

London Oct. 3. 1856 -

5 o'clock A.M.

My dear Sir

As the Electrician of the New York, Newfoundland and London Telegraph Company, it is with the highest gratification that I have to apprise you of the result of our experiments of this morning upon a single continuous conductor of over two thousand miles in extent. The admirable arrangements made at the Magnetic Telegraph Office in Old Broad Street for connecting ten subterranean gutta-percha-insulated conductors of over 200 miles each, so as to give one continuous conductor of more than 2000 miles, during the hours of the night when the Telegraph is not commercially employed, furnished us the means of conclusively settling by actual experiment, the question of the practicability, and I may also say the practicality of telegraphing through our proposed Atlantic cable. This result had been thrown into some doubt by the discovery more than two years since of certain phenomena upon subterranean and submarine conductors, and had attracted the attention of Electricians particularly of that most eminent philosopher Prof. Faraday, and that clear sighted investigator of

of electrical phenomena, D.^r Whitehouse, and one of these phenomena, to wit, the perceptible retardation of the current threatened to perplex our operations, and required careful investigation before we could pronounce with certainty the commercial practicability of our Ocean Telegraph.

I am most happy to inform you that our experiments this morning have most satisfactorily resolved all doubts of the practicability as well as the practicality of operating the Telegraph from Newfoundland to Ireland.

Although we telegraphed signals at the rate of 210, 241, and, according to the count at one time even of 270 per minute upon my Telegraphic Register, by means both of D.^r Whitehouse's and W. Charles Bright's improvements in my relay or Receiving magnets, (which speed you will perceive is at a rate commercially advantageous,) these results were accomplished, notwithstanding many disadvantages in our arrangements of a temporary and local character, disadvantages which will not occur on our submarine cable.

It may be observed, for example, that the whole force of the battery arrangement was ap-

plied at one extremity only of the 2000 miles conductor,
no assistance was derived from a second generator
of power at the other extremity of the conductor.

This assistance, it is readily seen, can easily be
given by a double set of generators, one at each
extremity of the cable, thus making assurance
doubly sure; for if one horse can draw the load,
two can certainly draw it with more ease.

Having passed the whole night with my active
and agreeable collaborators Dr. Whitehouse and
Mr. Bright, without sleep, you will excuse the
hurried and brief character of this note, which
I could not refrain from sending you, since
our experiments this morning settle the scientific
and commercial points of our enterprise satis-
factorily.

With respect & esteem

Yr. Ob. Serv^t

Sam. F. B. Morse.

J. Cyrus W. Field, Esq

Vice President of the

New York, New Foundland, & London,

Telegraph Company.

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