, one of the first commercial telephone companies in the United States. He had been associated with the Salem Electric Lighting Company for more than a half-century.

Mr. Smith was one of the founders and perpetual president of the Essex County Electrical Club and a member of the Salem Rotary Club and the Telephone Pioneers.

His wife died several years ago. Surviving are two sons, Sterry Putnam Smith of Ann Harbor, Mich., and Frederick Grafton Smith, budget officer of the agricultural adjustment administration of the Department of Agriculture in Washington. Funeral services will be held tomorrow at 3 P. M. in the First Church, Essex street, Salem, and burial will be in Greenlawn cemetery.



NEW ENGLAND TELEPHONE & TELEGRAPH COMPANY - 1885.

Seated, left to right:- P.W. BOSSART G.A. WHITTINGTON F.G. DABOLL J.N. KELLER W.A. INGHAM

A. C. SANBORN G.E. HANSON J. MENZIES S.F. SMITH X

Standing, left to right:- A.L. KING C.I. COLLAMORE J.B. HUNT W.D. ANTHONY J.T. WHEELER F.J. BOYNTON

N.W. LILLIE O I.H. FARNHAM J.W. NEAL J.D. STANFORD

M.F. #41635

was told the dividends were as high as twelve per cent. per month.

One day Mr. Ingham called me into his office and said, "We have a thief in our midst and I wish you would find him. Postage stamps are taken a sheet at a time (100) from some of the desks." We had an office boy whose home was in Lowell and he came to Boston soon after the New England Company moved from Lowell to Boston. I learned that Mr. Ingham had questioned him quite sharply, and in talking with him myself was convinced of his innocence. I talked with the General Superintendent on the subject, and he said, "Well, I guess that is where my railroad tickets are going." Mr. Wheeler was travelling most of the time and it was his custom to throw in a drawer of his desk such tickets which for some reason he did not use at the time of purchase, and he had collected from time to time a quantity of these tickets, and had been missing some of them without suspecting they had been stolen. There was a boy in the employ of a stock broker at that time who brought to Mr. Ingham and others, usually during the noon hour, an official sheet of the Boston Stock Exchange showing transactions up to noon. These sheets were usually placed on the desks which were left open while the user of the desk had gone out. I had no suspicion of any one, and hardly knew how to get proof as the offices were so located there was no chance to oversee without being seen. Before I could map out a plan, Mr. Ingham got after me again with a story that more stamps were missing. I went out on the street where I could think clearly, and the railroad tickets came to mind. I went to a well-known ticket scalper on Washington Street and inquired if he had a ticket for Lawrence and while he was looking I said, "Has the boy been in lately with tickets for sale?" He said, "What boy? Oh, you mean the boy with the green

sweater?" I replied, "Yes, he is the chap." Then he opened on me with a tirade of vulgar names, threatened to throw me downstairs and for a few minutes it looked as though there would be something doing, but I finally walked down the stairs, crossed the street and as I turned into Milk Street became aware that I was followed. When I reached 95 Milk Street I went up the steps, walked to the basement stairs and out to Pearl Street and thence to the office, leaving the young man who was behind me to wait patiently for my return.

Arriving at our office I sought an interview with Mr. Ingham, and learned he was at his other office in the Equitable Building. Proceeding there I convinced him that the thief was the boy from the broker's office. He called the broker and asked him to come to the Equitable Building and told him the story, and then requested him to have the boy come over right away, which he did. At first he denied any knowledge of the stamps or railroad tickets, but on being told that I had a conversation with the ticket scalper, broke down and confessed. This boy had obtained a duplicate key to his employer's safe and had been robbing him for a long time, the unfortunate part of this affair being that the chief clerk of his employer had been under suspicion and had been obliged to make good the losses against his protests of innocence. He left the employ and after the real thief was found no effort was ever made as far as I could learn to reimburse him. And what was done with the boy? He lost his job, that's all.

In the early spring of 1885 Mr. Loren N. Downs, General Manager, resigned and took up a residence in New York City. He was succeeded by Mr. Jasper N. Keller who had been General Manager of the Southwestern

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Telephone and Telegraph Company. On May 8, 1885, the resignation of W. A. Ingham as Vice President, and the resignation of Charles J. Glidden as Auditor were accepted. At the same time Fred J. Boynton was elected Acting Auditor. On September 23, 1885, General Thomas Sherwin, a Civil War veteran, was elected President, succeeding Mr. Theodore N. Vail, who had resigned. General Sherwin was a wonderful character, courteous, democratic, charitable, attentive to the rights and thoughts expressed by others, and one of God's noblemen.

Mr. Keller found the New England Company in a condition of dry rot. He continued me as secretary or clerk to the General Manager. I had been studying shorthand for some time, but was not proficient; with what I had learned and abbreviations of my own I could take dictation fairly well. I now am quite sure that Mr. Keller favored me and made it as easy as possible. All of this dictation was copied in long hand, as we had no typewriter. On May 1, 1886, a Miss Althea Tarbox became a stenographer for Mr. Keller. She was a young woman and an expert shorthand writer and a rapid operator of the typewriter. She continued in the business for twenty-five years or more and became the head of a force of women stenographers in the executive building at 50 Oliver Street. She passed away some years ago, mourned and regretted by a host of friends who respected and admired her for her lovable disposition and sterling character. An important event had taken place in my family just before Miss Tarbox came into the office. Our boy, Raymond Wilder Lillie, was born April 24, 1886. Miss Tarbox sat at a desk in the same room in which my desk was and not many days after she came had learned I was a proud and happy father. Mr. John T. Wheeler had resigned as General Superintendent and the desk

used by him was now utilized by Miss Tarbox. A short time before Messrs. Ingham, Glidden and Wheeler resigned I was requested to join a party of gentlemen at the photographic studio of J. W. Black on Washington Street, a noted photographer of those days. The result is shown in the group photograph following page 57. Of the nineteen men shown, thirteen have passed on, three I have lost record of, leaving Fred J. Boynton, S. Fred Smith and myself. Truly, the whirligig of time makes many changes.

When the offices of the New England Company were opened in Boston there was a stockroom located on Beverly Street which had been used by the Suburban Telephone Company. A former neighbor of mine in Chelsea, Mr. George T. Manson, was Superintendent of the Suburban Company when it went into the New England Company, and Mr. Downs had appointed Mr. Manson Purchasing Agent and Superintendent of the Supply Department of the New England Telephone and Telegraph Company. Mr. Manson had caused the removal of the Supply Department to the second floor of a building at 132 Pearl Street, a very commodious quarters with power elevator, but the finances of the New England Company were so depleted, these quarters were vacated and at this time the Supply Department was in the basement of 50 Pearl Street without any mechanical devices for taking in or out such merchandise as the place would accommodate, the floor space being about fifteen by seventy-five feet, the rear having a foot lathe and some bench tools used for repair of apparatus, magneto bells, switch cords, etc. It was a very expensive outfit for the handling of material. Mr. Manson was disgusted, and disgruntled. One day in May he advised me he had accepted a position as General Superintendent of the Okonite Company having a factory at Passaic, New Jersey, for manufacturing insulated wire

and cables and he would leave us on May 31st. I learned this with much regret as we were fast friends, and I did not fancy his going away. As I write these lines the news of Mr. Manson's death comes to me, which I receive with sadness and regret. He has joined that vast company of telephone employees who were the builders of the foundations.

A few days after this talk, Mr. Keller called me, and asked how would I like the job of Supply Man, naming a salary larger than I was receiving, but less than was paid Mr. Manson. I told Mr. Keller that I would be delighted to take it and assured him if he decided to appoint me I would devote my efforts to the end that he would be satisfied with my service. My appointment as Purchasing Agent and Superintendent of the Supply Department followed, and I assumed the dual position on June 1, 1886. During the twenty-two years which followed, the strongest and most sincere friendship developed with Mr. Keller and myself, and I can say with pardonable pride that not once in all those years was I "called on the carpet."

In addition to the cramped and inadequate quarters in the basement of 50 Pearl Street, the Supply Department was using an old shed located in South Boston, adjacent to the tracks of the New York and New England Railroad, now a part of the New Haven system. In this shed were stored reels of cable, crossarms and other bulky and heavy supplies. Two men were kept busy at this place repairing crossarms (painting and new pins), sorting and coiling covered wire to be again used, shipping empty cable reels to factories and many other duties incident to the receiving of material, switchboards, etc. returned by exchange managers for credit. One man was located in the basement of 50 Pearl Street whose duty it was

to pack and ship supplies on approved requisitions. The entire force of the Supply Department on June 1, 1886 was three men and the head of the department. Mr. Manson was required to submit on the first of the month an estimate of probable purchases for the ensuing month, and this practice was passed on to me and continued from month to month. The value of the purchases made for the year 1886 was twenty-five thousand dollars in round figures, and the total subscribers fifteen thousand in the four states, Maine, New Hampshire, Vermont and Massachusetts. Mr. Keller was personally scrutinizing every requisition and no item escaped his notice. The New England Company had paid no dividend up to 1886 and he was determined it would earn and pay one as soon as he could reorganize its functions, and it did pay a dividend of three dollars in 1886. The low for the stock was \$30 and the high \$46.25, - some rise from \$18. Mr. William J. Denver of Springfield, Massachusetts, had been appointed Assistant General Manager shortly before Mr. Wheeler resigned and he took over the duties of Mr. Wheeler and added materially to their scope. I do not recall any incident in 1886 which would be of interest in these reminiscences.

On May 10, 1887 the directors of the Boston Heating Company held a meeting at the office of President C. A. Richards and according to the Boston press, "voted to increase the capital stock to \$250,000 and the whole amount was taken immediately by Boston capitalists." There had been whisperings that Mr. Theodore N. Vail held quite a substantial interest in this company, also Col. Albert A. Pope, of Pope bicycle fame. Mr. Richards, the President, had been connected with the Metropolitan Horse Railroad Company of Boston, was a large owner of real estate and generally accepted as a man of good financial standing.

On June 1, 1887, the resignation of Mr. Keller as General Manager was accepted. He became General Manager of the Boston Heating Company. It was with great regret that I learned of this change. Mr. William J. Denver became Acting General Manager. I had not been very well acquainted with Mr. Denver up to this time, and what I had seen and heard of him gave me the impression that he was a man of stern exterior, austere, repellant, strict in manner, and it was with some disquietude that I accepted the new condition, determined to please him and perform my duties acceptably. As a matter of fact, we became firm and fast friends.

It was about this time that Mr. John J. Carty left the employ of the New England Company to accept a position with the Western Electric Company in New York. He had risen to the position of Superintendent of Operating Room at 50 Pearl Street. Although our respective duties did not bring us together often, yet I had a feeling of personal loss at his leaving us.

On June 22, 1887, an agreement was made by the New England Company with the American Telephone and Telegraph Company to construct a telephone line from Boston to New York along the right of way of the Boston and Maine and Central Massachusetts railroads as far as they extended in Massachusetts.

One day in August, 1887, I was called to the office of President Sherwin at 95 Milk Street. General Sherwin informed me that cedar telephone poles from Canada were and would be arriving at Boston over the rails of the Boston and Maine Railroad and he desired that I should inspect these poles and report to him in writing their fitness for a tele-

phone line from Boston to New York. In reply to my question if they were to be unloaded from the cars he replied they would not, I must do my inspection on the cars. Having ascertained that some poles had arrived, I went to the yard of the railroad and located the various cars. It was a stinging hot day and as I climbed over the poles the heat was almost unbearable. These poles were loaded on a car and trailer, as many of them were forty, forty-five and fifty feet in length. I was unable to see the sides of those below the top tier, except as they lay, and from the outside as they were piled, but I could see the butts of most of them. I got down off the first two cars I had examined and started a search for a light-weight stick which I finally found. It was about ten feet long. Selecting cars which were not coupled to others I was enabled to push my stick into the hole which was in the butt of most of the poles, caused by dry rot, and in many of the poles my stick was not long enough to reach solid wood. My record of inspection covered a number of days, and included the car number, sizes of poles, point of embarkation and such other detail as seemed necessary, such as hollow at the butt, only a two-inch shell, crooked, small top, etc. These inspections and records continued until the poles ceased to arrive at the railroad yard at Boston.

Not long after my inspection had ceased, I was abruptly called by Mr. Denver and on entering his office I was introduced to Mr. W. H. Fairbank. Mr. Fairbank was a well-known telegraph line builder, and Mr. Denver informed me he wished to ask me some questions. Mr. Fairbank inquired if I had any experience with poles used for telephone work to which I replied that my knowledge of telephone poles was limited, but I had been associated with men who had built lines for the Western Union Company and in a general way I knew the difference between one pole and

another. He turned on me and said, "What do you mean by reporting poles hollow and rotten at the butt?" I replied that I was only responsible to the President for such reports as I had made. He said, "Do you know I would rather set a cedar pole even if it is hollow at the butt, than any chestnut pole you ever saw?" My answer was that a sound chestnut pole would outlast two cedar poles set in the same soil and that I had learned this from contact with men who were in a position to know. The interview came to an end and as I returned to my desk I had misgiving that I had perhaps offended Mr. Denver and dire results would follow. I heard no more about the poles and considered the incident closed. The line was built and completed in 1887 or 1888. It carried one hundred copper wires on ten crossarms. Two or three years after it was built a disastrous sleet storm wrecked the poles which fell into the roadway of the railroad, tying up traffic and the Boston and Maine would not consent to the poles being replaced on their right of way, but later a compromise was reached and much shorter (twenty-five to thirty-five feet) poles were placed.

The work of the Supply Department was increasing and seriously hampered by the lack of space to carry on. After several conversations with Mr. Denver I was instructed to look for a location, but the rent must be low. There was a vacant building at 20 India Square, a short distance from 50 Pearl Street. This building was a small structure about fifteen feet front and forty feet deep, with a rope hoist to the floors and basement but it was so far ahead of what we were using, and the rental low enough to conform to the idea of the Acting General Manager, I advised renting it. On October 19, 1888 authority to lease it for five years at a rental of \$850 per year was granted. The basement was used for storage of crossarms, wire returned for credit and other material. The second

floor had a diminutive office for the superintendent, and shelves for supplies and a place for assembling and packing. On the third floor was set up a repair shop under the supervision of Mr. I. H. Farnham who had at that time the title of Electrician, his duties being to supervise and recommend such changes in any part of the territory as seemed best. It was in this shop that Mr. James L. McQuarrie, now Vice President of the International Telephone and Telegraph Company, was employed. "Jimmie" was a good boy, a fine character, admired and respected by his fellow workmen and myself. There was plenty of work for the shop force, repairing magneto bells returned for credit, switchboard cords and plugs, and many items too numerous to mention. The Supply Department was also very busy and in spite of our handicaps of lowering and raising supplies we were enabled to speed up our deliveries.

On March 1, 1889, Mr. Jasper N. Keller was again elected General Manager of the New England Company. The Boston Heating Company did not prove a success. Another year rolled around and I was obliged to interview Mr. Keller on the question of more space. We were handling many crossarms, new and used, and required a place for this purpose. I was authorized to hire the third floor of the Lawrence Building on Broad Street, very near India Square, with power elevator, and there we had sufficient room to fasten pins in new crossarms, and paint and repair those sent in for credit. This work was continued for many years by the Supply Department, but properly belonged to the Construction Department, or as it is called in modern days, Plant, but the maintenance of quarters and men and the expense incident thereto was charged to the Supply Department.

The New England Company was gradually, under the leadership of

Mr. Keller, improving its financial position, increasing its subscribers in and around Boston. It had paid dividends of \$3.50 per share since 1887. The American Bell Telephone Company was also forging ahead. It became necessary to have a building designed for telephone purposes and in 1889 land and buildings were purchased at 125 Milk Street, corner of Oliver Street, by the American Bell Company. It was necessary to purchase some leases for which good prices for those days were paid. The top floor of the new building was for the switchboards for the New England Company and other floors for the general offices of the New England and American Bell companies. New switchboards and appliances were ordered from the Western Electric Company and while these were being built the New England Company was granted permission to place a bridge from the roof of 50 Pearl Street over Franklin Street to the roof of 40 Pearl Street, and private rights of way were obtained to occupy roofs of buildings between 40 Pearl Street and the new building at 125 Milk Street. On this bridge and these roofs were laid cables of rubber covered wires, the wires being connected at 50 Pearl Street with the subscribers' wires and in this way the cutover was made without interruption of service. A number of months elapsed before this bridge and the cables were removed. The bridge was erected in July, 1890. Considerable underground construction had been made by this time, cables consisting of metallic circuits. The cutover from 50 Pearl to 125 Milk was made in July, 1891.

It had been obvious to me for some time that we could not do business at 20 India Square in a satisfactory manner as the size of the building and its facilities were not adequate to meet the growing demands for supplies. I had several interviews with Mr. Keller who was in accord

Boston, November 21st, 1890.

J. N. Keller, Esq.

General Manager.

Dear Sir:

I respectfully submit the following regarding the proposed new building for the Supply Dept.

In erecting a building for the use intended I would urge that, the floor space be an important consideration, especially as it is the intention that, all cables and other material for underground work not now handled by this dept. be so handled, and in my opinion the lower floor intended for this purpose should have as near ten thousand feet of floor space as possible, in which could be kept all cables and underground material, the regular supplies carried in stock such as wire, batteries, magneto bells, switch boards, cross arms, (which need a space of at least two thousand square feet) pins, brackets, insulators, and the innumerable small articles necessary for a complete stock of merchandise used in our business.

A good sized room properly shelved and lighted is also needed for keeping a stock of stationery. With a space as noted above it will be possible to so assort and arrange our stock in proper order that, the work of filling requisitions would be much simplified, and with additional help, (which is now very much needed) I have no doubt the service of the department would be improved.

Regarding the increase of facilities for the repair branch of this dept. I would say that, Mr. Farnham has made up a list of what he considers the necessary machinery for this purpose, as you requested, and included herewith is a portion of his letter on the subject; as follows:

"Now as to the mechanical and electrical features of the place, I start on the premises that we will do all our magneto bell repairing, nearly all our switchboard repairing and a portion of our small manufacturing, such as fuse clips, protector springs etc. It does not seem to me that we can profitably do cabinet work, as making bell boxes or switchboard frames. I will not therefore include items in this line. I also believe we can have all castings made outside cheaper than to establish and run a foundry.

To give us a good shop, the following tools are desirable:

1 Engine lathe, 5 ft.	\$140.
1 Upright drill	70.
Buffer and emery wheels on stand	35.
1 Milling machine	175.
Portable forge	20.
1 Power press	75.
Small tools for lathe, bench, etc.	100.
Gear cutting machine	235.
Screw machine lathe	335.
Nickel plating outfit	175.

If this outfit is thought by the Management to be too great, we could omit the gear cutting machine, by having our gears cut outside. We could omit the screw lathe by having all our screw posts and special screws etc. made outside and the nickle plate outfit could be omitted. These are the only items that would seem proper to omit, and the equipment would be very much more complete by retaining them. Should these items be omitted the cost of tools would be reduced to \$615.

I would advise a small circular saw for wood, for cutting packing box material etc. and possibly a power elevator would be desirable, though with all heavy goods on ground floor a hand elevator might do.

4 H. P. would run the above machinery. A gas engine would doubtless be the most economical motor to run, but the most expensive to purchase. A 4 H. P. gas engine would cost in the neighborhood of \$700. A steam engine, or an electric motor for the same power, would cost about half that amount.

Shafting, belting etc. would add \$300. more or less to the above. This would make an outside figure of about \$2400. I would recommend starting the shop without the three items, (Gear cutting machine, screw lathe and nickle plating outfit) but would provide power, shafting etc. for them. This would make a present figure of about \$1700. for machinery and tools.

To give good room for machinery, benches, instruments and boards in course of repairs, with small laboratory etc. about 5000 square feet floor space is desirable."

I have only to say in regard to the above that to run this machinery and do the work contemplated, it will be necessary to engage practical mechanics, and if possible those familiar with our work. I have some doubts that, the repairing of bells can be done at a less cost, if as low as now.

My plan for a building on the location at South Boston, would be for a lot 100' X 100'; one main building with a wing on the front, and a one story shed in the rear with a suitable driveway and yard for teams, giving a floor space on first floor of 8200 square feet, and a second story 50' X 100' for the machinery, laboratory etc. Whatever space on this floor not found necessary to use for repairs could no doubt be used for other purposes of the dept.

An elevator and sufficient power to run it should be furnished for raising and lowering articles from first to second floors.

This main building to be built of brick; the shed in the rear could be of wood.

We now have a large lot of cable and other material stored at Mt. Washington Ave. and I am convinced after looking this over that, if the intended building is used for one general storage headquarters that, the plan herein outlined will provide no more space than is necessary. If no more cable is handled by the Supply Dept. than now a building half the size would be sufficient.

Mr. Perkins has made a plan of the proposed building which I enclose herewith. He has also ascertained that, the cost of the building would be in the vicinity of \$17,500. including the cost of piling; divided as follows:

Main building, of brick	50' X 100', 2 stories, est. cost	\$15,000
Front ell of brick	30' X 40', 1 story " "	1,500
Rear ell is of wood	40' X 50' 1 " " "	1,000
		<u>\$17,500</u>

The above estimate is without partitions or furnishing, which would probably increase the cost \$2,000. more.

The location of the proposed building is such that, freight can be shipped us via the N. Y. and N. E. R. R. and unloaded from the cars at our door, thereby saving a considerable amount each year for trucking.

A summary of the cost is as follows:

Cost of land 10,000 sq. feet @ \$1.50	15,000.
Buildings, equipped with shelving and partitions.	19,500.
Present equipment of machinery.	1,700.
	<u>\$36,200</u>

Rent of Supply Dept. for one year	\$850.
Storage " " " " "	<u>300.</u>
	1150.

Storage Engineers Dept. one year	<u>660.</u>
	\$1810.

Cost of repairs on bells, one year	<u>5600.</u>
	\$7410.

Respectfully submitted,

(Sgd.) N. W. Lillie,

Supt. Supply Dept.

Original letter filed with correspondence:

520.-L, South Boston, Farnsworth St., 1890 - 1916.

with me that we should now have a building of our own, sufficiently large to enable us to handle our supplies quickly and economically. Several lots of land were considered, some too high in price, others too far from a railroad, and finally a lot on Farnsworth Street, South Boston, containing 10,000 square feet was purchased from the Boston Wharf Company under an agreement dated June 9, 1891. As early as November 21, 1890, I had submitted a proposition, since I had obtained an option on the land referred to. (See photostat of letter of that date.) I was instructed to furnish a floor plan for a two-story main building with a third story on the easterly end. Mr. Clarence A. Perkins, Engineer for the New England Company, was of much assistance, and we presented six different plans, all of which were disapproved.

It now became known that the American Bell Telephone Company proposed to occupy the second floor front with ^{quarters} ~~quarters~~ for the Mechanical Department, and at this stage Mr. Frank W. Weston, Architect, became the dominant figure in preparing plans for the building. All of the plans which I presented provided for receiving doors for incoming and outgoing freight at the front and rear of the building with the sill of the doorways three feet from the ground or about the height of the tailboard of a wagon when let down. This was intended to facilitate the movement of incoming and outgoing freight; the plans also provided for a power elevator with a capacity of 4300 pounds to be erected in close proximity to these doorways. Mr. Weston changed these plans by raising the first floor level to six feet from the ground, placed the elevator over fifty feet away from the front to the centre of the building, placed another elevator with a capacity of 2500 pounds in a space near the large one.

As the last payment to the contractor was made May 6, 1892, it may be assumed that we were occupying the building as early as April 1, 1892. The elevators were equipped to be operated by man power, a rope over a wheel. The first real problem was how to get our bulky and heavy freight from a wagon or truck three feet below the level of our door sill. At that time we were purchasing sal ammoniac in large casks, heavy barrels of blue vitriol, and quantities of heavy merchandise, all of which came in the receiving doors. We had a blacksmith place a heavy iron crane which would swing out over the sidewalk, and on this was attached a differential pulley block and we could now raise our heavy material and lower it, but what did it cost in time and labor?

For ten years this arrangement continued, necessitating the calling of men from other work frequently to take care of incoming or outgoing merchandise which the shipper or receiving clerk could not handle alone. And for eleven years the hand power elevators remained in use, slowing up the service and taking men from their occupations of laying out merchandise on requisition or packing, as the case might be. Proposals to equip them with electric motors had been disapproved. The actual cost of the manual labor required at the receiving doors and on the elevators will never be known, but I am convinced it was a considerable sum. From 1887 to 1894 the Company was paying a dividend of \$3.50 each year. The stock had become a favorite for investors as shown below:

<u>Year</u>	<u>Low</u>	<u>High</u>
1887	\$ 39	\$ 47
1888	39	46
1889	44	56
1890	48	55
1891	49	53
1892	50 $\frac{1}{2}$	62
1893	47 $\frac{1}{4}$	61 $\frac{1}{2}$
1894	49	68

In 1894 the dividend was increased from \$3.50 to \$4.00 per year.

Our purchases of hard-drawn copper wire had been increasing each year. In 1893, 212,578 pounds at a cost of \$26,649.99 were purchased at an average cost of 12.53 cents per pound; in 1894, 345,580 pounds at a cost of \$39,044.20, an average of 11.29 cents per pound.

The increase in dividend in 1894 was made in spite of the fact that "the three years following the panic of 1893 witnessed the complete paralysis of American trade; imminent insolvency of the United States government; its rescue, by barely the margin of a day from lapse to a depreciated silver standard; receiverships for one-fourth of the country's railway mileage; nation-wide strikes of employees, sometimes amounting to industrial insurrection, and almost entire prostration of our banking system." During President "Cleveland's second administration, in February, 1895, our gold supply got down to \$42,000,000, which was only 11 per cent. of the paper money outstanding against it." The above is quoted from the public press.

In 1895 the dividend was increased from \$4.00 to \$4.50 per year, the stock selling for \$66.00 low and \$90.50 high, and in 1896 the dividend was increased to \$5.00 per year, and the stock sold for \$85.00 low and \$103.00 high. These facts indicate that the public appreciated the value of telephone service, and that our business was growing by leaps and bounds.

All of this was reflected in the work of the Supply Department, requiring more help, increased purchase of supplies, receiving, handling and shipping the same on requisitions from the field duly approved by the



N. W. LILLIE IN 1900.

General Manager or his approved representative. I will state as a matter of record, during the twenty-two years I was in charge of the Supply Department responsibility for the care, condition and use of supplies was transferred to the various construction, accounting and administrative forces as soon as they were in transit. Under this system requisitions were made for excessive quantities at times, resulting in stocks piled in stock rooms for which there was no immediate demand. The Supply Department did not completely ignore this condition, as it was called to the attention of the proper officers at various times.

With much regret I find that records of the Supply Department which showed the yearly growth and expansion from 1890 to 1908 have been destroyed, and I am obliged to rely on memory of others and myself and papers which have come to hand for a continuance of these writings. In 1895 there were purchased 602,975 pounds of hard-drawn copper wire at a cost of \$75,943.25, an average of 12.59 cents per pound; in 1896, 474,430 $\frac{1}{2}$ pounds costing \$63,026.72, an average of 13.28 cents per pound.

In 1897 it became necessary to have more floor space. As we could not build on either end or the rear of our building, I suggested to General Manager Keller that we purchase a small lot across from our building on Farnsworth Street and the purchase was approved. On this land was erected a two-story brick building (mill construction). This building had a spur track from the New York and New England Railroad and was used for handling crossarms and cable. This relieved the main building in that it provided more space for incoming supplies. It was a function of the Supply Department to receive from the field all used supplies for full credit, the understanding being that the depreciation was written off in the gen-

eral accounting. It was necessary to dismantle quantities of these supplies, (switchboards, batteries, etc.), covered wire to be straightened and coiled for further use, or condemned to be sold for junk. All of these services were strictly the work of the Construction Department, but were included in the yearly cost of the Supply Department, which was not an earning department, but it was the man behind the gun, remembered in times of stress like a sleet storm, forgotten in fair weather, and necessary at all times. During 1897 we purchased 379,600 pounds of hard-drawn copper wire at a cost of \$51,720.47, an average of 13.62 cents per pound; in 1898, 417,620 pounds, \$55,186.27, average 13.21 cents. During this year the United States was at war with Spain, and in 1899 the price of copper was materially advanced. Purchases were 665,579 pounds, cost \$127,865.70, average, 19.19 cents per pound. In 1897 the dividend was increased to \$5.50, in 1898 to \$6.00, which was continued in 1899 and 1900, the stock selling in these four years low \$101.00, high \$156.00. Mr. Keller had made good his intention to put the Company in condition to earn and pay these dividends. It was the early pioneers from 1877 to 1907 who laid a foundation on which the superstructure of today is erected. They were the builders.

On November 2, 1890, the New York Herald announced the organization of a "NEW TELEPHONE GIANT TO FIGHT BELL MONOPOLY." It named as promoters William C. Whitney, William L. Elkins, George J. Gould, P.A.B. Widener and John Jacob Astor. This article must have made a decided impression on some investors in the United States, but I never read of there being one honest-to-goodness telephone exchange of any size being erected by the organization. There were competing telephone exchanges in a number of cities at the time this public announcement was made. I am reminded of a story told me by Mr. George T. Manson, referred to in these pages. Mr.

SUPPLY DEPARTMENT

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

April, 1908

SUPPLY DEPARTMENT

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

April, 1908

STENOGRAPHIC FORCE (Upper Left).

RECORDS OF REQUISITIONS (Upper Right).

First at left - Charles F. Dunn.
Fourth from left - Richard H. Jackson.
Fifth from left - Miss Frances Howe.
Extreme Right - Henry S. Dunn.

ACCOUNTANTS (Lower Left).

FILING OFFICE (Lower Right).



Manson was on the road almost constantly for a number of years. While in Chicago one day, sitting in the lobby of a hotel, a gentleman approached him, called his name and sat beside him. Mr. Manson could not place him by name but remembered his face. The conversation finally turned on competition in the telephone business, independents they were then called. The gentleman was quite well aware of what was being done in the independent field, and finally closed the dialogue by saying, "You mark my words, the independents will eventually own the American Bell." George did not take the man seriously and I listened as I would to a funny story, but in one or two states in the Middle West they came pretty near doing it.

One day in January, 1901, an old acquaintance called on me and when our conversation ended he had entered the employ of the Supply Department. His name is Thomas M. Saurman. He was first engaged in laying out orders and continued to do this until the following May when he was appointed foreman of the warehouse, all employees coming under his authority except the executive and accounting staffs. Edward E. Lillie was Assistant Superintendent of the Supply Department and he introduced many improvements in the layout of the stockroom, which helped in a material way to speed up the service and shipments. My recollection is that we were handling at this time 18,000 requisitions per year.

During the year 1901 two stories were added to the main warehouse building at 30 Farnsworth Street, and August 1, 1902, a one-story warehouse building adjoining the main supply building on Farnsworth Street, containing about 12,000 square feet of floor space, was leased for ten years. This building had receiving and delivery doors about thirty inches from the sidewalk and was quickly made into an ideal place for receiving and delivering

SUPPLY DEPARTMENT

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

April, 1908

SUPPLY DEPARTMENT

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

April, 1908

EDWARD E. LILLIE, Assistant Superintendent.
(Upper left.)

N. W. LILLIE'S ASSISTANTS (Upper right).

Left - Rodney Creerie, Assistant.
Right - Thomas M. Saurman, Foreman.

CHIEF CLERK'S FORCE (Lower left).

Charles A. McKay, second from left.

LABORERS OF SUPPLY DEPARTMENT (lower right).



merchandise. Openings were made in the partition brick wall between the two buildings and these were equipped with automatic closing fire doors, with inclines from the floor of the main building. The effect of this improvement was immediately noticeable in the quicker handling of supplies. No longer was it necessary to use the crane and pulley blocks to raise and lower our freight. Instead of this planks were laid from the doorways to the rear of the trucks and containers of all sizes and shapes were wheeled across the openings by men with hand trucks. This arrangement came at an opportune time as we were to see our largest growth in the next five years. We purchased in 1900, 272,165 pounds of copper wire at a cost of \$49,430.32, an average of 17.89 cents per pound.

1901	904,652 pounds	cost	\$163,064.88	average	18.02	cents	per	pound
1902	1,387,189	"	187,991.53	"	13.55	"	"	"
1903	875,548	"	113,635.47	"	12.97	"	"	"
1904	594,193	"	78,609.59	"	13.23	"	"	"
1905	732,827	"	116,842.10	"	15.94	"	"	"
1906	1,482,824	"	295,391.52	"	19.92	"	"	"
1907	359,544	"	86,707.46	"	24.11	"	"	"

The total amount of copper wire purchased from 1893 to 1908 was 9,711,306 pounds at a cost of \$1,531,109.47, average 15.76 cents per pound.

The statistics here given may or may not be of interest to the reader, and are given to show the increase of the use of copper wire on account of its high conductivity over iron wire which was universally used in the first ten years of the telephone industry. It was stated to me unofficially that the average price during these years paid by the New England Company for copper wire was very near the lowest, if not the lowest, paid by any of the Bell licensees. Today, 1932, when copper, the metal, has sold as low as five cents per pound these average prices seem exorbitant.



N. W. LILLIE AND MISS FLORENCE CAYE

April, 1908

Between 1900 and 1904 some valuable acquisitions had been made in the personnel of the Supply Department by the engaging of Henry S. Dunn, January 30, 1899; George T. Reid, 1904. These men with Mr. Saurman were of the highest type and proved to be not only loyal to the New England Company, but to me most sincere friends and devoted to my ideal of making the Supply Department one of sterling worth. How well we succeeded is a matter of record, or would be if the records were in existence.

The years from 1902 to 1906 were of great expansion, 1902 showing a total of \$2,529,414 expended for supplies. Preparations were made for a large increase in number of subscribers to be added in 1906. Mr. Frederick P. Fish was President of the American Telephone and Telegraph Company and his policy was one of great expansion. Under date of January 12, 1906, I was directed by General Manager F. A. Houston to provide supplies sufficient to add 60,000 subscribers during the year 1906, and the value of supplies purchased was \$4,316,375. Some difference between 1886, \$25,000, and twenty years later.

Up to the year 1895 the Western Electric Company had been strengthening its position in the telephone field and in 1900 was undertaking to furnish the Bell companies throughout the United States with switchboard and subscribers' equipment when required. This was an ambitious program, and proved to be in later years of far-reaching importance. It should be borne in mind that the telephone business was growing in an enormous way from 1890, and that frequent changes in central office equipment and subscriber sets were being made, necessitating calling on the Western Electric Company for new equipment and quick delivery. In

addition to supplies made in its own workshops, it had gone into the general supply business and was soliciting the trade of the Bell companies for all supplies. It was also manufacturing lead-covered aerial and underground cables for which there was now an extraordinary demand.

As early as 1900 the Supply Department had inaugurated a system of obtaining advance information where possible of the probable needs of the New England Company for six months, from January 1st and July 1st and based on these estimates requests for bids were made on reputable concerns for quotations on cable, pole line hardware, crossarms, poles, insulators, covered wire, bare wire, both copper and iron, and many incidentals. These bids when received were taken to the office of the General Manager, opened by him and tabulated by myself and awards made. New switchboards were arranged for by the Engineering Department, the orders for them passing through the office of the Purchasing Agent as a matter of record and form.

From 1900 to 1906 the Western Electric Company had reached the period where it was difficult to fill our orders promptly for subscribers' sets, parts of switchboards (relays, switchboard cords and plugs) and it became necessary to put many items on our back order book, which caused much dissatisfaction and unfortunately was laid at the door of the Supply Department by some of the employees in the field, but not all by any means, as there were enough who understood the cause of delay to more than offset the disgruntled who in some instances complained to the General Manager. A survey in 1905 of all back orders on our books showed 95% were orders placed with the Western Electric Company. It finally became necessary to place orders for subscriber sets with the Western Electric Company covering a period of six months to be shipped in equal quantities each month. These

N.W.L.
JAN 15 1906
DEPT.

New England Telephone and Telegraph Company

MEMORANDUM.

JAN 2 15 06
ARCHIVES

Boston, January 12, 1906. 190

To Superintendents and Heads of Departments:

It has been decided to increase the number of subscribers allotted for the year 1906 from 45,000 to 60,000; you will therefore increase your estimates accordingly.

J. A. Houston
General Manager.

N.W. Lillie, Esq.,

Supt., Supply Dept.

T.M.S.
Letter increase on
order for subscribers sets
and all other material
1/16

orders were based on probable demand as estimated by the Engineering Department. This was the situation on January 1st, 1906, when I received instructions to purchase supplies sufficient to take care of the connecting of 60,000 subscribers. On December 31, 1905 the total number of subscribers was 180,546. On December 31, 1906, the total number of subscribers was 222,605, a gain of 42,059, or 18,000 short of the number allotted. This resulted in an inventory rise on December 31, 1906, of \$475,000 over the previous year. On November 16, 1906, I was instructed by Mr. J. N. Keller, Vice President, to make plans for furnishing supplies in 1907 for an addition of 40,000 subscribers. On account of our increased inventory we cut many items from estimates furnished us of what would be required, notably copper wire of which we purchased in 1906, 1,482,824 pounds and in 1907, 359,544 pounds. Our total purchases in 1907 amounted to \$3,031,592 as against a total of \$4,316,375 in 1906. The number of subscribers added in 1907 was 25,775, a difference of 14,425 less than the allotted number. A financial panic was in evidence this year, and the New England Company was feeling it, as many other companies were. The Western Electric Company had made a ruling that orders for subscriber sets should be based on a stated quantity of each set required (there were 60 different styles) for the year 1907, and monthly shipments made from their factory in equal quantities. Before May 1st arrived, I knew we would be loaded with these supplies at the end of the year, and tried unsuccessfully to cancel or at least postpone deliveries, but all to no purpose. They would be caught with a large inventory and many others at the close of 1907, and insisted on forwarding the sets.

In May, 1907, I was called into a conference at the office of the President, at which Mr. Theodore N. Vail, General Thomas Sherwin, Mr.

New England Telephone and Telegraph Company**MEMORANDUM.**

Nov. 16, 1906.

190

It has been decided that we shall endeavor to get 40,000 subscribers for the year 1907 in the New England Company's territory and the territory of the companies controlled by it.

You will please make your plans accordingly.

J.N.K.

J

Jasper N. Keller, Mr. Francis A. Houston and other officials were present. The question was on the abnormal rise in the inventory of supplies as of December 31, 1906, which was Supply Department \$1,205,876; in field, \$1,028,939. There was considerable discussion and finally I was called to state my views on the cause of the increase in inventory and the remedy, if any. I felt reluctant at that time to refer to the gentlemen who had authorized me to proceed on an expansion program which did not turn out as expected. Instead of that, I stated that we expected to increase by 60,000 our total subscribers in 1906 and 40,000 in 1907 and orders had been placed accordingly, but we failed by 18,000 in 1906 and present indications were that we would fail in 1907; our purchases for the year would be much less than in 1906. I was asked by General Sherwin why I allowed the field to carry such an immense inventory when the Supply Department was well able to meet ordinary demands. I replied that the Supply Department had no jurisdiction over supplies after shipment from the warehouse or over requisitions when received from the field duly approved. His reply was, "You should have", and the conference as far as I was concerned was over, but I had again brought to light the vicious system of allowing the field to order supplies in large quantities over the approval of the Division Superintendent or more frequently by his clerk, and this stands for the Construction Departments also.

As a result of the conference on the question of the large amount of supplies on hand, General Manager Frank A. Houston deputed two gentlemen, Mr. F. C. Munroe and Mr. Arthur H. Houston, to make a special report on conditions in the Supply Department and the field. Right here it is proper to state that no books of record were supposed to be

New England Telephone and Telegraph Company:

-COPY-

MEMORANDUM.

Nov. 27, 1906. 190.....

G. H. D.,-

I desire to know at an early date your estimates of material that will be required during the year 1907 consisting of cedar and chestnut poles - stating quantities of the various lengths and sizes of the top; 6 pin and 10 pin crossarms - proportion of creosoted and painted; Nos. 10 and 12 iron wire; 7-strand guy wire; pony and standard insulators; crossarm braces; crossarm bolts and the various lengths; pole steps; guy rods; pole brackets; cable and all other material used in the plant.

I desire to know by the 10th of December the number of manhole castings, inside covers, quantities of steel rails, 3" and 3½" iron pipe, wood duct, creosoted plank and such other items of underground construction material as will be required.

The object of this inquiry is to inform the Supply Dept. so that necessary material may be contracted for in season to insure delivery as required.

J. N. K.

Material requirements for 1907

Boston, Mass. Dec. 28, 1906.

Mr. F. A. HOUSTON,

General Manager.

Dear Sir:

Referring to the attached notation, I should estimate that the material requirements for 1907 on outside line material will be as follows:

5" top poles 22' - 25'	25,000 of which 18,000 should be cedar and 7000 chestnut
25' 7" "	8,500 of which 5000 should be cedar and balance chestnut
25' 8" "	500 fifty percent of each
30' 7" "	12,000 of which 7000 should be cedar and 5000 chestnut
30' 8" "	2,800 of which 2000 should be cedar and 800 chestnut
25' 7" "	4,500 of which 2500 should be cedar and 1500 chestnut
35' 8" "	1,500 of which 500 should be cedar and 1000 chestnut
40' 7" "	1,000 of which 100 should be cedar and 900 chestnut
40' 8"	300 all chestnut
45' 7" "	200 chestnut
45' 8" "	50 "
50' 7" - 8"	250 "
#12 Copper wire	7,500 Miles
#10 copper wire	650 "
#10 iron wire	1,500 "
#12 iron wire (for Farmers' Line only)	3,000 Miles

-COPY-

Material requirements for 1907

Boston, Mass. Dec. 28, 1906.

Mr. F. A. HOUSTON,

General Manager.

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30' 7" "	12,000 of which 7000 should be cedar and 5000 chestnut
30' 8" "	2,800 of which 2000 should be cedar and 800 chestnut
25' 7" "	4,500 4,000 of which 2500 should be cedar and 1500 chestnut
35' 8" "	1,500 of which 500 should be cedar and 1000 chestnut
40' 7" "	1,000 of which 100 should be cedar and 900 chestnut
40' 8" "	300 all chestnut
45' 7" "	200 chestnut
45' 8" "	50 "
50' 7" - 8"	250 "
#12 Copper wire	7,500 Miles
#10 copper wire	650 "
#10 iron wire	1,500 "
#12 iron wire (for Farmers' Line only)	3,000 Miles

(2)

Crossarms 10-pin	45,000
" 6-pin	20,000

The hardware like guy rods, pole steps, etc.

I think Mr. Lillie can estimate better than I can as he is more familiar with the amount used outside of estimate work.

Mr. Lillie has already been notified in regard to the underground requirements, castings, covers, steel rails, etc.

Cable, I believe Mr. Manson is engaged in figuring out now.

Yours truly,

(Sd.) Geo. H. Dresser,

General Supt. Const.

kept at the Supply Department, they were kept and maintained by the Auditor in accordance with a rule laid down when I took the dual position in 1886. All bills for merchandise covering purchases by the Purchasing Agent were, after approval, sent to the Auditor for record and then paid. Also all charges for supplies against the field were sent to the Auditor. At the same time, if we had kept no books or records we would have been like a ship without a sail. These two gentlemen came to my office at 30 Farnsworth Street and were given assistance and every facility for examination of our records and the physical workings of the Supply Department. As a matter of history, the report of Mr. Munroe and* his assistant, Mr. Houston, are made a part of this story, more specifically as they have a direct bearing on the setting up of a Supervisory of Supplies Department, of which more later on. I have referred to the system in vogue of the field making requisitions for supplies in large quantities which the Supply Department had no alternative but to forward.

Mr. Munroe states in his report to the General Manager, "I am forced to conclude that exchanges, divisions and departments have ordered material in the most reckless manner and that supervision of requisitions has been most lax."

In 1903 or 1904 I had convinced Mr. Keller that it would be a good plan to have a branch Supply Department in Portland which would enable us to fill requisitions for State of Maine requirements and would be of great advantage in the event of a sleet storm with its usual result of broken poles, crossarms, tangled wires, interrupted service and all that implies, and I was finally authorized to purchase a desirable site, which was done. The land was on John Street with Boston and Maine Railroad

* See Appendix

spur track along side. No authority to build on it was granted. Mr. Munroe refers to setting up at least four branches; none were ever authorized. As a companion report to that of Mr. Munroe a communication from Mr. E. W. Longley, Auditor, under date of June 25, 1907, is also shown herewith.* The Auditor was of the opinion that the amount of overstock in the Supply Department was \$170,825.00 which is accounted for by old switchboards and other apparatus being in the inventory at an excess valuation of \$110,000.00 and \$67,500.00 covering the value of about 20,000 subscriber sets on hand at the close of the year not called for as there were 42,000 subscribers added instead of 60,000 as provided for by instructions to me.

On the night of February 9, 1905, thirteen men gathered at Young's Hotel in Boston, sat down to a fine dinner with something good on the side, and after the dinner discussed the advisability of forming an organization of purchasing agents in New England with headquarters in Boston. A committee was appointed to form a permanent organization, but nothing was accomplished until September 28, 1905, when a meeting was called at the American House, Boston, and the following named officers were elected: N. W. Lillie, President; Frederick J. Kemp, Vice President; H. L. Ogden, Secretary-Treasurer; and these three with C. T. Broughton, C. N. Chevalier, F. P. Mooney and H. L. Hall, Executive Committee, all to hold office for one year. Annual dues were fixed at one dollar per year. The name of the association was New England Association of Purchasing Agents, but as the initials read New England A.P.A. it was afterwards changed to New England Purchasing Agents Association, for obvious reasons. The Association was to meet once a month, at some hotel or clubhouse, have

* See Appendix.

dinner and then discuss matters of importance to its members. Thus was laid the foundation of the oldest association of purchasing agents in the United States. It is needless to record that similar organizations spread through the several states, and that in January, 1914, the question of the formation of the National Association of Purchasing Agents was discussed in New York City and became effective. And so the little acorn became a great oak. Readers of these lines who desire may obtain a copy of the New England Purchaser for October, 1930, by writing to Mr. H. J. Graham, Secretary, 80 Boylston Street, Boston, Massachusetts, enclosing postage. This issue contains the history of the Association as it is a record of the twenty-fifth anniversary. On this occasion the honor of being elected President Emeritus was conferred on me.

Our purchases in 1907 were slightly over \$3,000,000. We were to be prepared to furnish supplies to take care of 40,000 new subscribers but as we fell short about 18,000 in the previous year and our inventory on December 31, 1906 had increased, we decided to be moderate in our purchases, which proved to be wise as there was a financial panic in 1907 and again we fell short about 14,000 but nevertheless shipped \$4,131,212 of supplies which amount was \$185,000 less than our purchases for the year 1906.

Some time between 1900 and 1903 the Bell Telephone Company of Pennsylvania was having difficulty with its Supply and Purchasing Department. My recollection is that Mr. Samuel M. Bryan was President. The outcome was the making of an agreement with the Western Electric Company to do the purchasing and handle the supplies including all material returned for credit, on a commission basis. This proposition was observed

with much interest by telephone men and after a trial of a few years was adopted by other Bell companies. The New York Company was turned over in 1906 and on May 1, 1908 the New England Company's Supply Department and Purchasing Agent's position was turned over to the Western Electric Company. There was no contract signed for at least five years but the terms for doing the work were similar to agreements with other companies. It has been stated that enormous savings have resulted to the Bell companies under this arrangement. When it is considered that one centralized bureau of purchase has in its keeping the purchase of all supplies used by the American Telephone and Telegraph Company and the Associated Companies, it is not difficult to conceive the power behind such a vast organization, nor the great responsibility to the Associated Companies and the telephone-using public.

About the time the New York Company turned over its Supply and Purchasing Departments, Mr. Denver suggested that we go to New York to look over the conditions covering the warehousing, care and issuing of supplies by the New York Company. The Boston Supply Department had been placed under the jurisdiction of the Plant Department, Mr. George H. Dresser being the head of that department. Mr. Denver had been assigned to special oversight of requisitions coming to the Supply Department from the field, by instructions of the General Manager who was now relieved to a great extent of that responsibility. We arrived in New York, secured accommodations and went down town. We visited a stockroom on John Street, then looked at a place under the abutment of the Brooklyn Bridge where there were stored all sorts of heavy material and supplies, and then looked over some other places. I did not get any suggestions of value which would be of use in Boston, and Mr. Denver had little to say relative to what he had

seen.

We boarded an afternoon train for Boston, and when we reached New Haven Mr. Denver, in spite of my protest that I was not feeling well, insisted on my going into the dining car for dinner. I had been at the table a short time when I told him I would have to leave the car, and started for the aisle, and dropped to the floor. I never learned how long I lay there, but was carried from there to a drawing room and placed on the lounge, and there I stayed until we reached Boston. This drawing room was engaged by some Boston gentleman who very kindly gave it up for me, but I was too ill to get his name. On arrival in Boston I told Mr. Denver I would like to be taken across the street to the Essex House, and my physician and wife notified but he insisted on my being taken to the Relief Hospital at Haymarket Square, where I was placed in bed in a ward containing the usual Saturday night drunks, and the attendant was careful to put a leaky hot water bag inside my bed. When Mrs. Lillie arrived about one A.M. there was a strong protest made against the way I had been treated. I did not sleep any that night and as soon as daylight came, we had a conveyance take us home. When I recovered the realization of my condition struck home with full force. My physician had been urging me to relax and take it easier, but I had taken his medicine but not his advice. For seven or eight years I had been going at high pressure and it was now evident that I was in a condition which required watching. Some months after this incident I was in Worcester on business with Mr. Fred. Waring, the manager, and became so ill that he went to the station with me where I was to take the train for Boston and when I came to I was on a baggage truck. Mr. Waring insisted on going with me and left the train at South Framingham as I felt sufficiently recovered to continue alone, but

when I arrived in Boston Mr. Saurman was at the station and went home with me. This was another warning which I should have heeded, but did not.

On April 1, 1908 at the forty-fifth regular meeting of the Telephone Society of New England in Edison Hall, Boston, I was the speaker of the evening on the subject of Purchasing and Supply Departments. A resume of the Supply Department's history from its establishment at 66 Beverly Street, Boston, in 1883, to the present day was made. With the valuable assistance of Mr. Henry S. Dunn of the Supply Department, charts were exhibited showing the enormous increase in twenty-one years of the purchases of lead cable, copper wire, insulated wire, iron wire and poles. Reference has been made to the taking over on May 1, 1908, of the Supply and Purchasing Departments by the Western Electric Company.

On the afternoon of April 30, 1908, about five o'clock a friend of mine who was in the automobile business called at my office and inquired if I would like to ride in a new automobile. My reply was Yes, but I was not a prospective customer. "Come along", he said, "and we will see if we can get some others." On the sidewalk were Tom Saurman, Harry Dunn and Charlie McKay. We got in and then drove around the streets of Boston, until we finally drew alongside the old Revere House in Bowdoin Square. I was invited to go in with the others. The Revere House was one of the famous hotels of Boston. It opened its doors to the public on April 28, 1847; it had been a hotel for sixty-one years when we entered. Among those taking shelter and comfort under its hospitable roof were Jenny Lind, 1850; Daniel Webster, 1850; Prince of Wales, 1860; Parepa, 1865; Christine Nilson, 1870; Grand Duke Alexis, 1871; King Kalakaua, 1875; Dom Pedro of Brazil, 1876.

Wm J. Hayes

Wm J. Hickey

Francis D. O'Donnell

Richard N. Jackson

Harrie E. Wadsworth

Samuel Busby

John E. B. B. B.

Charles A. B. B.

Thomas J. B. B.

Joseph K. B. B.

Thomas M. B. B.

Chas A. B. B.

Edw. B. B.

Henry S. D. B.

George A. B. B.

John E. B. B.

Wm J. B. B.

Francis D. B. B.

Richard N. B. B.

Harrie E. B. B.

Samuel B. B.

John E. B. B.

Charles A. B. B.

Thomas J. B. B.

Joseph K. B. B.

Thomas M. B. B.

Chas A. B. B.

Edw. B. B.



A. H. Lillie. Sylvester L. Feltus

Fred E. Brown Fred Marcus Hult

Richard C. Jackson James J. Thompson

C. M. Hanson Banquet Chas F. Dumm

W. T. Kingfield, tendered to J. William Sellow

E. L. R. L. Nathaniel W. Lillie

John D. Smith and Frank B. Peers

Edward E. Lillie

Ass. Supt. Supply Dept.

New England Tel. and Tel. Company

By the Employees

April 30th, 1908, at 7 P. M.

Revere House, Boston

George T. Reid

George A. Thomson

George A. Thomson

George A. Thomson

George A. Thomson

Walter Aitchison
 William Brison
 Fred E. Brown
 Fred E. Bruce
 Samuel Busby
 William J. Byrnes
 Florence E. Caye
 Harold M. Crane
 Rodney S. Crierie
 George Coombs
 Joseph Daniels
 John E. Davis
 Mary A. Delaney
 J. William Dillon
 Albert L. Dinsmore
 Sadie M. Dolloff
 Washington Dolloff
 Dennis Donohue
 Charles F. Dunn
 Henry S. Dunn
 Michael J. Duggan
 Sylvestus L. Fillebrown
 John J. Fisher
 Edward E. Fitzgerald
 George L. Flynn
 Amelia M. Foley
 Ralph L. French
 John A. Gilmore
 Archibald T. Graham
 Carl M. Hanson
 Albert P. Hartt
 John Hayes
 Daniel E. Healey
 Frank L. Henderson
 George Henrie
 John P. Hinds
 Kent Hodgkins
 J. Wesley Howarth
 Frances L. Howe
 Fred Hulbig

William J. Hussy
 Richard H. Jackson
 Richard P. Jackson
 George A. Kellar
 Edward L. Kiley
 Leroy S. Knowles
 James T. Lakin
 Eugene J. L. Archer
 Edith M. Lowinsbury
 Pauline S. Lovejoy
 John Lyons
 Bernard J. McDermott
 Charles A. McKay
 Timothy W. Mahoney
 Thomas J. Mason
 George F. Morton
 Francis O'Donnell
 Michael J. O'Donnell
 Edwin L. Palmer
 Maynard A. Parker
 Charles A. Plummier
 Charles A. Powers
 Frank B. Reeves
 George T. Reid
 George Rhodes
 Burton Z. Rowell
 M. Emma Sadler
 Thomas M. Saurman
 Charles B. Sewall
 Patrick A. Short
 Thomas Smith
 Dwight K. Swanberg
 C. H. Swift
 James F. Thompson
 William W. Tripp
 Harrie E. Wadsworth
 Charles M. Walter
 Walter T. Wingfield
 Ernest J. Withrow

Menu

Consomme Princesse

Queen Olives

Radishes

Sweetbread Croquettes Supreme

Roast Young Turkey, Cranberry Sauce

Delmonico Potatoes

Green Peas

Lettuce Salad

Harlequin Ice Cream

Frozen Pudding

Assorted Cakes

Roquefort Cheese

Toasted Crackers

Black Coffee

So it was into this house of wonderful traditions that we went, ostensibly to drink a lemonade or something. We had not proceeded very far in the house when I spied two of my men leaning against the wall, and then my suspicion was aroused, but I was not given much time for thought as a door was opened and I was gently urged to enter. As I entered this large dining hall, I saw seated at the tables many of the employees of my department, men and women who all arose and gave me a hearty greeting. (A photostat of the menu is herein included on which appear the names of those in attendance.) Then everybody was seated and began to eat the good things, with here and there some chatter and laughter and every indication of a good time. I tried to join in, but the thought that I was no more to be associated with these fellow employees induced a feeling of sadness hard to overcome. When the tables were cleared I was listening to the voice of Mr. McKay, Chief Clerk, who in a very flattering speech presented me with a beautiful Knight Templars jewel as a tribute of respect and affection from my associates, followed by a framed photograph, or rather several photographs in one frame, of employees.* In accepting these gifts with all they implied, I urged my listeners to continue to show the same loyalty to the Western Electric Company which had been observed in their employment under my own administration. After some talks by others, the exercises were over. It was hard to realize I had parted from those who had worked with me shoulder to shoulder for many years.

The next day, May 1, 1908, an office was set up for me in the Farnsworth Street building on my assuming the duties of Supervisor of Supplies. There were three employees associated with me. It was the intention to have this organization act as a buffer between the Telephone Company and the Western Electric Company; hence all requisitions from the field passed

* See pages 73-76.

Subject, _____

New England Telephone and Telegraph Company

VICE-PRESIDENT'S OFFICE

101 MILK STREET.

P. O. DRAWER 110.

JASPER N. KELLER,

Vice-President

Boston, Mass., March 18, 1909. 190 .

In reply to yours _____

Mr. N. W. Lillie,

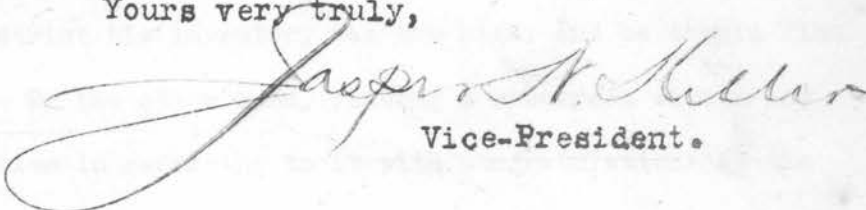
Supervisor of Supplies.

Dear Mr. Lillie:

The change in your official position made necessary by the employment of the Western Electric Company as Purchasing Agent for this Company, was not made because of any inefficiency in your Department, but solely for the sake of uniformity, and saving in cost prices of articles purchased, the details of which you are familiar.

I was the General Manager of this Company for some eighteen years, and have been Vice President for about five years, and it gives me much pleasure to say to you that I have ever found you capable, faithful, trustworthy and honest, and I hope that the Company may have the benefit of your services for years to come.

Yours very truly,


Vice-President.

through our office on their way to the Western Electric Company.

On vigorous protest from the Boston manager of the Western Electric Company against this routine on account of alleged delay, this practice was abandoned, but we continued the direct telephone communication with the field relative to delays in packing and shipping and succeeded in many cases in hastening delivery of supplies. It was predicted that our department would not exist over six months, and yet it continued to live and became one of the most important, the supervision of all vehicles owned by the Company being added to its duties. One of my assistants, Mr. Henry Dunn, was transferred to the Auditing Department. On May 1, 1908, the inventory value of supplies in the field approximated \$1,250,000. I resolved to cut this one half, without demoralizing the storekeepers or reducing their stock unreasonably. Our office was removed from Farnsworth Street to the Executive Building at 50 Oliver Street and our force reduced to one man (Edward Lillie) besides myself. I was reporting to the General Superintendent of Plant, Mr. George H. Dresser. The stockrooms in the field were in charge of storekeepers reporting to District Plant Chiefs. About the first of each month there was sent me from the Auditor's office a sheet showing the money value of stock on hand per subscriber. With this information we could approach the District Plant Chief with a story that in comparison with such a district his inventory was too high, and he should find some way to reduce it. On the other hand, finding a stockroom with a low valuation, we lost no time in referring to it with congratulations to the storekeeper on his success. Two or three of the District Plant Chiefs were disposed to regard this procedure to reduce stock in storerooms as a mild interference with their official rights, and it required some months of persuasion and presentation of facts to convince them that they could

continue, if work was properly planned, to do business with much less stock showing in their inventory. I began a systematic visiting to the store-rooms in Maine, New Hampshire, Vermont and Massachusetts, made the acquaintance of the storekeepers, gave advice on the layout of the stock-rooms, showed how time could be saved in issuing supplies, the handling of material returned for credit, the delaying of making requisitions for supplies to be used on estimate work until the estimate was approved and to consult frequently with the District Chief as to the proper time to order cable, pole line hardware, poles, etc., to be used several months ahead. On March 18, 1909 I received from Mr. Keller a letter, copy of which is included herein. After about four years of this campaign of education I began to see results not only in decrease of stock but by being called to go to some place where a new storeroom was contemplated, and on which the storekeeper wished suggestions as to layout. During 1912 visits were made to 51 storerooms (some duplicates). By 1913 the storekeepers were sold on this idea of carrying moderate stocks and were vying with each other to be the lowest per subscriber in value of stock.

One morning in February, 1914, I left home as usual for my office. On arrival at the Elevated Railroad station I was overcome by a sinking spell, and was placed by the guards on a settee, and made to lie down. There I was helpless, in full view of the crowds boarding the trains. The guards had left me, but I was conscious of my surroundings. How long I was there is not known to me, but I was aroused by the voice of a friend who made inquiries, got a glass of hot water, into which he poured some medicine I had been carrying with me, and with the assistance of one of the guards got me down to the street level where a taxi was in waiting and went with me to my home. Nor would he leave until I was in bed. It was three

50 Oliver Street, Boston, Mass.,

May 13, 1914.

Mr. George H. Dresser,

General Supt. of Plant,

50 Oliver Street,

Boston, Mass.

Dear Sir;

It is with mingled feelings of pleasure and regret that I write you at this time to advise you that I desire to be considered an applicant for retirement under the Company's pension plan, Class C.

For a long time I have been afflicted with nervous indigestion, which is assuming a chronic form, and while my condition is not in any way serious, I am assured that an absolute relaxation from business for an indefinite period is the best remedy which can be applied.

For thirty-six years I have been identified with the telephone business, and have contributed the best there was in me for its success. I shall leave the Company with great regret, and with many pleasant remembrances of my associations with its officers and employees in all ranks. If my application is considered favorably. I will leave to you the date on which it will be made effective, but would like to be relieved not later than July first, next.

Yours truly,



Supervisor of Supplies.

days before I was able to leave my bed. I had two physicians in Somerville who were familiar with my case; one advised me strongly to leave my employment and go to a farm in New Hampshire while there was time, otherwise he would give me two years to live.

Mrs. Lillie and I had several talks on the subject and finally as there appeared to be no marked improvement in my condition, I wrote Mr. Dresser under date of May 13, 1914, copy of which is shown herewith. I expected to at least be called by Mr. Dresser to his office for an unofficial talk, or to receive an acknowledgment of the receipt of my letter, but had no communication from him until June 11th and I was then on a farm about four miles outside of Laconia. (Copy of letter herewith.) On June 4th I was advised by the secretary of the Employees' Benefit Fund that my request had been granted and lost no time in leaving for New Hampshire. I wrote President Spaulding on June 4th to which he replied June 6th. (Copies herewith.) There is also included herewith copy of a letter dated June 8th from Division Storekeeper Daniel B. Burnett which I value very highly. I stated that when the Supervisor of Supplies was set up the inventory of supplies in the field showed a value of \$1,250,000. When I retired in June, 1914, the inventory was about \$550,000 and the field was doing business as usual.

I am a Life Member of the Telephone Pioneers of America. It is a splendid organization. I urge all readers of these pages who are eligible to join the organization. The Employees' Benefit Fund set up by the Telephone Companies associates with the American Telephone and Telegraph Company is one of many thoughtful plans made for employees which is deserving of the highest praise. Many families would be left in straitened circumstances were it not for the generous consideration of

Boston, Mass., June 4, 1914.

Mr. Philip L. Spaulding,

President, New England Telephone and Telegraph Co.

Dear Sir:

I am advised that my request of May 13th, to Mr. Dresser, to be placed on the retired list on July 1st, next, has been favorably considered and granted and I wish to thank you and through you the Board of Directors for your action in putting in effect a pension plan which enables me at the close of thirty-six years of active service to retire with the sole view, if possible, of regaining my health which has become impaired through a close application to my duties during this long period.

I leave the employ of the company with many regrets at the severance of my official relations which have been most cordial and pleasant with the officers and employees in all ranks and for whom I have the highest regard. I am, sir,

Very respectfully yours,

J. W. Tillie
Supervisor of Supplies.

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

RESIDENT
SPALDING

BOSTON

June 6, 1914.

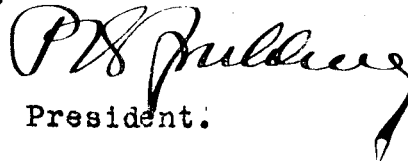
Mr. N. W. Lillie,

Supervisor of Supplies.

My dear Mr. Lillie:-

I wish to thank you for your thoughtfulness in expressing your appreciation of the Benefit Fund Plan of the Company, which enables you to retire after your thirty-six years of service. I shall see that your letter of June 4th is properly presented to the Board of Directors at their next meeting. Personally, I wish to congratulate you on your long term of valued services to the Company. Such an example is an inspiring one to all of the employees and I trust that the merited rest which you will now have will enable you completely to regain your health.

Yours very truly,


President.

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

25 Allerton St., Roxbury, Mass.

June 8, 1914.

Mr. N. W. Lillie,

Supervisor of Supplies.

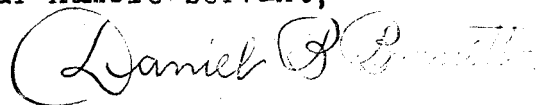
Dear Sir:

It is with profound regret I learn that you are about to retire from active participation in the telephone family.

You may retire, but your life's accomplishment will remain an incentive to honest followers in the stock game who have had confidence and faith in you and profited in your example.

I do not know of any one who will miss you more than

Your humble servant,



Division Storekeeper

DBB/S

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

GEN'L SUPT OF PLANT
G. H. DRESSER

BOSTON, Mass., June 10, 1914.

Mr. N. W. Lillie,

Laconia, N. H.

Dear Mr. Lillie:-

It is with feelings of regret that I enclose herewith notice from the Secretary of the Employees' Benefit Fund Committee that the President has approved your request to be retired.

After so many years of close association it is grievous to have a break in the family.

Trusting, however, that your health will improve and that we shall see you often, I am,

Yours very truly,



General Superintendent of Plant.

GHD-H

Enclosure -

the executives of these companies.

It is with deep regret that I record the death on December 19, 1914 of General Thomas Sherwin, and on September 22, 1922 of Mr. Jasper N. Keller, two gentlemen whom I held in high regard and esteem. Their many acts of kindness and thoughtfulness for me are imprinted on my memory and can not be effaced in this life.

As I complete these lines I am saddened by the news of the sudden death of General John J. Carty. I have referred to him in these pages, and now offer my tribute of affection and respect to his memory. He was more than an engineer. One of God's noblemen.

And so I close my telephone history, but it is fitting that in doing so I pay a loving tribute to my companion of fifty-five years, who through sunshine and storm, sickness and health, has encouraged and cheered me on my way, Martha L. Lillie.



42743.

N. W. LILLIE AUTOGRAPHING HIS REMINISCENCES
IN THE AMERICAN TELEPHONE HISTORICAL COLLECTION

December 21, 1932

TCI Library | www.telephonecollectors.info

FCM-L

June 20, 1907.

F. A. Houston, Esq.,

General Manager.

Dear Sir:--

I beg to submit a report on the conditions which have made possible an abnormal rise in our general supply balance. The table of figures next given shows the changes in our supply balance each year from December 31, 1900 to December 31, 1906. I have divided the balance between "Supplies actually in the Supply Department proper" and "Supplies in the field". The figures show the value of all supplies exclusive of "Tools and Teams" and "Supplies in the Repair Shop."

	<u>In Supply Dept.</u>	<u>In Field</u>	<u>Total</u>
December 31, 1900,	\$427472.	\$283298.	\$710770.
December 31, 1901,	466544.	307091.	773635.
December 31, 1902,	636234.	397448.	1033682.
December 31, 1903,	507475.	374985.	882460.
December 31, 1904,	605623.	514812.	1120435.
December 31, 1905,	725961.	583507.	1309468.
December 31, 1906,	1205876.	1028939.	2234815.

An analysis of the above figures discloses the fact that in the five years from December 31, 1900, to

December 31, 1905, the supply balance increased gradually from \$710770. to \$1309468. or a five year increase of 84%. In the year from December 31, 1905, to December 31, 1906, the balance increased from \$1309468. to \$2234815. or an increase in one year of 70.6%. By further analysis we discover that the increase in the "Supplies in the Field" has been proportionately greater from year to year than the increase in the "Supplies in the Supply Department." During the six years shown the "Supply Department" balance increased 182%, while the "Field" balance increased 263%. When we consider that the "Field" embraces several hundred stockrooms in all parts of our territory and that each of these stockrooms is practically under its own supervision, the significance of this great increase in supplies is marked.

An examination of the expenditures for new supplies during the six years from 1900 to 1905 inclusive, shows that the heaviest expenditure (\$2529414.) was made in 1902, and the smallest (\$1573635.) was made in 1903. The net result of six years shows that only 22% more supplies were purchased in 1905 than in 1900. In the year from December 31, 1905, to December 31, 1906, the material purchased increased from \$2442671. to \$4316375. or an increase in one year of 76%. During this same year the expenditures for plant and equipment increased only 29% over the previous year, and the net gain in subscribers' stations was only 23%. It seems to me reasonable to assume that the increase in our annual purchases of supplies and the increase in our yearly supply balance should be somewhat commensurate with the general growth of our plant and business.

Granting this, it is obvious that in 1906 we purchases supplies in far greater amounts than we could use them with the consequent result of a 70.6% increase in our supply balance in one year. I have not attempted to fix definitely the responsibility for purchasing material in such enormous quantities. Mr. Lillie asserts that the purchases were made under estimates of probable demand furnished him and with the express authority of the General Manager. The increase in the Supply Department proper for the year amounted to \$479915. and by a comparison of the inventories of 1905 and 1906 I have accounted for practically all of this increase as follows:-

Increase of Stock

December 31, 1906, over December 31, 1905

Cable - - - - -	\$ 7,000.00
Crossarms - - - - -	16,000.00
Copper Wire - - - - -	26,000.00
Covered Wire - - - - -	30,000.00
Iron Wire - - - - -	16,000.00
Poles - - - - -	54,000.00
Subscribers' Sets and Material - - - - -	<u>-300,000.00</u>
	\$449,000.00

The bulk of the increase is seen to be in subscribers' sets and material, and the question simply becomes:- Did Mr. Lillie make an error of judgment in purchasing so heavily in excess of our needs or were the purchases made under express authority?

Leaving the Supply Department for the moment, let us consider the increased balance of supplies in the "Field."

Here we find a situation most reprehensible. If we accept as an explanation of the unwonted rise in our general supply balance the statement that we purchased material in much greater amounts than the demands of our business required, we must logically expect to find the excess stock stored in our Supply Department uncalled for. Such, however, is not the case. In spite of the fact that the general growth of our plant and business during 1906 was not heavily in excess of 1905, the "field" has seen fit to increase its supply balance from \$583507. to \$1028939. I am forced to conclude that exchanges, divisions and departments have ordered material in the most reckless manner and that supervision of requisitions has been most lax.

An exhaustive examination of what the present distribution system accomplishes was made by Mr. Arthur Houston, and I will sum up as briefly as I may. By examining nearly 2000 requisitions for standard material we found that the average time consumed in shipping was 3.9 days. By examining 1131 requisitions of all kinds both standard and special, at a very busy period, we found that shipment took place within an average of 9.4 days. Consideration must be given to the fact that many of these requisitions were for material which Mr. Lillie could not and is not expected to have in stock. This often necessitates a delay of months because of non-delivery to the Supply Department by dealers of whom the special material is ordered. An examination of 1783 requisitions of all kinds in May, 1906, shows an average shipment of 19 days as compared with 1790 req-

quisitions in May 1907 averaging 7.8 days. The causes for long delay are almost invariably due to requisitions for special material, and I find almost no cases of undue delay in filling requisitions for standard material. Under the congested conditions at the Supply Department, I believe that Mr. Lillie is filling his requisitions with reasonable promptness. I have appended to this report all figures in detail which resulted from Mr. Arthur Houston's examination. It is not probable you will wish to examine them. They give in detail generally good reasons for delay in filling requisitions. They show that requisitions held for months or even a year are for classes of material which cannot be carried in stock. All requisitions in the hands of the Back Order Clerk are shown and reasons given in each case for undue delay and in practically no case do I find any indication of laxness or incompetence in the management of the Supply Department. The serious faults of a heavy supply balance and slow delivery of material appear to me to be due, not to men, but to measures. Our present distribution system is utterly inadequate to meet the demands made upon it.

Let me give first consideration to the question of separating the offices of Purchasing Agent and Superintendent of supplies. I doubt very much the possibility of ever obtaining the highest efficiency from a system which entails the combination of these two positions. The duties of purchasing supplies are alone heavy enough for any one man to carry and the same weight attaches to the duties which go with the position of Superintendent of Supplies. I believe we should lose no time in getting a capable, broad-gauged man to perfect a system of distributing

supplies, leaving with Mr. Lillie the duties of Purchasing Agent only. I do not mean to reflect on Mr. Lillie's ability in any way. Quite on the contrary. I believe, however, that no one man can handle both jobs in the manner in which they must be handled. In searching for a man to assume the position of Superintendent of Supplies I cannot too strongly recommend that the question of salary be made secondary and the question of fitness alone be considered. A man of first-rate ability in receipt of a salary commensurate with his ability will be cheaper by thousands of dollars annually than a second-rate man at a somewhat lower salary. The separation of these two positions I believe to be of immediate necessity and most vital.

Let us next consider the present condition of supplies in the "field." It is the height of business absurdity that Mr. Lillie should be called on to ship thousands of feet of cable and other supplies in large quantities to the Boston Division stockroom, which is situated in one of the basement rooms of the Supply Department, and then be obliged to consider that this cable and other supplies are entirely outside his jurisdiction. The same thing applies to the stockroom of the General Construction Department, and going farther into the field, it applies equally to any central stockroom in which large quantities of supplies are stored. The theory of our supply system is that our supplies are always in one of two places, either in the Supply Department or the field. The Supply Department is the furnishing point and the field is the using point. Is it not absurd that this using point should have at all times

exchange must naturally have enough standard material to care for current needs, and it is probable that the heavy stock in the field is not chargeable to the exchanges. The great fault I believe to be in the extensive system of subsidiary furnishing points which exists by virtue of the many District and Division stockrooms. Under the theory of our system these subsidiary furnishing points should not be considered "Field" but "Supply Department," and they should be under the control and direction of the Superintendent of Supplies. The Superintendent of Supplies should always be in a position to know exactly how much cable and wire and other material we have stored in any part of our territory, and a system like that of ours today, which sends its Purchasing Agent into the market to buy new material, when enough to meet current demands may be lying idle in various parts of our territory, is a vicious system and should be replaced with something which will enable us to turn our supplies over quickly in accordance with the fundamental principles of any producing business which expects to live. The solution of our problem seems to me to lie in the establishment of several Branch Supply Departments to be situated at convenient points in our territory. If we are unable at present to consider the purchasing of land and the erection of our own buildings, let us rent the most available buildings we can find and thereby take the first step of establishing our subsidiary furnishing points. After some thought I have reached the conclusion that Portland, Maine, Concord, N. H., and Greenfield, Mass., might be the most

for the whole of Maine; Concord, N. H., the furnishing point for New Hampshire, and Greenfield could cover the Western Division and Vermont. This would leave to Boston the task of supplying the demands of the Boston Division, the Southern Massachusetts Company, and the Central Division west as far as Worcester and Winchendon, north as far as Lowell and Haverhill, and east as far as Newburyport. Under this set-up all freight shipments from Boston would receive the benefits of our general contract with the Boston & Maine Railroad. Shipments from Concord would receive the same benefits and from Greenfield all shipments throughout Massachusetts would be without cost to us. It is very probable that some better plan may be made, but I believe that serious consideration should be given to the question of getting all we can from our Boston & Maine contract.

Let us then for the purpose of argument, consider that we have established three and perhaps four Branch Supply Departments. In Boston Proper we could wipe out the stockroom of the Boston Division Construction Department and the general Construction Department. The Superintendent of Supplies could have all the material in the Boston Division under his personal supervision except such small quantities as were needed in the exchanges. If the different Districts felt the need of having stock for daily needs at some point other than the South Boston Storehouse, the Superintendent of Supplies might set up a small stockroom at District headquarters with his own storekeeper in charge, who could deliver material to men on proper orders and keep a strict account. For supplying the heavy demands of the General Construction Department and Mr.

the South Boston storehouse so set up that material could be delivered to men in the same manner employed in the smaller outside stockrooms. The point gained consists of placing the bulk of the material in the hands of the Supply Department to be applied on requisitions in accordance with its judgment of the exigencies of the situation. It will prevent the piling up of heavy material which may lie idle for months while other parts of the Company are demanding this material.

When we get outside practically the same conditions will be met and the same solution will be applied. With four or five Supply Departments instead of one, each part of our territory will be within each shipping distance of its Supply Department. Divisions and Districts may be deprived of the bulk of all the material which they find it necessary to carry today. Exchanges will carry only such material as is necessary to meet the current demands. If an emergency arises an Exchange manager need only telephone his Supply Department, and the required material may be usually delivered to him on the same day by express. The general result of this system must be that at least 75% of our supplies will be concentrated in the four or five Supply Departments under the eye and hand of the Superintendent of Supplies. Each of the Branch Supply Departments will be in charge of a competent man directly responsible to his Superintendent of Supplies. The Purchasing Agent, with his office in Boston, will be in close touch with the Executive office and the different Departments, and he will have constant

and systematic information from the Superintendent of Supplies as to the needs of the Supply Department. The Superintendent of Supplies will be expected to have at all times sufficient material in his several places to meet all demands promptly and his work will be to meet these demands with the smallest possible invested capital in material. I believe he should have supervising power over requisitions and should have the right to satisfy himself that every demand was warranted by actual needs. It seems obvious that such a system properly organized and properly supervised cannot fail to accomplish infinitely better results with a great decrease in investment.

In concluding this report I wish to recommend that an inventory be taken on July 1st. Mr. Lillie states that in his judgment, in addition to the depreciation written off January 1, 1907, the inventory contained an overvaluation of junk and obsolete material amounting to \$110,000. An inventory alone can establish the value of the depreciation now existing and I recommend that a competent representative of the Engineering Department take part in the taking of the inventory and that he give a complete appraisal of all material which in his judgment has depreciated from the price at which it is being carried on our books. I know of no other way of determining how great our depreciation is today.

It is possible that I have not given all the information which you desire as to the present working of our system.

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I shall be glad to add whatever you may wish. Our investigation, **however**, seemed to me to disclose nothing so bad as the system itself. That there are many minor imperfections and difficulties is undoubted, but attacking the system from this standpoint would to **my** mind accomplish nothing. A thorough revision of the system itself is needed and I have tried to indicate the lines along which I think this **revision** should be undertaken.

Very respectfully,

Asst. Supt. Contract Dept.

New England Telephone and Telegraph Company

6

PURCHASING AGENT'S OFFICE.
30 FARNSWORTH STREET.

L.E.
Purchasing Agent

C O P Y

Boston, Mass. June 21, 1907 190

In reply please refer to...

AHH-H

F. C. Munroe, Esq.,

Asst. Supt. Contract Dept.,

Dear Sir:

I have carefully read your report on our examination of present conditions in the Supply Department, and think of nothing to add, excepting my hearty support to your suggestions for the setting up of a new system for the purchasing and distribution of supplies.

Hoping that we have furnished the information desired,
I am,

Yours very truly,

(sd.) A. H. Houston
Special Agent.

NEW ENGLAND TELEPHONE AND TELEGRAPH COMPANY

Auditor's Office

125 Milk Street

Edmund W. Longley,
Auditor.

Boston, Mass., June 25, 1907

Mr. F. A. Houston,

General Manager.

Dear Sir:--

In connection with the claim that the Company has an excessive stock of supplies on hand, I beg to hand you a statement showing the value of stock at the end of each year for seventeen years, and the average per subscriber.

At the end of 1906, the average was \$9.04, which average has twice before been exceeded, viz., in

1900 when the average was \$9.72, and

1904 " " " 9.93

For these seventeen years the average per subscriber at the Boston Supply Department was \$3.97, and in the field \$3.42, which amounts, I think, may be considered fair for the normal averages of stock under our present methods of handling supplies.

These averages would call for stock on hand at the end of 1906 of

	<u>At Supply Dept.</u>	<u>In Field</u>	<u>Total</u>
	\$1,036,229.55	\$92,671.30	\$1,928,900.85
The value of the actual stock was	<u>1,207,054.93</u>	<u>1,153,275.89</u>	<u>2,360,330.82</u>
Amount of over stock,	170,825.38	260,604.59	\$ 431,429.97

I think it may fairly be said of us that we were overstocked \$431,000., and that 60% of the over stock was in the field.

it is probable that it may fairly be said that the interest on \$431,000. at 6%, or \$25,860, represents the yearly cost to subscribers or stockholders of carrying these excessive supplies.

We must consider, however, that the Supply Department has been run at a very low cost. In 1906, supplies costing \$4,580,951.00 were handled, and the cost of the Supply Department, including teaming, was only 2.6% of this cost.

I believe that 6% would not be an excessive percentage for the cost of handling supplies, which would have called for an expense of \$274,857.06

The actual cost was 119,575.12

A difference of \$155,281.94

My conclusion is that if 6% is a proper rate to apply as the cost of handling supplies, our present methods have not been expensive, unless we have suffered large losses through supplies becoming obsolete.

My further conclusion is that the Company can afford to spend a much larger sum of money in handling its supplies.

Yours truly,

(SD) E. W. Longley,

Auditor.