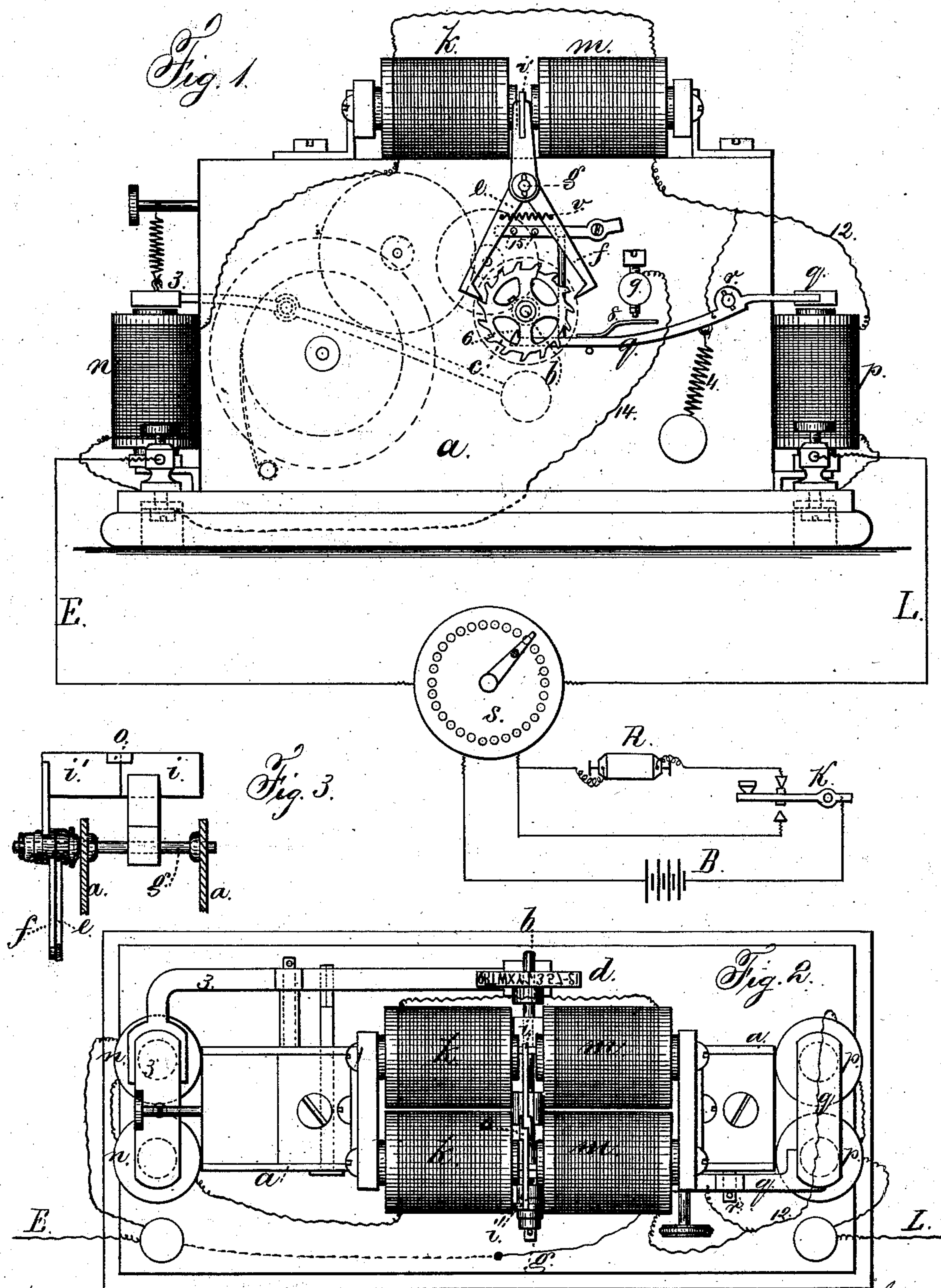


C. J. WILEY
Printing-Telegraphs.

No. 227,869.

Patented May 18, 1880.



Witnesses
Harold Terrell
Chas. H. Smith

Inventor
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UNITED STATES PATENT OFFICE.

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PRINTING-TELEGRAPH.

SPECIFICATION forming part of Letters Patent No. 227,869, dated May 18, 1880.

Application filed February 16, 1880.

To all whom it may concern:

Be it known that I, CHARLES J. WILEY, of the city and State of New York, have invented an Improvement in Printing-Telegraphs, of which the following is a specification.

Printing-telegraphs have been made with a unison device that allows the type-wheel to turn around to a stop, and in some cases the pallets of the escapement have been separated, or one of them moved aside laterally.

In my present instrument I make the armature in two parts, one of which is connected to each pallet, and the pallets and armature move together in setting the type-wheel, and when the unison is brought into action the parts of the armature separate, and the pallets open and allow the escapement-wheel and type-wheel to turn onto the unison-stop. The type-wheel is moved by the reversal of polarity in the circuit. The printing is effected by a pause and the accumulation of energy in the press-magnet, and the unison is effected by an increase of electric tension on the line acting in an electro-magnet to move the unison-stop, and also to shunt the current from the type-wheel magnets and allow the divided armature to separate and liberate the escapement-wheel, so that it and the type-wheel may move on to unison. The restoration of the normal current breaks the shunt and closes the main-circuit connections.

In the drawings, Figure 1 is a side elevation of the instrument and a diagram illustrating the circuit-connections. Fig. 2 is a plan of the instrument, and Fig. 3 is a side elevation of the compound armature and pallets.

The case *a* contains any suitable gearing and a spring or cord barrel for a weight, by means of which the necessary power is obtained for rotating the shaft *b*, upon which are the escapement-wheel *c* and type-wheel *d*.

The pallets *e* and *f* swing on the fulcrum *g*, and the armature is made in two parts, *i* and *i'*, the part *i* being connected with the pallet *e* and the part *i'* with the pallet *f*. There is a stop, *o*, to prevent the parts of the armature moving past each other. This determines the nearest approach of the points of the pallets to each other; but said pallets may separate.

The electro-magnets *k* *m* face each other, and the armature *i* *i'*, which is polarized, pul-

sates between them by the reversal of the current, as now usual, and in so doing the escapement-wheel is allowed to revolve and the type-wheel is set.

The magnet *n* acts on the armature 3 and lever to print or impress the paper upon the type, as in ordinary printing-telegraphs.

The electro-magnet *p* has an armature-lever, *q*, on a fulcrum, *r*, and the spring 4 is adjusted so that the armature will not be moved by the ordinary electric current; but when the current is sufficiently increased to overcome said spring the armature-lever is thrown up and the catch 6 is moved into the path of the unison-pin on the escapement or type wheel, and at the same time the spring 8, coming into contact with the stop-screw 9, establishes a shunt or short circuit from the line L through the magnet-wire 12, lever *q*, spring 8, stop 9, wire 14, to the return or earth circuit E, and the electro-magnets *k* and *m* lose their magnetism, and the two-part armature, not being held toward either one magnet or the other, is free to separate and open the pallets and allow the escapement-wheel to turn around to unison, and the separation of the pallets may be insured by the pins 15 upon the unison-lever *q*, or upon a small lever connected to it, entering between the pallets and spreading them apart.

Any suitable means may be made use of for transmitting. A dial of ordinary construction is illustrated at *s*, from which the circuit-connections lead to the line and to the battery B. The current will usually pass through the rheostat R; but when the unison-key K is closed the rheostat is shunted, so that the strength of the current on the line becomes enough to move the unison-lever by the electro-magnet *p*.

It will be apparent that several of these printing-instruments may be introduced in one circuit, and that all will be operated simultaneously, and that the unison will set all the instruments at the same time.

When the pressure on the unison-key is released the unison-magnet ceases to hold the lever *q*, and the unison-catch drops away at the same time that the shunt is broken between 8 and 9, and the current restored to the helices of the magnets *k* and *m*, so as to hold the two parts of the armature toward one core

or the other of the magnets *k* and *m*, and thus hold the escapement-wheel by the pallets.

I make use of a type-wheel with letters and figures upon it, and in all printing-instruments it is important to have as few characters as possible. I therefore introduce a type that is similar to the last stroke of the letter *n*, thus *ℓ*. This character is understood to mean *l* or *I*, or, by repeating it, the letter *n* or *m* will be formed, thus making one character answer the duty of four characters as heretofore used. This character may also be used for the letter *n* in cases where its connection with other letters renders it distinguishable from the letter *n*, thus allowing this character to be used in making five letters.

If the type-wheel is brought to unison and the circuit should be accidentally broken entirely before the circuit is re-established through the escapement-magnets, the escapement might be left free to revolve. To guard against this contingency a small contractile spring, *v*, is placed between the two pallets that draws them into a normal position and grasps the escapement as soon as the unison-lever and pins drop. This construction of unison allows for the setting of the type-wheel when the electric current of either polarity is on the line.

I claim as my invention—

1. The combination, in a printing-telegraph instrument, of an escapement, two pallets, two

parts of an armature connected respectively to the pallets, and a unison-stop that arrests the movement of the escapement and type wheels when the parts of the armature and pallets separate, substantially as set forth.

2. The combination, in a printing-telegraph instrument, of two type-wheel magnets, a printing-magnet, a unison magnet and lever, a divided armature and escapement, and a shunt-connection operated by the unison-lever, for the purposes and substantially as set forth.

3. In the type-wheel of a printing-telegraph, a character similar to the last stroke of the letter *n*, the same being adapted to use as set forth, and displacing the several types, as described.

4. The combination, in a printing-telegraph, of two escapement-pallets on one shaft, a spring to draw them toward each other, a unison-lever, and pins acted upon by the unison-lever to spread the pallets and allow the escapement-wheel to revolve to unison, substantially as set forth.

Signed by me this 12th day of February, A. D. 1880.

CHAS. J. WILEY.

Witnesses:

WILLIAM G. MORT,
GEO. T. PINCKNEY.