

THE POSSIBILITIES OF THE TELEPHONE AS FIRST VIEWED BY THE INVENTOR.

THE following interview took place recently between Prof. Graham Bell, the inventor of the telephone, and an old newspaper acquaintance on the staff of one of the Boston papers :

"Did you appreciate, Professor Bell, the possibilities and tremendous scope and influence of the telephone when you described your invention to me in 1876?"

"No, I did not ; but I was much more sanguine of its success than were my business associates at that time. Like all inventors I saw what no one else could see at that early day. I saw a fortune for some one and hoped that it might be for me. But really, you newspaper gentlemen place my fortune too high. You are responsible for a too exalted impression in the mind of the great public as to the colossal proportions of my estate. I am said to be a millionaire, and people charge me for everything as if I were a millionaire. The telephone has made large fortunes for many men who were courageous enough in the infancy of the invention to invest in the enterprise, but the amount of money made by telephone companies is not so large as the public supposes.

"Has the telephone reached its highest stage of improvement did you say ? Oh, no ; I sincerely believe that its possibilities are much greater than any of us imagine. What we must now do is to discover some method by which to simplify the complicated system which has grown up and surrounds my original invention. The telephone proper is the same to-day that it was 15 years ago, when the first line was run from Somerville to the office of Stone & Downer, the State street bankers and brokers. Mr. R. C. Downer, now president of the Broadway National Bank, was really the first to use the telephone, and when I recall the crude manner in which the line was then constructed, I am surprised that it worked at all.

"In the summer of 1876, when you so kindly published a sketch of my invention, and when the Boston *Journal* told the world about my achievements, I could then talk as far as North Conway, N. H., and south to New York. The night when you were obliged to decline an invitation to meet myself and Sir William Thomson, the celebrated English electrician, who has since been made a peer of Great Britain in recognition of his invaluable contributions to science, I had secured the use of the line of the then Mutual Union Telegraph Company, and we conversed with New York, but, of course, the conversation was not so easily carried on as it has been since the construction of what is known as the metallic circuit.

"At the outset we experienced a difficulty in 'calling up' people at the other end of the line, and \$50,000 were expended in merely developing a 'call bell.' To do that it was necessary to use an induction coil, or two high resistance coils of fine wire at either end of the line, making four in all. That necessitated a new transmitter, for originally the hand telephone was used as a transmitter and receiver, and the new transmitter called for more resistance coils and a battery at either end of the line. And thus addition after addition has been made, while the telephone principle remains the same as it was originally."

"The public is disposed to grumble at the prices charged for the use of telephones, and think that because the company is doing such an enormously large business that it ought, therefore, to reduce rather than increase, the rates. The fact is, that the telephone business is unique in this respect. It costs more to do a large wholesale than a retail business, and is less remunerative. It is difficult to convince the public of this, but it is nevertheless, true. To meet the demands of the public expensive additions have been made. The 'call bell' was a necessity, but it cost money to introduce it. A transmitter was a necessity, and that cost money. Improvements have been made in many directions. Every genius has been encouraged to invent something that would enhance the value of the telephone to the public, and that has cost money. In fact, the increase in expenditures in perfecting and adding to the original invention have been, not in arithmetical, but in geometrical proportion. The original charges were not sufficiently high ; consequently, it has been necessary to increase the amount, and unless some device shall be discovered whereby the expenses can be reduced it will be necessary to make a further increase."

"Americans are averse to the tollage system. They prefer to pay a lump sum and to use the telephone as often as they wish,

for all sorts of purposes. What is the result ? The business man, who has occasion to use the telephone many times a day pays no more, in most cases, than the man who only actually requires it two or three times a day. A great deal of useless to and unnecessary talking is done every day over the telephone. Servants gossip over it to their friends ; people call up their neighbors many times when they would not do so if they were charged a certain sum every time they did so. If the tollage system were introduced the number of calls would be reduced ; it would require fewer employees to transact the business, fewer wires would be necessary and in a thousand and one ways would reduce expenses, while the men who did need the telephone frequently for business purposes would pay for it.

"The telephone, as at present constructed, needs the open air to obtain the best results. To use wires placed underground a metallic circuit will be necessary, similar to the one used now on long distance lines. To place the wires underground and to make a metallic circuit, which means to use two wires where one is used at present, will materially increase the expenses of the company, and the public must pay for the luxury. As the number of wires is increasing rapidly it is evident that they must, ere long, be buried.

"To simplify the telephone opens a wide field for inventors, for it is in that direction that we must turn. Pay a visit to the central office in Boston, New York or any other large city, and you will be astonished at the complex system which has grown up almost unnoticed within a few years. There is a labyrinth of wires such as no outsider ever dreamed of. The telephone is so simple in itself and the people have become so familiar with its use, that they would be astonished if shown a modern switchboard. It cost \$150,000 to construct the switchboard for the central office in New York city, and if you were to see it you would be surprised that it could be constructed for even that large sum.

"Of course, I am not speaking now from the standpoint of the business manager of the telephone. I am merely a stockholder ; I have nothing to do with the business management ; but it is patent to me and to others that the problem to solve now is, How can the telephone business be simplified and expenses reduced without impairing the efficiency of the service ? It is needless to say that business will increase. New subscribers are clamoring daily for the service, and this means more wires, or better facilities for using what we now have."

THE TELEPHONE INSPECTOR.

HE apparently was a visitor from the rural districts who was totally unacquainted with city ways. He entered, says a Chicago paper, one of the offices at the city building and finally attracted the attention of a clerk, who rather gruffly inquired : "Well, what is it ? What can I do for you?"

"Where's your telephone?" asked the caller, taking a survey of the room.

"Over there."

Without saying another word the caller walked across the room, timidly took down the receiver, placed it to his ear, and stood for a minute as still as a statue, evidently listening and waiting for the mysterious instrument to "say something" to him. Then he carefully hung up the receiver, glanced around the room and noticed that the face of every clerk was stretched out of its normal shape by a smile of generous proportions. Again he returned to the attack. After listening as before, he tapped on the transmitter several times. Again he waited. Then he glanced about him, put his lips close to the 'phone, and said quietly—very quietly, "Hello!"

This was too much for the amused clerks to stand, and after a hearty chorus of laughter one of them kindly volunteered to show the old man how to operate the new-fangled talking machine.

"Hang up the receiver just as you found it. Turn that little crank at the right, which rings the bell. Then take down the 'phone, place it to your ear, and when the central girl answers tell her——"

The old gentleman slowly turned, and gazing long and steadfastly on his young friend, remarked, in that same, sad, sweet voice.

"Say! Don't get gay, now. I'm the inspector, and I'm just testing your telephone."