

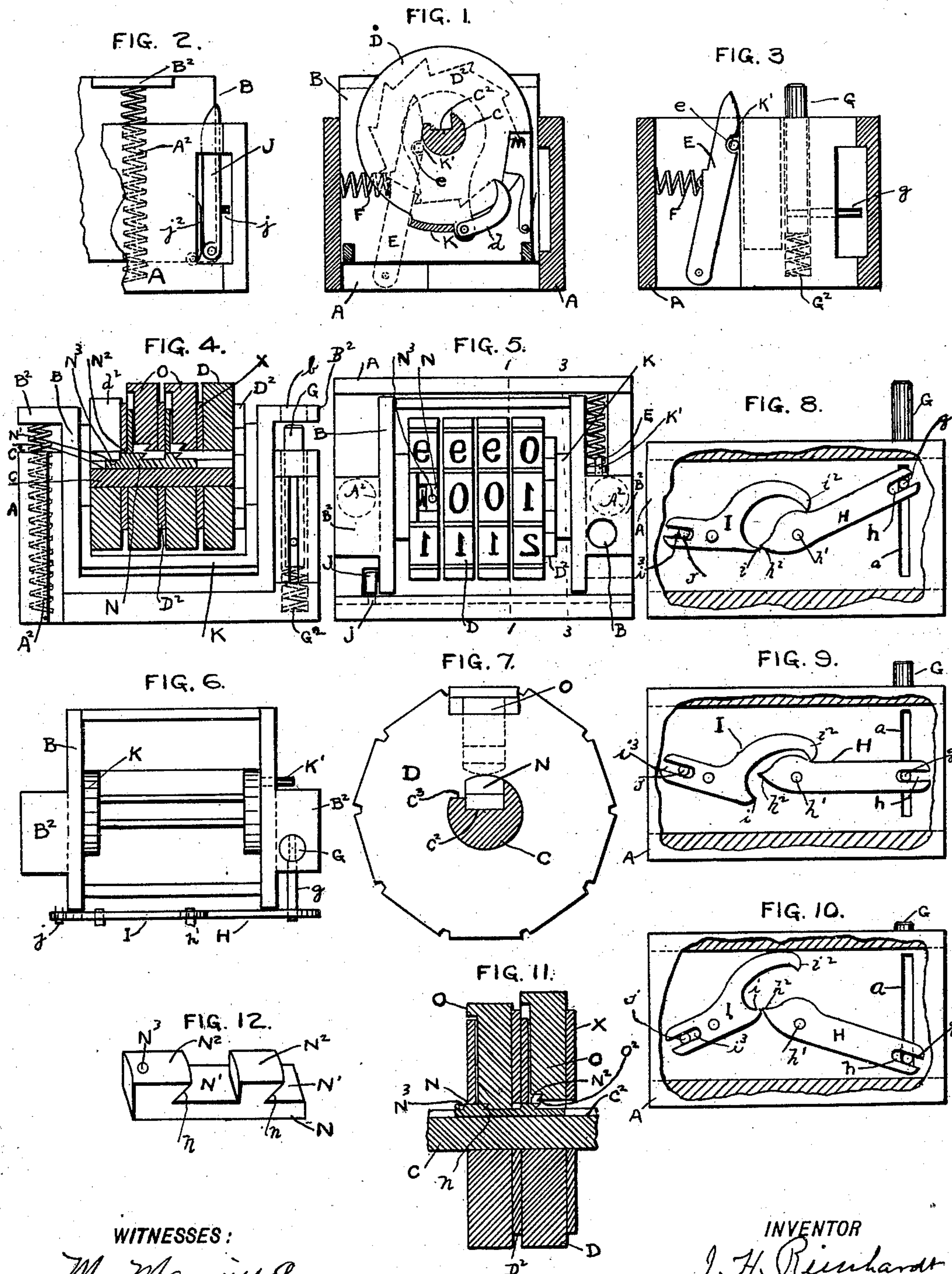
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Patented Jan. 28, 1902.

J. H. REINHARDT.
NUMBERING MACHINE.

(Application filed Mar. 18, 1901.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES H. REINHARDT, OF EAST ORANGE, NEW JERSEY.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 692,072, dated January 28, 1902.

Application filed March 18, 1901. Serial No. 51,677. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. REINHARDT, a citizen of the United States, residing in East Orange, Essex county, New Jersey, have
5 invented certain new and useful Improvements in Numbering-Machines, of which the following is a specification.

One object of my invention is to provide improved means for controlling the drop-ciphers in numbering wheels or disks, whereby the cipher may conveniently be raised to and held in the printing position and readily depressed and held below such position, and to this end I provide a number wheel or disk
15 with a drop-cipher, and the shaft upon which said wheel or disk is mounted is provided with a recess or groove, in which I place a cipher-controller adapted to slide along the shaft and provided with a jaw or projection adapted to
20 engage a jaw or projection carried by the drop-cipher, whereby when said jaws or projections are in engagement the cipher will be held below the printing-line, and when the cipher is raised and the controller is under
25 it the cipher will be maintained in the elevated or printing position.

Another object of my invention is to provide improved means for stripping the printed sheet from the numbers in advance of the
30 rotation of the number wheels or disks, and to this end I provide the main frame of the machine with a stripper adapted to move toward the paper, but held normally below the printing-line of the number-wheels, and a
35 movable frame carrying the number-wheels within the main frame, and between said stripper and the movable frame are located a pair of arms or levers adapted to act one upon the other, one also being connected with
40 the stripper and the other with the movable frame, whereby as the latter is moved during the act of printing the stripper will be caused to move the paper from contact with the number-wheels before the latter rotates to the new
45 position.

My invention also contemplates novel details of improvement that will be more fully hereinafter set forth and then pointed out in the claims.

50 Reference is to be had to the accompanying drawings, forming part hereof, wherein—

Figure 1 is a cross-section on the line 1 1 in

Fig. 5 of a numbering-machine embodying my invention. Fig. 2 is a partly-broken side view thereof looking from the left in Fig. 5. 55 Fig. 3 is a cross-section on the line 3 3 in Fig. 5. Fig. 4 is a face view of the machine, the front plate being removed and the number-wheels and their shaft in section. Fig. 5 is a plan view of the machine. Fig. 6 is a plan 60 view of the movable frame and levers detached from the main or outer frame. Fig. 7 is an enlarged detail view of a number-wheel, showing its shaft in section. Fig. 8 is a detail view of the main frame looking from 65 the front, the front wall being partly broken away, disclosing the arms or levers that control the stripper, showing the latter in the outward position. Fig. 9 is a similar view 70 showing said arms or levers and the stripper in the normal position. Fig. 10 is a similar view showing the stripper in the inward position. Fig. 11 is a vertical cross-section of Fig. 7, and Fig. 12 is a perspective view of the cipher-controlling block. 75

In the accompanying drawings similar letters of reference indicate corresponding parts in the several views.

The letter A in the drawings indicates a main or outer frame, which may be of suitable 80 construction and within which is guided a frame B, which is adapted to move in and out relatively to frame A. The frame B has portions B², which overlie springs A², carried by frame A, which serve to maintain the frame 85 B in the normal position and to return it thereto after it has been moved inwardly. Within frame B is secured a shaft C, upon which number wheels or disks D are mounted to rotate freely. The wheels D are provided 90 with ratchet-wheels D² in well-known manner. The wheels or disks D, which are intended to carry a drop-cipher O, are each provided with a suitable recess or guide, in which said ciphers are supported so as to be moved 95 radially. The shaft C in one side is provided with a recess or groove C², in which a cipher-controller block N is placed so as to slide therein, and the material of shaft C at one side of recess C² is cut away for a suitable 100 depth at C³, as shown in Fig. 7, so that there will be a space at one side of the controller N. The controller N has a projection N² for each drop-cipher, the side of which projection

is undercut or beveled at n to engage a corresponding projection O^2 at the inner end of the drop-cipher, (see Fig. 11,) whereby said projections are adapted to interlock to hold the drop-cipher in the inward position. The controller N also has a space N' contiguous to the adjacent projection N^2 , into which the lower end of the drop-cipher projects when the projections $N^2 O^2$ are interlocked, as shown at the left in Fig. 11. When the drop-cipher is lifted to the printing line or position, the controller N is to be under the same, so as to hold it elevated, and it will be understood that one or more drop-ciphers may be so held elevated while one or more are held depressed by the controller N . For convenience in manipulating the controller N , I have shown the same provided with a hole N^3 , adapted to receive a suitable tool, that may be passed through the guideway d^2 in the number-wheel D that has no cipher. (See Fig. 4.) The upper surface of the projection N^2 of controller or block N is preferably curved to follow the periphery of shaft C , so that as the wheel D is rotated and the drop-cipher brought over said projection the cipher will be maintained in the printing position. (See Fig. 7.) The bottom or body portion of controller or block N is guided in groove C^2 of shaft C , while the space N' aligns with the cut-away part C^3 of said shaft, whereby when the cipher is held down by the controller, as at the left in Fig. 11, and the wheel D is rotated to the left in Fig. 7 the projection O^2 passes away from projection N^2 into space C^3 , and the end of the cipher will thereupon ride upon the periphery of the shaft and be pushed outwardly to the printing position and there held either by the shaft or controller N until the block is drawn back to permit the cipher to be pushed inwardly and locked by the controller. By means of my improvements it will be understood that any or all of the drop-ciphers can be pushed back and locked out of printing position when desired and that if it be desired to bring any cipher up to printing position it is merely necessary to rotate the corresponding wheel D to the left in Fig. 7, so as to bring the cipher into contact with shaft C .

The ratchet-wheels D^2 are operated by pawls d , pivoted on an oscillating frame K , loosely hung upon shaft C , M being a back-stop pawl pivotally carried by frame B to engage the corresponding ratchet-wheel D^2 in well-known manner. The reciprocations of frame B are to cause frame K to oscillate to rotate the number-wheels step by step, and the arrangements I have shown for this purpose comprise an arm E , pivotally carried by frame A and provided with a notch or recess e in engagement with a pin K' , that projects from frame K , a spring F , interposed between frame A and arm E , serving to maintain the latter in connection with pin K' . The pin K' is offset from or out of line with the axis of frame K , and it will be understood that as

frame B is pushed inwardly pin K' will encounter the bottom of notch e , which will stop downward movement of said pin; but as shaft C continues to move downward the frame K will be swung to draw back the pawls over the ratchet-teeth. As frame K is thus swung pin K' will move toward arm E and turn the latter on its pivot, whereupon notch e will rise slightly, thus swinging frame K farther back than would occur only by the inward movement of frame B . By pulling back arm E the frame B can be inserted in frame A or removed therefrom, as pin K' is then free to pass arm E .

As it is desired to strip the paper from the number-wheels D after impression and before they rotate, I provide a stripper G , whose operative end is normally below the printing-line of the number-wheels, but is adapted to be pushed above the printing-line by movement of frame B . To accomplish this, I have provided arrangements as follows: The stripper G (shown in the form of a rod) is guided in suitable bearings in frame A in line with an opening b in the extended portion B^2 of frame B , through which opening the stripper is adapted to pass. The stripper is normally held below the upper surface of the part B^2 in an intermediate position by a spring G^2 beneath the stripper, whereby the stripper can be depressed to some extent. The stripper G has a projection or pin g , (shown extended through a vertical slot a in frame A ,) which pin engages a lever or arm H , pivotally supported by frame A , as along one wall thereof, said pin being shown as passing through a slot or fork h at the end of said lever. The spring G^2 keeps the stripper G and the lever H in the normal position shown in Fig. 9. The lever H at the end opposite the pin g has a nose or finger h^2 , adapted to engage a finger or projection i on a lever I , that is pivotally supported by frame A . Said lever also has an extension i^2 , that is adapted to overlie and bear upon lever H at a point beyond the pivot h' thereof. The lever I also has a slot or fork i^3 , adapted to receive a pin j , that extends from an arm J , pivotally carried by frame B and normally pressed by a spring j^2 . The arm j works in a recess in frame A , (see Fig. 5,) and when frame B is to be removed or replaced in frame A the arm J can be moved back to release pin j from lever I . When frame B is in its normal position, the levers H I and the stripper G will be in the relative positions shown in Fig. 9. When the frame B is pressed inwardly while an impression is being made, the pin j will cause lever I to rock so as to carry its nose i upwardly and which will engage nose h^2 of lever H , depressing the latter and stripper G , (see Fig. 10,) and nose i will then slip past and above the nose h^2 . Nose i then comes to rest above nose h^2 , spring G^2 meanwhile moving parts G and H to their normal positions. When frame B next begins to move outwardly after the im-

pression has been made, the pin *j* will cause lever I to move downwardly toward lever H, and the nose *i* will thereupon bear upon nose *h*² and will cause lever H to tilt or rise at its outer end, thus raising stripper G to a position above the printing-line, as indicated in Fig. 8, to strip the paper from the type or number wheels, and then the nose *i* will slip past and below the nose *h*², and the end *i*² of lever I will during the continued movement of the latter engage lever H and return the same to the normal position, as in Fig. 9, thereby also moving the stripper back from the type-high position. It will thus be seen that the reciprocations of frame B within frame A will by means of the mechanism interposed between frame B and the stripper G reciprocate the stripper, but at such times that the stripper will not engage the paper until after the impression has been made. Furthermore, the relative arrangement of said parts and the devices for rotating the number-wheels step by step is such that the stripper will have stripped the paper from the number-wheels before the latter are rotated, thereby avoiding blurring of the printed numbers, which occurs when paper is not stripped from the type before the number-wheels are rotated.

I do not limit my invention to the precise details of improvement shown and described, as they may be varied without departing from the spirit thereof.

Having now described my invention, what I claim is—

1. The combination of a numbering-wheel provided with a movable cipher, a shaft for said wheel, a cipher-controller adapted to move along the shaft, and means for locking the cipher to the controller, substantially as described.

2. The combination of a numbering-wheel provided with a movable cipher, a shaft for the wheel, a cipher-controller adapted to move along the shaft, and interlocking parts provided on the cipher and the controller respectively for locking the cipher, substantially as described.

3. The combination of a numbering-wheel provided with a movable cipher, a shaft for the wheel, the cipher having a projection at its lower part, and a movable controller adapted to slide along the shaft and provided with a projection to interlock with the projection on the cipher, substantially as described.

4. The combination of a numbering-wheel provided with a movable cipher, said cipher having a projection at its lower part, a shaft for said wheel, said shaft having a groove, and a controller movable in said groove and provided with a projection to interlock with the projection on the cipher, substantially as described.

5. The combination of a numbering-wheel provided with a movable cipher having a projection at its lower part, and a shaft for said wheel provided with a groove having one side

cut away, with a controller located in said groove and provided with a projection to engage the projection on the cipher, the projection on the cipher being adapted to pass laterally through the cut-away part of the groove, when the wheel is rotated to unlock the cipher from the controller, substantially as described.

6. The combination of a numbering-wheel provided with a movable cipher, said cipher having a projection at its lower part, and a shaft for said wheel having a groove one side of which is cut away, with a controller located in said groove and provided with a projection to engage the projection on the cipher, the outer surface of said projection being substantially a continuation of the periphery of the shaft to enable the cipher to rest upon the controller, said projection serving to lock the cipher in the inner position, substantially as described.

7. The combination of a main frame and a stripper, with an independent frame, a pair of arms or levers one of which is connected to the stripper and the other to the independent frame, and means for enabling said arms to coact with each other to operate the stripper by the movement of the independent frame, substantially as described.

8. The combination of a main frame and a stripper adapted to move toward a printed surface, with an independent frame, a pair of arms or levers one of which is connected with the stripper and the other with the independent frame, said arms or levers each having a nose or projection to act one upon the other, one being adapted to slip past the other when moving in one direction and to operate the corresponding arm or lever when moving in the opposite direction to actuate the stripper, substantially as described.

9. The combination of a main frame provided with a stripper adapted to move toward a printed surface, with an independent frame, a pair of arms or levers, one being connected with the stripper and the other with the independent frame, said arms or levers each having a nose or projection and one of said arms or levers having an end that is adapted to act upon the opposite arm or lever beyond its pivot, substantially as described.

10. The combination of a main frame, an independent frame having numbering-wheels, a swinging frame supported by the independent frame, means for operating the numbering-wheels by the swinging frame, a movable arm supported by the main frame, and connections between said arm and the swinging frame for oscillating the latter by the reciprocations of the independent frame, substantially as described.

11. The combination of a main frame, an independent frame having numbering-wheels, a swinging frame carried by the independent frame, means for operating the numbering-wheels by the swinging frame, an arm pivotally supported by the main frame, said arm and swinging frame being provided with co-

acting members for oscillating the swinging frame during the reciprocations of the independent frame, substantially as described.

12. The combination of a main frame, an
5 independent frame provided with numbering-wheels, a swinging frame carried by the independent frame, means for causing the swinging frame to operate the numbering-wheels,
an arm movably carried by the main frame,
10 and a projection carried by the swinging

frame eccentric to the axis of said frame and adapted to coact with a corresponding member of said arm to oscillate the swinging frame by the reciprocations of the independent frame, substantially as described.

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Witnesses:

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