

(No Model.)

J. H. REINHARDT.
CONSECUTIVE NUMBERING MACHINE.

No. 469,198.

Patented Feb. 16, 1892.

Fig. 1.

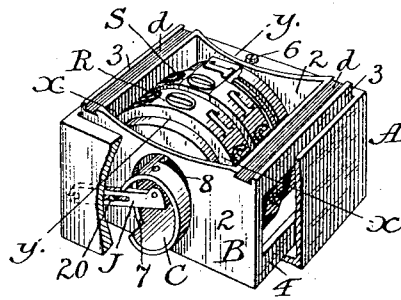


Fig. 2.

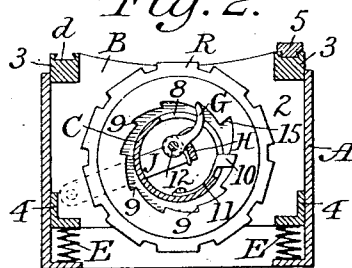


Fig. 3.

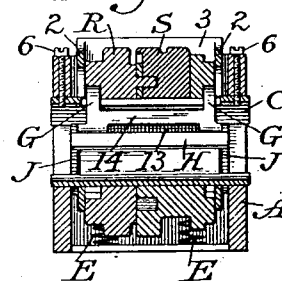


Fig. 4.

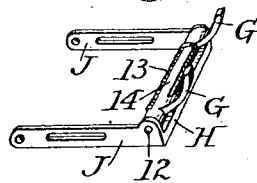


Fig. 5.

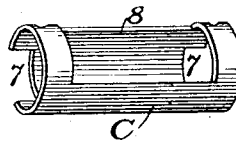
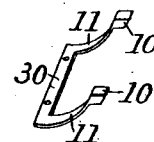


Fig. 6.



Attest:

A. N. Jester.
W. H. Hider.

Inventor:

James H. Reinhardt
by William B. Greeley
Atty.

UNITED STATES PATENT OFFICE.

JAMES H. REINHARDT, OF NEWARK, NEW JERSEY, ASSIGNOR TO JOSEPH WETTER, OF MEMPHIS, TENNESSEE.

CONSECUTIVE-NUMBERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 469,198, dated February 16, 1892.

Application filed August 3, 1891. Serial No. 401,473. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. REINHARDT, of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Consecutive-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.

Figure 1 is a view in perspective of my improved consecutive-numbering-machine with a portion of the outer case broken away, illustrating the construction and arrangement of the inner movable frame and of the fixed tubular shaft in its relation thereto. Fig. 2 is a transverse section in line *xx*, and Fig. 3 a longitudinal section in line *yy* of Fig. 1. Fig. 4 is a view in perspective of the frame carrying the connected pawls detached; Fig. 5, an elevation in perspective of the tubular shaft upon which the numbering-wheels revolve detached, and Fig. 6 a rear view in perspective of the holding-pawls detached.

Similar letters indicate like parts in all of the figures.

My invention relates to that class of consecutive-numbering machines which are adapted to be fitted upon the bed of a printing-press in or with the form of type, and to be actuated by the movement of the platen of the press in closing down upon the type.

Its object is mainly to dispense with the necessity of forming points of contact between the numbering-machine and the platen in line with the numeral or series of numerals brought into line of print. This object is accomplished in my invention by mounting the numbering-wheels upon a hollow or tubular shaft and by forming an internal ratchet upon each wheel, to be engaged by pawls projecting from a bar or rod, which extends through the tubular shaft and is suitably supported at either end. The relative movement of the ratchet-wheel and pawl necessary to cause the proper rotation of the ratchet-wheel is produced by connecting one of said parts to a fixed casing and the other to a spring-seated frame fitting closely within the outer

case and inclosing the numbering-wheels, substantially as hereinafter fully described.

In the accompanying drawings, wherein I have shown a convenient embodiment of my invention, A represents the inclosing case of the numbering-machine constructed in the customary manner to admit of being locked up in a form of type, the types on the wheels of the machine being adjusted to reach, when in line of print, the same plane as the remainder of the type placed on the bed of the press.

B is an inner rectangular frame constructed of two end plates 2 2 and of longitudinal lateral bars 3 4, the upper bars 3 3 being preferably made sufficiently wide and solid to admit of a longitudinal groove or recess *d* in the upper face of each. These longitudinal grooves *d d* are preferably made dovetailed in cross-section (see Fig. 2) to receive a counterpart type-bar or a series of type 5, (see at right hand of Fig. 2,) adapted to reach the plane of the type on the numbering-wheels when the frame B is forced down. The end plates 2 2 are centrally slotted to admit of the passage through them of a tubular shaft C and of a vertical movement upon said shaft. The frame B is made to fit closely within the rectangular case A of the machine, leaving, however, a narrow space at each end between the frame and case. It is supported upon springs E E, (see Figs. 2 and 3,) which bear it up automatically above the level of the numbering-wheels in the machine.

The shaft C consists of an open-ended, tubular, or hollow cylinder, preferably carried through the slots in the end plates 2 2 of the inner frame B and through central apertures in the ends of the casing A, to which it is made fast by set-screws 6 6 (see Fig. 3) or other equivalent means. A portion of each end of this tubular shaft is cut away, as shown at 7 7, Figs. 1 and 5, to admit of the play therein of vibrating pawl-arms, which extend radially to the middle of the shaft at each end, and a wide longitudinal slot 8, extending nearly the length of the shaft, is cut out therein on the side opposite said end recesses 7 7, as clearly shown in Fig. 5.

Upon the tubular shaft C as an axis two or

more type-bearing numbering-wheels R S are mounted, their united widths being such as to fill in the space between the end plates 22 of the movable frame B. The inner periphery of each wheel is formed with a series of internal ratchet-teeth 9 9, (see Fig. 2,) equal in number to the type upon the outer periphery of the wheel, and these ratchets are engaged by connected pawls G G, pivoted upon a longitudinal rod 12, secured in a swinging frame, which consists of a cross-bar H, (see Fig. 4,) carried longitudinally through the tubular shaft C and made fast at its ends to the outer free ends of the pawl-arms J J. These arms J are severally pivoted to the inner face of each of the end plates of the outer casing A and vibrate in the narrow spaces left between the outer casing and the end plates 2 2 of the inner frame B. The arms J J pass through the recesses 7 7 in the ends of the tubular shafts C. The rod 12 extends parallel with the bar H of the frame, close to it, and, like it, is secured at each end to the arms J J. The swinging pawls G G are pivoted upon said rod 12 to project therefrom through the slot 8 in the shaft C, so as to reach the internal ratchets in the numbering-wheels, and they are connected together by a cross-bar 14, (see Fig. 4,) so as to move in unison. These two pawls are of unequal length, that engaging the units-wheel being made longer than that which engages the tens-wheel, so that with ratchets of the same diameter for both the pawl for the tens-wheel shall be of insufficient length to reach its ratchet until the longer pawl drops into a special deep notch in the ratchet of the units-wheel. Each vibrating arm J is longitudinally slotted in the portion thereof between its pivot and the tubular shaft C, and a pin 20, projecting from the inner spring-seated frame B, is made to enter each slot, so that a depression of said frame will operate to depress the arms and with them the pawl-rod 12 and pawls G G, and an elevation of the frame will contrariwise throw up the arms and pawls. The pawls G are so placed relatively to the ratchet-teeth 9 9 as that the elevation of the frame B and pawls will operate to turn the numbering-wheels. They are held in engagement with the ratchets by a coiled spring 13, fitted on the rod 12. Stop-pawls 10 10, (see Figs. 2 and 6,) fitted upon the ends of spring-arms 11 11, which are connected by a cross-bar 30 and fixed within the tubular shaft C are made to project out through the slot 8 beneath the swinging pawls G G and engage the ratchets 9 9, so as to pre-

vent a reverse movement of the type-wheels after they have been moved forward by the action of the swinging pawls. The ratchet on the first or units wheel R is of the same diameter as that of the ratchet on the second or tens wheel S, so that when the longer of the two pawls is in engagement with the ratchet of the units-wheel it will hold the second shorter pawl out of engagement with the ratchet of the tens-wheel. The one notch 15 (see Fig. 2) in the ratchet of the units-wheel, which corresponds with the type-number 9 on said wheel, is cut so deep as that when its pawl drops therein it will allow the pawl of the tens-wheel to fall into engagement, so that when at each revolution of the units-wheel it moves from 9 to 0 the pawl of the tens-wheel is brought into play to move that wheel forward one step—a device which is well known to the art.

It is evident that the frame B may be made with bars at its ends instead of the plates 2 2, so as to consist of a very light frame-work throughout, that the hollow shaft might be connected to the spring seated frame and the pawls to the fixed frame, and that instead of providing type to be fitted in the grooved bars 3 3 to contact with the platen of the press, one or more contact-points of any description may be formed upon any portion of the upper bars of said frame as equivalent for the type 5 to receive the pressure of the platen, by which the spring-seated frame is to be forced down to actuate the pawls of the numbering-wheels.

I claim as my invention—

The combination of a stationary frame, a frame adapted to be reciprocated with respect to said stationary frame, a hollow slotted shaft, a pawl-frame whose cross-bar extends through the hollow slotted shaft, said shaft being connected to one of said frames, connections between the pawl-frame and the other of said frames whereby the reciprocation of the one causes the oscillation of said pawl-frame, and numbering-wheels journaled on said shaft and formed with internal ratchets which are engaged by the pawls of the pawl-frame, substantially as shown and described.

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

JAMES H. REINHARDT.

Witnesses:

A. N. JESBERA,
A. WIDDER.