No. 648,440. Patented May 1, 1900.

F. SANDERS.

NUMBERING MACHINE.

(Application filed Dec. 28, 1897.)

(No Model.)

Fig. 1.

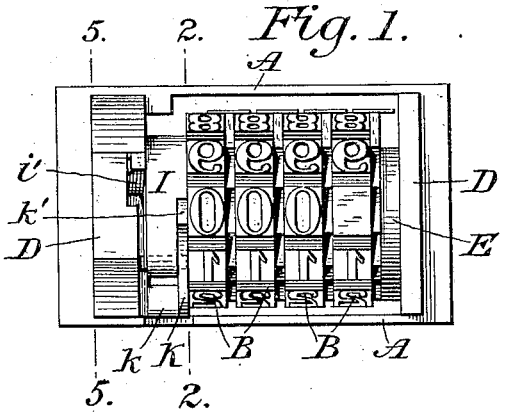


Fig. 2.

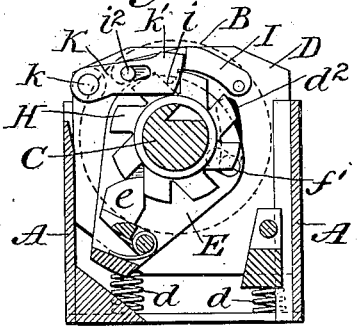


Fig. 3.

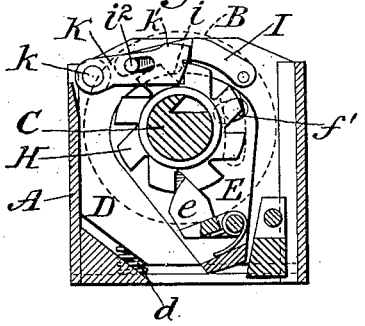


Fig. 4.

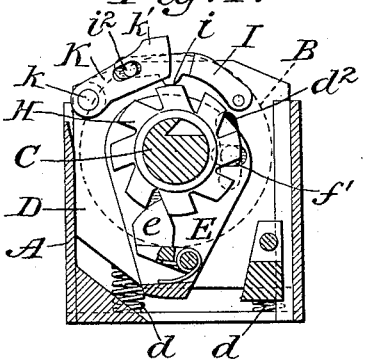


Fig. 5.

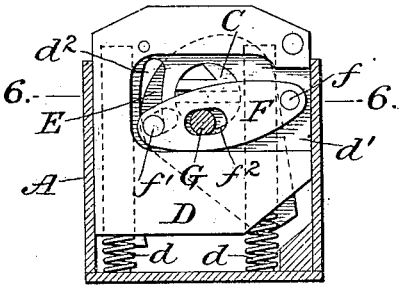
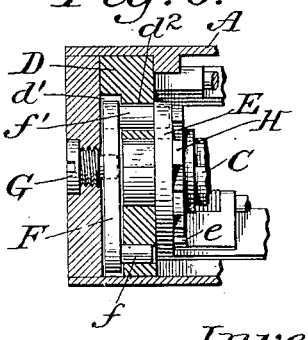


Fig. 6.



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UNITED STATES PATENT OFFICE.

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NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,440, dated May 1, 1900.

Application filed December 28, 1897. Serial No. 663,848. (No model.)

To all whom it may concern:

Be it known that I, FRANK SANDERS, a citizen of the United States, and a resident of New York, (Brooklyn,) in the county of Kings and State of New York, have invented certain new and useful Improvements in Numbering-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to consecutive-numbering machines or other machines of like character in which the figures or other characters to be printed are formed upon wheels which are adapted to be rotated to bring the desired character to the line of print. In the use of such machines it is desirable to effect the complete separation of the paper upon which an impression has just been made from the type-wheels before they are shifted to bring another character to the line of print lest the impression should be blurred. To this end provision is sometimes made for locking the wheels against movement until the platen of the press has withdrawn to its full distance from the numbering-wheels. It has also been proposed to accomplish the same result by pushing the paper away from the numbering-wheels before they are allowed to turn; but so far as I am aware the means last referred to have not proved satisfactory in use, partly because the lifter could not descend below the plane of contact with the inking-roller, and therefore made a permanent mark upon the paper, and partly because, with the construction suggested, the lifter could not have the proper amplitude of movement.

Accordingly the main object of this invention is to provide improved means for lifting the paper away from the numbering-wheels before they are allowed to turn or preventing the turning of the wheels until the paper has left the wheels, the lifter or contact device having an amplitude of movement sufficient to insure the complete separation of the paper from the numbering-wheels and descending below the plane of print, so that it shall escape contact with the inking-roller and the making of a permanent mark upon the paper by the lifter be thereby avoided.

The improved construction wherein the invention is embodied, together with other features of improvement, will be more fully described hereinafter with reference to the accompanying drawings, in which—

Figure 1 is a plan view of a machine adapted to be locked in a form with the type to which this improvement has been applied. Fig. 2 is a section on the plane indicated by the line 2 2 of Fig. 1, the inner frame or case being in its elevated position. Fig. 3 is a view similar to Fig. 2, but with the frame or case in its depressed position. Fig. 4 is a view similar to Figs. 2 and 3, but showing the lifter in its raised position. Fig. 5 is a section on the plane indicated by the line 5 5 of Fig. 1. Fig. 6 is a horizontal sectional detail on the plane indicated by the line 6 6 of Fig. 5.

The numbering-machine which for purposes of explanation of my invention has been chosen for illustration in the accompanying drawings is adapted to be locked in the form with the type and comprises an outer frame or case A, within which the numbering-wheels are placed. The particular means whereby the necessary movement is imparted to the numbering-wheels are not material to the present invention; but in the machine shown in the drawings the numbering-wheels B B are mounted to rotate upon a shaft C, which is fixed in an inner frame or case D, the latter being supported upon springs d and having a limited vertical movement within the outer case or frame A. A pawl-frame E is mounted to swing upon the shaft C and is provided with pawls to actuate the numbering-wheels in the usual manner. One of the end members of the inner frame or case D is recessed, as at d', to receive a lever F, which is pivoted at one end, as at f, to the inner frame or case and at the other end is provided with a pin f', which projects through an elongated opening d^2 and engages the pawl-frame E. A screw pin or stud G is seated in the end of the outer frame or case A and enters a slot f^2 in the lever F, so that as the inner frame or case is depressed by the action of the press and is raised by the action of the springs d d the pawl-frame is actuated to effect the proper movement of the numbering-wheels. The pin or stud G by its coöperation with the lever F in the recess d' of the inner

frame or case D also serves to limit the movement of the inner frame or case, and its removal permits the inner frame or case and the parts carried thereby to be withdrawn from the outer frame or case A for cleaning or any other purpose.

Upon the shaft C is loosely mounted a toothed wheel H, which is actuated slightly in advance of the first numbering-wheel by a pawl *e*, carried by the pawl-frame E. A lever I is pivoted at one end upon the inner frame or case D and rests upon the toothed wheel H, having on its under side a projection *i* for contact with said toothed wheel and being held toward the toothed wheel by a spring *i'*. At its extremity the lever I engages, as by a suitable pin-and-slot connection i^2, a second lever or lifter or contact device K for contact with the paper at a point between its pivot *k* and its free end *k'*, whereby the movement of the free end *k'* of the lever K is considerably greater than the movement of the free end of the lever I. The lever or lifter K is pivoted to the frame or casing D, and the free end is suitably formed for contact with the paper. By reason of the amplitude of the movement of the lever or lifter or contact device K it can be permitted to and does drop below the plane of print and out of reach of the inking-roller, so that its contact with the paper cannot leave a permanent mark thereon, and when operated by the movement of the toothed wheel H it rises quickly and far enough above the plane of print to insure the separation of the paper from the numbering-wheels before the rotary movement of the wheels commences, either lifting the paper, if the pressure thereof is light, or, if the pressure is heavy, acting through the lever I and toothed wheel H to prevent the swinging of the pawl-frame E, and therefore to prevent the shifting of the numbering-wheels until the paper has left them.

I claim as my invention—

1. In a numbering-machine, the combination with the numbering-wheels and the pawl-frame, of a lifter or contact device having a range of movement above and below the plane of print, and means controlled by said lifter or contact device to prevent the movement of said pawl-frame and to release the same when said lifter or contact device is above the plane of print.

2. In a numbering-machine the combination with the numbering-wheels and the pawl-frame, of a lifter or contact device having a range of movement above and below the plane of print, a toothed wheel engaged by said pawl-frame, and a stop or projection operatively connected with said lifter or contact device for engagement with said toothed wheel.

3. In a numbering-machine, the combination with the numbering-wheels, of a toothed wheel, means to actuate the same, a lever resting upon said toothed wheel, and a lifter connected to the free end of said lever whereby the effective forward movement of said wheel takes place when the lifter is in its highest position, substantially as shown and described.

4. In a numbering-machine, the combination with the numbering-wheels, of a toothed wheel, means to actuate the same, a lever resting at an intermediate point upon said toothed wheel, and a second or lifter lever connected to the free end of the first-named lever whereby the effective forward movement of said wheel takes place when the lifter is in its highest position, substantially as shown and described.

5. In a numbering-machine, the combination with an outer frame or case, an inner frame or case vertically movable within the outer frame or case, and numbering-wheels mounted in the vertically-movable frame or case, of a toothed wheel mounted with the numbering-wheels, means to actuate said toothed wheel, a lever pivoted upon the vertically-movable frame or case and resting upon said toothed wheel and a second or lifter lever pivoted upon said vertically-movable frame or case and connected at an intermediate point to the free end of the first-named lever, substantially as shown and described.

This specification signed and witnessed this 23d day of December, A. D. 1897.

FRANK SANDERS.

In presence of—
WM. WENZ,
A. N. JESBERA.