

(No Model.)

F. W. WICHT.
NUMBERING MACHINE.

No. 520,976.

Patented June 5, 1894.

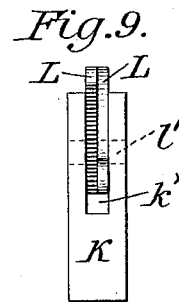
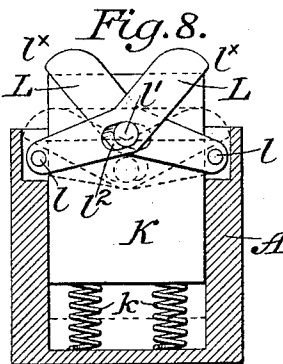
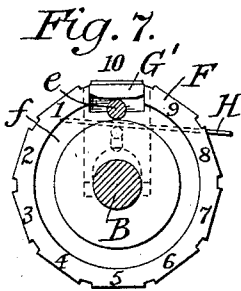
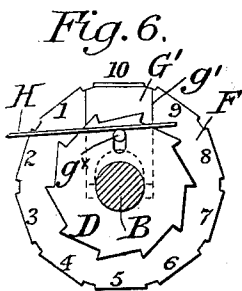
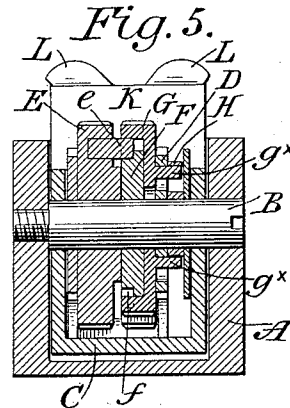
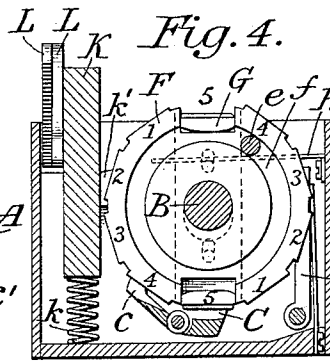
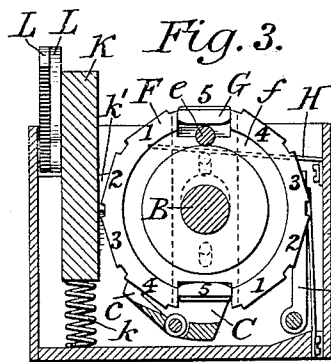
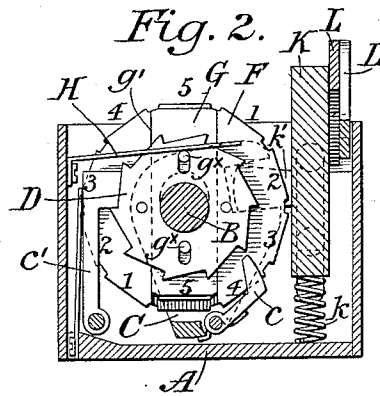
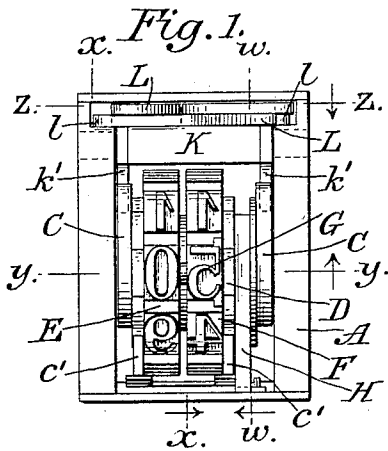
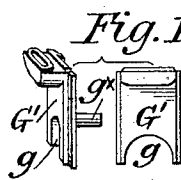
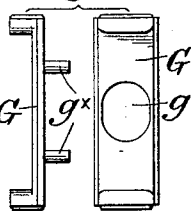


Fig. 10.



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UNITED STATES PATENT OFFICE.

FRANK W. WICHT, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPH WETTER, OF SAME PLACE.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 520,976, dated June 5, 1894.

Application filed July 11, 1893. Serial No. 480,145. (No model.)

To all whom it may concern:

Be it known that I, FRANK W. WICHT, of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Numbering-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to numbering machines which are adapted to be secured to the bed-plate of a printing-press or to be locked in the form with the type.

One object of my invention is to provide an improved machine of the character referred to which will automatically repeat a series of numbers which it is adapted to print. It will be obvious that the construction which I have devised for this particular purpose might be used in other cases where a series of numbers is required and therefore, although I shall herein describe such construction with reference to this particular use, it will be understood that I do not intend thereby to restrict the application of my improvement. For the general purpose referred to I have provided one of two adjacent numbering-wheels with a recess in which a type-block is adapted to slide; a spring presses upon the type-block to depress it when it is in the line of print except as the block is raised to the plane of print against the pressure of the spring by an eccentric projection carried by the adjacent wheel of a lower denomination.

Another object of my invention is to provide a machine which can be used in any position upon a cylinder or any other form of printing-press, as well as upon a press in which the platen moves in a perpendicular line, or substantially in a perpendicular line, with respect to the bed-plate of the press. It has been sought heretofore to attain this general object by the use of a wide plunger so that the plunger shall be struck and moved by the impression cylinder or other body moving with a rolling motion with respect to the bed-plate, before the paper is brought into contact with the numbering-wheels. The objection to this arrangement is that when the long plunger is struck at one end or the other

it sometimes binds in the ways in which it moves and injury results to the numbering machine or to the press. I propose to provide a pivoted plunger which shall be so disposed as to receive the contact of the impression cylinder or other body before the paper is brought into contact with the numbering-wheels and shall transfer the pressure to the intermediate means for actuating the number-wheels.

In the accompanying drawings wherein I have illustrated a convenient adaptation of my improvements: Figure 1 is a plan view of a numbering machine having the improvements applied thereto. Fig. 2 is a section on the line $w-w$ of Fig. 1. Fig. 3 is a section on the line $x-x$ of Fig. 1, looking toward the right. Fig. 4 is a similar view, but showing the movable type-block in a different position. Fig. 5 is a section on the line $y-y$ of Fig. 1, looking in the direction of the arrow. Fig. 6 is a partial section corresponding to Fig. 2, but showing a movable type-block bearing but one type-character instead of two diametrically opposite as in Fig. 2. Fig. 7 is a partial section corresponding to Fig. 3, but showing the arrangement just referred to. Fig. 8 is a section on the line $z-z$ of Fig. 1, looking in the direction of the arrow. Fig. 9 is an edge view of a modified arrangement of the plunger. Fig. 10 presents edge and side views of a movable type-block bearing a type-character at each end. Fig. 11 presents perspective and front views of the single type-character.

The casing A, the fixed shaft B, upon which the numbering-wheels are mounted to rotate, the pawl-frame C, bearing the actuating pawls c , the hold-pawls c' and the ratchet-wheels D fixed to their respective number-wheels may be all as usual and require no further description herein.

In the machine chosen for illustration I have represented but two number-wheels, a units-wheel E and a tens-wheel F. In the several figures of the drawings the units-wheel is represented as bearing upon its periphery a cipher and the digital figures from 1 to 9 inclusive in succession. In Figs. 1, 2, 3 and 4 the tens-wheel is represented as having the figures from 1 to 5 inclusive in succession

once repeated about its periphery, the machine shown in the said figures being adapted to print the several numbers from 1 to 50 in succession and to begin again with the figure 1 automatically. In Figs. 6 and 7, however, the tens-wheel is represented as bearing the numbers from 1 to 10 inclusive about its periphery, a machine having this form of wheel being adapted to print numbers from 1 to 100 in succession and to begin again at 1 automatically.

Referring first to the construction shown in Figs. 1 to 5 inclusive and in Fig. 10 it will be observed that the tens-wheel is formed with the diametrical recess g' in which is mounted to move freely a type-block G which is somewhat shorter than the full diameter of the number-wheel and bears upon each end the type-character "5." As shown more clearly in Fig. 10 the type-block is slotted in its middle portion, as at g , to straddle the fixed shaft B , and has two pins g^x which project through slots in the ratchet wheel D . These pins form shoulders or projections to receive the pressure of a spring H which, as represented, is fixed to the casing and tends to press the movable type-block back from the plane of print when the number-wheel is in such position as to bring the end of the type-block near the line of print. It is obvious that the spring might be fixed to the wheel itself, though I prefer the arrangement shown. The units-wheel E bears on its proximate face an eccentric projection e which, for economy of space, may enter an annular recess f in the face of the tens-wheel F and is adapted, as it moves with respect to the tens-wheel through the space immediately below the line of print, to engage the overhanging head or shoulder of the type-block and to move it against the pressure of the spring H to bring the type-character on the corresponding end of the block into the plane of print. As soon as the projection e has passed beyond the type-block G the latter will immediately be moved away from the plane of print by the spring H . It being assumed that the tens-wheel is advanced one step upon the completion of each rotation of the units-wheel it will be evident that upon the completion of five rotations of the units-wheel one end of the movable type-block G will be brought to the plane of print and that upon the completion of five more rotations of the units-wheel the other end of the type-block will be brought to the plane of print.

In the construction shown in Figs. 6 and 7 the tens-wheel F bears the numbers from 1 to 10 inclusive and the movable type-block G' extends only partly across the number-wheel and bears the type-character upon one end only. The recess g' in which the single type-block G' is adapted to move may be radially or otherwise disposed in the face of the number-wheel, it being only necessary that the type-character on the block shall be brought out with its face parallel with the

plane of print. The action of the spring H and of the eccentric projection e in this case is exactly the same as before and need not be further described herein.

I will now proceed to describe the second part of my invention, namely, that which relates to the means for actuating or advancing the number-wheels at each movement of the press to make an impression.

Any well known means for imparting movement to the wheels may be employed, but I prefer to employ a vertically movable block K which is seated in the usual manner upon springs k and is adapted to engage the swinging pawl-frame C to operate the latter through the medium of a finger or projection k' . In order that the movement of the block and of the pawl-frame may be smooth and easy it is preferable that the block should have such a length that both ends of the pawl-frame may be engaged by the corresponding fingers or projections k' . It is immaterial, however, so far as my invention is concerned, how the block K is arranged with reference to the pawl-frame and whether it be long or short. To the casing A of the machine is pivoted, as at l , preferably so that it may move in a plane parallel with the axis of the wheels, a lever-plunger L , which engages the block K loosely, as by a pin and slot connection l', l'' , at about the middle line of the block and has its other end, as at l^x , extended above the block K and above and to one side of the number-wheels in such a position as to be struck by the advancing impression cylinder or other moving part and to cause the depression of the block K before the paper is brought in contact with the number-wheels. If two oppositely disposed levers L, L , be employed with their ends extended beyond the wheels in opposite directions, as indicated in the several figures of the drawings, the machine may be placed in the form with either side in advance. As shown in Figs. 1, 2 and 8 both plungers L, L , are placed at one side of the block K but if desired the block K might be slotted, as shown at k^x in Fig. 9, to receive the plungers L, L . The mode of operation of this part of my invention will be readily understood from the foregoing description, and it will be clear that as the plungers transmit the pressure of the impression cylinder or other body directly to the central line of the block K , the latter cannot be tilted out of position and become jammed in its movement as it might be if one end or the other of the block itself received pressure.

Referring to the mode of operation of the movable type-block, let it be assumed that the tens-wheel is standing with the figure 4 at the line of print and the units-wheel with the figure 9 at the line of print. At the next forward movement of the units-wheel the tens-wheel will also be advanced in unison one step bringing the type-block G into line of print. As the tens-wheel moves forward into this position the spring H will tend to keep

the type-block back from the plane of print, but the eccentric projection *e* of the units-wheel moves forward with the movement of the tens-wheel immediately beneath the over-
 5 hanging head or shoulder of the type-block thereby moving it into the plane of print and holding it therein. At the next forward movement of the units-wheel the projection *e* will move from beneath the head of the
 10 movable type-block into the position shown in Fig. 4 and the type-block will immediately be moved back from the line of print by the spring H. As before stated this operation will be repeated upon the completion of five
 15 more rotations of the units-wheel. If the form and arrangement of the tens-wheel and movable block are as shown in Figs. 6 and 7, the movable type-block, which bears upon its end the type-character 10, will be brought
 20 into the plane of print at the change from 99 and at the next movement will be dropped and in order to allow the figure 1 of the units-wheel to be printed alone.

I claim as my invention—

25 1. In a numbering machine, the combination of a number wheel having a recess, a type-block movable in said recess toward and from the plane of print, a spring to press said type-block from the plane of print, a second
 30 number wheel adjacent to the first, an eccentric projection carried by the second wheel and adapted to move the type-block against the pressure of the spring into the plane of print, and means to advance said wheels, sub-
 35 stantially as shown and described.

2. In a numbering machine, the combination of a number-wheel having a recess, a type-block movable in said recess toward and from the plane of print, a flat spring fixed to
 40 the casing of the machine and tending to press said type-block from the plane of print while the type-block is near the line of print, a second wheel adjacent to the first, an eccentric projection carried by the second wheel
 45 and adapted to move the type-block against pressure of the spring into the plane of print, and means to advance said wheels, substantially as shown and described.

3. In a numbering machine, the combination of a number-wheel having a diametrical
 50 recess, a type-block movable in said recess and having a type-character on each end

thereof, and means substantially as described whereby the bar is moved in opposite directions to bring each end in turn to the plane of
 55 print, substantially as shown and described.

4. In a numbering machine, the combination of a number-wheel having a diametrical recess, a type-block movable in said recess
 60 and having a type-character on each end, a spring to press the type-block from the plane of print as each end is brought to the line of print, a second number-wheel adjacent to the first, an eccentric projection carried by the
 65 second wheel and adapted to move the type-block against the pressure of the spring, and means to advance said wheels, substantially as shown and described.

5. In a numbering machine, the combination of a number-wheel having a radial recess
 70 and an annular recess in its face, a type-block movable in said radial recess, a second number-wheel adjacent to the first, and a pin carried by said second wheel and entering the annular recess in the first wheel to move said
 75 block to the plane of print, substantially as shown and described.

6. In a numbering machine, the combination of the number-wheels, a pawl-frame to
 80 advance said wheel, two oppositely disposed levers pivoted to move in planes parallel with the axis of the wheels and extended above and beyond the wheels in opposite directions, and means to transmit the movement of said levers to the pawl-frame, substantially as shown
 85 and described.

7. In a numbering machine, the combination of the number-wheels, a vertically movable
 90 block, intermediate means actuated thereby to advance the wheels, and two oppositely disposed levers loosely engaging said block and extended above and beyond the wheels in opposite directions and adapted to be struck by a body moving toward the machine and to transmit its pressure to the block,
 95 substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK W. WICHT.

Witnesses:

WILLIAM WENZ,
 W. J. GEORGE.