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oratory Summer learned Brook-' induce results the 11th etary of President Garfield) kindly handed to me the letters he had received from Mr. Hopkins,¹ and also a Hughes induction balance like that shown in Fig. 2, which Mr. Hopkins had forwarded to the Executive Mansion for trial.

This apparatus was at once tested in my laboratory, with results slightly better than those I had obtained in Boston.

My Boston apparatus did not give a greater hearing distance than 3 cm., whereas with the Hopkins apparatus I could distinguish effects at a distance of 3.75 cm.

Two of Mr. Hopkins' coils (A B, Fig. 2) were then fastened upon a wooden handle to form an exploring instrument, and the whole apparatus was arranged for immediate use in case of any necessity arising for an experiment upon the President. I set myself in communication with Mr. Hopkins, and requested his assistance and co-operation, and in reply received through Private Secretary Brown the following account of further experiments:

"60 IRVING PLACE, BROOKLYN, July 16, 1881.

" MR. J. STANLEY BROWN: "DEARSIR: I have made two new instruments on plans differ-"ing from that sent, but they yield no better results. The first

" consisted of " two oblong " coils ar-" ranged at " right angles **25** " to each oth-

" er, thus :



"The onter coil being of coarse wire (No. 18) placed in the "primary circuit, the inner coil being of very fine wire (No. "36) and connected with a telephone. The parallel enrrents "traversing the wires neutralized each other, and no andible "effects are perceived in the telephone, but on presenting a "metallic body to the instrument upon a line bisecting the "angle between the coils the clicking in the telephone is heard. "This instrument possesses only one advantage over that "sent, and that is that it requires no adjustment.

¹ See Appendix, notes .. and 4.

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