

UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF NEWARK, NEW JERSEY.

IMPROVEMENT IN PRINTING-TELEGRAPHS.

Specification forming part of Letters Patent No. 131,339 dated September 17, 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 telegraph there are two type-wheels, two printing-levers, and contiguous printing-pads, and there is a separate magnet to each printing-lever. The step-by-step movement revolves the type-wheel, and there is a half-space moved by the pallets when the circuit to the printing-magnet is closed, and the other half space is moved at the reverse movement of the armature away from the magnet. The type-wheels are positioned so that the letters in one are in line with the spaces between the letters in the other. An arm is provided that vibrates with the armature of the type-wheel magnet, and acts as a circuit-closer, so that when the type-wheels are stopped with the armature drawn toward the type-wheel magnet this circuit-closing arm will complete the circuit to the magnet that acts upon the proper printing-lever. The circuit to the other printing-lever is closed by the rising of the armature from the type-wheel magnet. This instrument is adapted to printing letters from one type-wheel, and numbers and fractions from the other wheel, and either can be brought into action at any time, the letters being in position with a closed circuit, and the numbers in position with the open circuit through the type-wheel magnet, or the reverse. Two line-wires, of course, are required to operate a number of instruments; one goes through the type-wheel magnets and the other through the printing-magnets. The general characteristics of this machine are the same as those heretofore described by me in other applications for patents, except in the particulars hereafter described.

In the drawing, Figure 1 is a plan, and Fig.

2 is a detached sectional view of my improved instrument.

The type-wheel magnet *h* is in the electric circuit to the line-wires 26. Its armature *h'* acts upon the levers *h'* and pallets *i* to move the toothed wheel *k*, shaft *g*, and type-wheels *l* *l'* half a space on the type-wheels as the circuit is closed through *h*, and the other half as the circuit is broken and the armature retracted by a spring. The spring-arm 45 is upon the shaft 6, and moved at the same time as the armature *l*, and plays between the circuit-closers 3 and 4. When the circuit through *h* is closed one character on the type-wheel *l'* will be in line for printing, and the spring 45 will close the circuit from 27 through the magnet *m*, closer 4, spring 45, shaft 6, frame *f'*, bed *f*, and binding-screw 28 to the line; hence, the lever *m*¹ will be operated to impress from the type-wheel *l'*, and by the clamp and pawl *u* *v* and lever *v*¹ to feed the paper as soon as a pulsation is sent through 27. If the type-wheels are stopped with circuit through *h* broken, the circuit-closer 45 will be in contact with 3; hence, a pulsation through 27 will pass by the magnet *m* 4, closer 3, spring 45, shaft 6, frame and bed *f'* *f* to 28, and operate the printing-lever *m*² and give an impression from the type-wheel *l*, and by the clamps and pawls *v*² *w*² and lever *v*² feed the paper. By this arrangement either type-wheel can be printed from at pleasure, and there are not any parts to shift or change.

I claim as my invention—

The circuit-closing arm 45 and connections 3 4 to the respective magnets *m* *m*⁴, in combination with the printing-levers *m*¹ *m*², type-wheels *l* *l'*, and actuating mechanism, substantially as set forth.

Signed by me this 29th day of June, A. D. 1872.

Witnesses: T. A. EDISON.
GEO. T. PINCKNEY,
CHAS. H. SMITH.