B. B. CONRAD.

NUMBERING MACHINE.

APPLICATION FILED DEC. 30, 1907.

898,836.

Patented Sept. 15, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

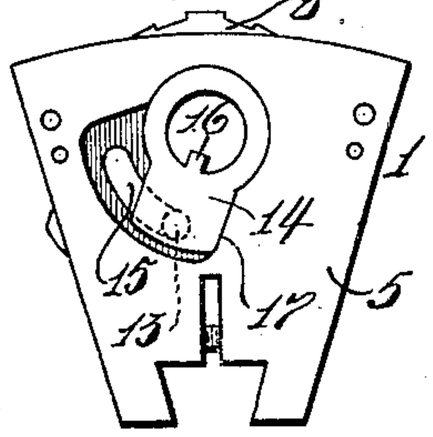



Fig. 5.

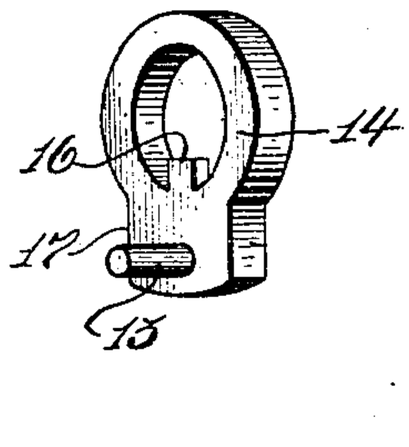



Fig. 2.

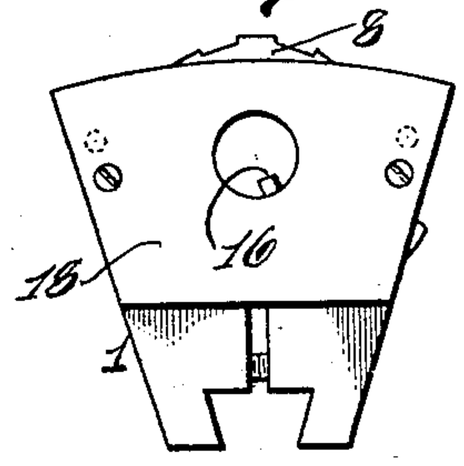



Fig. 3.

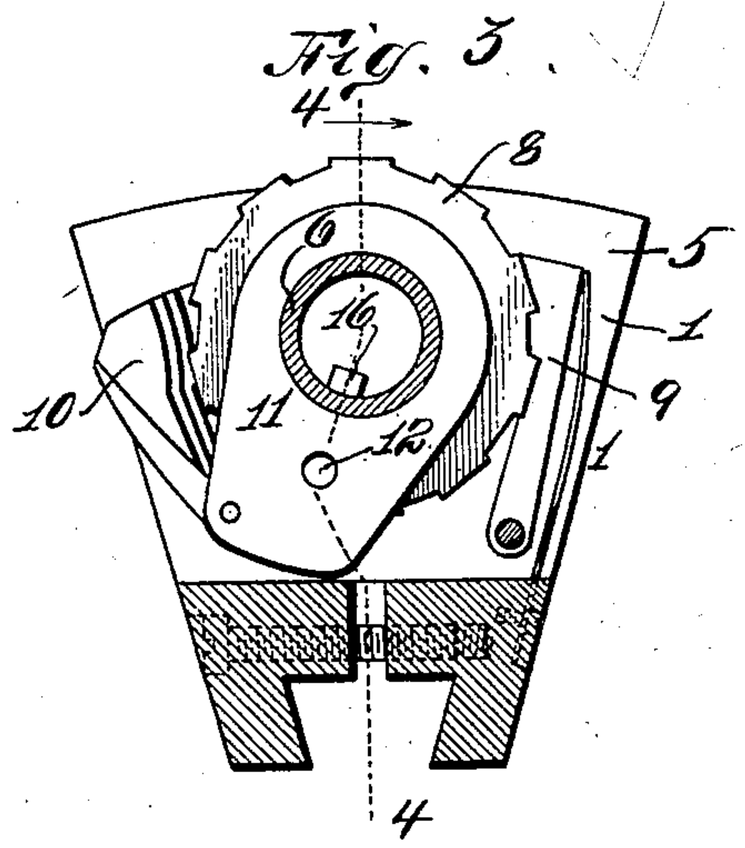



Fig. 4.

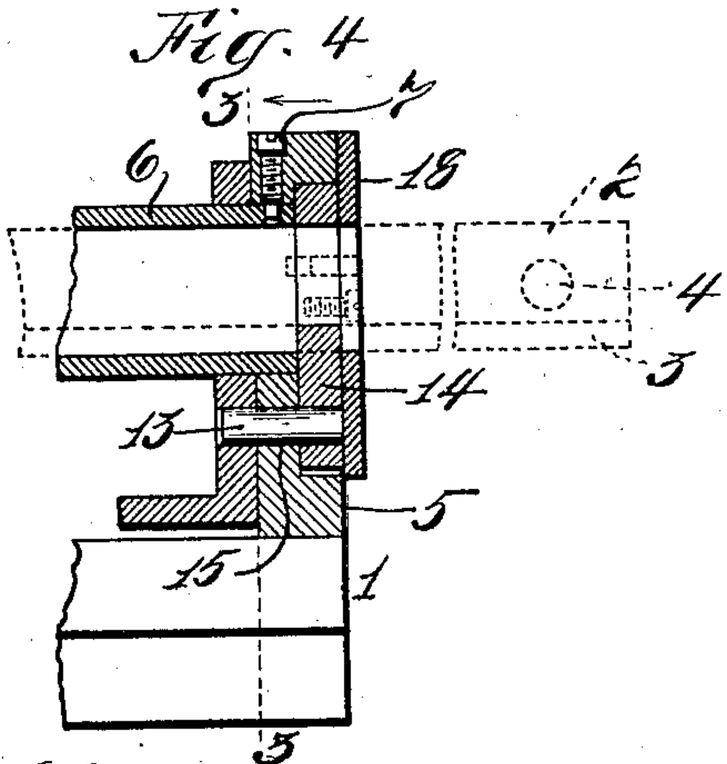
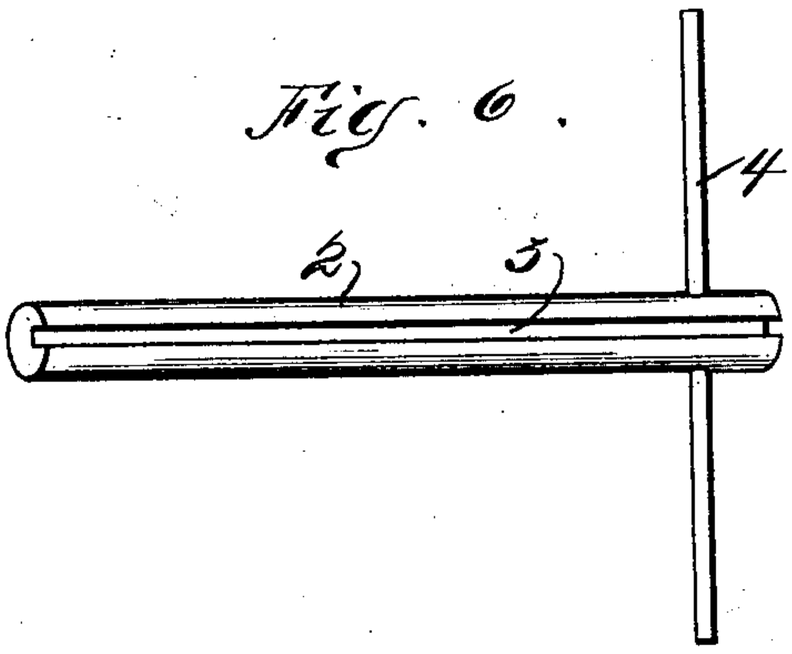



Fig. 6.

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2 SHEETS—SHEET 2.

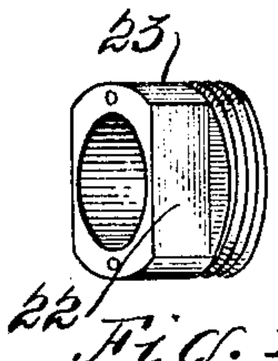



Fig. 13.

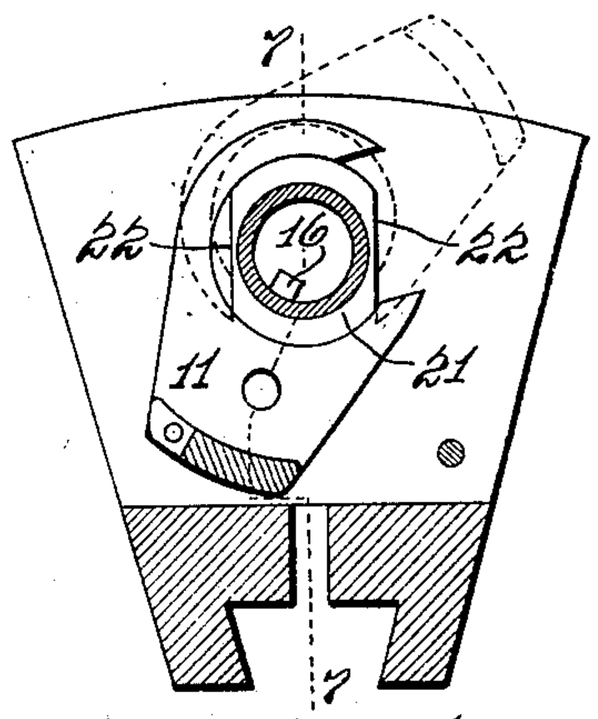



Fig. 11.

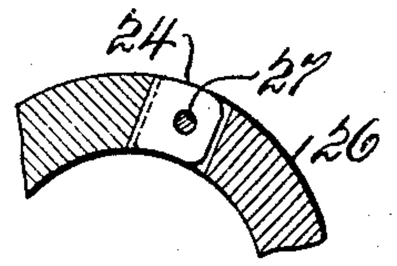



Fig. 14.

Fig. 7.

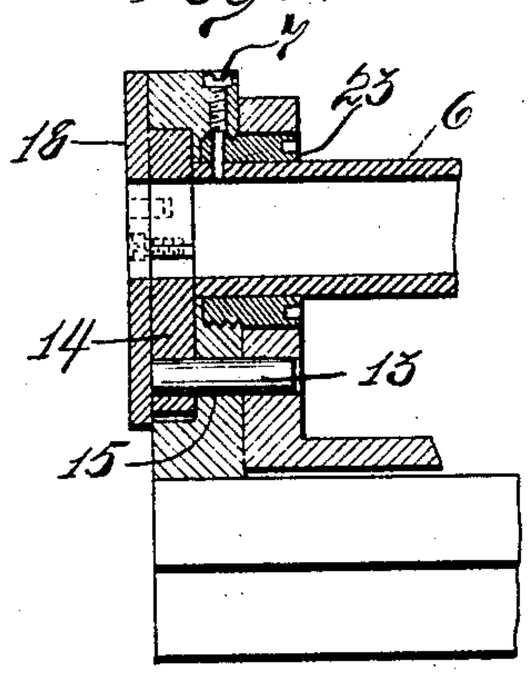



Fig. 8.

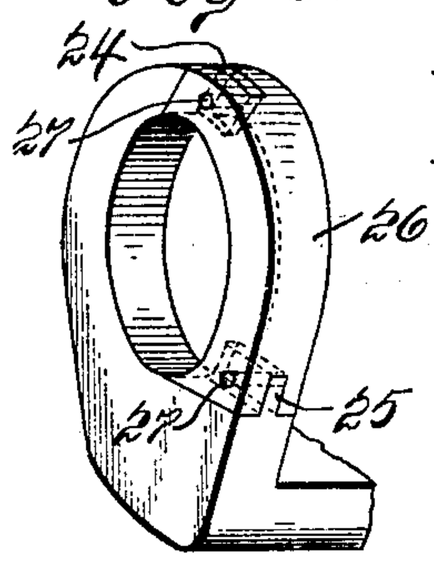



Fig. 12.

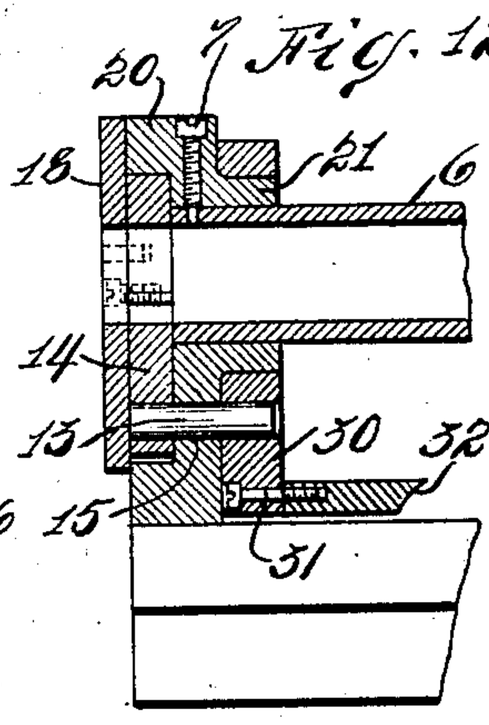
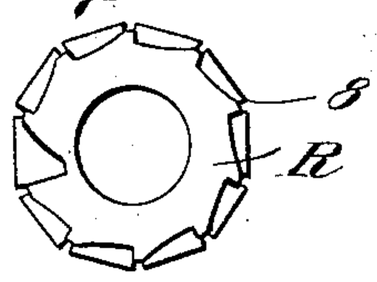



Fig. 15.



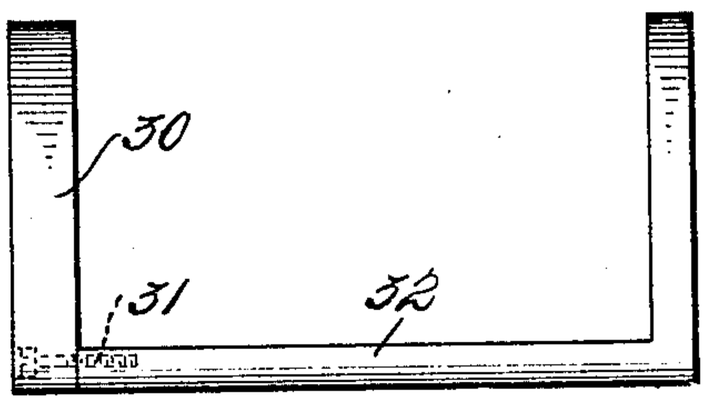
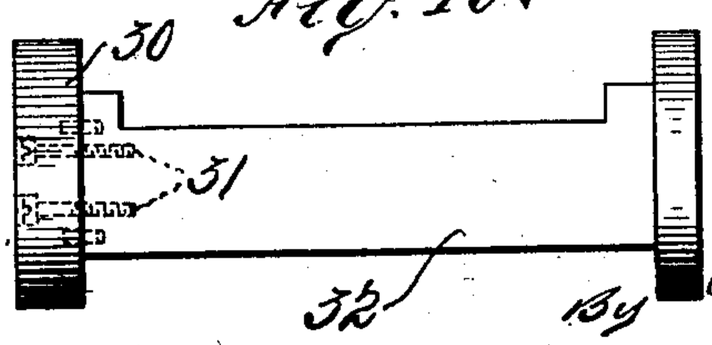




Fig. 9.

Fig. 10.

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# UNITED STATES PATENT OFFICE.

BENJAMIN B. CONRAD, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN NUMBERING MACHINE COMPANY, A CORPORATION OF NEW YORK

## NUMBERING-MACHINE.

No. 898,836. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed December 30, 1907. Serial No. 408,505.

*To all whom it may concern:*

Be it known that I, BENJAMIN B. CONRAD, a citizen of the United States, residing at New York city, in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Numbering-Machines, of which the following is a clear, full, and exact description.

This invention relates to an improved numbering machine for operation from an oscillating shaft such as shown in the Reinhardt patent of June 5th, 1894, No. 521,001, in which the wheels are carried on a sleeve encircling the shaft and the main object of the invention is to simplify the actuating mechanism over that shown in the before-mentioned patent.

In securing the desired object, briefly stated, I have adapted the operating mechanism of the Reinhardt patent 388,307, dated August 21st, 1888, by changing its operative mechanism replacing a plunger and pin by an oscillating arm and pin which may be engaged, with the shaft.

Although the first above mentioned Reinhardt patent is shown with a frame to fit a chase, I have shown my invention as applied to a numbering head for use on a rotary press, though I do not limit myself thereby, as it will be obvious that my invention is applicable to any numbering machine with oscillating shaft.

The scope of my invention will be pointed out in the claims.

In the accompanying drawings Figure 1 is an end view of a machine constructed in accordance with this invention with the end plate removed. Fig. 2 is a side elevation of the opposite end of the machine with end plate in place. Fig. 3 is a section on line 3—3 Fig. 4. Fig. 4 is a central longitudinal section of one end of the machine on line 4—4 Fig. 3. Fig. 5 is a perspective detail of the operating arm. Fig. 6 is a view of the operating shaft. Fig. 7 is a view similar to Fig. 4 of a modified construction. Fig. 8 is a view of a modified form of pawl swing arm for use with the constructions of Figs. 7 and 12. Fig. 9 is a front elevation, and Fig. 10 is a plan of a further modification of pawl swing for use with the constructions of Figs. 7 and 12. Fig. 11 is a view of a modification in which the pawl swing is detachable independent of sleeve and wheels. Fig. 12 is a view on line 7—7 Fig. 11. Fig. 13 is a perspective detail of the collar of Fig. 7 and Fig. 14 is a sectional detail of the joint of Fig. 8 and Fig. 15 is a detail face view of one of the wheels with its attached ratchet.

As shown in the drawings 1 is the frame of a numbering head, the shaft 2 for the operating of this type of machine is provided with a groove 3 throughout its length, generally operated by cam mechanism at the side of a printing press, not shown herein. It is shown herein as provided with a pin 4, merely to indicate that the same may be oscillated thereby. The frame of the machine is provided with upstanding ends 5, with an aperture in each, through which the shaft may be passed. A sleeve 6 is secured in each end of the frame, but it does not pass through the frame, merely entering the frame for a short distance, there being secured if desired, by set screws 7. The wheels 8 carrying the numbers are mounted to turn on the sleeve, and are supplied with the usual detaining pawls 9, while pawls 10 pivoted in the pawl swing 11 serve to advance the wheels in the manner customary in machines of this character. The pawl swing 11 in the various modifications shown in this specification is provided with a hole 12, into which a pin 13 carried by an operating arm 14 fits. The exterior of the frame is recessed as shown in Fig. 1 to receive the operating arm 14, so that its face may be flush with the side of the frame. A slot 15 cut through the wall of the frame serves to permit the pin 13 to take an oscillatory movement sufficient to operate pawls 10 and the number wheels. The operating arm 14 is centrally bored to accommodate the shaft 2, while the projecting lug 16 is adapted to engage the groove 2 of the shaft. The side 17 of the operating arm acts as a stop to limit the backward motion of the pawl swing against the broad bearing of the side of the recess in the end of the frame. An end plate 18 may be secured at the end of the frame to cover the operating mechanism, and protect the same as well as improve the appearance of the machine.

In the modifications shown in Figs. 1 to 5 inclusive, the pawl swing 11 is shown as mounted on and oscillating upon the sleeve 6. In general practice, I prefer to mount the swing, not on the sleeve at all, but as shown in Figs. 11 and 12 of the drawings, in which figures the sides of the machine 20

carry a projecting hub 21 having slabbed sides as shown at 22, Fig. 11. The pawl swing is cut through as shown in that figure, so that it may be slid into place when in the position of the dotted lines down, and encircle the projecting collar, and be there locked when the swing is in the operative position shown in full lines in the Fig. 11. This construction has the advantage that the swing may be removed without removing the sleeve or number wheels, and it gives a better, more substantial bearing for the swing than can be secured in the construction shown in Fig. 4.

As shown in Fig. 7, the projecting hub 21, instead of being integral with the side of the frame, may be substituted by a threaded collar 23, screwed into the frame as shown in that figure. In this instance the pawl swing of Fig. 3 or Fig. 11 may be used. If the former is used the sleeve 23 is inserted after the swing is put in place, and before the sleeve and numbering wheels are assembled. If the latter construction is used the sides of the collar 23 are slabbed as shown at 22, Fig. 11. If it is desired to do away with the removable swing of Figs. 11 and 12, and still take advantage of the annular collar for a bearing for the swing, the pawl swing may be modified as shown in Figs. 8 to 14, in which it is shown as split and joined at 24—25, the intervening piece 26 being placed in position after the swing is placed upon the shaft, and the parts pinned together by pins 27.

The modified manner of securing the same result as shown in Fig. 8 is illustrated in Figs. 9 and 10, in which the pawl swing is in two parts, parts 30 and 32. Part 32 is mounted on its collar. Part 30 is then mounted upon its collar, the joints caused to meet, and screws 31 used to unite the two structures.

It will be seen from the foregoing, that the oscillatory motion of the shaft 2 is, through the operating arm 14, transformed from the vertical movement of the Reinhardt patent of 1888 into the oscillating movement of the Reinhardt patent of 1890, both referred to hereinbefore, at the same time producing a machine in which the operating parts do not occupy any of the space within the limits of the sleeve or upstanding ends of the frame.

The operation of the device will be obvious to one skilled in the art, as the machine differs in structure only from the machines known for many years in this art.

As shown in Fig. 15 a ratchet wheel R is secured on the face of each numbering wheel 8 for engagement with the actuating pawl in the ordinary manner.

I claim as my invention:

1. In a numbering machine of the character described a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, said operating means comprising an arm extending from the shaft on the outer side of the frame, and carrying a projection extending through the frame, and engaging the pawl swing.

2. In a numbering machine of the character described a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, said operating means comprising an arm extending from the shaft on the outer side of the frame, and carrying a projection extending through the frame, and engaging the pawl swing, the end of said frame being recessed to house the arm.

3. In a numbering machine of the character described a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, said operating means comprising an arm extending from the shaft on the outer side of the frame, and carrying a projection extending through the frame, and engaging the pawl swing, the end of said frame being recessed to house the arm, the arm and recess at one end of each being semi-circular.

4. In a numbering machine of the character described a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, said operating means comprising an arm extending from the shaft on the outer side of the frame, and carrying a projection extending through the frame, and engaging the pawl swing, the end of said frame being recessed to house the arm, the arm and recess at one end of each being semi-circular, and a shoulder of considerable surface at the side of the recess of the frame against which the arm may abut.

5. In a numbering machine of the character described a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, said operating means comprising an arm extending from the shaft

on the outer side of the frame, and carrying a projection extending through the frame, and engaging the pawl swing, the end of said frame being recessed to house the arm, and a removable end plate for the arm.

6. In a numbering machine of the character described a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, said operating means comprising an arm extending from the shaft on the outer side of the frame, and carrying a projection extending through the frame, and engaging the pawl swing; a central opening in the arm and a lug projecting into said opening, said shaft having a groove to engage the lug.

7. In the numbering machine of the character described, a frame, a pawl swing and its actuating pawls, the number of wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, the bearing for the pawl swing rigid with the frame and means to permit the ready detachment of the swing from said bearing, said means comprising a cylindrical hub having slotted sides, a pawl swing having a central bearing surface and a passage therefrom to the outside of less width than the diameter of said central bearing surface.

8. In the numbering machine of the character described, a frame, a pawl swing and its actuating pawls, the number wheels, their ratchets, an operating shaft for the pawl swing, a sleeve on which the wheels are rotatable surrounding the shaft, and an operating means exterior to the sleeve connecting the shaft and pawl swing, a bearing for the pawl swing secured to the frame, the sleeve passing freely through said bearing, said sleeve being removable without removing the pawl swing.

Signed at Brooklyn, this 27th day of December, 1907.

BENJAMIN B. CONRAD.

Witnesses:

A. A. FONDA,

C. E. WYLIE.