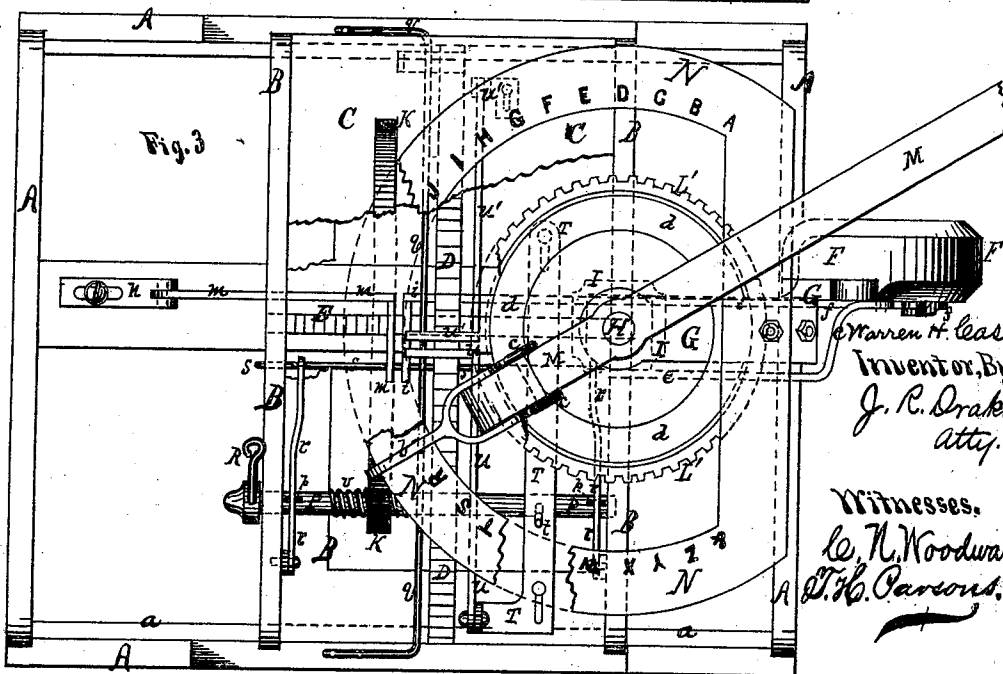
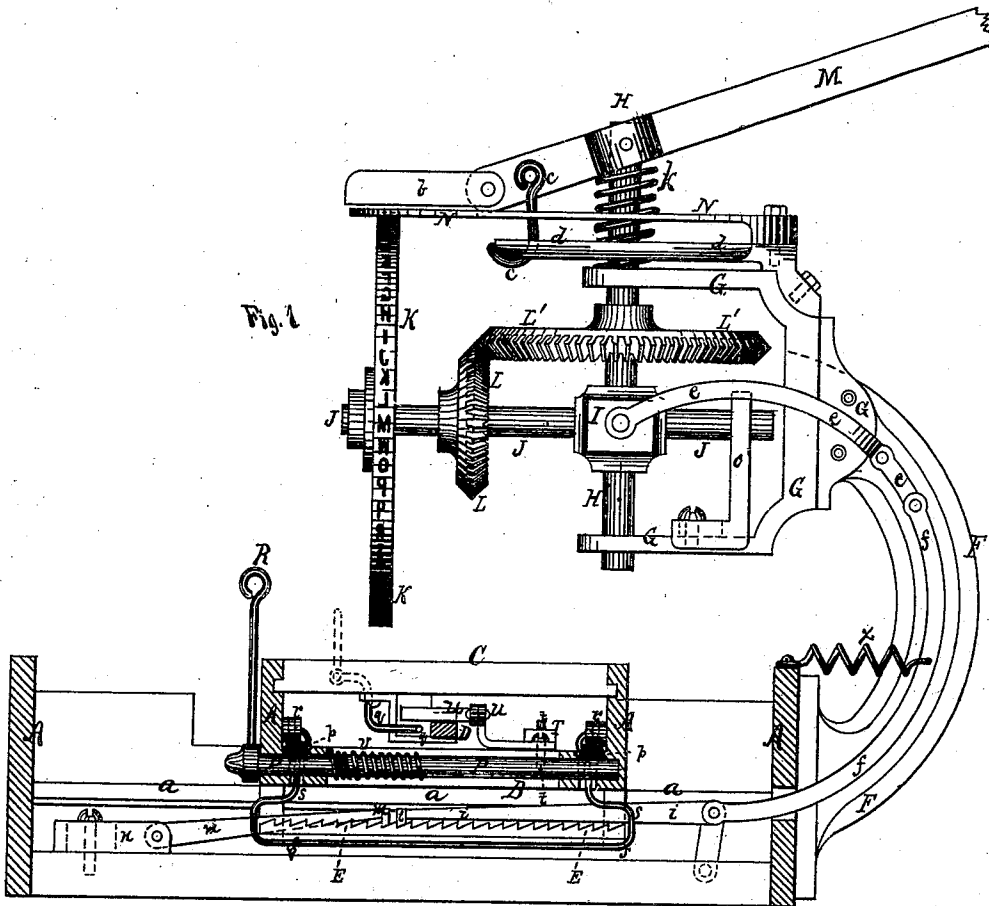


W. H. CASE.
TYPE-WRITING MACHINE.

No. 170,233.

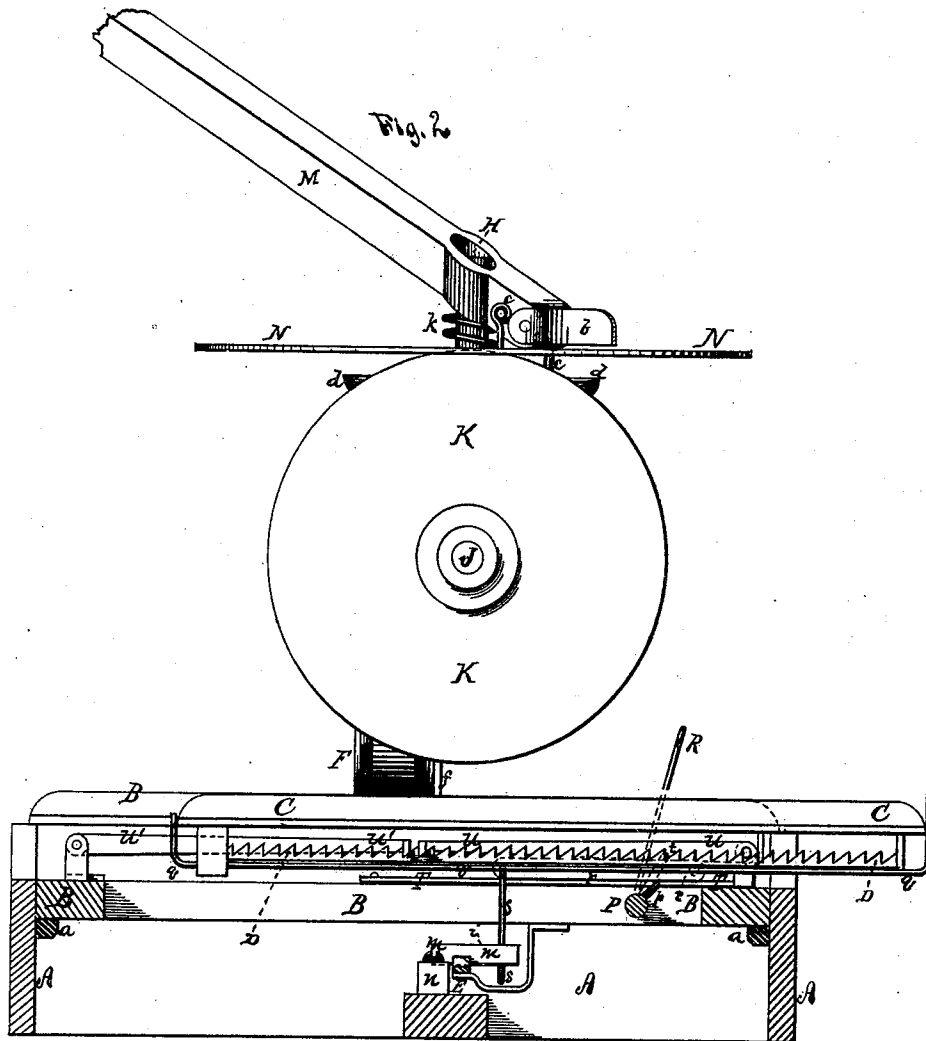
Patented Nov. 23, 1875.



W. H. CASE.
TYPE-WRITING MACHINE.

No. 170,233.

Patented Nov. 23, 1875.



Witnesses.
C. N. Woodward
D. H. Parsons.

Warren H. Case.
Inventor, By
J. R. Drake
Atty

UNITED STATES PATENT OFFICE.

WARREN H. CASE, OF DANSVILLE, NEW YORK.

IMPROVEMENT IN TYPE-WRITING MACHINES.

Specification forming part of Letters Patent No. **170,233**, dated November 23, 1875; application filed December 5, 1874.

To all whom it may concern:

Be it known that I, WARREN HALSTED CASE, of Dansville, in the county of Livingston and State of New York, have invented certain Improvements in Type-Writing Machines, of which the following is a specification:

The invention relates to machines or devices for writing with type; and my invention consists in the general construction, arrangement, and operation of the parts, and, mainly, in doing all the writing by means of a single lever or key, which simultaneously operates the type or type-wheel and moves the printing-table, all as hereinafter fully explained.

In the drawings, Figure 1 is a side elevation; Fig. 2, a sectional front elevation; Fig. 3 is a plan view.

A is a frame or bed, having a smaller sliding frame or table, B, set in ways or grooves *a a'*. This frame B is provided with a sliding top, C; which is to move forward or backward from right to left, as desired. Secured lengthwise to the under side of this sliding top C is a rack, D, (see Figs. 1 and 2,) and a similar one, E, is secured crosswise underneath the frame B, as shown. F is an immovable bracket or curved supporting-arm, which holds the devices for operating directly over the table C for the paper. It is secured to the bed A, and having bolted to it a hanger or frame, G, which carries an upright shaft, H, one end of which works in a hub, I, in which a horizontal shaft, J, moves, as shown. To the front end of this latter shaft a type-wheel, K, is keyed, upon the periphery of which the letters or characters to be used on the machine are arranged. The lower end *H'* of the shaft H is attached to the hub I, and plays down through the lower arm of the hanger, and acting as a guide-pin. The type-wheel may be provided with letters, figures, characters, or signs, either set in or engraved on its periphery, or on steel bars attached to its side, and allowed to project beyond its circumference. *L L'* are two beveled gear-wheels, one on each of the shafts H and J, which mesh together, and which serve to revolve the type-wheel K by means of a key or lever, M, set loosely on and pivoted to the top of the shaft H, so as to play vertically. To the front end of this lever a finger, *b*, is attached, which is turned around

by the key over an indicator, N, upon which the same characters are set as upon the type-wheel K. By this means, as will be seen, if the finger *b* is placed above any figure or letter desired upon the indicator N, the same letter, by means of the gear-wheels *L L'*, will be brought directly at the bottom of the type-wheel, and, by pressing down upon the outer end of the lever M, it forces down the shaft H, hub I, and gear-wheels *L L'*, and the type-wheel K will thereby be pressed down upon the table C, upon which the paper is placed, and the letter is thus printed thereon. The inner end of the key is provided with a pivoted hook, *c*, which catches underneath a smooth ring, *d*, secured to the hanger G, and inclosing the vertical operating-shaft H, so that a horizontal motion given to the key causes the pivoted hook to travel around on the under side of the ring *d*, while a vertical motion given to the key causes the hook to clasp the under side of the ring, where it is retained in place by friction until the lever is released.

The object of the hook and ring is to keep the wheel in any position to which it may be shifted for the purpose of printing a particular letter. O represents a slotted standard, secured to the lower arm of hanger G, in the slot of which one end of the shaft J sits and moves.

The description and operation of the tables B C are as follows: *e* is a curved lever-arm, pivoted to the hub I, and, running back, is again pivoted to the curved support F, and also to another curved lever-arm, *f*, which is continued by a jointed connection, and terminates beneath the table *b* in a dog, *i*, which acts upon the rack E, attached to the table, (see Figs. 1 and 2,) so that at every descent of the vertical shaft H this dog falls back one notch in the rack E, and which moves the table sidewise. A spring, *x*, attached to the curved lever-arm *f*, and also to the frame A, throws the dog back.

Thus it will be seen that every time the lever M is pressed down to print a letter, the return motion—which is accomplished by a spring, *k*, surrounding the shaft H, or otherwise placed, and the spring *x*—moves the table sidewise one notch of the ratchet, or the space of one letter. *m* is another pivoted dog,

similar to *i*, which acts a holdback to the ratchet, to prevent it being accidentally moved at the wrong time. This dog *m* will be secured to the bottom of the frame A by a slotted adjustable block, *n*, so that it may be adjusted to work properly. P is a shaft which passes through the frame B, beneath the table C, and has attached to it two lugs or pins, *p p*, which act as cams to raise two levers or arms, *r r*, the front ends of which are pivoted to the frame B, while the back ends are attached to a wire bail or loop, *s*, which passes downward and across, beneath the points of the dogs *m* and *i*, as shown. To the outer end of the shaft P an arm or lever, R, is attached, by which the shaft may be operated. By this means the points of the dogs *m* and *i* may be raised out of the ratchets, and the frame B returned to its former place, ready for another line. A spring, *v*, on the shaft returns it to its former position. *t* is a pin, which projects upward from the shaft P, and passes through a sliding plate or bar, T, to the front end of which a dog or lever, *u*, is pivoted, and which passes forward and ends at the center of the ratchet-bar D, secured beneath the table C, into one of the teeth of which it engages, as shown in Figs. 1 and 3. *u'* is another dog, which acts as a holdback, to prevent the table being moved at the wrong time, similar to the dog *m* on the other ratchet. By this means, when the arm R is pressed down to release the dogs *m* and *i*, the pin *t*, actuating the dog *u*, serves to move the table C ahead the distance of one line, thus moving the paper in two directions by one motion.

To draw the table C back again when the

paper is printed full, or to remove it for any purpose, a wire loop or bail, *q*, is pivoted to either end of the table C, and passes downward underneath the points of the dogs *u u'*, by which they may be raised to release the table, so that it may be drawn back or removed for any purpose, at the will of the operator.

It is obvious that the movement of the table could be got by other means, such as using a circular ratchet with gear-wheel working into a toothed rack by a rock-shaft; but I prefer that above described, as appearing to be the simplest. An inking device will be attached to the printer in any suitable manner.

I claim—

1. In combination with the sliding table B, the jointed levers *e f*, the dogs or catches *i m*, the rack E, and spring *x*, operated by the key M for moving the table, substantially as described.

2. The combination, with the table B and desk C, the shaft P, provided with an arm, R, at one end, by means of which the same may be partially rotated, and with lugs or pins *p p*, adapted to raise the levers *r r*, and lift the ends of the dogs *m i* out of the ratchets through the medium of a bail, S, extending from said levers down under the dogs, in order to allow the desk to be moved, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WARREN H. CASE.

Witnesses:

J. R. DRAKE,

T. H. PARSONS.