

THE ELECTRIC TELEGRAPH.



ARVELLOUS indeed have been the productions of modern scientific investigations, but none surpass the wonder-working Electro-magnetic Telegraphic Machine; and when Shakspeare, in the exercise of his unbounded imagination, made *Puck*, in obedience to *Oberon's* order to him—

“Be here again
Ere the leviathan can swim a league.”

reply—

“I'll put a girdle round the earth
In forty minutes”——

how little did our immortal Bard think that this light fanciful offer of a “fairy” to “the King of the Fairies” would, in the nineteenth century, not only be substantially realised, but surpassed as follows:—

The electric telegraph would convey intelligence more than twenty-eight thousand times round the earth, while *Puck*, at his vaunted speed, was crawling round it only ONCE!

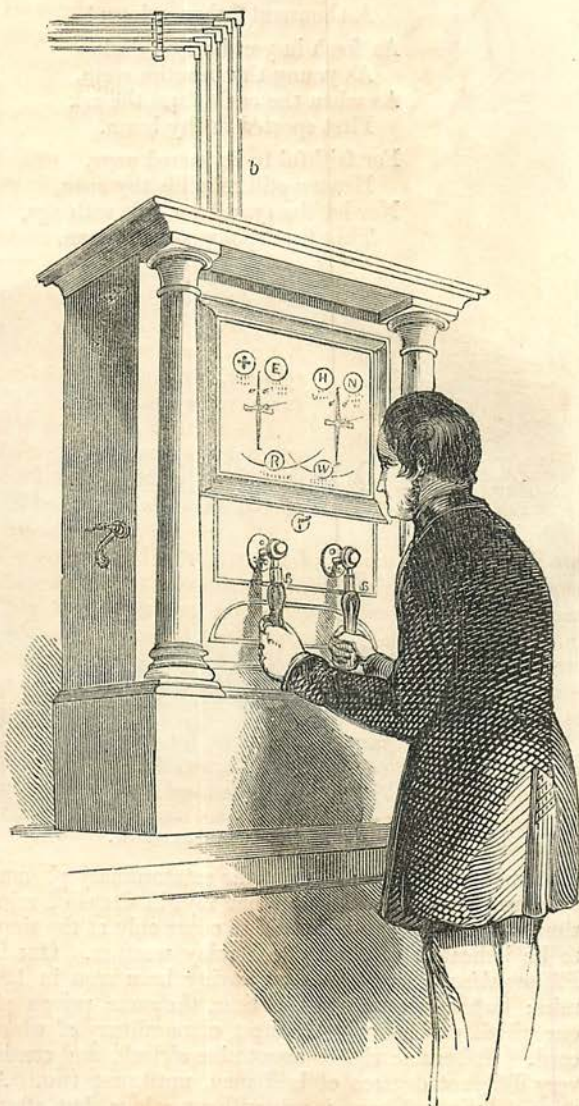
On every instrument there is a dial, on which are inscribed the names of the six or eight stations with which it usually communicates. When much business is to be transacted, a boy is necessary for each of these instruments; generally, however, one lad can, without practical difficulty, manage about three; but, as the whole of them are ready for work by night as well as by day, they are incessantly attended, in watches of eight hours each, by these satellite boys by day and by men at night.

As fast as the various messages for delivery, flying one after another from the ground-floor up the chimney, reach the level of the instruments, they are brought by the superintendant to the particular one by which they are to be communicated; and its boy, with the quickness characteristic of his age, then instantly sets to work.

His first process is by means of the electric current to sound a little bell, which simultaneously alarms all the stations on his line; and although the attention of the sentinel at each is thus attracted, yet it almost instantly evaporates from all excepting from that to the name of which he causes the electric needle to point, by which signal the clerk at that station instantly knows that the forthcoming question is addressed to *him*; and accordingly, by a corresponding signal, he announces to the London boy that he is ready to receive it. By means of a brass handle fixed to the dial, which the boy grasps in each hand, he now begins rapidly to spell off his information by certain twists of his wrists, each of which imparts to the needles on his dial, as well as to those on the dial of his distant correspondent, a convulsive movement designating the particular letter of the telegraphic alphabet required. By this arrangement he is enabled to

transmit an ordinary-sized word in three seconds, or about twenty per minute. In the case of any accident to the wire of one of his needles, he can, by a different alphabet, transmit his message by a series of movements of the single needle, at the reduced rate of about eight or nine words per minute.

While a boy at one instrument is thus occupied in transmitting to—say Liverpool, a message, written by its London author in ink which is scarcely dry, another boy at the adjoining instrument is, by the reverse of the process, attentively reading the quivering movements of the needles of his dial, which, by a sort of St. Vitus's dance, are rapidly spelling to him a message, *vid* the wires of the South - Western Railway, say from Gosport, which word by word he repeats aloud to an assistant, who, seated by his side, writes it down (he receives it about as fast as his attendant can conveniently write it) on a sheet of paper, which, as soon as the message is concluded, descends to the "booking-office." When inscribed in due form, it is without delay despatched to its destination by messenger, cab, or express, according to order.



WORKING THE ELECTRIC TELEGRAPH.

SIR F. B. HEAD.