T. A. EDISON.

Improvement in Printing-Telegraphs.

No. 128,607. Patented July 2, 1872.

Fig. 2.

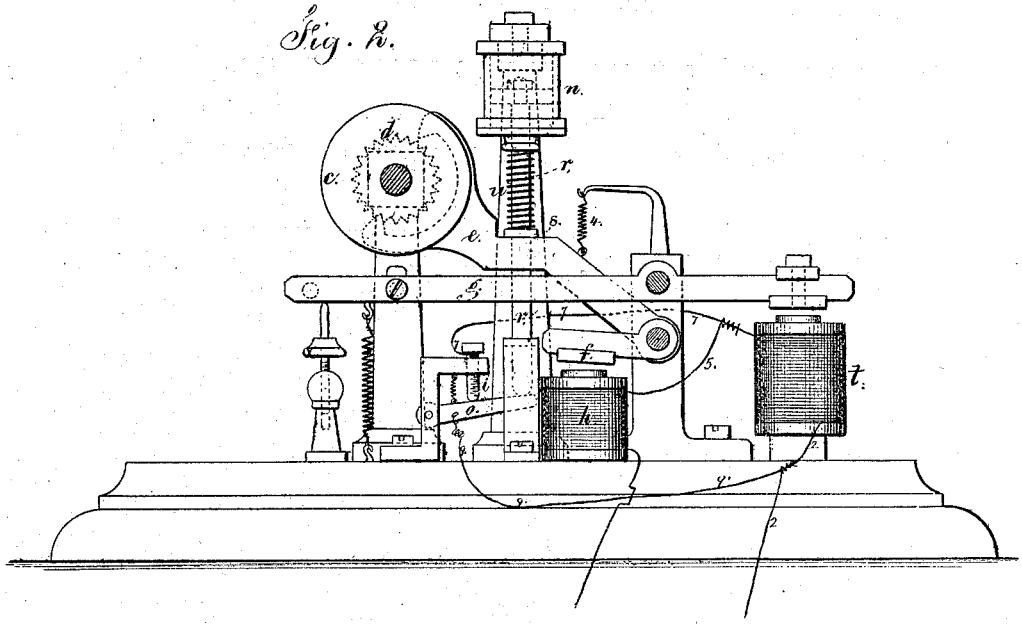
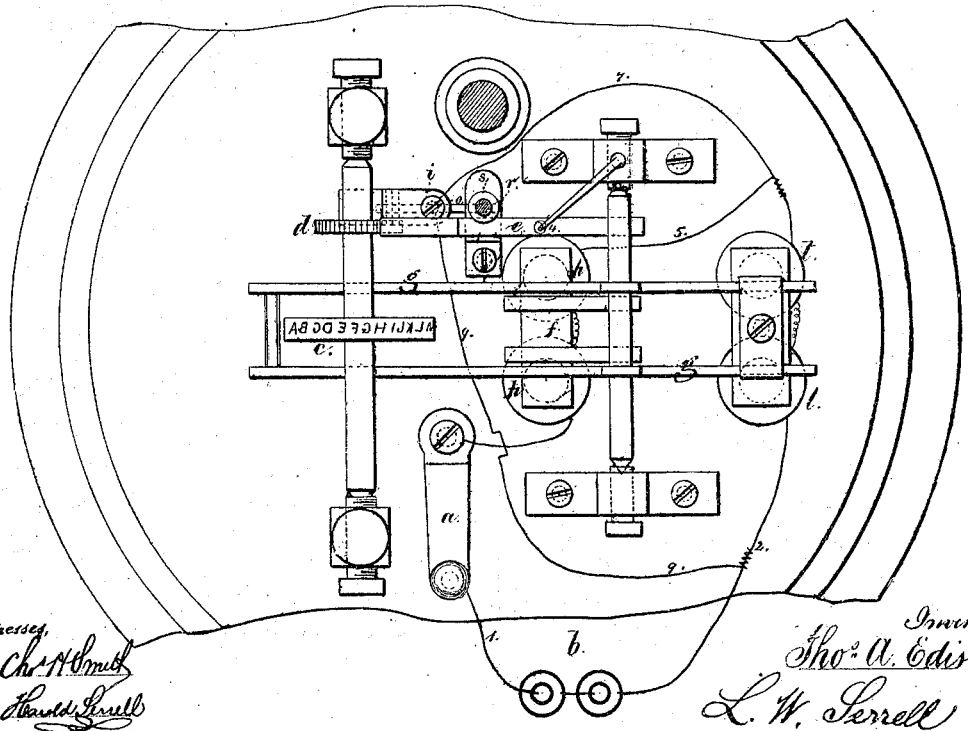


Fig. 1.



Witnesses,
Chas. H. Smith
Harold Serrell

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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 128,607, dated July 2, 1872.

To all whom it may concern:

Be it known that I, THOMAS A. EDISON, of Newark, in the county of Essex and State of New Jersey, have invented an Improvement in Printing-Telegraphs; and the following is declared to be a correct description of the same.

In this instrument the magnet that gives the impression is in the main-line circuit as well as the type-wheel magnet, but the former is "cut out" by a shunt or short circuit that is closed when the instrument is not working, and during the pulsations that set the type-wheel; but when a pause occurs with the circuit closed this short circuit is broken by a gradually-operating spring or weight controlled by an air-cushion, so that the electricity is forced to pass through the printing-magnet and gives the impression, simply in consequence of keeping the circuit closed when the letter to be printed has arrived in position for the impression.

In the drawing, Figure 1 is a plan, and Fig. 2 an elevation, of the instrument.

The finger-key *a* is introduced to illustrate any suitable apparatus for opening and closing the electric circuit from the battery *b*. 1 represents the line-wire, and 2 the ground or return circuit. The type-wheel *c* is moved by any suitable step-by-step motion. I have shown the ratchet-wheel *d* and lever *e*, operated by the armature *f* and spring 4. The printing-lever *g* may also be of any desired character. The type-wheel magnet *h* is connected with the line-wire 1, and from this the wire 5 leads to the printing-magnet *t*, and thence the circuit returns by the wire 2. If this alone was used, both magnets would be energized each pulsation; therefore, to prevent this, I employ the short circuit or shunt, composed of the wire 7 leading to the screw *i*, and the wire 9 leading to the tongue *o*. The air-cushion is made of the cylinder *n*, within which is a piston, and the rod *r* of the same rests at its lower end upon the tongue *o*, and the parts are adjusted so that the circuit between *i* and *o* is closed when the parts are at rest, because a collar, *s*, on the rod *r* rests upon the type-wheel lever *e* and holds the rod *r* up against the spring *u*. When the type-wheel lever *g* is vibrated in setting the type-wheel, the movement is sufficiently rapid to keep pressing the rod *r* up against the action of the spring *u*, and the air-cushion prevents its return with rapidity; but when a pause takes place in the pulsations, and the circuit is kept closed, the rod *r* descends and moves the tongue *o*, breaking the shunt-circuit through 7, *i*, *o*, and 9, and compelling the electricity to pass through the magnet *t* and produce the printing. The parts return to the position of inactivity with magnet *t* cut out by the circuit 7 *i o* 9, when the circuit is broken at the transmitting station, and I remark that there might be a finger upon the printing-lever *g* to lift the rod *r*, in which case the impression-lever would drop back instantly, as the circuit would be closed again through 7, *i*, *o*, and 9; and in this manner a second or third impression of the same letter, number, or character would be given by keeping the circuit closed at the transmitting station to allow sufficient time for the rod *r* to descend again and open the shunt at *o i*.

I claim as my invention—

Two electro-magnets, one for operating the type-wheel lever, the other for giving the impression, both in the main circuit, in combination with a "shunt" or "cut-out" circuit and a shunt-breaker, substantially as and for the purposes set forth.

Signed by me this 26th day of April, A. D. 1872.

T. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.