

No. 836,742.

PATENTED NOV. 27, 1906.

P. R. DILL.
NUMBERING MACHINE.
APPLICATION FILED APR. 5, 1905.

Fig. 1.

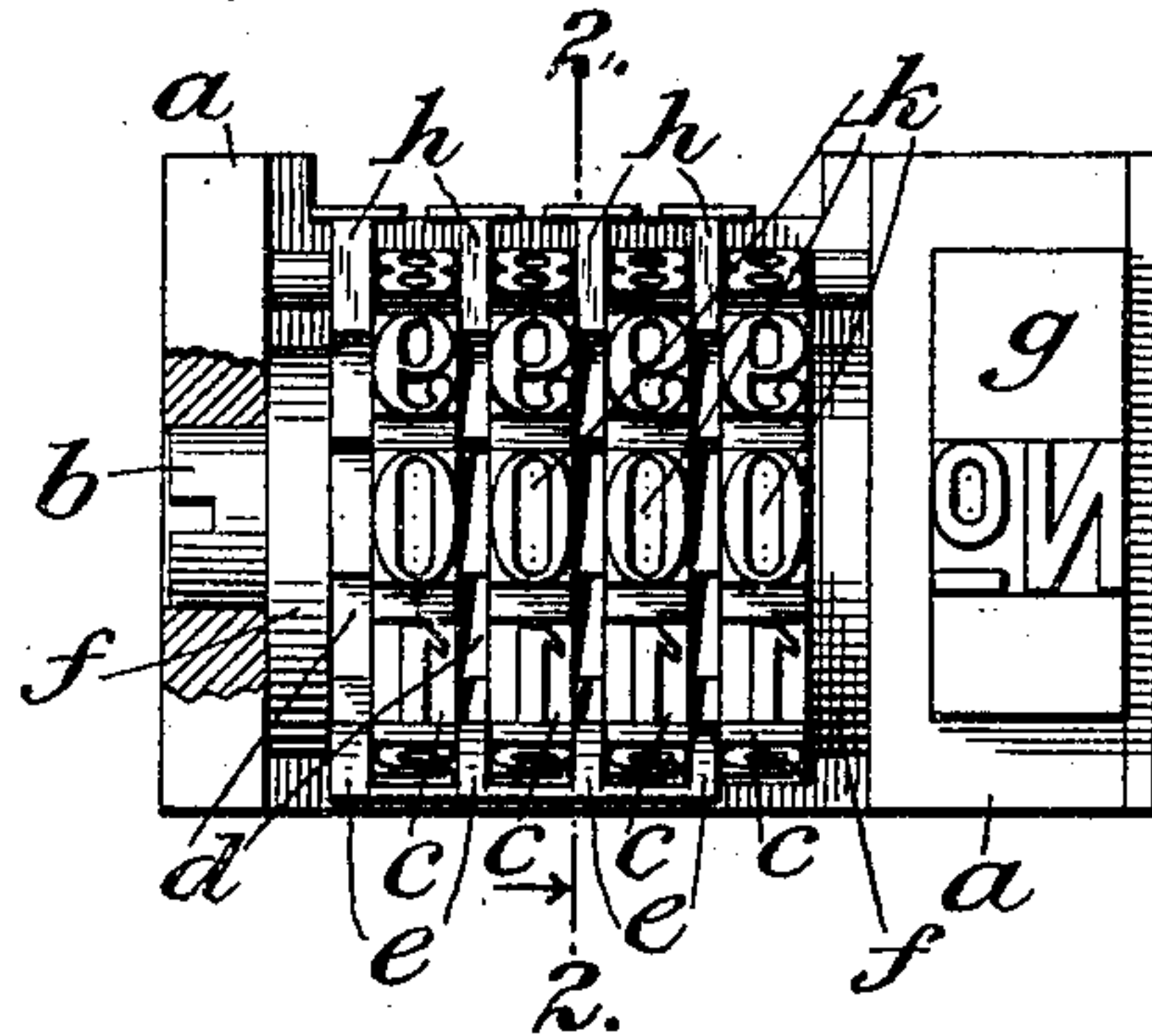


Fig. 2.

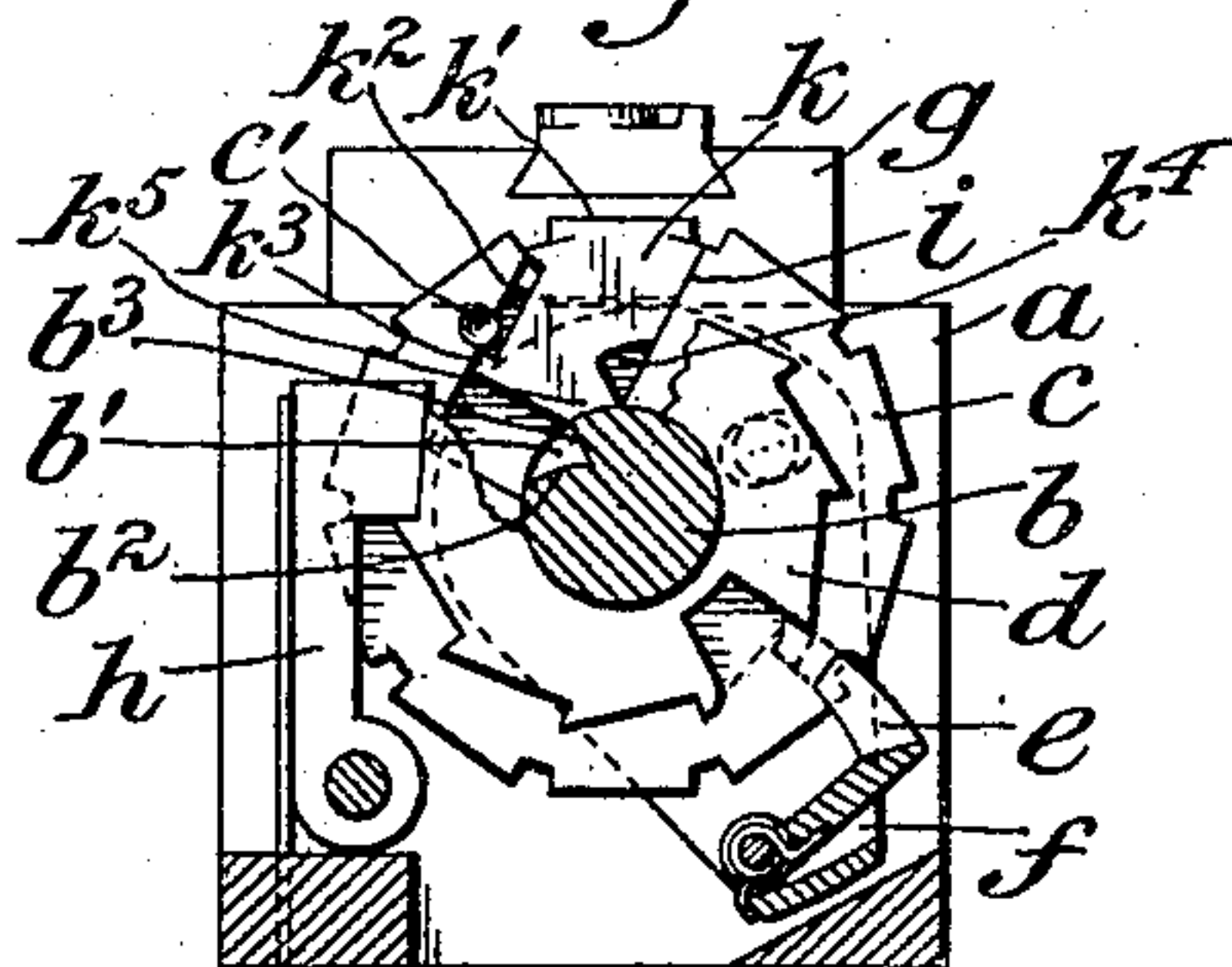


Fig. 3.

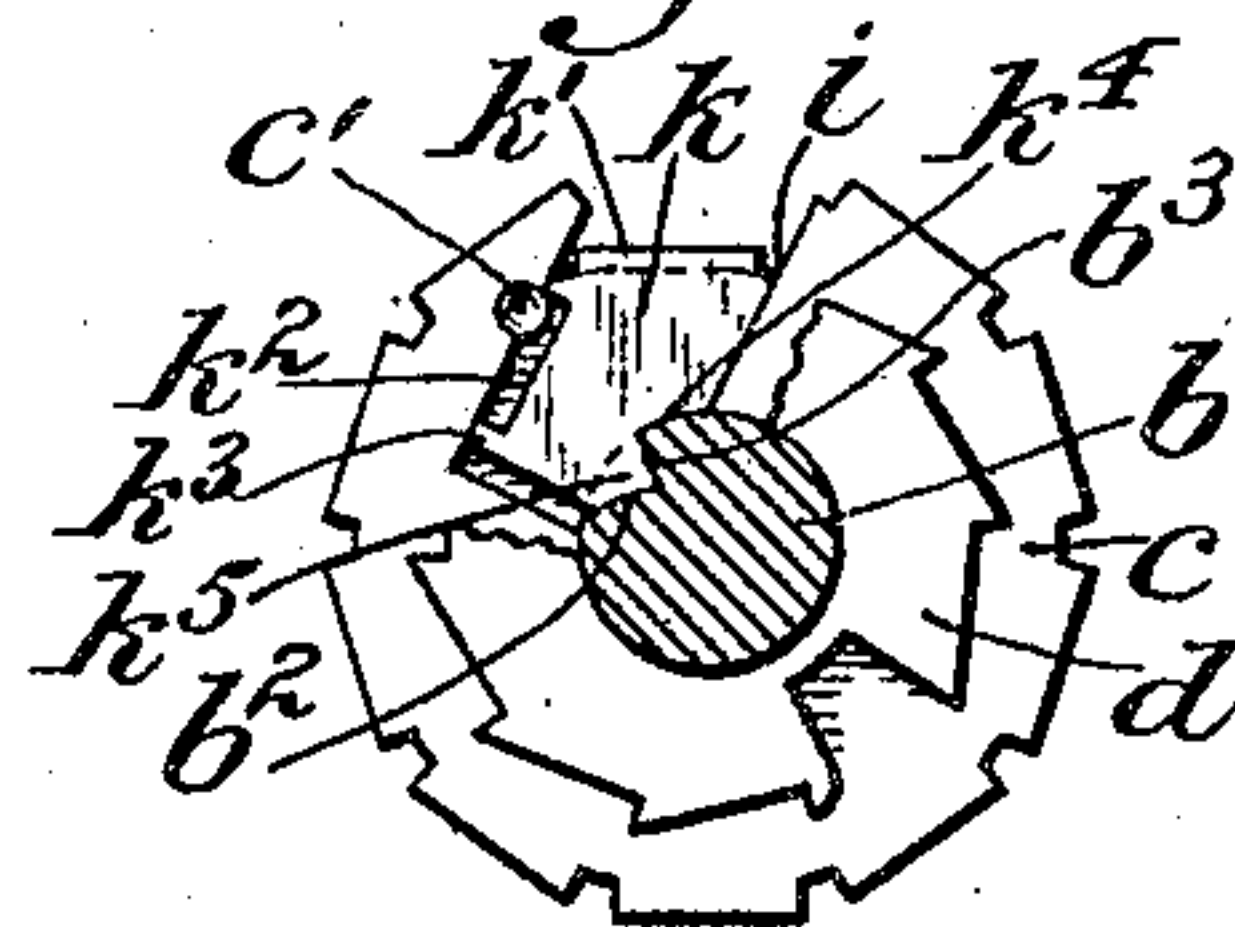
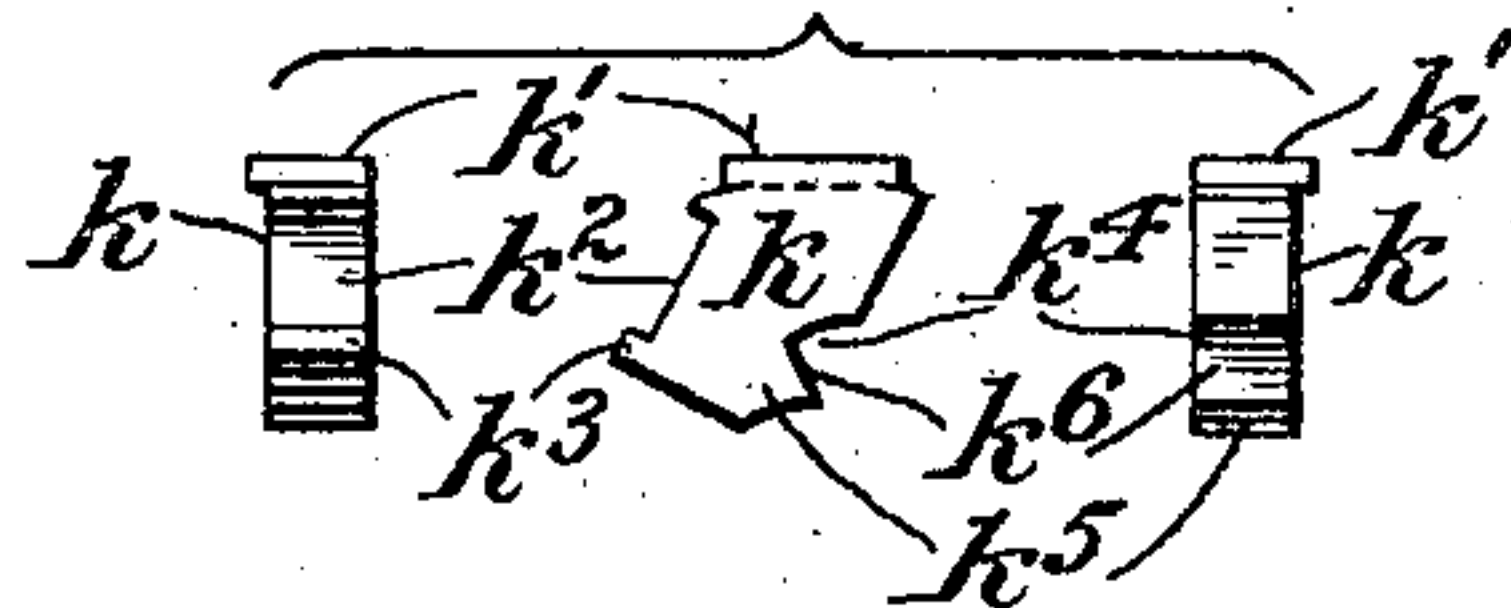


Fig. 4.



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UNITED STATES PATENT OFFICE.

PETER R. DILL, OF NEW YORK, N. Y., ASSIGNOR TO WETTER NUMBERING MACHINE COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

NUMBERING-MACHINE.

No. 836,742.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed April 5, 1905. Serial No. 253,931.

To all whom it may concern:

Be it known that I, PETER R. DILL, a citizen of the United States, residing in the borough of Brooklyn, in the city of New York, in the State of New York, have invented certain new and useful Improvements in Numbering-Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part hereof.

10 This invention relates to consecutive-numbering machines such as are now commonly employed by printers and others, and is particularly concerned with the construction and arrangement of the movable type-block, 15 which in most modern automatic machines of this character is provided in each number-wheel above the units-wheel and is arranged to be depressed below the plane of print, so that a non-significant zero shall not appear 20 at the left of the number to be printed. Various arrangements of such movable type-blocks or "drop-ciphers," as they are commonly called, have been devised heretofore; but whatever their construction they have 25 constituted heretofore a more or less prolific source of trouble. The printing pressure is great, and in a high-speed printing-press its effect is almost like that of a hammer, and the drop-cipher blocks are therefore sometimes broken or deformed to such an extent 30 as to permit the type-face thereof to fall slightly below the plane of print, when it should be supported firmly in the plane of print.

35 It is the object of this invention to improve the construction and arrangement of the movable type-block or drop-cipher block, so that it will be better able to withstand the severe usage to which it is subjected without suffering therefrom.

40 As now commonly employed the type-block is arranged to move radially in the number-wheel and is provided with a foot to cooperate with one side of an undercut 45 groove in the supporting-shaft, so that when the type-block is in the printing position its face shall be supported in the plane of print, and when the type-block is moved with wheels slightly beyond the printing position 50 and then returned the type-block shall be held in its depressed position from accidental movement outward. In such an arrangement in order that the foot of the type-block and the overhanging edge of the slot in the 55 shaft may properly cooperate the point of

the foot is made somewhat slender, and the line of pressure when the type-block is in printing position falls but slightly behind the point of the foot, with the result that the foot frequently becomes bent after more or less 60 extended use and fails to hold the type-surface of the block fully up to the plane of print. The object of this invention is to overcome this difficulty, and in accordance therewith the movable type-block instead of being radially disposed is tangentially disposed in the 65 number-wheel and with respect to the supporting-shaft. The said shaft is slotted; but the retaining side of said slot does not overhang with respect to a radial line, and the 70 foot of the movable block is correspondingly formed, so that there is a continuous and substantial body of metal between the face of the type-block and the surface of the supporting-shaft when the type-block is in the 75 printing position to receive the printing pressure. By the provision of such continuous supporting-body of metal the danger of bending the foot of the type-block is obviated and the necessity for frequent repairs is avoided. 80

The invention will be more fully explained hereinafter with reference to the accompanying drawings, in which it is illustrated, and in which—

85 Figure 1 is a plan view of a numbering-machine to which the invention is applied, the frame being partly broken out at one side. Fig. 2 is a view in vertical section on the plane indicated by the line 2 2 of Fig. 1, showing the type-block supported in the 90 printing position, the ratchet-wheel being partly broken away. Fig. 3 is a detail view showing the movable type-block in its depressed position. Fig. 4 shows front, side, and rear views of the movable type-block. 95

The numbering-machine to which the invention is applied may be of any usual or suitable construction. As shown in the accompanying drawings, it comprises a frame *a*, in which is supported a shaft *b*. The number-wheels *c* are mounted to rotate upon the shaft *b* and are provided each with a suitable ratchet-wheel *d*, the several ratchet-wheels being engaged by graduated pawls *e*, carried by a swinging pawl-frame *f*. Oscillating 105 movement is imparted to the latter in the particular machine shown through suitable connections from a spring-supported vertically-movable plunger *g*. Hold-pawls *h* are provided for engagement with the ratchet- 110

wheels of the several number-wheels. Any other suitable arrangement of number-wheels and actuating devices therefor may be employed, the present invention not being directly concerned therewith, except as hereinafter indicated.

In accordance with the present invention each number-wheel c is slotted tangentially with respect to the supporting-shaft b , and mounted to slide therein is a movable type-block or drop-cipher k . The supporting-shaft b is grooved or slotted, as indicated at b' , one side b^2 thereof being adapted to cooperate with the foot of the movable block k as a cam to thrust the block outwardly, while the other side b^3 is adapted to cooperate with the foot of the block to hold the block in its depressed position, as shown in Fig. 3. As will be observed, however, the side b^3 does not overhang with respect to any radius of said shaft intersecting any part of said side. The movable type-block or drop-cipher block k , as clearly shown in the drawings, is of an irregular geometrical shape, its type-surface k' being oblique with respect to the general axis of the block. On one side the block is slotted, as at k^2 , forming at the lower end a shoulder k^3 for cooperation with a bur struck up, as indicated at c' , on the side of the slot i in the wheel c for the purpose of preventing the sliding of the block entirely out of the slot. On the opposite side the block is notched, as at k^4 , forming a foot k^5 to bear on the supporting-shaft b , its forward side k^6 cooperating with the edge b^3 of the slot b' in said shaft. As will be observed upon reference to Fig. 2, the lines of pressure between the type-face of the block and the greater portion of the bearing-surface of the foot of the block fall entirely within the body of the block, so that there is no tendency to deform the foot in such a manner as to permit the type-surface of the block to fall below the plane of print. At the same time, as will be seen by reference to Fig. 3, the block is held in its depressed position by the cooperation of the edge b^3 of the slot in the supporting-shaft and the side k^6 of the notch in the block against the possibility of accidental movement of the block outward.

I claim as my invention—

1. In a numbering-machine, the combination of a slotted supporting-shaft, a number-wheel mounted thereon and slotted tangentially with respect to said shaft and a movable type-block mounted in the slot of the number-wheel and having a foot to cooperate with the slot in the shaft, substantially as described.

2. In a numbering-machine, the combination of a slotted supporting-shaft, a number-wheel mounted thereon and slotted tangentially with respect to said shaft, and a movable type-block mounted in the slot in said wheel and having its type-face oblique to its axis and having a foot to cooperate with said shaft, substantially as described.

3. The combination of a center shaft having a reëntrant angular notch at one side, and a type-wheel loosely mounted on said shaft having a depressible type, said wheel having a slot extending from its periphery to the shaft in a direction not radial, and a block carrying the depressible type movable in said slot, said block having its foot formed to interfit with the notched side of the shaft when the type is depressed, and said foot adapted to rest upon the periphery of the shaft when the type is raised and provide a solid bearing between the impression-surface of the type and the shaft.

4. The combination of a center shaft having a notch or recess at one side, leaving a solid bearing directly above the center of the shaft, and a type-wheel loosely mounted on said shaft having a drop-type whose foot is constructed to interfit with said notch when the wheel is turned in a position to allow depression of the type and to rest upon the top of the shaft and provide a solid bearing between the impression-surface of the type and the center of the shaft when the type is up.

5. A type-wheel for numbering-machines having a drop-type movable in a slot oblique or inclined to a radial line.

This specification signed and witnessed this 3d day of April, 1905.

PETER R. DILL.

In presence of—

ANTHONY N. JESBERA,
W. B. GREELEY.