

Letter from Alexander Graham Bell to Gardiner Greene Hubbard, November 12, 1876, with transcript

Boston Nov. 12th, 1876. Dear Mr. Hubbard,

Mabel will tell you of the success of our experiment last night between Boston & the observatory. The fact is conclusively settled that the power of the electrical undulations depends upon the resistance of the electro-magnet relatively to the circuit upon which it is placed . Last night we tried two coils — one of twenty-five ohms resistance — the other of 100 ohms resistance.

The 25 ohms coil gave very poor results — the voice was scarcely audible — but with the 100 ohms coil — the sounds were as loud as we have ever heard them on a short circuit — and much more distinct . Indeed the distinction was so marked that we begin to suspect that the sounds were re-inforced by the vibrations of the armatures of the six Horse Sounders upon the circuit. Sounds were clearly audible without any battery. I intend applying to the Superintendent of the Eastern Railroad for permission to make an experiment between Boston & Salem next Sunday. Tomorrow evening we are to experiment again with coils of 250 and 500 ohms.

I have not the remotest fear of making the proposed experiment between Boston and New York — as the 2 experiments of last night show perfectly conclusively that it only requires that we should have the resistance of our electro-magnet proportioned to the resistance of the circuit.

I should think that an electro-magnet of 500 ohms resistance should give results between here and New York — but I shall provide myself with one of 1000 ohms so as to be perfectly sure of success.

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Yours respectfully, A. Graham Bell. Hon. Gardiner G. Hubbard San Francisco.