A REPLY TO MR. COOKE'S PAMPHLET, "THE ELECTRIC TELEGRAPH; WAS IT INVENTED BY PROFESSOR WHEATSTONE?"

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A Reply to Mr. Cooke's Pamphlet, "The Electric Telegraph; was it invented by professor Wheatstone?" by Charles Wheatstone

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CHARLES WHEATSTONE

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MR. COOKE'S PAMPHLET,

"THE ELECTRIC TELEGRAPH;

WAS IT INVENTED

BY PROFESSOR WHEATSTONE?"

LONDON:
RICHARD TAYLOR AND WILLIAM FRANCIS,
RED LION COURT, FLEET STREET.
1855.

[*Price One Shilling.*]

"THE ELECTRIC TELEGRAPH;

WAS IT INVENTED

BY PROFESSOR WHEATSTONE?"

In undertaking to reply to the pamphlet bearing the above title, Mr. Wheatstone must disclaim any undue impression that its discussion is entitled to engage public attention. Though he is aware of the interest taken in the Electric Telegraph, he is not solicitous to divert it to his personal exaltation, if he now seeks to perform the duty which every man owes to himself of vindicating his name from unmerited detraction. He is bound to record his claims, as inventor of this instrument in the form which first made it practically available; for these have been publicly questioned by his former partner Mr. Cooke. At the same time, had he been left to follow his own inclinations, he would certainly not have troubled the world with their differences. He has not cared hitherto to publish a line on these topics, for his position was sufficiently understood and fairly recognized beyond the circle of Mr. Cooke's acquaintance. But as Mr. Cooke has at length ventured to appeal to a wider tribunal, Mr. Wheatstone is called upon to use the materials he possesses to confute Mr. Cooke's many

misrepresentations, and to uphold, as is due to himself, the just verdict of their contemporaries.

Mr. Cooke's disparagement of Mr. Wheatstone's position (see pp. 4 & 5 of his pamphlet) extends to no less than this:—that Mr. Wheatstone became one of the patentees of the first practical electric telegraph, "not from his philosophical information, nor from his experimental ingenuity, but from a communication made to him in confidence by Mr. Cooke, who was then completing the practical invention, and was about to take out a patent for it; who was in possession of practical electric telegraphs, already made by him and *fit* for practical use; who had worked out into a pamphlet* or *sketch* a detailed practical system of electric telegraphing; who was in negotiation with a railway company for the practical application of the invention upon their line; and who, having consulted Mr. Wheatstone as a scientific man, was induced by his scientific acquirements, and by pecuniary considerations, to admit him to a share in the patent as second partner." This, which is Mr. Cooke's language, with some abbreviations, amounts in substance to a denial of any originative share on the part of Mr. Wheatstone in the first telegraphic patent, and is consistent with the further allegation on page 9 of the pamphlet, that Mr. Cooke was himself "the originator of the practical electric telegraph." It would be easy to show that this is inconsistent even with former printed admissions of Mr. Cooke†, but it is so far more grossly inconsistent

* No further reference will be made to this pamphlet, as it was never published, nor even in its manuscript form exhibited to Mr. Wheatstone.

† It is inconsistent with his *written* admissions, so late as January 7th, 1845; for in a letter to Mr. Wheatstone of that date, he ob-

with the facts about to be detailed, that this discrepancy is comparatively trivial. Mr. Wheatstone will not only show that the representations of Mr. Cooke are at variance with these facts, but that the facts sustain the position which he has invariably claimed for himself, and which cannot be better stated than in the words of the 'Quarterly Review,' to which Mr. Cooke objects, that Mr. Wheatstone was "the first contriver of the electric telegraph in the form which made it available for popular use."

The proofs of this assertion will be given in a few particulars, divested as far as possible of immaterial statements. Before Mr. Wheatstone had the slightest knowledge of Mr. Cooke, the subject of telegraphic communication had occupied his thoughts for many years. He had paid great attention to the attainment of this object, by means of electricity, and had made important practical advances, which were already mentioned in print, before Mr. Cooke's introductory visit to him. In the third volume of the 'Magazine of Popular Science' it was stated that:—

"During the month of June last year (1836), in a course of lectures delivered at King's College, London, Professor Wheatstone repeated his experiments on the velocity of electricity, which were published in the 'Philosophical Transactions' for 1834, but with an insulated circuit of copper wire, the length of which was now increased

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serves:—"You reap your most popular reputation from this invention:" (referring to the electric telegraph)—"*for the part you have performed in it, you deserve it*! but it is my belief that I deserve as much for what I have done, *not as a scientific*, but as a practical man." In a letter of the 20th of October, 1840, he had urged Mr. Wheatstone to put him in a right position with regard to their *joint* invention—"*not indeed as the original projector and leading inventor*, for that I did not ask or desire."

to nearly four miles; the thickness of the wire was the $\frac{1}{18}$th of an inch. When machine electricity was employed, an electrometer placed on any point of the circuit diverged, and whenever the continuity of the circuit was broken, very bright sparks were visible. With a voltaic battery, or with a magneto-electric machine, water was decomposed, the needle of a galvanometer deflected, &c. in the middle of the circuit. But, which has a more direct reference to the subject of our esteemed correspondent's communication from Munich, Prof. Wheatstone gave a sketch of the means by which he proposes to convert his apparatus into an electrical telegraph, which, by the aid of a few finger-stops, will instantaneously and distinctly convey communications between the most distant points. These experiments are, we understand, still in progress, and the apparatus, *as it is at present constructed*, is capable of conveying thirty simple signals, which, combined in various manners, will be fully sufficient for the purposes of telegraphic communication."

It was not till Mr. Wheatstone had reached this stage in his progress to a practical result, which he subsequently attained on the plan thus announced, that Mr. Cooke introduced himself to Mr. Wheatstone, on the occasion mentioned in page 20 of his pamphlet; and he then came, as he states, "to consult Professor Wheatstone," by the advice of Dr. Roget, who immediately referred him to Mr. Wheatstone, as to one who was known to be engaged in experiments of this description, and who possessed the means of answering Mr. Cooke's inquiries.

On that occasion Mr. Wheatstone mentioned, and at another interview he exhibited to Mr. Cooke some of the results he had attained, and communicated to him others which he contemplated; *subsequently* to which Mr. Cooke exhibited to Mr. Wheatstone the instrument he had himself proposed. Mr. Wheatstone saw that Mr. Cooke's was an inefficient contrivance, which neither in mechanical construction or application of scientific principles fulfilled the conditions required

in a practical electric telegraph. This instrument, notwithstanding Mr. Cooke's statement, had never been practically applied, and was incapable of being so; while, on the contrary, the instruments Mr. Wheatstone had proposed were all founded on principles which he had previously proved, by decisive experiments, would produce the required effects at great distances. On no occasion during Mr. Wheatstone's acquaintance with Mr. Cooke and his "practical realities" was Mr. Cooke's instrument exhibited to him in action, even in a short circuit; it was, after it had been proposed to be inserted in their first patent, omitted as useless, and Mr. Cooke, when he took out the second patent himself, did not think it of sufficient importance to mention it there. Mr. Cooke's "practical realities" were thus tacitly admitted by himself to be abortive, while Mr. Wheatstone's "philosophic toys" were not merely theoretical, but, as the event proved, eminently of a practical nature.

Mr. Cooke's intention was, as he told Mr. Wheatstone at an early stage of their acquaintance, to take out a patent for his invention; Mr. Wheatstone's, when he had finished his experiments, was to publish the results, and then to allow other persons to carry them out in practice. When Mr. Cooke discovered that his instrument was inapplicable to the purpose contemplated, and that Mr. Wheatstone's researches were more likely than his own to be practically useful, he proposed a partnership, and that they should take out a joint patent. Mr. Cooke is of course at liberty to state as he pleases his own inducements for *making* this proposal; but at all events Mr. Wheatstone's sole reason for *accepting* it, was the evident possession on the part of Mr. Cooke of the zeal, ability and perseverance required for a commercial enterprise,

and the expression of his intention to devote to it his entire time and energies. Mr. Wheatstone felt confident of overcoming himself all the scientific and mechanical difficulties of the subject, but neither his occupations nor his inclination qualified him for the part which Mr. Cooke undertook to perform. The motives which induced Mr. Wheatstone to associate himself with Mr. Cooke are more amply stated in his letter (Appendix A.), and any objections he entertained having been removed by Mr. Cooke's representations, the partnership was formed in May 1837, under which they took out, in the June following, as their joint property, the first telegraphic patent*.

The Magnetic Needle Telegraph, which was the principal subject of this Patent, is the instrument on which Mr. Wheatstone relies for a refutation of Mr. Cooke's claim to have participated in his invention; *à fortiori*, to exclude Mr. Cooke's pretensions, as stated in his own phrase, of having been its '*originator*.' It was indeed at first agreed between them that their two several instruments should be jointly included in this patent; but during the drawing of the specification, and after the description had been prepared, Mr. Cooke, as has been stated, having become convinced of the inefficiency of his instrument, withdrew its description and the accompanying drawings from the specification, leaving Mr. Wheatstone's to stand alone. In this instrument Mr. Cooke had not the slightest part. This Telegraph† was entirely and exclusively

* The specification of this patent is published in the 'Repertory of Patent Inventions,' Nos. 61 and 62, N.S.

† The electro-magnetic alarm, brought into action by means of a short secondary circuit, which forms a separate part of the first patent, was also an invention of Mr. Wheatstone's; but as Mr. Cooke stated that he himself had proposed to ring a bell by means of