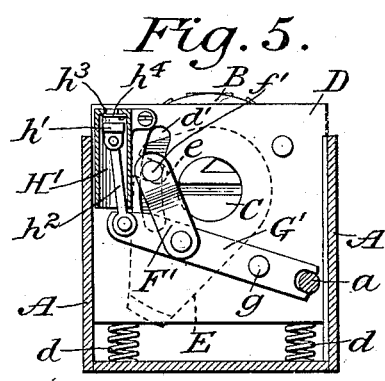
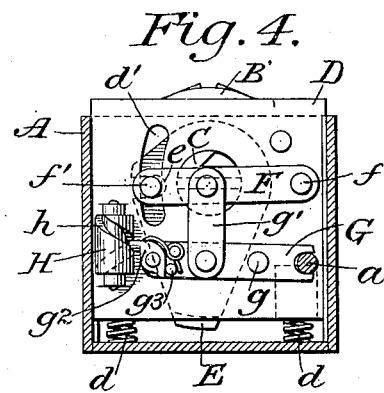
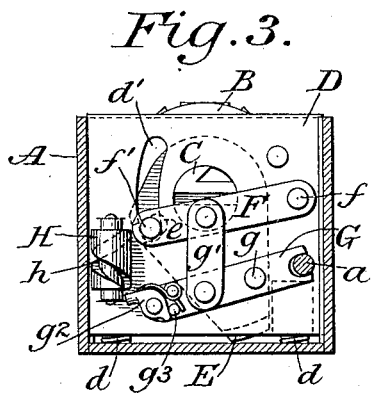
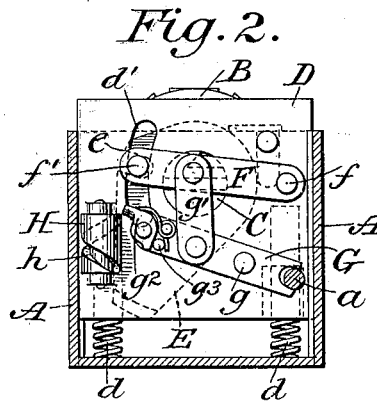
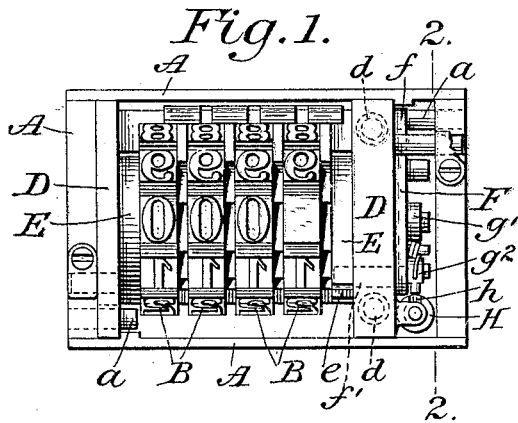


J. H. REINHARDT.  
NUMBERING MACHINE.

(Application filed Mar. 22, 1898.)

(No Model.)



Attest:

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# UNITED STATES PATENT OFFICE.

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## NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 648,433, dated May 1, 1900.

Application filed March 22, 1898. Serial No. 674,789. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES H. REINHARDT, a citizen of the United States, residing in the city of Newark, county of Essex, in the State of New Jersey, 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.

10 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  
15 desired characters to the line of print. In machines of this character the wheels are generally advanced just after the impression has been made and while the platen or other impression-surface is receding or retiring  
20 from the surface of the type, and it not infrequently happens that the wheels begin to move while the paper is in contact therewith, whereby the fresh impression is blurred.

It is the object of the present invention, therefore, to provide means whereby the  
25 movement of the wheels shall be retarded or delayed slightly until the paper has separated from the wheels.

Practical embodiments of the invention are  
30 illustrated in the accompanying drawings, wherein the improvements are shown as applied to numbering-machines of that particular character in which an independent plunger is dispensed with and the numbering-  
35 wheels are mounted in a case or frame which is vertically movable within an outer case or frame, the forward movements of the wheels being produced through suitable intermediate mechanism by the vertical reciprocations  
40 of the inner frame or case under the action of the impression-surface and the springs upon which the inner case or frame is seated; but it will be obvious that the invention is not necessarily restricted to its application to  
45 such machines.

In the drawings, Figure 1 is a plan view of a machine of the character referred to, to which the present improvements are applied. Fig. 2 is a section on the plane indicated by  
50 the line 2 2 of Fig. 1, the inner frame or case

being in its elevated position. Figs. 3 and 4 are views similar to Fig. 2, but with the inner frame or case in its lowest position and in an intermediate position and with the retarding or delaying device in different positions. Fig. 5 is a view similar to Fig. 2, but  
55 illustrating a modification of the retarding or delaying device.

The machine shown in the drawings comprises an outer frame or case A, which is  
60 adapted to be locked in the form with the type. The numbering-wheels B are mounted to rotate upon the shaft C, which is fixed in an inner frame or case D. The said inner frame or case fits freely within the outer case  
65 or frame A, so as to be capable of a limited vertical movement within the same, and is supported upon one or more springs *d*. A pawl-frame E, provided with pawls to actuate the numbering-wheels by engagement with  
70 their respective ratchets in the usual manner, is mounted to swing upon the shaft C and is provided with a notch *e* for engagement with its actuating devices. The precise character of the said actuating devices is not  
75 material to the present invention; but in the construction shown in the drawings a lever F 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  
80 an elongated opening *d'* in the end of the inner frame or case and engages the slot or notch *e* in the end member of the pawl-frame. A second lever G is also pivoted to the inner frame or case at a point between its ends, as  
85 at *g*, and is connected to the lever F by a link *g'*. A pin or stud *a*, carried by the outer frame or case A, engages one end of the lever G to cause the same to oscillate as the inner frame or case moves up and down, and  
90 the said lever G at its other end engages the retarding or delaying device. As shown in Figs. 2, 3, and 4 of the drawings, the retarding or delaying device H consists of a spirally-slotted hub which is mounted to rotate  
95 on a vertical axis in bearings carried by the inner frame or case, the end of the lever G being adapted to engage the slot *h* as the lever G moves up, whereby the upward movement of said lever, and consequently, through  
100

the described connections, the forward or actuating movement of the pawl-frame, is delayed slightly to permit the paper to be separated from the numbering-wheels before the latter commence to move. It is unnecessary that the lever G shall engage the delaying device during the downward movement of the lever, and the extremity of the lever is therefore provided with a yielding portion or spring-pressed latch  $g^2$ , which yields and slips over the hub H during the downward movement of the lever G, but is held by a stop  $g^3$  during the upward movement of the lever G, so that said lever is permitted to rise only as the said latch travels upward in the spiral slot  $h$  of the rotating hub H. The lever G and link  $g'$  are employed in the construction shown for the sake of the greater amplitude of movement which is thereby secured for the part which engages the retarding or delaying device, the delay in the action of the pawl-frame being correspondingly increased in this way. It is obvious, however, that a single lever may be employed in place of the two levers F and G, and in Fig. 5 is shown a single lever  $G'$ , which is actuated substantially in the same manner as the lever G (shown in Figs. 2, 3, and 4) and has pivoted thereon a link  $F'$ , which engages the pawl-frame through a pin  $f'$  in the manner already described. The retarding or delaying device is represented in Fig. 5 as a dash-pot H', of ordinary construction. The plunger  $h'$  is connected by a link  $h^2$  to the extremity of the lever  $G'$ , and the upper end of the cylinder of the dash-pot is provided with a port  $h^3$ , which is closed by a downwardly-opening valve  $h^4$ , whereby the downward movement of the lever  $G'$  is not affected; but the upward movement of the same is delayed or retarded with the results already described.

It is frequently desirable in the use of numbering-machines to change the position of a machine end for end, so that the printed impressions shall be reversed. This is accomplished with the ordinary machine by unlocking it from the form and reversing it bodily; but with this machine the same result can be accomplished without requiring the form to be unlocked. To this end the inner case D is made bodily removable and reversible end for end within the outer case A, and at each end of the outer case A is provided a device, such as the pin  $a$ , for engaging with the actuating mechanism for the numbering-wheels.

The mode of operation of the improvements herein described will be clearly understood without further explanation herein. It will be obvious, moreover, that retarding devices of many different and well-known forms may be employed for the purpose in view herein and that they may be applied in many different ways to the actuating devices of the numbering-wheels. Consequently the invention is not to be restricted to the precise construction and arrangement shown and described herein.

I claim as my invention—

1. In a numbering-machine, the combination with the numbering-wheels and actuating devices therefor, of a retarding or delaying device within the casing or frame of the machine and operatively connected to said actuating devices to render their operative movement slow but continuous, whereby, in printing, the paper is permitted to leave the numbering-wheels before they are moved forwardly by their actuating devices; substantially as described.

2. In a numbering-machine, the combination with the number-wheels, a pawl-frame, and actuating devices for said pawl-frame, of a retarding or delaying device within the frame or casing of the machine and operatively connected to said actuating devices to render their operative movement slow but continuous, whereby the paper is permitted to leave the wheels before they are moved forwardly by their actuating devices; substantially as described.

3. In a numbering-machine, the combination with the numbering-wheels, of a lever, means to oscillate said lever, actuating connections between said lever and said numbering-wheels, and a retarding or delaying device within the frame or casing of the machine, and operatively connected to said lever to render its movement slow but continuous, whereby the paper is permitted to leave the wheels before they are moved forwardly by their actuating devices; substantially as described.

4. In a numbering-machine, the combination with the numbering-wheels, of a lever, means to oscillate said lever, actuating connections between said lever and said numbering-wheels and a spirally-slotted hub mounted to rotate and engaged by said lever.

5. In a numbering-machine, the combination with the numbering-wheels, and a pawl-frame, of a lever connected to said pawl-frame, a second lever connected to the first-named lever, means to oscillate the second-named lever, and a retarding or delaying device operatively connected to the second-named lever.

6. In a numbering-machine, the combination with an outer frame or case, an inner frame or case having a limited vertical movement in the outer frame or case and provided with a slot in one end, numbering-wheels carried by the inner frame or case, a pawl-carrying frame mounted on the axis of the numbering-wheels for actuating said wheels, a lever in the space between the slotted end of the inner frame or case and the adjacent end of the outer case; said lever being pivoted to said inner case, in engagement with said outer case and operatively connected to the pawl-frame through the said slot, and a retarding device also in the space between said ends of the two casings and operatively connected to said lever to render its movement slow but continuous; substantially as described.

7. In a numbering-machine, the combina-

tion with an outer frame or case, an inner  
frame or case bodily removable from and re-  
versible end for end within the outer case,  
numbering-wheels carried by said inner case,  
5 actuating mechanism for said numbering-  
wheels, and a device at each end of the outer  
case to engage said actuating mechanism.

This specification signed and witnessed this  
21st day of March, A. D. 1898.

JAMES H. REINHARDT.

In presence of—

W. B. GREELEY,  
A. N. JESBERA.