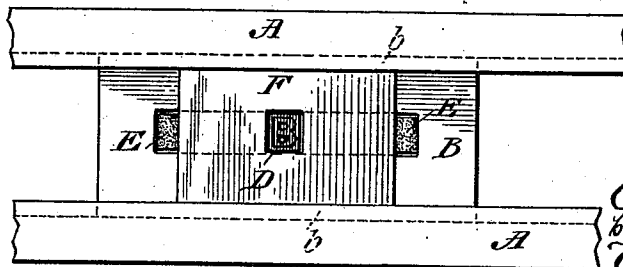
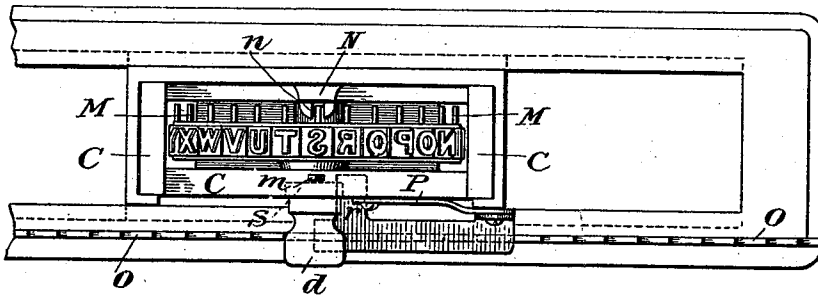
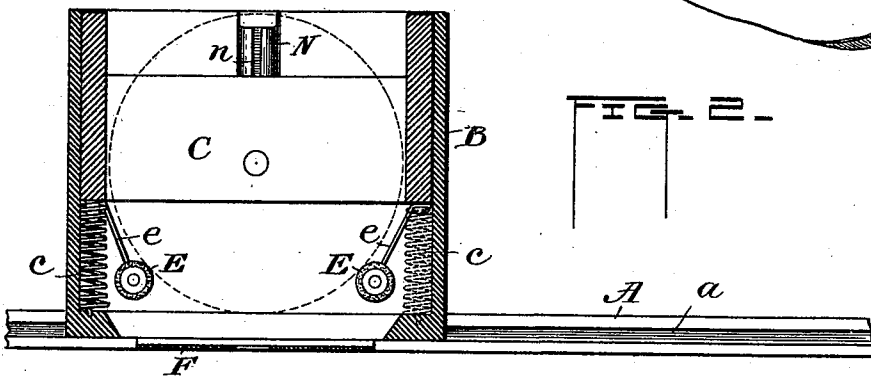
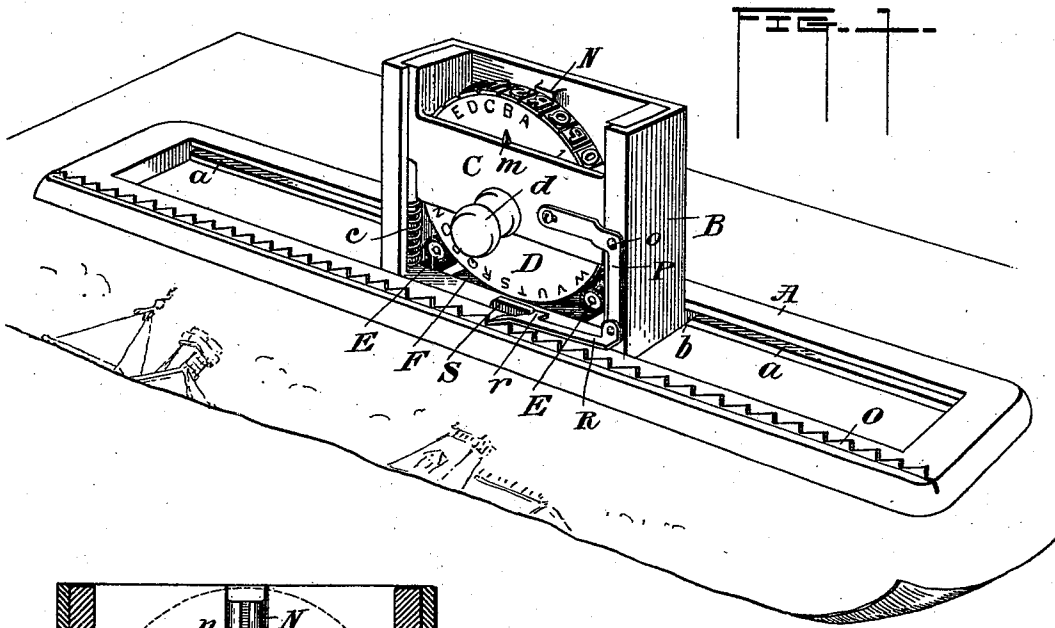


(No Model.)

C. HESS.
TYPE WRITING MACHINE.

No. 516,973.

Patented Mar. 20, 1894.



Witnesses
L. A. Comer Jr.
O. G. Clark.

Inventor
Christian Hess
by
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his Attorney

UNITED STATES PATENT OFFICE.

CHRISTIAN HESS, OF STEELTON, PENNSYLVANIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 516,973, dated March 20, 1894.

Application filed August 22, 1893. Serial No. 483,727. (No model.)

To all whom it may concern:

Be it known that I, CHRISTIAN HESS, a citizen of the United States, residing at Steelton, in the county of Dauphin, State of Pennsylvania, have invented certain new and useful Improvements in Printing-Machines, of which the following is a description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to printing machines, my object being to provide a device by means of which printing may be done upon surfaces which cannot well be placed in type-writing machines, for example, upon maps, charts, advertising signs, books, &c., and to this end it consists in the various matters hereinafter described and claimed.

In the accompanying drawings which illustrate my invention Figure 1 is a perspective. Fig. 2 is a view with the type-wheel removed, showing the ink rollers. Fig. 3 is a top plan, and Fig. 4 is a bottom plan.

Referring to the drawings, A is a guide frame along which the casing, or printing head, B travels, these parts being held in engagement by means of lugs *b, b*, projecting into the grooves *a, a*, of the frame. A frame C vertically movable in suitable ways upon the casing B is normally held in a raised position by means of springs *c*, and has journaled to it a type-wheel D to the axis of which is affixed a knob *d* for rotating the wheel. Ink may be supplied to the type in any well known manner, as by hand, ribbon or roller, but I prefer to use rollers E carried by the frame C and pressed against the type by the spring arms *e*.

In order that but one letter shall print at each stroke, and that there may be no smearing upon the paper caused by the contact thereof with parts of the adjacent type, a plate F, preferably of celluloid, having an opening therein just large enough for the passage of a single type is carried by the casing B. An index showing which letter is in position to print is provided upon the type-wheel in a suitable manner, the correct position of the wheel being determined by bringing the index letter opposite a pointer or other convenient mark *m* upon the frame C, while to guide the wheel in its downward movement, thus preventing any turning thereof and overcom-

ing the possibility of printing the wrong letter, one side of the type-wheel is provided with lugs M which are adapted to slide in the slot *n* formed in the guide N secured to the casing. Of course, guides other than those just described could be substituted without departing from the spirit of my invention.

The above being the arrangement of parts for printing and aligning, the spacing is accomplished by means of suitable step-by-step mechanism.

In the device herein illustrated a toothed rack O is placed along the frame A, a bell-crank lever P is pivoted at *o*, while one arm of said lever is connected to the frame C and to the other is pivoted a pawl R adapted to engage the teeth of the rack. Thus when the type-wheel, after being set to the proper position, is depressed, the lower arm of the bell-crank lever is forced forward, carrying with it the pawl R, the movement of the lever being sufficient to withdraw the pawl from the notch in which it rested while the wheel was in its raised position and to carry it over the next tooth, dropping it against the same, so that as the frame C is returned by the springs, the bell-crank lever is brought to its normal position, and, by reason of the pawl resting against the perpendicular wall of the tooth, the printing head is moved forward one step. In this construction, however, the pawl R being pivoted and thus free to move, should the head B be accidentally pressed toward the direction of printing, it would slide forward and destroy the spacing, but in order to prevent the head B being moved forward before the proper time, a lug *r* is provided upon the side of the pawl and passes beneath a catch S upon the casing, said catch having a beveled shoulder as shown. By this construction, when the frame C is depressed, the pawl is withdrawn from under the catch and moves forward as above described, but, should the head be accidentally pressed forward when it is not desired to print, the catch will hold the pawl down, thus preventing it rising out of the notch and passing over the tooth. Of course, the casing is prevented from backward movement by reason of the pawl bearing against the vertical edge of a tooth, and it will be seen, therefore, that the head is normally held from

movement in either direction except upon the depression of the type support. After the casing has traveled the length of the frame, to return it, it is only necessary to depress the
5 frame C when the pawl will pass from under the stop S and can then be lifted above it and, as the frame is elevated, let fall upon the top of the stop. There being now no connection between the casing and the rack, the
10 former can be slid back to the front of the frame, the first depression of the type-wheel carrying the pawl from the stop and allowing it to fall into a notch of the rack.

Having thus described my invention, what
15 I claim as new, and desire to secure by Letters Patent, is—

1. A printing machine comprising a frame, a printing head traveling thereon, a toothed rack upon said frame, a pawl attached to said
20 head and engaging with the toothed rack, whereby in the operation of printing the pawl

cooperates with the rack to move the head along the frame, and a shoulder upon said head beneath which the pawl normally rests; substantially as described. 25

2. A printing machine comprising a frame, a printing head traveling thereon, a toothed rack upon said frame, a pawl attached to said head and engaging with the toothed rack whereby in the operation of printing the pawl
30 cooperates with the rack to move the head along the frame, a lug upon said pawl, a support upon the printing head, and a shoulder upon said support beneath which the lug normally rests; substantially as described. 35

In testimony whereof I affix my signature in presence of two witnesses.

CHRISTIAN HESS.

Witnesses:

FREDK. E. SMITH,
S. S. SLAYBAUGH.