T. A. EDISON.

Improvement in Electrical Printing-Machines.

No. 133,019. Patented Nov. 12, 1872.

Fig. 2.

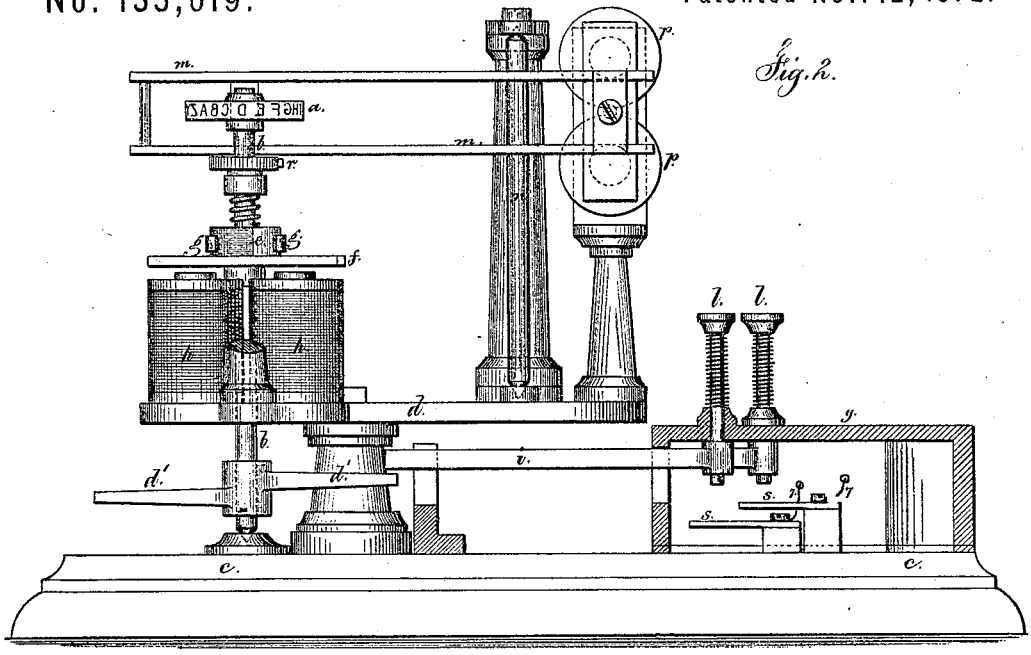
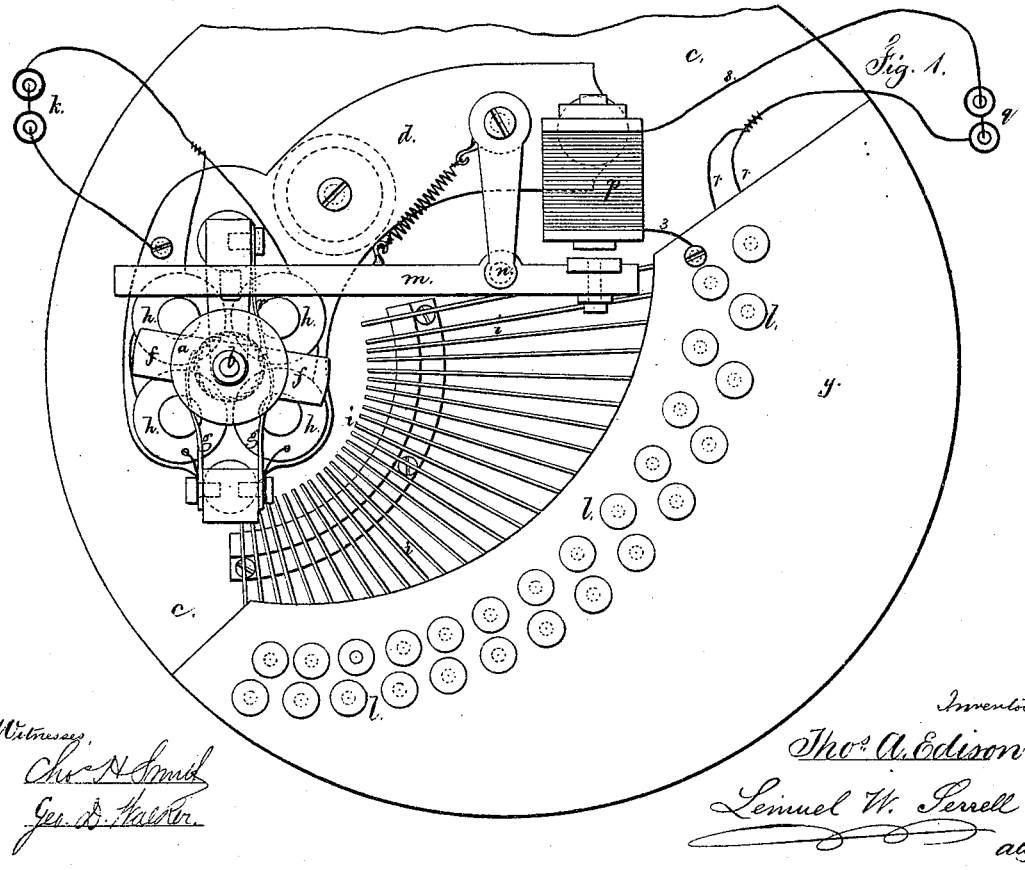


Fig. 1.



Witnesses,
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UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY, ASSIGNOR TO HIMSELF AND GEORGE HARRINGTON, OF WASHINGTON, DISTRICT OF COLUMBIA.

IMPROVEMENT IN ELECTRICAL PRINTING-MACHINES.

Specification forming part of Letters Patent No. **133,019**, dated November 12, 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 Electrical Printing-Machines; and the following is declared to be a correct description thereof.

This invention is intended for printing upon a strip or sheet of paper by a type-wheel, so that messages, instead of being written, can be printed off by touching finger-keys. The machine is also available for printing copies of documents or composing and printing instead of writing.

I make use of a type-wheel upon a shaft that also carries an armature and circuit-breaker that is driven by a magnetic motor, the said armature propelling the said shaft by frictional contact. Upon the shaft is an arm that is stopped by one of a range of keys, these being positioned so that the type-wheel, with the corresponding type, will be stopped at the position to be impressed. The depression of the finger-key completes a circuit to a magnet that gives the impression.

In the drawing, Figure 1 is a general plan of the machine; and Fig. 2 is an elevation, partially in section, of the same.

The type-wheel *a* is upon a shaft, *b*, in suitable bearings in the bed *c* and frame *d*. Affixed to this shaft *b* are also the arm or arms *d'* and the armature *f* and circuit-breaker *e* to the springs *g;* and this armature and circuit-breaker are connected to the shaft by a friction-coupling, so that they can easily revolve the shaft when free; but when the shaft is stopped the armature will continue to revolve. The electro-magnets *h* and the connections from the battery *k* to form, with the armature *f*, an electro-motor are known, and do not require further description. The finger-keys *l* are arranged so as to move a projection, *i*, to each key into the path of the arm *d'*, so as to arrest the movement of the arm and type-wheel when the former comes into contact with the projection *i* of the depressed key. These projections *i* are arranged circularly, and, if positioned in a circle, then only one arm, *d'*, will be required. If positioned in a half circle, they must be in two rows, one above the other, and two arms, *d'*, will be required, as shown. The printing-lever *m* is on a fulcrum, *n*, and is operated upon by the magnet *p*, the connection for this magnet from the battery *q* being completed by the depression of the finger-key, causing the slide-rod of said key to stop upon the insulated plate *s*, one pole of the battery being connected therewith by the wire or wires 7, and the other, by the wire 8, to the magnet *p;* and from the latter there is a connection, 3, to the metallic plate *y* carrying the keys *l*. The impression-lever is made with any suitable feeding device for moving a strip of paper along or presenting a sheet, line after line, to the type-wheel.

It will now be understood that the magnetic motor maintains a rapid rotation of the type-wheel until one of the keys is depressed, which arrests, by its projection *i*, the arm *d'* and type-wheel, the latter having a corresponding letter opposite the impression-pad, and instantly the impression is given by the action of the electro-magnet *p*.

A stop-pawl, *r*, prevents any risk of rebound when the arm is arrested by the stop *i*.

I claim as my invention—

1. The type-wheel and shaft, revolved by friction from the armature of an electro-motor placed upon the type-wheel shaft, substantially as set forth.

2. The finger-keys *l* and electro-magnet *p*, connected as set forth, in combination with said type-wheel and the impression-lever, substantially as specified.

Signed by me this 18th day of April, 1872.

T. A. EDISON.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.