

G. L. ANDERS.
PRINTING TELEGRAPH.

No. 108,867.

Patented Nov. 1, 1870.

Fig. 1

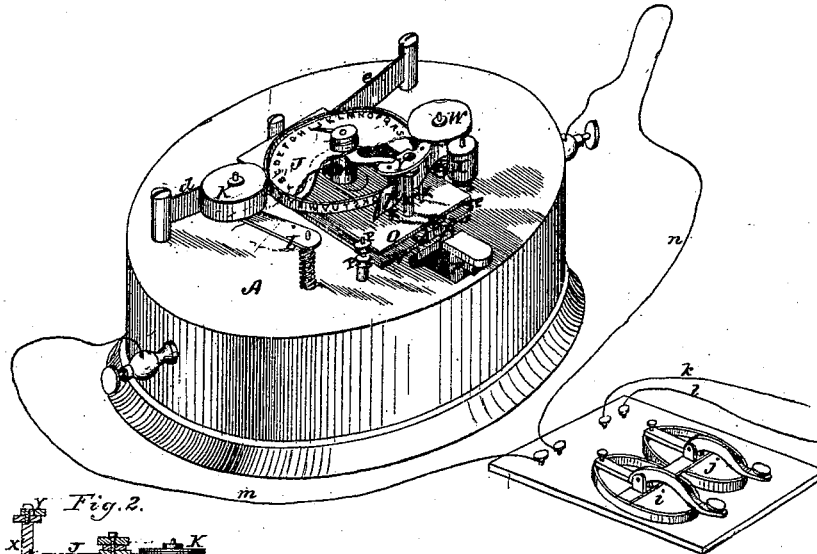


Fig. 2.

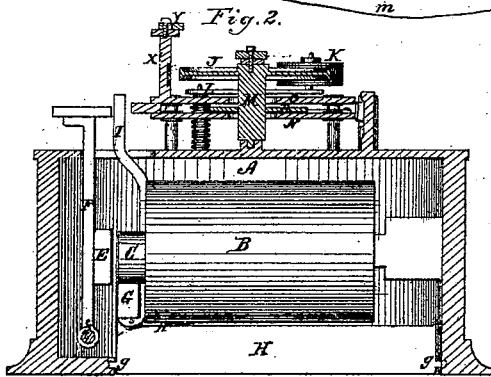


Fig. 3.

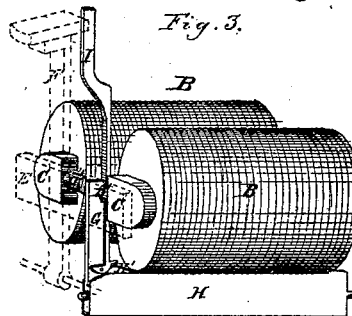


Fig. 4.

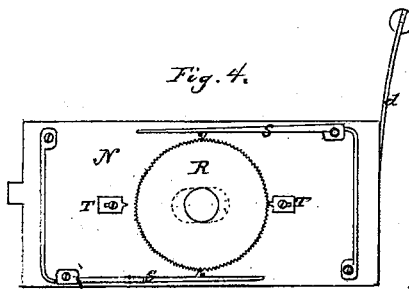


Fig. 5.

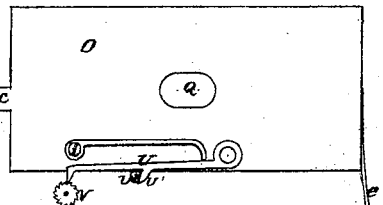
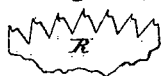


Fig. 6.



Witnesses.
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GEORGE L. ANDERS, OF BOSTON, ASSIGNOR TO HIMSELF AND E. B. WELCH,
OF CAMBRIDGE, MASSACHUSETTS.

Letters Patent No. 108,867, dated November 1, 1870.

IMPROVEMENT IN PRINTING-TELEGRAPHS.

The Schedule referred to in these Letters Patent and making part of the same.

I, GEORGE L. ANDERS, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Telegraphic Printing-Instruments, of which the following is a specification.

Figure 1 is a perspective view of my invention;

Figure 2 is a transverse vertical central section; and

Figure 3, 4, 5, and 6 views of the parts in detail.

This invention relates to telegraphic-printing, and consists of certain details of construction, and a peculiar arrangement of an electro-magnet, whereby I am enabled to perform two separate operations in telegraphic-printing with a single electro-magnet; whereas in all printing-mechanisms heretofore employed for this purpose it has been found necessary to employ two or more magnets to perform the two distinct operations of feeding the paper to the press and causing the latter to make the desired impression thereon.

In the drawing—

A represents the circular case containing the magnet and printing-mechanism.

B represents the magnet, which consists of a single pair of helices, which have the semicircular poles C, the inner faces of which are provided with the inwardly-projecting extensions D D'.

E represents a horizontal armature, which works over poles C. Said armature is located on the vertical lever F, the same being pivoted at *f*, as shown in fig. 2.

H represents a permanent magnet, which is provided with the extension G, and pivoted at *g g* to the sides of case A, as shown in fig. 2.

The extension G is located between the poles D D', and vibrates freely between the same.

I represents a vertical lever or director, which is pivoted to the lower end of the extension G, and is kept in a vertical position by the spring H, but, at the same time, admits of a vibratory motion when impelled by the lever F, with which it is in contact, the upper ends of both levers projecting through an orifice in the top of case A.

J represents the type-wheel, on the periphery of which are the printing-characters.

An inking-disk, K, mounted on a spring-elbow, L, keeps the wheel J properly inked. Said wheel is located on a vertical shaft, M, which is journaled in the center of case A.

N O represent horizontal sliding plates, located between the friction-rollers P P on case A. Said plates inclose shaft M, having elongated orifices Q, which permit them to slide freely.

Between the plates N O the shaft M is provided with an escape-wheel, R, the teeth of which are shaped as shown in fig. 6, and on the plate N are two spring-pawls, S S, and pallets or stops T T.

On one side of the plate O is the spring-pawl U, which engages with the ratchet V on the shaft of the feed-wheel W. This latter is located at one side of plates N O, and has serrated flanges, which engage with and operate a rubber disk, X, which feeds out the paper, which is wound upon wheel W.

The pawl U is provided with a catch, U', which engages with a pin, U², and is thereby prevented from carrying ratchet V too far.

X' represents a vertical standard near one end of plate O. Said standard is provided with the cross-piece Y, and this latter with the smaller standards Z Z, one of which is located on each side and a little in front of the standard X, which latter is also provided with an elastic cushion, *a*.

b c represent tongues or projections on the outer ends of plates N O, which projections, when the plates are in their natural position, are side by side.

d e represent springs, which press the plates N O backward when the force which moves them forward is removed.

i j represent circuit-breakers, which connect with the wires *k l* leading from the battery, and the wires *m n* leading to the instrument.

The operation is as follows:

A vibratory motion being imparted to the lever F in the usual manner, that is, by the alternate attraction and releasing of the armature E by the magnet B, the same motion is imparted to the lever I. It must be borne in mind that, there being but one magnet, there is but one current of electricity, and that the laterally-vibrating extension G will be attracted to one or the other of the poles D D', according to the polarity of the current. Suppose the current to be a positive one, the extension G will be drawn to the pole D, and will thus cause the lever or director I to swing over with it into line with the projection *b* of plate N, and, when driven forward by the before-mentioned motion of the armature E and lever F, will impart said motion to the plate N, which will cause one of the pawls S to engage the escape-wheel R and give the same a partial rotation, which, of course, is imparted to the type-wheel J. When the forward motion is compelled, and the armature E is released by the magnet, the lever I is forced back by spring H, and the plate B by spring *d*, the latter imparting another partial rotation to the wheel R by means of the other pawl S. This operation is rapidly continued until the desired letter of the type-wheel comes before the standard X, between which and said wheel the paper strip *p* is in waiting. When the desired letter is reached, (the fact being indicated by an index on the top of wheel J,) the current is changed, and the extension G attracted to the pole D', and the lever or director I consequently brought in connection with the projec-

tion *c* of the plate *O*, and imparts a forward motion thereto similar to that of the plate *N*. This motion drives the standard *X* against the type-wheel, and the paper coming in contact therewith receives an impression of the letter nearest itself. The plate *O* being then released, the spring *c* presses it backward, and the pawl *U*, engaging with the ratchet *V*, gives a partial rotation to the same, and to the feed-mechanism *W X*, which forces the strip *p* along and prepares it for another impression. The current is then changed as before, and the first operation is continued, and the entire message thus printed by simply changing the current to operate either mechanism.

Having thus fully described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

1. A single electro-magnet *B*, with its armature *E*, in combination with the permanent magnet *H*, having

director *I*, by which means the power of magnet *B*, through the agency of a reverse polarity, is directed either upon the type-selecting or printing-mechanism of a telegraph-printing apparatus, substantially as described.

2. The combination of the electro-magnet *B*, armature *E*, lever *F*, permanent magnet *H*, and director *I*, with the printing-mechanism, consisting of the slides *N O*, type-wheel *J*, and feed-mechanism *W X*, and their attachments, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

GEO. L. ANDERS.

Witnesses:

CARROLL D. WRIGHT,
C. F. BROWN.