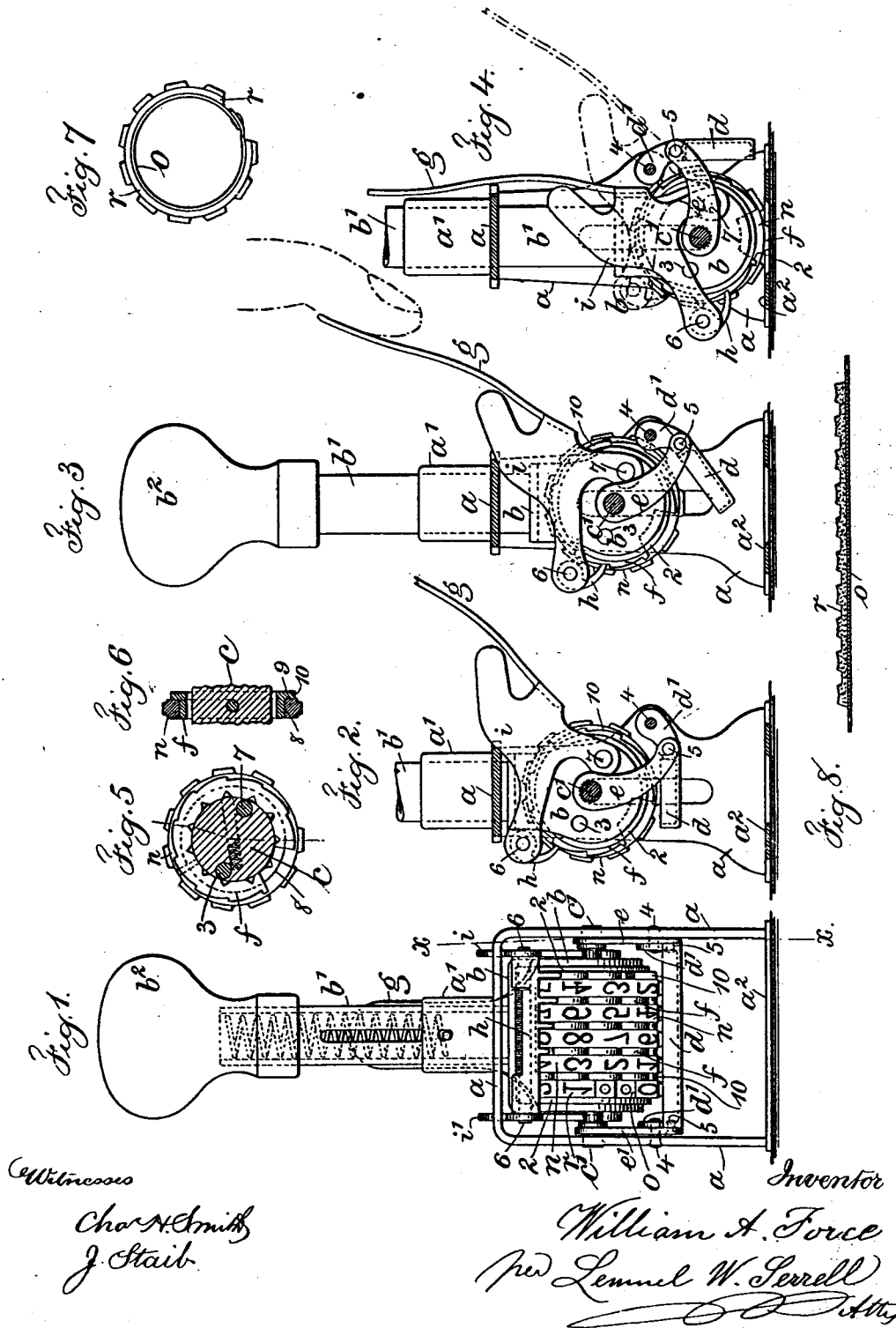


(No Model.)

W. A. FORCE.
NUMBERING MACHINE.

No. 548,802.

Patented Oct. 29, 1895.



UNITED STATES PATENT OFFICE.

WILLIAM A. FORCE, OF BROOKLYN, NEW YORK.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 548,802, dated October 29, 1895.

Application filed May 20, 1895. Serial No. 549,880. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. FORCE, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Numbering-Machines, of which the following is a specification.

My invention relates particularly to that class of numbering-machines where numbers can be impressed consecutively in duplicate or repeated. My improvements in such machines relate to the manner of making the type-wheels and type-bands and to a means for moving the inking-pad away from the type-faces and turning the type-wheels. The peripheral eyes of the type-wheels are notched so as to form a rib along one side against which there is a shoulder to the depressed portion. The ribs are cut to form ratchet-teeth and the type-bands are passed over the wheels up to the shoulders, and when the type-bands are in place their type-faces are beyond the ratchet-teeth. These type-bands may be of rubber or metal or a combination of both rubber and metal. If of the latter, the metal is a thin narrow and flat strip, and the rubber body and letters conform to the metal strip and are cemented thereto, and these parts are then bent up into a band or ring and the ends united together or to the type-wheel around which the band is placed, or both. These ends may be riveted together or pinned to the type-wheels, and when made in the flat form the rubber type-faces should be slightly concave, so that when brought into the circular form said faces may become flat.

The device for moving the inking-pad and turning the type-wheels consists of a rocking finger-lever pivoted to the yoke carrying the type-wheels and bearing on the under side of the yoke-frame and carrying the pawl-block. The operation of this lever against the yoke-frame serves to depress the yoke and handle and type-wheels and swing the inking-pad away from the surface of the type before the pawl-block acts to rotate the type-wheels.

In the drawings, Figure 1 is an elevation of my improvement at one side. Figs. 2, 3, and 4 are side elevations and partial sections at the line $x x$ of Fig. 1, showing the three positions of the mechanism; and Figs. 5, 6, 7, and 8 represent details hereinafter described.

The yoke-frame a , sleeve a' , and open centered base a^2 are connected together. The yoke b , tube b' , and handle b^2 are connected together, the tube b' passing through the sleeve a' , and a pin and helical spring are provided, as usual, for raising the parts to their normal position after depression by hand.

The shaft c has end hubs c' , that pass through the yoke b and through bushings 2, and pins 3 and 7 pass through the yoke b and bushings 2 and through the shaft c of the type-wheels f to hold the said parts together, and the hub ends c' of said shaft pass through and are guided in slots in the opposite sides of the yoke-frame a , and the type-wheels are between the bushings 2, and their position is maintained in any well-known way, preferably by pointed spring-actuated radially-placed pins in the shaft c , engaging internal notches in the type-wheels.

The inking-pad d is provided with arms d' , pivoted at 4 to the yoke-frame a , and arms $e e'$, pivoted on the shaft-hubs c' , are connected by pivots 5 to the arms d' of the inking-pad d , so that as the shaft c and hubs c' are moved down the arms $e e'$ rock the inking-pad on its pivots 4 away from the type-wheels, and the reverse movement returns the said inking-pad to place against the type-wheels. These positions are shown in Figs. 2, 3, and 4. The rocking lever consists of the finger-piece g and the cam-plates $i i'$. These cam-plates are pivoted to the pin 7 at the opposite portions of the yoke b , and they are extended backwardly, and the pawl-block h is connected thereto by the pivot-rod 6. These cam-plates $i i'$ take a bearing against the under side of the top portion of the yoke-frame a at one side of the machine, and in the position of rest, Figs. 1 and 2, the upward force exerted by the spring in the tube b' keeps the cam-plates against the yoke-frame and the inner portion of the pawl-block h against the face of the yoke b , so that there is no looseness of the parts.

The peripheral edges of the type-wheels f are notched, as shown in Fig. 6, so as to form on each wheel a plain surface 8 and a shoulder 9 and a rib 10 along one side, and these ribs are cut with teeth to form the ratchets for the pawls of the pawl-block, and the type-bands surround the type-wheels, the connec-

tions being made at the surfaces *s* and the type-faces projecting beyond the ratchet-teeth. These type bands or rings *n* may be made integral of rubber or metal and be forced to place upon the wheels *f*, or the bands may be made in flat form, as shown in Fig. 8. In this latter construction a narrow flat strip of metal *o* is employed and holes are made in its end, and the rubber type are made upon a long narrow body-strip *r* and cemented to the metal strip, and the faces of the types are made concave (see Fig. 8) to a predetermined extent, so that when the strip is bent into circular form, as shown in Fig. 7, the type-faces will by the stretching become flat. The ends of the metal strips may be connected at the holes by a rivet (see Fig. 7) and the band be forced on the type-wheel, or the metal strip may be just long enough when on the wheel *f* for the ends to meet, and in this case pins can be driven into holes in the type-wheel, as shown in Fig. 1.

In the operation of the machine Fig. 3 shows the position where the finger-lever *g* has been brought slightly toward the handle and the type-wheels depressed part way. This movement swings the inking-pad *d* away from the type-faces, but is not yet sufficient to bring the pawls of the pawl-block into engagement with the type-wheel ratchets to turn the type-wheels with the usual progressive movement. Fig. 4 shows the full movement, wherein a type-wheel has been turned to alter the number of the type-wheels brought down to give the impression. This machine can be employed to impress numbers repeatedly in duplicate and consecutively. Where the numbers are repeated, of course the lever device is not at all employed, and where the numbers are duplicated the lever device is used with each alternate vertical movement of the handle *b*².

Where the numbers are impressed consecutively, the lever device is operated, as shown in Fig. 4 by the full lines—that is, the lever device is moved toward the handle once for each depression of the handle *b*² and is held there while the handle is depressed, or the lever device may be operated to turn the units number-wheel progressively and then released to bring the inking-pad up to and to insure the inking of the types, and then the handle and type-wheels are depressed to give the impression without moving the lever device. This latter movement will leave the lever device in the position shown by dotted lines in Fig. 4, but the preferable mode of

operation is that first described and shown by full lines in Fig. 4.

My improved numbering-machine is very simple, compact, and efficient, and the cost of its manufacture is very much less than that of other machines for doing like work.

I claim as my invention—

1. In a numbering machine the combination with the yoke frame *a*, the type wheels and their shaft, the pivoted inking pad and arms connecting the same and said shaft for swinging the inking pad, of the yoke *b*, a lever device comprising the finger piece *g* and cam plates *i* *i'* pivoted to the yoke *b* at 7, and the pawl block *h* pivoted at 6 to said cam plates, the cam plates as moved by the finger piece acting against the under side of the yoke frame *a* at one side to effect the downward movement and swing the inking pad off the type faces and thereafter turn the type wheels in rotation before the impression is given at the completion of the downward movement, substantially as set forth.

2. In a numbering machine the combination with a yoke, a shaft passing across through the same and a spring actuated device connected thereto for raising the parts after being depressed by hand, of type wheels upon said shaft between the parallel parts of said yoke, said type wheels each being made with a notched peripheral edge so as to form a plain surface, a shoulder and a rib along one side to be cut with teeth and form the ratchet and a type band or ring upon and around the plain surface of the wheel, substantially as set forth.

3. In a numbering machine the combination with a yoke, a shaft passing across through the same and a spring actuated device connected thereto for raising the parts after being depressed by hand, of type wheels upon said shaft between the parallel parts of said yoke, said type wheels having notched peripheral edges, the flat strips of metal *o*, the rubber body strips *r* cemented to the metal strips *o* and having raised type faces that are concave, said metal and rubber strips being bent into circular form to surround the type wheels and the ends secured, substantially as set forth.

Signed by me this 29th day of April, A. D. 1895.

WM. A. FORCE.

Witnesses:

GEO. T. PINCKNEY,
HAROLD SERRELL.