

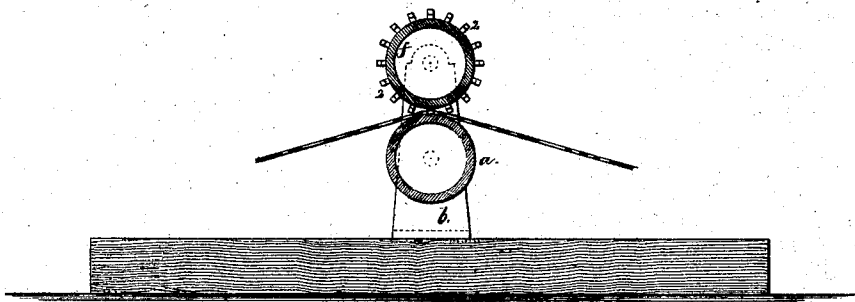
GEORGE LITTLE.

Improvement in Circuit Closing Rollers for Telegraphic Apparatus.

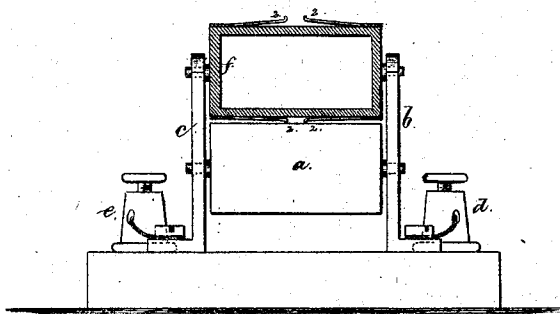
No. 115,968.

Patented June 13, 1871.

*Fig. 1.*



*Fig. 2.*



*Wm. W. W. W.*

*Chas. H. Smith  
Harold Penell*

*George Little  
Lemuel W. Perrell  
att'y.*

# UNITED STATES PATENT OFFICE.

GEORGE LITTLE, OF RUTHERFORD PARK, NEW JERSEY.

IMPROVEMENT IN CIRCUIT-CLOSING ROLLERS FOR TELEGRAPHIC APPARATUS.

Specification forming part of Letters Patent No. 115,968, dated June 13, 1871.

*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 and made an Improvement in Circuit-Closing Rollers for Telegraphic Apparatus; and the following is declared to be a correct description of the same.

In telegraphic-transmitting machines a perforated strip of paper has been employed to make and break the circuit; said strip being drawn along over a metallic roller, and a wire brush being in contact with such paper and closing the circuit through the perforations; or else a small roller or disk on a spring arm is employed for this purpose, as shown in Letters Patent granted to me November 2, 1869, No. 96,333. In the use of the wire brush there is sometimes a difficulty in consequence of particles of paper or dust adhering to the points and forming a non-conductor, that prevents the circuit closing through the perforation; besides this the contact is so sudden that the spring does not always act reliably in giving the electrical pulsation.

My invention is intended to prevent the aforesaid difficulties; and consists in a circuit-closing roller, made with a series of projections that are yielding, so that when the perforated paper is drawn through between the metallic roller and this roller with yielding projections bristling from it, the said projections roll into the perforations and close the circuit, and there is not any risk of the circuit-closers accumulating particles of non-conducting material, and the points must remain in contact with the roller a sufficient length of time, because said points yield when coming into contact with the roller through the perforations in the paper.

In the drawing, Figure 1 is a section transversely of the transmitting-rollers, and Fig. 2 is a section longitudinally of the bristling-roller.

A metallic roller, *a*, is mounted in bearings *b c*, and to one of these bearings the binding-screw *d* is connected, the wire from which leads to the battery or to the main line of the electric circuit; and *e* is the other binding-screw, leading either to the main line or to the battery, and connected electrically with the bristling-roller *f*, in order that the electrical pulsations may pass from the yielding points of the roller *f* to the roller *a*, or the reverse, according to the direction of the electrical currents through the connections. The yielding bristling points or projections are as numerous as it is convenient to manufacture them. I have shown but few in the drawing, for greater clearness, and these points are to stand in one, two, or more lines around the roller. These yielding points are shown in the drawing as made by the bent ends of spring-arms, as at 2. The yielding points may be separate springs or slitted arms or tongues projecting from a thin spring plate or plates, or they may be pins running through holes in the roller with springs inside the roller.

I claim as my invention—

A circuit-closing roller made with projecting yielding points, substantially as and for the purposes set forth.

Signed by me this 11th day of April, A. D. 1871.

GEORGE LITTLE.

Witnesses:

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