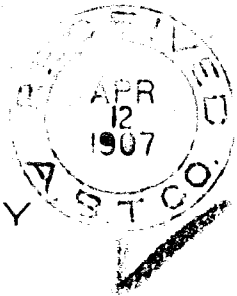


New York Electric Music Company.



AMERICAN TELEPHONE AND TELEGRAPH COMPANY

FREDERICK P. FISH, PRESIDENT.

EDWARD J. HALL
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ENGINEERING DEPARTMENT

HAMMOND V. HAYES, CHIEF ENGINEER.

CHARLES EUSTIS HUBBARD, SECRETARY.
WILLIAM R. DRIVER, TREASURER.

BOSTON,

April 12, 1907.

*Mr. Lockwood
Mr. Fish*

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See L.B. 47

F. P. Fish, Esq., President,

American Telephone and Telegraph Company,

125 Milk Street, Boston, Massachusetts.

Dear Sir:-

On April 1st you handed me a letter from Mr. Crosby of the New York Electric Music Company in which the suggestion was made that the Western Electric Company undertake the manufacture of a portion of the apparatus employed by his company. You asked me to look into the question and let you know whether I could see any possibility of his device, the "Telharmonium", being employed advantageously to us as an adjunct to our telephone system.

I have examined the apparatus used by this company in a very general way, have listened to the music which is furnished at the present time and have talked over with Mr. Carty and Mr. Yorke the result of experiments which they have been making of the transmission of this music over the lines of the telephone companies.

Competent opinion as to the quality of the music can be formed only by one who is especially trained as a musician. My own judgment of the music was that it was remarkable for the purity of the tones transmitted, but I failed to see the similarity of the tones to those of the musical instruments which they were

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designed to represent. Much less could I see that the music approached that which is obtained by an orchestra. In the selections which I heard attempts were made to reproduce flute, oboe, tuba, violon-cello, french horn and clarinet, but I question whether I should have recognized in the electrical music the quality of the various instruments had I not been told that it was those instruments the reproduction of which was attempted. I am inclined to believe that many overtones now missing from the present apparatus will be required before the quality of orchestral instruments can be attained.

Whether or not it will be possible to obtain a complete orchestral effect cannot be determined. My belief is, however, that an enormous amount of work and great complexity in apparatus must be made before such results are possible. On this portion of the subject I can say that I should not consider the music which I heard would in any way replace for commercial purposes the music now ordinarily furnished by orchestras, although the marvellousness and novelty of it will, of course, appeal to the public for some time to come.

The apparatus itself is of extraordinary complexity. It is most expensive and will require enormous expense for models and for experimental work before it can be simplified sufficiently as it seems to me for practical purposes. I consider the whole installation at the present time an experiment of the greatest magnitude and would question whether anything approaching the necessary simplification can be attained without extraordinary expense.

The results of the tests which were made by Mr. Carty and Mr. Yorke seem to show that it is impossible to transmit this music through the present cables and lines now used by us for telephone purposes and that, in order to transmit this music successfully, some inventions must be made in the way of special balancing of circuits and by the use of special circuits for the transmission of the music.

Looking at the matter as a whole, I consider it one which will require vast sums of money to develop, will require experience and skill of the highest order, and I cannot see how it can be a profitable investment for very many years to come. Moreover, I do not see how the telephone interests would derive any special benefit in developing the "Telharmonium" as an adjunct to the telephone business on account of the greatly increased plant which would be required to transmit the music and possibly, even with special circuits, there might be a disturbance introduced by the system upon our regular business.

My own feeling is that the problems before the Western Electric Company and ourselves for the coming few years in the simplification of our own apparatus and its development are so great that our energies ought to be directed wholly and entirely to our legitimate field of work and I should hardly expect that we could afford to assist in the development of such an extraordinarily difficult problem as that of electrical music.

Respectfully yours,

Hammond V. Hayes
Chief Engineer.

HVH/LP