

GEORGE LITTLE.
Improvement in Printing Telegraphs.
No. 125,583. Patented April 9, 1872.

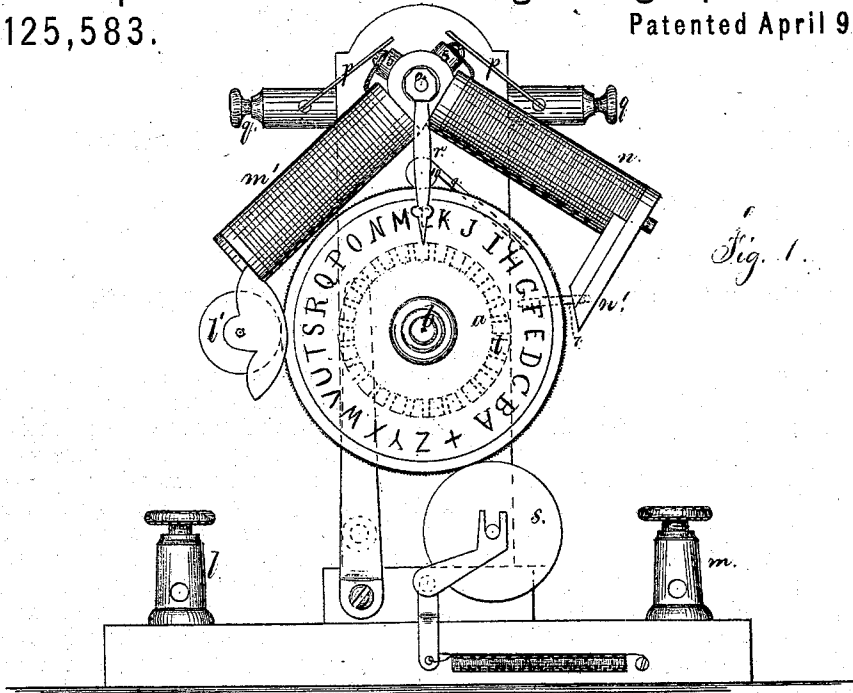


Fig. 1.

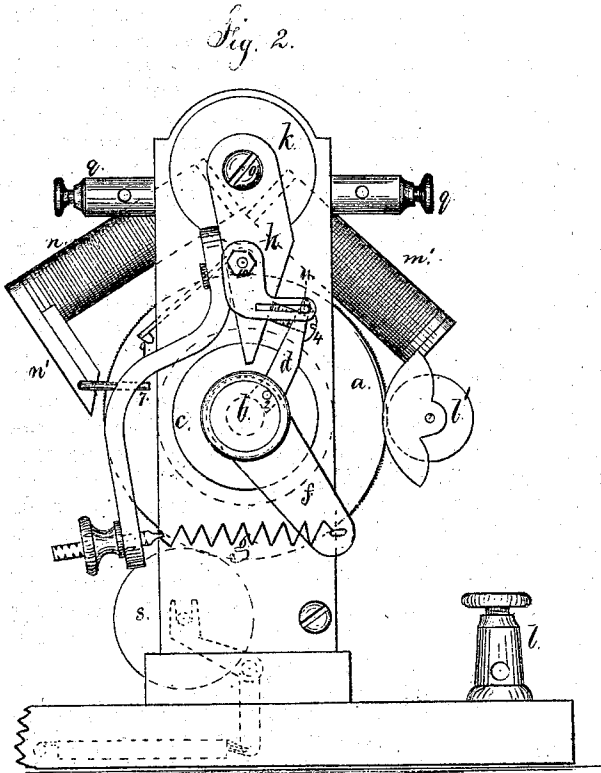


Fig. 2.

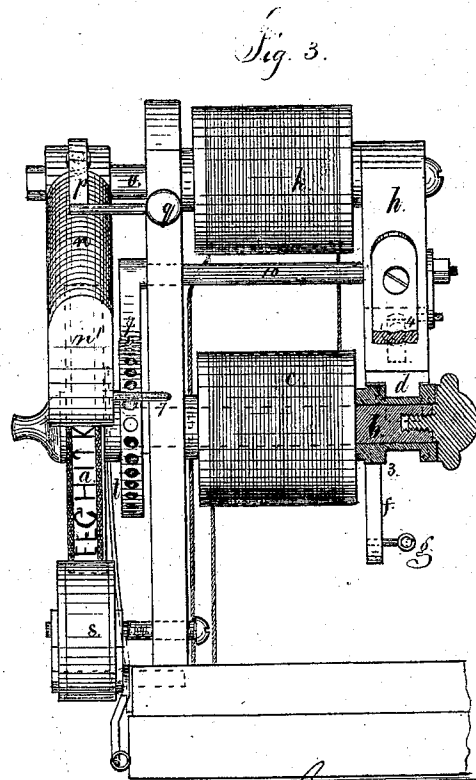


Fig. 3.

Witness

Charles Smith
Harold Terrell

George Little.

Received Feb'y. 4th 1873.

125,583

UNITED STATES PATENT OFFICE.

GEORGE LITTLE, OF RUTHERFORD PARK, NEW JERSEY.

IMPROVEMENT IN PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 125,583, dated April 9, 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 and made a new and useful Improvement in Printing-Telegraphs; and I do hereby declare the following to be a correct description of the same.

The type-wheel is made to revolve upon an axis passing through a helix. The progressive movement is given to the type-wheel by a feeding-clamp operated by the attraction of the poles of an electro-magnet. The type-wheel is of iron so that it becomes polarized. The impression-roller is hung upon a vibrating electro-magnet connected with a local battery. The polarity of the type-wheel is such as to repel the pole of the electro-magnet carrying the impression-roller and attract the other pole toward said type-wheel, but contact is prevented by a stop. When the type-wheel has been moved around to the desired point the impression is made by reversing the main current, which changes the polarity of the type-wheel simultaneously with the movement of the same; this causes the impression-roller to swing into contact with the type-wheel and print the letter, and at the same time serrations on the edges of the type-wheel move the paper along.

In the drawing, Fig. 1 is an elevation of my said apparatus. Fig. 2 is an elevation of the reverse side of said apparatus, and Fig. 3 is a view at right angles to Fig. 1.

a is the type-wheel, set upon an arbor, *b*, that passes through the helix or coil *c*, and is provided with a friction-clamp, *d*, swinging upon the pin 2 that is in heads 3 3, formed with the lever *f*, and *g* is a return spring to *f*. This clamp *d* acts like some kinds of sewing-machine feeds, to move the arbor *b* and type-wheel around progressively, the motion being adjusted by the screw 4 extending from the pole *h* of the magnet helix or coil *k*. The coils *c* and *k* are connected with the binding-screws *l m*, that are placed in the main line or circuit, and the pulsations are derived from finger-keys arranged to connect or close the circuit in one direction through the coils *c* and *k*, for setting the type-wheel *a* by the pole *h*, attracting the clamp *d*, and at the same time the type-wheel becomes polarized by induced

magnetism from the helix *c*. When the other finger-key is struck the direction of the current is reversed to change the polarity of the type-wheel for the purpose of causing the impression and feeding the paper by the movement of the type-wheel, said type-wheel having serrated edges that act upon the paper between the periphery of said type-wheel and the impression-roller *l'*. This impression-roller *l'* is upon the end of the arm *m'*, and *n* is a second arm connected to *m'*, and the two swing upon the stud *o*. Around these arms *m' n* coils or helices are wound, and the wires are connected by the insulated pins 5 and springs *p* to the binding-screws *q* of a local circuit. The wires are connected so that the armature *n'* of the arm *n* is attracted by the polarity of the type-wheel *a*, but a stop, 7, limits the movement so that the parts do not touch. When the polarity of *a* is reversed the armature *n'* is repelled and the roller *l'* brought into contact with the type-wheel to print the letter and feed the paper. An inking-roller, *s*, is provided, and I also make use of a dial upon the side of the type-wheel *a*, having letters or characters corresponding to those upon the type-wheel and placed so that when the desired letter is indicated by the pointer *r* the corresponding letter will be in position for printing. This enables an operator to set his own machine and print a copy of the message sent to the distant station. In order to hold the type-wheel each successive pulsation I employ the perforated ratchet-wheel *b*, receiving the conical point 9 of a spring lever. I have shown the said point 9 and lever upon a rock-shaft, 10, operated by the crank-pin 11 on the clamp *d* and its return spring *g*. The type-wheel might be made of steel permanently magnetized, and the impression be made by reversing the polarity of the contiguous electro-magnet.

I claim as my invention—

1. An iron type-wheel, polarized by an induction-coil, in combination with a magnet to effect the impression when the polarity of the type-wheel is changed by reversing the electrical current, substantially as set forth.

2. The type-wheel upon an arbor running through a coil and provided with a swinging clamp or feed to move the type-wheel, in combination with an electro-magnet that operates

the said means for moving the type-wheel, substantially as set forth.

3. The electro-magnet *m' n*, set to swing and carry the armature *m'*, and impression-roller *l'*, in combination with the type-wheel, as and for the purposes specified.

4. A magnetized type-wheel, in combination with the swinging electro-magnet to effect the the impression and feed of the paper when the polarity is reversed, substantially as specified.

5. Two or more magnetized type-wheels in one electric circuit and revolving in unison by pulsations from the transmitting instrument, substantially as specified.

Dated this 22d day of November, A.D. 1869.

GEORGE LITTLE.

Witnesses:

CHAS. H. SMITH.

GEO. T. PINCKNEY,