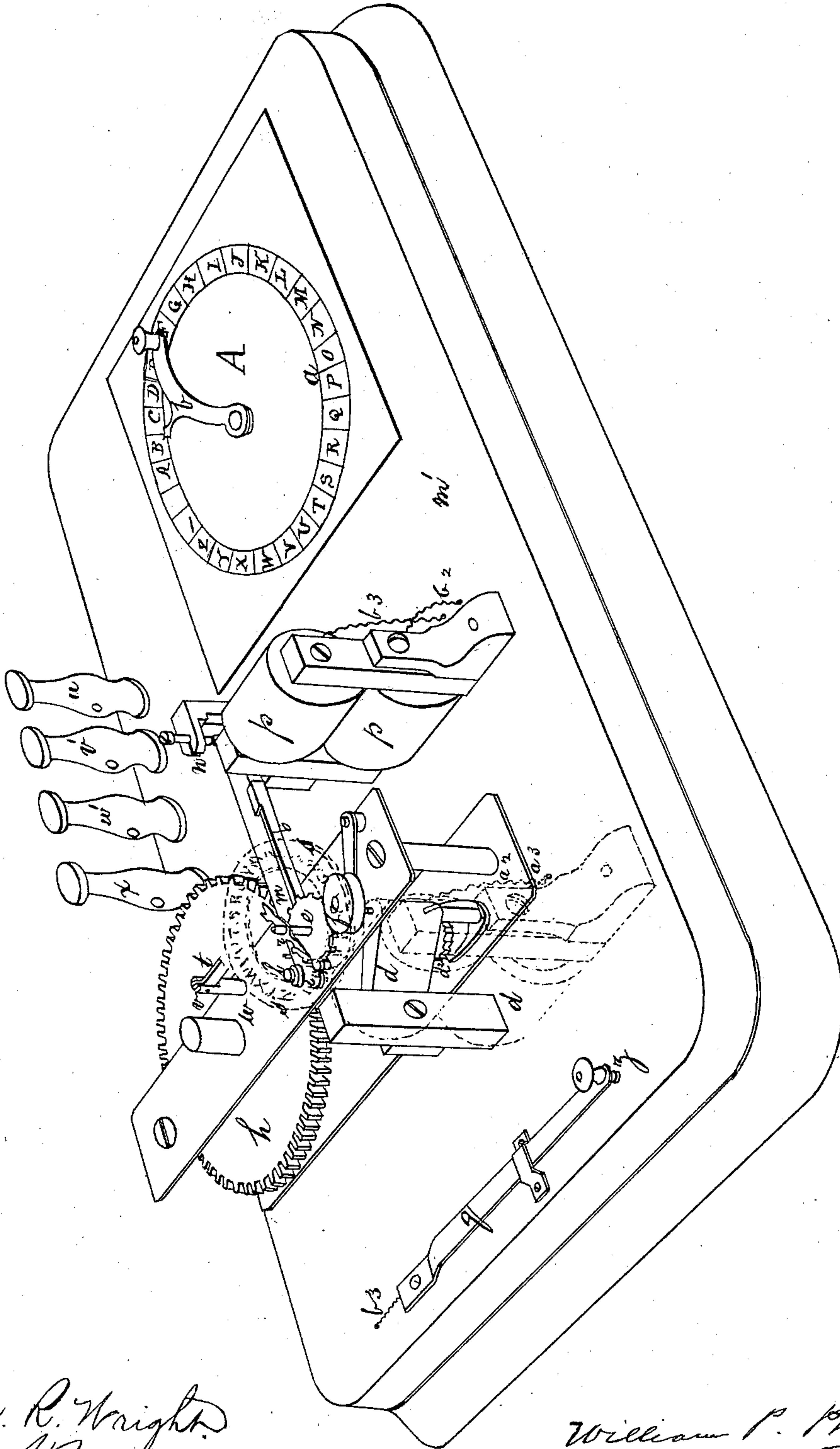


W. P. PHELPS & W. J. PHILIPS.
PRINTING TELEGRAPH INSTRUMENT.

No. 104,345.

Patented June 14, 1870.

Fig. 1.



Witnesses:

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Jno. J. Burns.

William P. Phelps
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by their attorney J. E. Shaw

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FIG. 2.

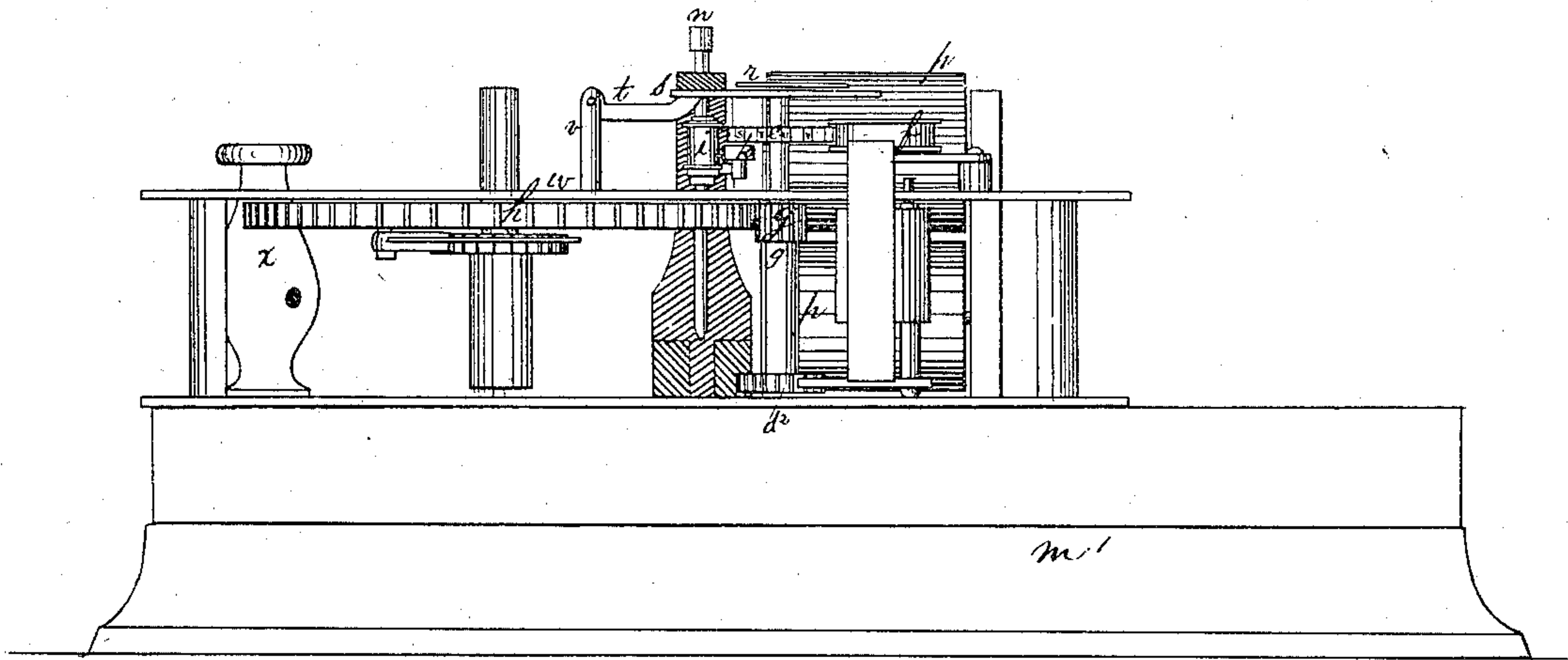
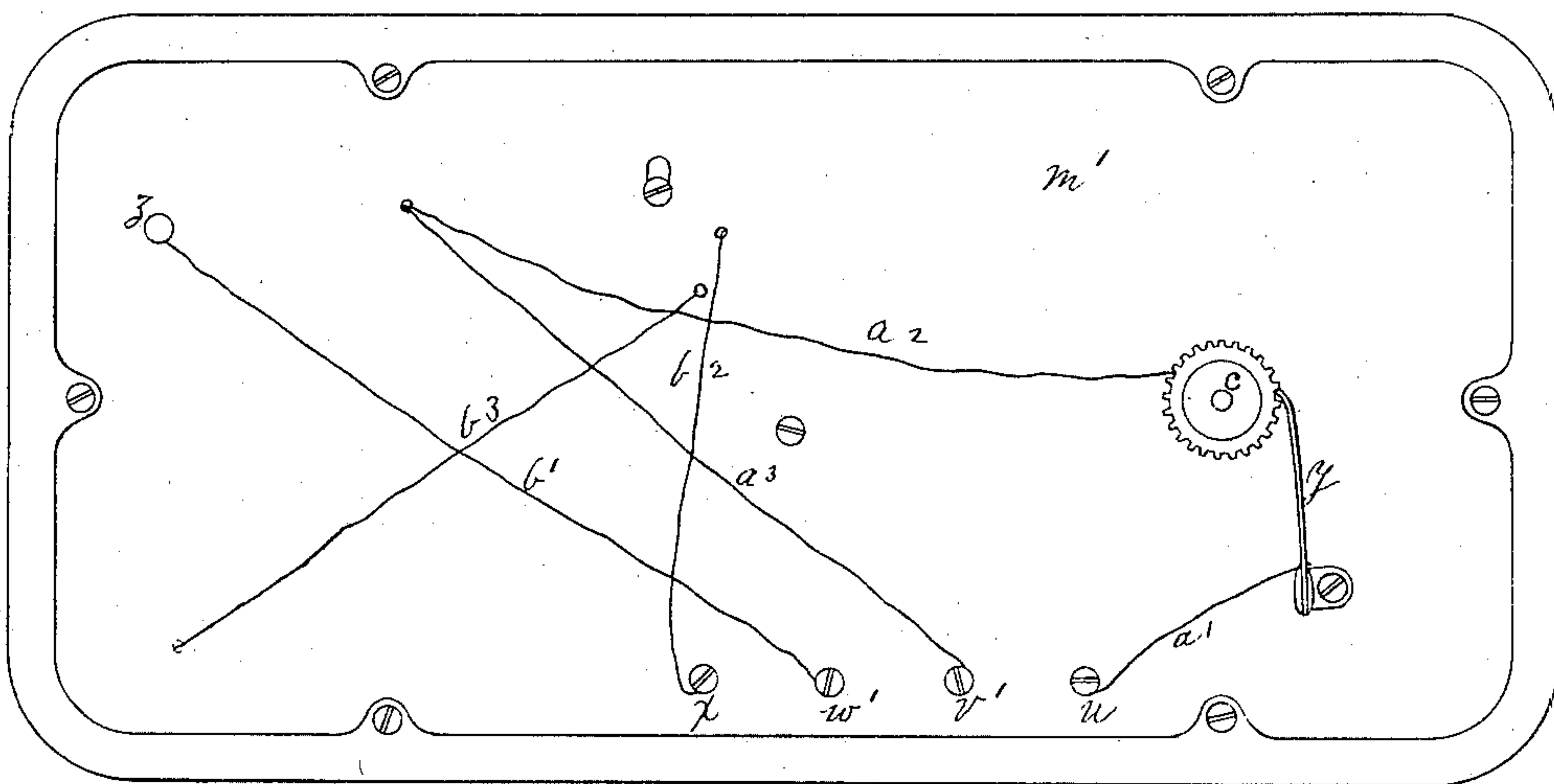


Fig. 3.



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Inventors,
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by their attorney J. E. Shaw

United States Patent Office.

WILLIAM P. PHELPS, OF BROOKLYN, NEW YORK, AND WILLIAM J. PHILIPS,
OF PHILADELPHIA, PENNSYLVANIA.*

Letters Patent No. 104,345, dated June 14, 1870.

IMPROVEMENT IN PRINTING-TELEGRAPH INSTRUMENTS.

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

To all whom it may concern.

Be it known that we, WILLIAM P. PHELPS, of Brooklyn, New York, and WILLIAM J. PHILIPS, of Philadelphia, Pennsylvania, have invented certain new and useful Improvements in Printing-Telegraph Instruments; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawing forming part hereof, in which—

Figure 1 is a perspective view of my improved instrument.

Figure 2, an end elevation of the same, the printing-key, *q*, and the main-line magnet, *d*, being removed.

Figure 3, a plan of the under side of the base, *m'*, of the instrument, showing the various wires connecting the printing-key *q*, printing-magnet *p*, and screw-caps or binding-screws *u v w x*; also, the wires which connect the transmitter *A*, main-line magnet *d*, and screw-cups aforesaid.

The instrument herein described is designed more especially for use on bank and other private telegraph lines.

In fig. 1—

A is an ordinary transmitting apparatus, consisting of an alphabetical circle, *a*, and an index, *b*, the latter being attached to a shaft, which holds a ratchet-wheel, *c*, fig. 3, for breaking and closing the circuit of main line.

d, fig. 1, is an ordinary electro-magnet for vibrating a common escapement, *d'*, figs. 1 and 2, on the shaft of the type-wheel *e*, the types in which are inked by the ordinary inking-roller *f*.

The type-wheel shaft carries the pinion *g*, fig. 2, which gears into the large wheel *h*, which is propelled by weight or spring.

i is a roller, with roughened edge. This roller revolves on an upright stud, *l*, which is attached to the lever *m*, fig. 1, said lever being pivoted at *n*, figs. 1 and 2. The roller *i* stands a little off from the type-wheel *e*.

k, fig. 2, is a friction-roller, working on and upright stud, which proceeds from the spring *o*, fig. 1. The roller *k* bears against the paper-roller *i*.

p, fig. 1, is an electro-magnet, placed in a local circuit, which is broken and closed by means of the key *q*, which is of ordinary construction.

r, fig. 1, is an index, placed on the shaft of the type-wheel *e*, for pointing to the letters of the alphabet, on the dial *s*, which is suspended by an overhanging arm, *t*, which is hinged at *v*, figs. 1 and 2, to an upright stud, which is shown to be attached to the frame-plates *w*. This stud may, however, be located at any part of the base *m'* of the instrument.

u, *v'*, *w'*, and *x*, figs. 3 and 1, represent the screw-cups or binding-posts.

From post *u* a wire, *a'*, fig. 3, proceeds to the spring or circuit-breaker *y*, one end of which bears on the

ratchet-wheel *c*, the shaft of which is connected, through the base *m'* of the instrument, by a wire, *a''*, with the main-line magnet *d*, fig. 1, and thence returns marked *a'''* to the screw-cup *v'*.

The local or printing circuit leads through the wire *b'*, from screw-cup *w'*, to the metallic point *z*, fig. 1, with which the corresponding point of the key *q* is brought in contact, to close the printing circuit. Thence this circuit leads, by wire *b''*, through the base of the instrument to the printing-magnet *p*, and thence through the wire *b'''* to the screw-cup *x*.

There being nothing novel in the transmitting apparatus described, we will proceed to describe the operation of the receiving portion of the instrument.

The type-wheel *e* is set in unison with the transmitter *A*, starting at blank, said wheel being caused to revolve by the breaking and closing of the main circuit.

The motive power of the type-wheel *e* is supplied through the wheels *g* and *h*, and by a spring or weight, not represented.

The type-wheel is arrested by stopping the index *b* of the transmitter at the letter designed to be printed, when the receiving operator, by means of the key *q*, closes the local circuit, and the paper is thereby drawn up against the type-wheel *e*, receiving an impression of the type presented.

The local circuit is then broken by the key *q*, the paper-roller *i* is drawn back, and revolved for a space equal to the breadth of one type, by means of a dog and ratchet-wheel, such as are usually employed for a similar purpose, the paper being held upon the surface of the paper-roller *i* by means of the friction-roller *k*, thereby securing the hold of the paper-roller on the moving paper without materially increasing the friction. The paper is thus caused to present a new surface for each successive letter.

During the operation described, the dial *s* is turned up out of the way, but when the receiving operator prefers to dispense with the printing of the message, the dial *s* is turned down over the type-wheel *e*, so as to encircle the index *r*, as shown, and thereby enable the operator to read the message by sight, as is indicated on the dial by the index *r*.

We claim as our invention—

1. The key *q*, in combination with the type-wheel *e*, inking-roller *f*, movable dial *s*, index *r*, friction-roller *k*, and the mechanism for moving the type-wheel *e*, all substantially as set forth, the whole constituting an apparatus whereby either the receiving or sending operator is, or both are, enabled, at will, to print messages or receive them by the eye from the dial.

2. The movable dial *s*, in combination with the type-wheel *e* and the index *r*, in the manner and for the purpose substantially as set forth.

WM. P. PHELPS.
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Witnesses:

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J. E. SHAW.

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