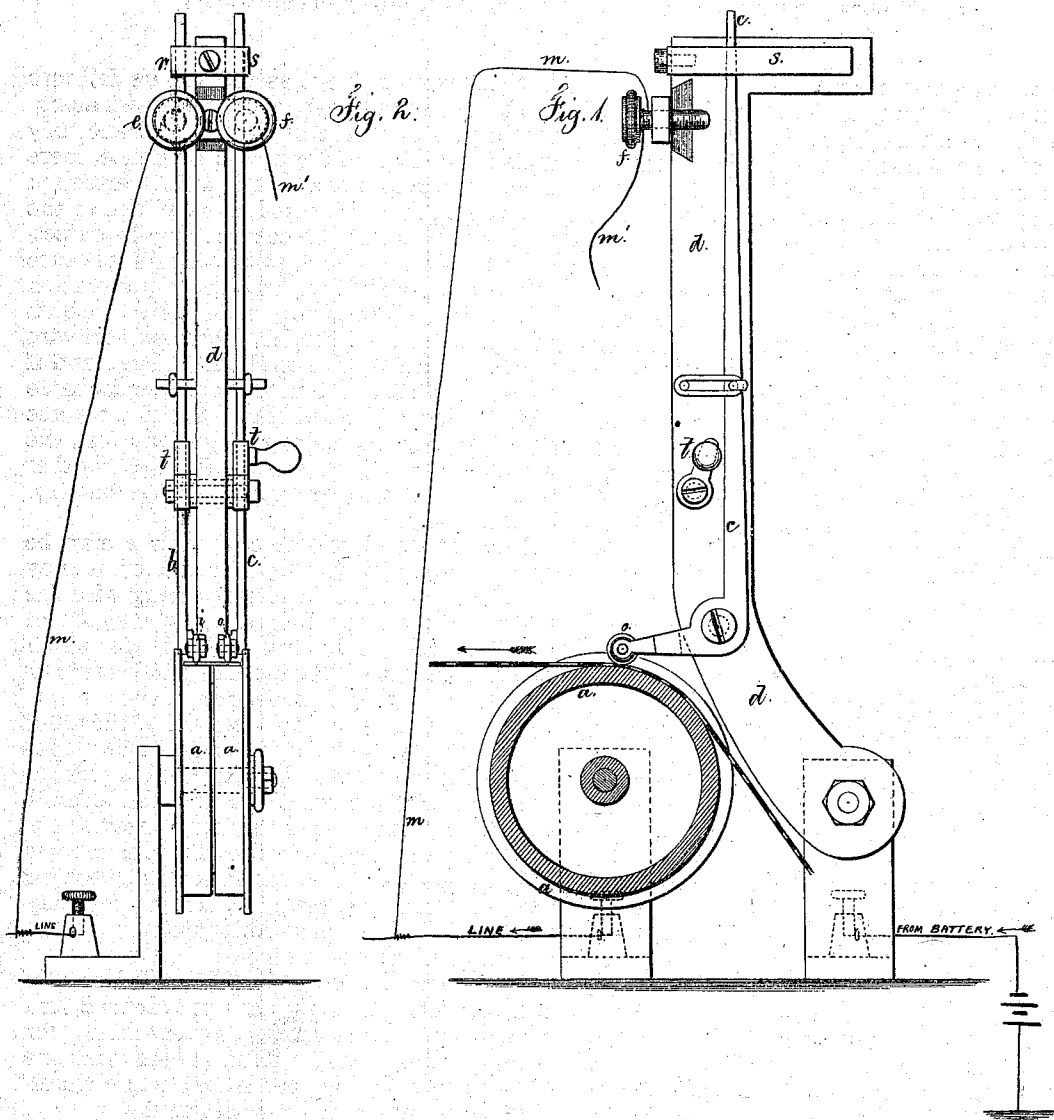


G. LITTLE.

Improvement in Automatic Telegraph Transmitters.

No. 129,839.

Patented July 23, 1872.



Cha^s H. Smith
Harold Ferrell

Witnesses.

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IMPROVEMENT IN AUTOMATIC TELEGRAPH-TRANSMITTERS.

Specification forming part of Letters Patent No. 129,839, dated July 23, 1872.

To all whom it may concern:

Be it known that I, GEORGE LITTLE, of Rutherford Park, in the county of Bergen and State of New Jersey, have invented an Improvement in Telegraphic Transmitting Apparatus; and the following is declared to be a correct description of the same.

This improvement applies to transmitting apparatus in which perforated paper is employed. In some instances the small rollers or points employed become coated with the mulage employed in attaching one length of paper to the next; at other times particles of paper adhere to the small rollers or to the drum. In either instance the circuit is not properly closed through the perforations in the paper, and imperfect writing is the result. My present invention is for availing of the thickness of the paper to break the main circuit, and the absence thereof at the perforation to allow a motion that closes the circuit; thereby the circuit is made and broken at two points simultaneously, one through the perforation of the paper, and the other simultaneously at a separate point by the movement of the lever carrying such roller, so as to insure great reliability in transmitting the message.

In the drawing, Figure 1 is a side view of the transmitting mechanism, and Fig. 2 is an elevation edgewise of the transmitting-drum.

The drum *a* is to be supported in suitable bearings and revolved by suitable power. The small rollers *i o* are upon levers *b c* that have their fulcrums upon the standard *d*. The insulated circuit-closers *e f* are adjustable, and their ends contiguous to the ends of the spring-levers *b c*. The circuit-closers may also be made elastic or yielding. If the battery is connected to the standard *d* and the line-wire to the bearings of the drum *a*, there will be a circuit established through the standard *d*, levers *b c*, rollers *i o*, and drum *a*, when there is not any paper intervening between the rollers *o i* and drum, or when a perforation allows of the contact of the rollers *i o* and *a*, this portion being substantially the same as usual; but when the thickness of the paper intervenes the levers *b c* are moved to break the circuit

at the closers *e f*, but as the rollers fall into the holes in the paper, as that is drawn along, the circuit is closed at *e* or *f* simultaneously with the contact of *i* or *o* with *a*; hence, there being two points of contact, great perfection in transmitting is insured, even if one or the other of the points of contact may be defective. The rollers *i o* may be one in advance of the other, and if but one line of perforation is used in the paper only one roller, *i*, with its lever and circuit-closer, is required, and the wire *m* will connect from *e* to the main line; and if two rows of perforations are required the same connection will be sufficient; but if a reverse circuit is used at one row of perforations, the closers *e f* may be insulated from each other and a second wire, *m'*, from *f* to the battery, be employed.

The circuit closed at *e f* or *b c* may be the main-line circuit or circuits, or it may be a local circuit, or a circuit acting with the main-line circuits. The drum *a* may be of wood or non-conducting material, in which case the circuit will be closed by the lever *b c* at *e* or *f* only, and, if desired, a convex surface or trough may take the place of the roller *a*. In all cases the thickness of the paper moves the circuit-closers. The guide-plates *r s* may be made as latches to hold the levers *b c* back while the paper is being inserted beneath the rollers *i o*, or turning-buttons or cams at *t* may be used to force back the levers *b c* for the same purpose. The levers *b c* may either stand vertical or horizontal.

I claim as my invention—

The circuit-closer *e* or *f* and lever *b* or *c*, in combination with the roller *i* or *o*, drum *a*, and connections, substantially as specified, for closing and breaking a circuit to the main line at two points by the perforated paper simultaneously, substantially as set forth.

Signed by me this 20th day of June, A. D. 1872.

GEORGE LITTLE.

Witnesses:

GEO. T. PINCKNEY,
CHAS. H. SMITH.