

**THE
EARLY CORPORATE
DEVELOPMENT**



**OF THE
TELEPHONE**

THIS brief history of the early growth of the Bell Telephone organization was written by the late William Chauncy Langdon when he was Historical Librarian of the A.T. & T. Company, and was published originally in the July, 1923, *Bell Telephone Quarterly*. A reprint in booklet form was issued in 1935 which embodied, as does this edition, certain timely revisions in the concluding section.

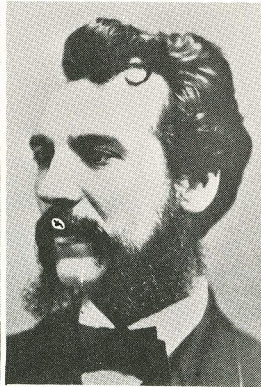
THE qualities which characterize the Bell System of the present day have all grown from right beginnings made by the small group of men through whose vision and practicality the telephone industry was started fairly on its way toward universal service. Bell, Sanders, Hubbard, Watson, Forbes and Vail seem, each in his own line, instinctively to have known the principles, the methods and the practice which in less than fifty years would make of the telephone a well centralized federation of companies, a sound financial institution, an efficient and progressive engineering utility, and therefore the habitual reliance of the civilized world.

While Alexander Graham Bell himself never carried the invention of the telephone beyond its elementary stage, he foresaw in very specific detail the possibilities of universal communication to which, with the addition of the exchange and long lines systems, his invention would ultimately be developed. In an address which served as a prospectus for a group of London capitalists, dated March 25, 1878, Mr. Bell wrote (with slight omissions), —

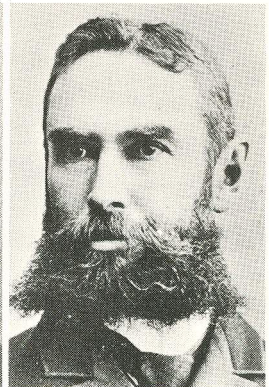
“It is conceivable that cables of telephone wires could be laid underground, or suspended overhead, communicating by branch wires with private dwellings, country houses, shops, manufactories, &c., &c., uniting them through the main cable with a central office where the wire could be connected as desired, establishing direct communication between any two places in the city. Such a plan as this will, I firmly believe, be the outcome of the introduction of the telephone to the public. Not only so, but I believe in the future wires will unite the head offices of the Telephone Company in different cities, and a man in one part of the country may communicate by word of mouth with another in a different place. Believing as I do that such a scheme will be the ultimate result of the telephone to the public, I will impress upon you all the advisability of keeping this end in view, that all arrangements of the telephone may be eventually realized in this grand system.”



Gardiner G. Hubbard



Alexander Graham Bell



Thomas Sanders

THE "BELL PATENT ASSOCIATION"

The first germ of a corporate form for the business development of the telephone was a verbal offer made by Thomas Sanders of Haverhill, Massachusetts, to Alexander Graham Bell in the fall of 1874 to supply him with money for his experimenting in return for a share in whatever patent rights might come from the work. A short time after this arrangement with Mr. Sanders, Gardiner G. Hubbard of Cambridge made Bell a similar offer. These informal offers and acceptances were later embodied in a written agreement, dated February 27, 1875.

This agreement provided that Mr. Sanders and Mr. Hubbard should each furnish one-half of the money necessary for Bell to perfect his inventions and to secure and maintain patents for them; and that the three should together own the patents. This personal association was not formal enough to have a name. To distinguish it from other subsequent organizations it will here be called the "Bell Patent Association."

A week after this agreement of the "Bell Patent Association" was signed, on March 6, 1875, application was filed in the United States Patent Office at Washington for Patent No. 161,739, Improvement in Transmitters and Receivers for Electric Telegraphs. This patent was issued to Bell one month later, on April 6, 1875. It was the first of the tangible assets of the "Bell

Patent Association." It did not, however, ever bring any financial income.

On June 2, 1875, while Bell was working with his assistant, Thomas A. Watson, to improve his multiple harmonic telegraph, he made the discovery which assured him that his theory about the electric transmission of speech was correct, and which made clear to him how to make an instrument that would produce the necessary undulatory current. Now at last he had something in the line of speech transmission that he could patent. Winning at once the approval of Mr. Hubbard and Mr. Sanders, Bell in large measure discontinued his work on the multiple telegraph and devoted his energies to developing the invention of the telephone.

THE FOUR FUNDAMENTAL PATENTS

In September, 1875, at his father's home near Brantford, Ontario, he began writing the specifications for the first telephone patent. In order to avoid conflict between American and British patent rights, he wished to delay the filing of the application at the United States Patent Office at Washington. So it was not filed until February 14, 1876. Credit is due to Mr. Hubbard that the application was not delayed even longer. The patent was allowed on March 3, 1876, Bell's birthday, and was issued to him on March 7, 1876, as Patent No. 174,465, Improvement in Telegraphy. It was the corner-stone of the Bell System of intercommunication.

The written agreement of the "Bell Patent Association" did not speak of the telephone nor refer to it in a distinctive way. It stated the basis of the agreement to be that "the said Bell has invented certain new and useful methods and apparatus for telegraphing." Nor was this an instance of the interchangeable use of the two words, telegraph and telephone, common at the time, such as that in the title of the first telephone patent itself. It was either an inadvertent or a deliberate discrimination in favor of the telegraph. Mr. Sanders and Mr. Hubbard had both formerly believed that the multiple telegraph was the invention that would prove to be the profitable one, and at one time Mr.

No 14,465



TO ALL WHOM THESE PRESENTS SHALL COME:

Whereas Alexander Graham Bell, of Salem, Massachusetts

has presented to the Commissioner of Patents a petition praying for the grant of LETTERS PATENT for an alleged new and useful

Improvement in Telegraphy

a description of which invention is contained in the Specification of which a copy is herewith annexed and made a part hereof, and has complied with the various requirements of Law in such cases made and provided, and

Whereas upon due examination made the said Claimant is adjudged to be justly entitled to a Patent under the Law;

Now therefore these LETTERS PATENT are to grant unto the said Alexander Graham Bell, his heirs or assigns for the term of seventeen years from the seventh day of March one thousand eight hundred and seventy six the exclusive right to make, use and vend the said invention throughout the United States and the Territories thereof.

In testimony whereof I have hereunto set my hand and caused the seal of the Patent Office to be affixed at the City of Washington this seventh day of March in the year of our Lord one thousand eight hundred and seventy six and of the Independence of the United States of America the one hundredth.

Secretary of the Interior
Commissioner of Patents

THE FIRST TELEPHONE PATENT

Alexander Graham Bell called the telephone an "Improvement in Telegraphy" because telegraphy was at that time a synonym for Electrical Communication.

Hubbard had told Bell that their financial support was conditioned on his devoting his attention to that line of experiment.

This preference for the telegraphic inventions before long brought up a practical question of real importance, even affecting the ownership of the telephone. Dr. Bell has told about it.

“My understanding always was that the speaking telephone was included in the inventions that belonged to the Messrs. Hubbard and Sanders from the autumn of 1874, but I found at a later period that they had not had this idea, which might account for the little encouragement I received to spend time on experiments relating to it. Even as late as 1876, when the telephone was an assured success, Mr. Hubbard generously offered to relinquish to me all right and title to that invention, as he was inclined to think it was outside our original understanding.”

It was not, however, outside of Bell's original intention, and after consulting with Anthony Pollock, their attorney, Bell took the position that the telephone was to be considered as included in the agreement. So this agreement of the “Bell Patent Association” by Bell's interpretation of it became the first legal instrument of corporate telephone ownership and organization.

The experimenting of the winter 1875-1876 culminated in another patent, No. 178,399, Telephonic Telegraph Receivers. Application was filed for this patent on April 8, 1876, and it was issued to Bell on June 6, 1876. There were now three patents to the credit of Bell and of the support he had received from Sanders and Hubbard. Of the first of these there could be no question of its being included in the agreement of the “Bell Patent Association.” Of the other two there might be reasonable question. Therefore on September 15, 1876, Bell made an assignment of these two telephone patents to the three individuals who constituted the “Bell Patent Association,” — himself, Sanders and Hubbard. This settled for all time any possible question as to whether the telephone patents were or were not covered by the agreement of February 27, 1875. Incontrovertibly this assignment constituted the three men the first telephone organization.

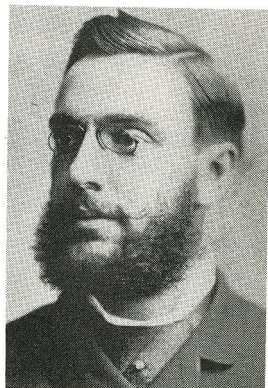
To the three patents within a few months was added a fourth. On January 15, 1877, application was filed, and on January 30,

1877, letters patent were issued to Bell for Patent No. 186,787, Improvement in Electric Telegraphy. These four patents were the foundation of all the early telephone organizations of the Bell System.

THE TRUSTEESHIP OF GARDINER G. HUBBARD

The agreement of the "Bell Patent Association" had also specifically provided that if the expected inventions proved to be of value, a company should be organized to manage and control the patents; and that each of the three should own one-third of the stock of that company. By the summer of 1877 it was recognized that the condition provided for in the agreement had developed. Moreover, Mr. Bell was soon to marry Mr. Hubbard's daughter, and they were going to Europe for their wedding trip, to be gone for an extended period. Mr. Bell was to see what he could do to introduce the telephone into England. So it was advisable that the business affairs of the telephone should be put on a more definite and formal basis. Accordingly, steps were taken to organize a company. This was done by the appointment of Gardiner G. Hubbard as Trustee.

Anticipating such an outcome, and recognizing that it would be wise definitely "to associate with them a practical mechanic of sufficient skill and ability, under Mr. Bell, to make these inventions pecuniarily successful," the three members of the "Bell Patent Association" had in the previous autumn made a contract with Thomas A. Watson, Bell's assistant. It was dated September 1, 1876. It provided that Watson should give at first half his time and later all his time to working on the patents. This was the beginning of the Bell System's research laboratories. In return Mr. Watson was to receive \$3.00 a day as wages, and a one-tenth interest in all the patents when the joint stock company was organized. This provision was now carried out.



Thomas A. Watson

The Telephone.

The proprietors of the Telephone, the invention of Alexander Graham Bell, for which patents have been issued by the United States and Great Britain, are now prepared to furnish Telephones for the transmission of articulate speech through instruments not more than twenty miles apart. Conversation can be easily carried on after slight practice and with the occasional repetition of a word or sentence. On first listening to the Telephone, though the sound is perfectly audible, the articulation seems to be indistinct; but after a few trials the ear becomes accustomed to the peculiar sound and finds little difficulty in understanding the words.

The Telephone should be set in a quiet place, where there is no noise which would interrupt ordinary conversation.

The advantages of the Telephone over the Telegraph for local business are

1st. That no skilled operator is required, but direct communication may be had by speech without the intervention of a third person.

2d. That the communication is much more rapid, the average number of words transmitted a minute by Morse Sounder being from fifteen to twenty, by Telephone from one to two hundred.

3d. That no expense is required either for its operation, maintenance, or repair. It needs no battery, and has no complicated machinery. It is unsurpassed for economy and simplicity.

The Terms for leasing two Telephones for social purposes connecting a dwelling-house with any other building will be \$20 a year, for business purposes \$40 a year, payable semiannually in advance, with the cost of expressage from Boston, New York, Cincinnati, Chicago, St. Louis, or San Francisco. The instruments will be kept in good working order by the lessors, free of expense, except from injuries resulting from great carelessness.

Several Telephones can be placed on the same line at an additional rental of \$10 for each instrument; but the use of more than two on the same line where privacy is required is not advised. Any person within ordinary hearing distance can hear the voice calling through the Telephone. If a louder call is required one can be furnished for \$5.

Telegraph lines will be constructed by the proprietors if desired. The price will vary from \$100 to \$150 a mile; any good mechanic can construct a line; No. 9 wire costs 8½ cents a pound, 320 pounds to the mile; 34 insulators at 25 cents each; the price of poles and setting varies in every locality; stringing wire \$5 per mile; sundries \$10 per mile.

Parties leasing the Telephones incur no expense beyond the annual rental and the repair of the line wire. On the following pages are extracts from the Press and other sources relating to the Telephone.

GARDINER G. HUBBARD.

CAMBRIDGE, MASS., May, 1877.

For further information and orders address

THOS. A. WATSON, 109 COURT ST., BOSTON.

THE FIRST TELEPHONE ADVERTISEMENT

Offering "Telephones for the transmission of articulate speech through instruments not more than twenty miles apart."

Mr. Watson's distinctive contribution was along the line of the developing of the invention. He had little to do with the organizing of the business. From the time of Bell's sailing for Europe in July, 1877, until his own resignation and departure for Europe in June, 1881, he carried the burden of the necessary research work and superintended the making of the telephone instruments. Though he had had no scientific education, and though indeed of technical training for that work there was at that time none to be had anywhere, he had to solve or try to solve all the baffling technical problems that arose in telephone construction and operation. Taking up the work of Alexander Graham Bell, his was a large share in the making of Bell's invention a practical thing with commercial possibilities, and in those four overworked years started the remarkable record of Bell System engineers in the solving of telephone problems and the advancing of the art of telephony.

The title of the declaration by which Mr. Hubbard undertook the responsibility of the business affairs of the telephone was the Bell Telephone Company, Gardiner G. Hubbard, Trustee. It was dated July 9, 1877. At the same time, the members of the "Bell Patent Association" made an assignment of all their rights under the four patents to the Trustee. This brought what has here been called the "Bell Patent Association" to an end and vested all the rights and powers of the three men in Mr. Hubbard's Trusteeship.

THE LEASING OF TELEPHONES

The legacy of the Trusteeship to the Bell System was the leasing and licensing system. This led directly to the sale of service only, the fundamental principle of the business policy of the Bell System. Mr. Hubbard got the idea of leasing telephones instead of selling them from the practise of the Gordon-McKay Shoe Machinery Company, of which he was attorney. This company leased its shoe-sewing machines to the shoemakers, retaining the title to the machines and receiving a royalty for every pair of shoes sewed with the machines. Mr. Hubbard had the business control of the telephone in his own hands and

adopted this method of distribution. The Declaration of Trust in its plan of organization provided for it and not for the sale of telephones, as follows:

“The business of manufacturing telephones and licensing parties to use the same for a royalty, shall be carried on and managed by the Trustee, under the name of the Bell Telephone Company, under and in accordance with such general directions, rules and regulations as may be made for that purpose by the Board of Managers.”

Against strong pressure from most of his associates, and in spite of sore need for money at a time when sales would undoubtedly have brought in a greater income than the leases, Mr. Hubbard firmly held to the leasing principle as the wisest and best for the development of the telephone business. Certainly the unity and the nation-wide efficiency of the Bell System would have been impossible if he had yielded and tried to build the business up on a sale basis. To some of those concerned it seemed absurdly impractical, but it resulted ultimately in the munificent endowment of the Bell System.

The Declaration of Trust also provided for the division of the rights into 5,000 equal shares. The contract with Mr. Watson required that he should receive a one-tenth right. Mr. Bell married Mr. Hubbard's daughter on July 11, 1877, and at that time made over to his bride practically all his financial interest in the telephone patents with her father as trustee for her. Mr. Hubbard also wished to bring his wife and his brother into the telephone ownership to a moderate degree. Accordingly on August 1, 1877, the telephone rights were converted from the ownership by the three men into the form of 5,000 shares of stock, the shares were apportioned, and certificates were issued by Gardiner G. Hubbard, Trustee, as follows: Alexander Graham Bell, 10; Mabel G. Bell, 1497; Gardiner G. Hubbard, 1387; Gertrude McC. Hubbard, 100; Thomas Sanders, 1497; Thomas A. Watson, 499; Charles Eustis Hubbard, 10; Total, 5000.

About this time the commercial branch of Telephone development was given its first start, when Robert W. Devonshire was hired on August 10, 1877, to do the bookkeeping, relieving Mr. Watson of this part of the work. He reported to Mr. Hubbard or to Mr. Sanders, as might be natural at the moment.

But money was very scarce. Mr. Sanders personally was still supplying most of what was needed. He was gallantly staking his entire fortune and credit to see the telephone through to success. Indeed he put in \$110,000 before he got a dollar back. Now again, when relief came to the finances of the telephone, it came through Mr. Sanders. He interested a group of Massachusetts and Rhode Island men. They agreed to put money into the telephone, but they wished to confine their interest and their responsibility to the development of the telephone within the territory of New England; and naturally, while willing to cooperate with the Trusteeship, they wished to control the telephone business within that territory.

THE FIRST NEW ENGLAND COMPANY

Accordingly the New England Telephone Company was formed. While there was no direct connection between this Company and the present New England Telephone & Telegraph Company, yet it is clear that the old New England Company pointed the way to the regional organization and federated relationships of the Associated Companies in the Bell System. The subscribers to the Articles of Association were: Gardiner G. Hubbard, Thomas Sanders, Thomas A. Watson, Charles Eustis Hubbard, C. S. Bradley, G. L. Bradley, Alexander Cochrane, Rowland Hazard, Edward Sherwin, Joseph H. Goodspeed, W. G. Saltonstall, and G. Z. Silsbee.

The office of the corporation was to be in Boston, and the capitalization \$200,000, — 2,000 shares of \$100 each. The Certificate of Incorporation was dated February 12, 1878. The officers chosen were: President, Gardiner G. Hubbard; Treasurer, Thomas Sanders; Clerk, Charles Eustis Hubbard; and General Agent, G. L. Bradley.

The Articles committed the Company to Mr. Hubbard's policy of leasing and not selling telephones. They simply declared the intention to constitute a corporation "for the purpose of carrying on the business of manufacturing and renting telephones and constructing lines of telegraph therefor, in the New England States." On February 2, 1878, before the Certificate of

Incorporation was filed, Gardiner G. Hubbard as Trustee made an assignment to the New England Telephone Company, of all rights under the four patents for the territory of the New England States. He did this by an agreement to license in consideration of the payment of \$1.00 and 1,000 shares, one-half of the stock of the New England Telephone Company, to be issued: to Gardiner G. Hubbard, 600 shares; to Thomas Sanders, 300 shares; to Thomas A. Watson, 100 shares, — to each as trustee for the Bell Telephone Company. The other \$100,000 of stock was turned over to George L. Bradley as General Agent of the New England Telephone Company and was sold for \$50,000 in cash. This was used as a working capital. The agreement required that the New England Telephone Company buy its telephone instruments exclusively from the Bell Telephone Company at the price of \$3.00 for telephones and \$10.00 for magneto calls, and specifically forbade the New England Company from selling the instruments, permitting them only to lease them to their subscribers.

The agreement further provided for cooperation between the Bell Telephone Company and the New England Company in conducting the telephone business within and outside of the New England States, and in patent litigation. Finally, there was a specific provision in the agreement looking forward directly to the creation of the long lines:

“And insomuch as said parties and their successors and assigns may have a common interest in the working of continuous and connecting lines extending outside of New England, the said parties agree that they will endeavor to cooperate in the establishing of connecting lines and in the joint working of the same, and the division of the expense and the profits thereof pro rata upon some equally fair and equitable basis.”

It is interesting that the coordination of subscribers' lines began, with the opening of the first commercial telephone exchange at New Haven on January 28, 1878, only five days before this agreement for the coordination of exchanges by a long lines system was signed.

THE BELL TELEPHONE COMPANY



Theodore N. Vail

The outlook for the success of the New England Telephone Company was so promising as to suggest the advantage of a similar organization for the telephone business in the rest of the country. Money was needed; money could be secured from Mr. Sanders' friends on condition of such reorganization. Probably Mr. Vail, who accepted the position of General Manager in a letter dated May 22, 1878, also advised it as wise from the business point of view. Accordingly

the Bell Telephone Company was formed.

This was not an incorporation of the Trusteeship, but an entirely new and different organization. The men who signed the Agreement of Association on June 29, 1878, to form the new Company were:

Gardiner G. Hubbard, Thomas Sanders, Alexander Graham Bell (by Atty.G.G.H.), Charles Eustis Hubbard, Thomas A. Watson, A. O. Morgan, George L. Bradley, Thomas B. Bailey, James Sturgis, Joseph H. Goodspeed;

President, Gardiner G. Hubbard; Treasurer, Thomas Sanders; Clerk, Charles Eustis Hubbard; and General Manager, Theodore N. Vail.

The office was located in Boston, and the capitalization was \$450,000, consisting of 4,500 shares of \$100 par each. The Certificate of Incorporation was filed on July 30, 1878.

While there was actually no divergence from Mr. Hubbard's business policy of only leasing telephones, the new Company took to itself the right to sell the instruments by the following clause in the Articles of Association:

"The purpose for which the Corporation is constituted is to manufacture and sell telephones and their appurtenances and to construct, maintain and operate telephone lines and rent Telephones throughout the United States outside of the New England States."

BELL TELEPHONE COMPANY

OF
NEW YORK.

THE ONLY PARTY IN THIS CITY HAVING AUTHORITY OR LICENSE UNDER PATENTS OF
PROFESSOR ALEX. GRAHAM BELL TO RENT TELEPHONES.

This company proposes, and is now prepared, to establish direct

TELEPHONIC COMMUNICATION

THROUGH THEIR

Central District Offices

between each and every business house in the city. Whatever inquiry you wish to make, or business you wish to transact, or message you wish to communicate, with any other house or profession in the city, you can do it while seated at your desk.

This is done by simply communicating through the Telephone to a central office, that you desire to speak to Mr. Jones, Mr. Smith, or Mr. Brown. In an instant your communication at the office is made direct and complete to him and you can carry out your conversation, which none but yourselves can hear, as long as you please, again signaling the office when you close.

Every Bank, Banker, Broker, Lawyer, Judge, Public Building, Hotel, and Business House, and every Profession, in this and the neighboring cities, are expected to connect with this district office system, and for this purpose the terms will be made very reasonable. You will be called upon in a few days for your name as a subscriber, or we should be pleased to have you call at our office and examine the working of the Telephone, and leave your order. Our offices are already in operation from the Battery to Union Square.

Simply talking through your Telephone does it all.

EXTRACT FROM A CIRCULAR OF THE BELL CO. WHO OWN THE ORIGINAL PATENTS.

This Company (The Bell Co.) controls the patents for "Telephones" issued to Prof. ALEX. GRAHAM BELL; these are the only patents which cover the principle involved in the construction of all Telephones or instruments by which the "sound wave" can be reproduced. All other patents for Telephones simply cover some device or method of construction, and can only be used under license of the Bell patent.

GARDNER C. HUBBARD, President.

All contracts and other and previous interests in the Telephone business in this city, under the Bell patents, have been transferred to this new Company.

Private lines constructed for all purposes. Telephones rented, put in operation, and warranted.

Business Office, 318 Broadway.

E. HOLMES, President.

W. H. WOOLVERTON, Treasurer.
A. G. DODD, Secretary.

ADVERTISEMENT OF 1878

Offering inter-communicating telephone service through switchboards.

After this one glance in the tempting direction of sales, however, the policy of only leasing was maintained and unhesitatingly continued thenceforth.

In effecting the transfer of the control of the telephone to the new company, on July 20, 1878, Gardiner G. Hubbard as Trustee made an assignment to the Bell Telephone Company of "all the patents, patent rights and interest in any and all contracts relating to any patents or future inventions owned or held by him as Trustee," in return for 3,000 shares of the capital stock of the new Company; and also sold to the new Company all other property of every kind and description for \$42,500.

The actual control and real direction of the telephone industry therewith passed into the hands of an Executive Committee of the Bell Telephone Company, consisting of Gardiner G. Hubbard, Thomas Sanders and George L. Bradley, for whose authority the Directors provided by the following resolution:

"That the Executive Committee shall, until further orders, have all such powers as may be necessary for the management of the Company."

About the same time the differentiation of the two Companies was emphasized by a change in the officers of the New England Telephone Company. Mr. Hubbard and Mr. Sanders resigned as President and Treasurer on July 27, 1878, and their places were filled as follows: President, Thomas Sanders; Treasurer, George L. Bradley. Thus came to an end the Bell Telephone Company, Gardiner G. Hubbard, Trustee. Mr. Hubbard's exclusive control of the business affairs of the telephone had rendered its great service. It was with the endowment of the right business policy that the Telephone went on to its next step toward the federated system of the American Telephone and Telegraph Company and its Associated Companies of the present.

UNITING TELEPHONE INTERESTS

On December 31, 1878, a new name appeared in telephone affairs. William H. Forbes was on that day elected a Director of

the Bell Telephone Company. The telephone was now well launched into the period of patent litigation. Its prosperity had suffered from the superiority of the Edison transmitter, but now the Blake transmitter was brought to the Company by its inventor, and the advantage in the competition for the control of telephone service was restored to the Bell interests. Francis Blake, Jr., also was elected to the Board of Directors at the same meeting as Mr. Forbes. Within a month, Mr. Sanders resigned as Treasurer of the Bell Telephone Company and George L. Bradley was elected to succeed him.



William H. Forbes

The opportunity which lay in the situation as a whole called for the strongest and most able business ability in the community. This was secured in the person of Mr. Forbes and the interests he represented. In effect this amounted to his taking over control of the telephone, for at a meeting of the stockholders on January 23, 1879, a by-law was passed providing that:

“The holders of one-third of the stock for which money has been paid and subscribed shall, for the space of two years, have an equal right and power with the holders of the two-thirds reserved to the patentees; and any holders of such originally subscribed stock shall cast two votes at each meeting upon each of such shares, and the holders of the stock originally issued to the patentees shall cast one vote on each of such shares during said two years.”

This unquestionably placed the control of the Company's affairs in the hands of Mr. Forbes and those who were supplying the new money.

THE NATIONAL BELL TELEPHONE COMPANY

Mr. Forbes immediately, at a meeting of the Directors on January 29, 1879, took steps toward uniting all the Bell interests in one Company, the National Bell Telephone Company. The

Articles of Association were signed on February 17, 1879, by the following men: Gardiner G. Hubbard, Francis Blake, Jr., Thomas Sanders, George L. Bradley, Richard S. Fay, Thomas B. Bailey, R. W. Devonshire, William H. Forbes, Charles S. Bradley, Alexander Graham Bell, G. Z. Silsbee, Alexander Cochrane, J. Cheever Fuller, and C. E. Hubbard.

The purpose was stated in the Articles of Association as follows:

“To manufacture, sell and rent telephones and their appurtenances, and to build, maintain and operate lines for the transmission of messages by electricity or otherwise.”

The office was to be located in Boston, and the capitalization was to be \$850,000, consisting of 8,500 shares of \$100 par each. The following officers were elected: President, William H. Forbes; Clerk, Charles Eustis Hubbard; Treasurer, George L. Bradley; General Manager, Theodore N. Vail; and Electrician, Alexander Graham Bell.

The Executive Committee consisted of the President of the new National Bell Telephone Company, the Presidents of the two constituent Companies, and two of the new men, as follows: William H. Forbes, Gardiner G. Hubbard, Thomas Sanders, Richard S. Fay, and Francis Blake, Jr. The Certificate of Incorporation was filed on March 13, 1879.

Of the \$850,000 of the stock of the new Company, \$200,000 was paid to the New England Telephone Company to distribute to its shareholders share for share; \$450,000 was paid to the Bell Telephone Company to distribute to its shareholders share for share; \$75,000 was assigned to the money-paid or money-subscribed stockholders of the Bell Telephone Company on the two-votes-to-a-share basis; \$125,000 was held as Treasury stock.

On March 20, 1879, both the New England Telephone Company and the Bell Telephone Company made assignments of their rights under two of the Bell patents, Nos. 161,739 and 178,399, to the National Bell Telephone Company; but they specifically excepted from their assignments the two distinctively telephone patents, Nos. 174,465 and 186,787. The National Bell Telephone Company never acquired title to these two patents during the life of the corporation. However, it did own all bene-

Subject: *Central Office*
 W. H. FORBES, President. GEO. L. BENTLEY, Vice President and Treasurer. THEO. N. VAIL, General Manager.
 THE NATIONAL BELL TELEPHONE CO.
 No. 96 Mill Street,
 P. O. BOX 3466.

Boston, *June 26* 1879.

Dear Sir,

Before putting in any
 exchanges or starting in or even
 planning for a central office sys-
 tem I think it would be well
 for you to consult thoroughly with
 Mr. Watson, and examine minutely
 into our standard system for central
 office connections. What we want
 to do in every case is to adopt the
 best system, and that we think we
 have, then if there is anything better
 we should of course want to
 adopt that.

Please let me hear from
 you in regard to this. Truly,
 yours,
 Theodore N. Vail

A. W. Pope
 679 Broadway

"WHAT WE WANT TO DO . . . IS TO ADOPT THE BEST SYSTEM."

A letter from Theodore N. Vail, in 1879, which makes reference to Mr. Watson's central office system.

ficial interest in them and did have the power to have these patents assigned to it or to its appointee by the owner, The Bell Telephone Company.

Thus were the two former Companies consolidated. Thus was the development of the telephone and its introduction throughout the country unified by the organization of the National Bell Telephone Company under William H. Forbes. The name was an appropriate one. It was at this time that the telephone entered into its truly national career, and its industrial development was dominated and chiefly directed by two men. William H. Forbes represented the East — the East of the East — with its conservative stability and its regard for tradition and social and financial standing. The telephone had scored as something to be permanently reckoned with when it secured a Forbes of Boston as its President. Theodore N. Vail represented the West with its direct freedom and disregard for anything but inherent merit. Although Vail was born in the East, the West had breathed the breath of its life into him and made him her own. Both individually and both in cooperation were essential at this time to the development of the telephone into a truly national utility and institution.

The National Bell Telephone Company had unified the development of the telephone, but it concerned affairs only inside the household, so to speak. It brought the family in under one roof, but the roof was not large enough to permit of very much increase in the size of the family. The pressure of affairs outside the Bell Telephone household was within a year to render the National Bell Telephone Company quite inadequate to cope with the situation as a whole.

COORDINATION OF LOCAL COMPANIES

In the spread of the telephone over the country the method of local organization had usually been by means of local corporations which leased their instruments from the parent company. But if the telephone service was to be unified, which was becoming more and more evidently essential, the mere leasing of instruments would not be sufficient for a real coordination of the local interests with other local companies and with the

parent company, even though this was before the days of the long lines connecting the various local city exchanges. The accomplishment of unified service, with all that that meant of advisory, laboratory and manufacturing service, required an exclusive license agreement between the National Company as licensor and each of the local companies as licensee. Further than that, actual control of the local companies must be possessed by the central corporation. This necessitated the command of a large amount of capital, far more than enough for the parent company to conduct its own regular business. The \$850,000 which in March, 1879, had been deemed ample, by March, 1880, had proved to be utterly inadequate.

In this situation the most serious competitor was the powerful Western Union Telegraph Company. During the early summer of 1879 the Western Union made it a matter of policy to buy up controlling interests in the companies organized under Bell licenses. The fight with the Western Union and the enormous increase of business which came with the settlement of that fight on November 10, 1879, on the basis of all telephone business going to the National Bell Telephone Company and all public telegraph message business to the Western Union Telegraph Company, constituted the most important single element that made it necessary to reorganize the telephone business.

In order to permit this reorganization on an adequate scale and to permit the corporation to hold stock in other corporations, the Massachusetts Legislature passed a special act giving authority for the purpose, and it was signed by Governor John D. Long on March 19, 1880. The purpose as stated in this Act was for the —

“manufacturing, owning, selling, using and licensing others to use electric speaking telephones and other apparatus and appliances pertaining to the transmission of intelligence by electricity, and for that purpose constructing and maintaining by itself and its licensees public and private lines and district exchanges.”

The capitalization was limited to \$10,000,000, and the permission to hold stock in other corporations was conditioned as follows:

“Said corporation may become a stockholder in or become interested with other corporations hereafter organized for like purposes, or already established for the transaction of telephone business under its patents and no others: Provided, that said corporation shall not become a stockholder in any other corporation doing business in this state to an amount exceeding 30% of the capital stock of said last named corporation.”

THE AMERICAN BELL TELEPHONE COMPANY

In accordance with this Act of Legislature, The American Bell Telephone Company was formed on March 20, 1880, by an Agreement of Association signed by the following men: William H. Forbes, G. Z. Silsbee, Francis Blake, Jr., Richard S. Fay, Charles Emerson, George L. Bradley, Charles Eustis Hubbard, W. G. Saltonstall, R. W. Devonshire, Thomas B. Bailey, and C. M. Whitcomb.

The officers chosen were as follows: President, William H. Forbes; Treasurer, W. R. Driver; Clerk, Charles Eustis Hubbard; General Manager, Theodore N. Vail; Engineer, Joseph P. Davis; Consulting Engineers, Alexander Graham Bell and Francis Blake, Jr.; Superintendent of Agencies, O. E. Madden; and General Inspector, Thomas A. Watson.

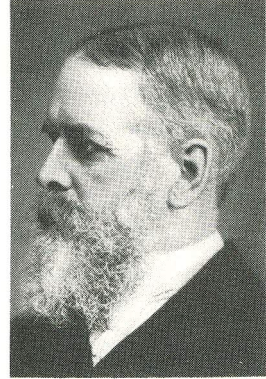
The capitalization was fixed at \$7,350,000, consisting of 73,500 shares of \$100 par each, and the office was to be in Boston. The Certificate of Incorporation was filed on April 17, 1880.

The purchase by the American Bell Telephone Company of the stock of the National Bell Telephone Company was duly effected by payment of six shares of the new stock for one share of the old. This took up \$6,500,000 of the American Bell stock. The balance of \$850,000 was offered to the stockholders of the National Bell Telephone Company at par.

This year, 1880, was the last year that a majority of telephone stock was closely held. In December, 1880, there were 540 stockholders, fourteen of whom owned a majority of the stock. The company declared its first dividend—three dollars—about the same time. It was paid on January 1, 1881. Another three-dollar dividend was paid the following July 1, and dividends of four dollars each were paid on January 2 and July 1, 1882. Regular

Bell Telephone Company until 1887, when he resigned. On August 10, 1887, Howard Stockton was elected President and took office on September 1st following. He in turn was succeeded on April 1, 1889, by John E. Hudson, who was already President of the American Telephone and Telegraph Company.

By 1899 it was deemed best that the American Telephone and Telegraph Company should be made the central organization. Experience had proved that conditions under the laws of the State of New York were more advantageous for the development of so great an industry as this promised to be than under the laws of the Commonwealth of Massachusetts. Increases of capitalization were allowed by the Massachusetts Legislature, in 1889 to \$20,000,000, and in 1894 to \$50,000,000, but these increases were not adequate in either case to the needs of the business which almost immediately thereafter loomed up before the company. Furthermore, with the increase of 1894 the Legislature imposed the restrictions that the new stock must be offered to stockholders, not at par, but at a market price to be fixed by the Commissioner of Corporations, and that stock remaining after that offer should be sold at auction. These were conditions which were not practical for a business of national scope. Therefore, in 1900 the American Bell Telephone Company conveyed all its assets other than American Telephone and Telegraph Company stock to the American Telephone and Telegraph Company. The stockholders of the American Bell Telephone Company at the Annual Meeting on March 27, 1900, voted to distribute to each stockholder two shares of the capital stock of the American Telephone and Telegraph Company, then held by the American Bell Telephone Company, for each share of American Bell Telephone Company stock held by him. The book value of the American Bell Telephone Company stock at December 30, 1899 was \$229 per share; \$124 per share having been received



John E. Hudson

for the stock when issued, the balance of \$105 per share representing accumulated surplus. The book value of the American Telephone and Telegraph Company stock was \$102 per share.

After the American Bell Telephone Company had exchanged the stock of the American Telephone and Telegraph Company for its own on the basis of two for one, there were 517,726 shares of American Telephone and Telegraph Company stock (838,830 shares issued less 321,104 shares held by the American Bell Telephone Company for the benefit of the American Telephone and Telegraph Company) in the hands of the public representing net book assets of \$77,744,985, or \$150 per share.

While the American Telephone and Telegraph Company was for fifteen years a subsidiary company, it was also, and in a more important way, the simple and natural continuation after 1900 of the line of parent companies. With the inception of the American Telephone and Telegraph Company as a long distance company and its comparatively rapid rise to a commanding position in the federation of telephone companies, a new period in the corporate development of the Telephone began. This larger function had materialized and demanded legal recognition by 1900. The goal of national telephonic unity motivated the work more and more. It was the same development, only a new period of it. The early period drew to a close in the years 1885-1900. Nonetheless it had shown from the beginning in simple form the same structure and all the essential characteristics of the entire development of the Telephone down to the very present.

It is the structure of the Bell Telephone System of today—a coordinated federation consisting of the American Telephone and Telegraph Company and Associated Companies.

PRESENT BELL SYSTEM STRUCTURE

Each Associated Company has the primary responsibility of providing local telephone service and inter-connecting communities within its own territory, subject to the regulation of the state or states in which it operates.

Subject to the regulation of the Federal Communications Commission under the Communications Act of 1934, the American Telephone and Telegraph Company interconnects the territorial operating companies by means of its long distance lines; affords a centralized advisory service; maintains for the System the Bell Telephone Laboratories, Inc., an extensive organization devoted to research, development, and design in the communications field; controls the Western Electric Company, the manufacturing and supply unit for the System; and furnishes the Associated Companies with engineering assistance and operating advice, as well as assistance in legal, accounting and financial matters.

The present day functions of the parent company are those it assumed when taking over the assets of its predecessor, the American Bell Telephone Company — amplified and extended, of course, as responsibilities increased with the growth of a nationwide service. The genealogy of some of these functions may therefore quite properly be included in this account of early corporate development.

The services rendered by the parent company to the operating companies included almost from the beginning important lines of activity including manufacturing, financing, and technical research and advice. The supply of telephone instruments to the early Bell Companies was inevitably its responsibility because of its ownership of the Bell patents. Adequate manufacturing, both in quality, quantity, and availability was always of immediate concern. Charles Williams, Jr. of Boston was the first telephone manufacturer. Then other shops went into the business — the Western Electric Manufacturing Company of Chicago, Davis & Watts of Baltimore, Post & Company of Cincinnati, the Gilliland Electric Manufacturing Company of Indianapolis, and the California Electrical Works of San Francisco. By 1882 practically all telephone manufacturing was united in the Chicago company, because of the necessity for uniform equipment throughout the country. At that time this company changed its name to the Western Electric Company. It was thereafter controlled first by the American Bell Telephone Company and then by the American Telephone and Telegraph Company. It did almost all

the manufacturing of telephone instruments and apparatus for the Bell companies, but it did other manufacturing as well and sold to other customers. Between 1901 and 1913 the Western Electric Company extended its operation so as to make available for all of the Bell Companies its services as purchasing and warehousing agent. In this manner were created the opportunities which the Bell Companies enjoy today for the economies of bulk purchases of supplies for the realization of the efficiencies related to standard apparatus manufactured according to the exact specifications of Bell engineers.

During the trusteeship, Gardiner G. Hubbard gave away telephone agencies to any accredited persons who would undertake to organize, finance and conduct a telephone business in a given locality, on the simple terms of payment of rental for the telephone instruments. The agents were responsible for raising any money needed for local construction and operation. In many cases these agents nonetheless got into financial difficulties and applied to the parent company for assistance, whether in the form of a loan or of a resumption of the agency. Under these circumstances Theodore N. Vail, as General Manager, adopted the policy of helping these companies by buying stock. Thus began the financial service which the parent company renders on request to the operating companies on terms exceptionally advantageous to them; which enables it to act as a stabilizing factor to the telephone federation as a whole, and to give unity and strength to the Bell System. It is the genesis of the American Telephone and Telegraph Company's present day investment in the operating companies, now representing more than nine-tenths of their outstanding stock.

Another activity that has continued down to the present from the very beginning in the service rendered to the operating companies by the parent company, is that of scientific research and technical advice. When Alexander Graham Bell went to Europe in 1877, Thomas A. Watson was left as the only one to whom application could be made for technical information or suggestion for the improvement of telephone operation. He had to advise, and if he did not know he had to find out. This has always been the function of the technical staff and is the function

of the Bell Telephone Laboratories now. At first Mr. Watson in his own person alone was the whole research and technical staff. When Mr. Watson went to Europe in 1881, the responsibility devolved upon the little group of assistants he had gathered around him. Until 1907 the work of research grew up partly with the advisory service maintained by the parent company in Boston and partly with that maintained in connection with the manufacturing service of the Western Electric Company in Chicago and New York. In 1925 all of this work was consolidated, and it is now the function of the Bell Telephone Laboratories.

A final word is needed here regarding independent telephone companies to complete the picture. With the expiration of the Bell Telephone patents in 1893 and 1894, a large number of independent telephone companies had been organized, most of them in communities where no Bell agency had been started and developed, but some also in cities where there was already a Bell exchange. Yielding to the fact that no one wanted to be obliged to have two telephones, many of these were merged by purchase into the Bell operating companies. Many others failed because of inadequate financing. Today there are some 2,600 companies, operating nearly one-sixth of the country's telephones, that are not part of the Bell System but whose lines connect with those of adjacent Bell companies, thus making possible a single intercommunicating system serving practically every community in the nation.

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In a very true way the story of the development of the Bell System is all contained in the early period that ended with the beginning of the American Telephone and Telegraph Company's parenthood. An old fashioned structure was created and brought to maturity in essential form in those years. The principles of telephone organization and operation have not changed. The only changes have been those necessary to adapt the details of the structure to the new conditions of new times.