

(No Model.)

F. SANDERS.
NUMBERING MACHINE.

No. 561,818.

Patented June 9, 1896.

Fig. 1,

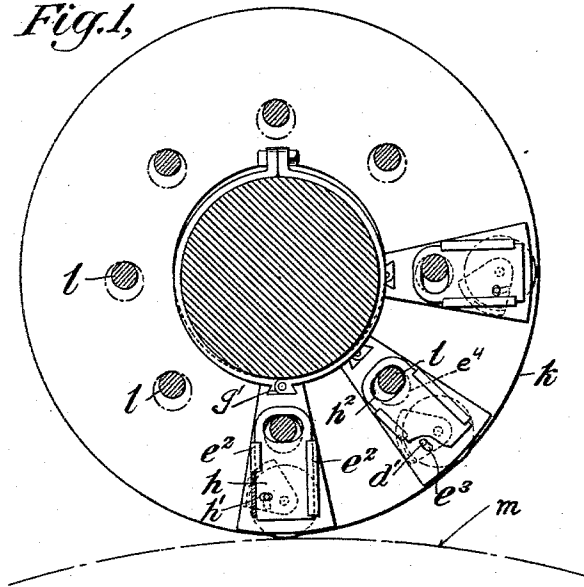


Fig. 2,

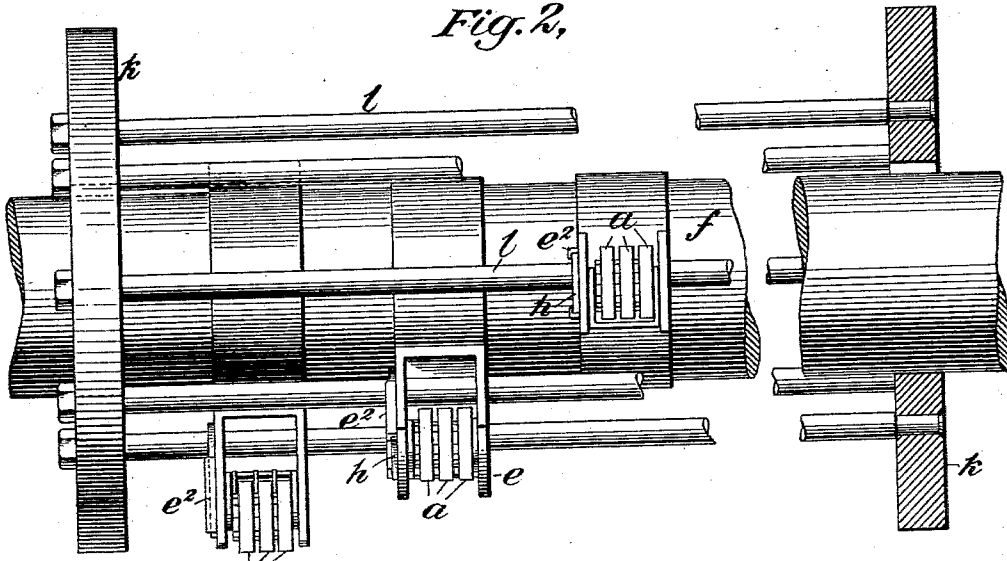
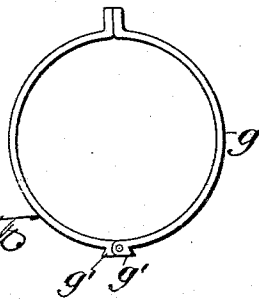


Fig. 3,

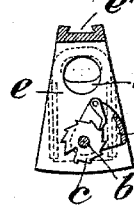


Witnesses:

W. H. Hayward

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Fig. 4



Inventor:

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by *Redding & Kiddle*
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UNITED STATES PATENT OFFICE.

FRANK SANDERS, OF BROOKLYN, NEW YORK, ASSIGNOR TO JOSEPH WETTER, OF SAME PLACE.

NUMBERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 561,818, dated June 9, 1896.

Application filed October 16, 1895. Serial No. 565,878. (No model.)

To all whom it may concern:

Be it known that I, FRANK SANDERS, a subject of the Emperor of Germany, residing in the city of Brooklyn, in the county of Kings and 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.

This invention relates to numbering machines or devices such as are employed for numbering tickets or for other like uses, and more particularly to the means for actuating the printing or numbering wheels thereof to cause the figures or characters to be printed to be brought in succession to the printing-point. Usually such machines are provided with a spring-seated plunger which is operated by contact with the platen or impression cylinder of the press as the numbering-machine is brought to the printing position, and this mode of operation is satisfactory if the numbering-machine is not operated too rapidly. In some classes of work, however, such as the numbering of tickets upon rapidly-moving cylinder-presses, the numbering-machines are operated with a frequency approaching two hundred times in a minute. The consequence is that the plunger of the numbering-machine is operated with a hammer-like blow which is not only ultimately destructive to the machine, but is so swift that the mechanism of the numbering-head sometimes fails to respond, particularly if the parts are not thoroughly clean.

It is the object of this invention to overcome this difficulty, so that the numbering-machine may not skip or fail to operate properly notwithstanding the great frequency of operation, the desired result being accomplished by substituting for the usual plunger an actuator which moves somewhat more slowly, but completes an effective movement as often as the numbering-machine is brought to the printing position. The device, moreover, makes it possible to dispense with the spring usually employed to return the parts to position for another operation.

In the accompanying drawings, wherein the invention is illustrated as embodied in a practical form, Figure 1 is a transverse section of

a numbering attachment for a cylinder-press, comprising numbering-heads, means for supporting and securing them in position, and means for actuating them in accordance with this invention, three numbering-heads being shown in position. Fig. 2 is an elevation of the same, partly broken out to save space. Fig. 3 is a detail view of the device employed to secure a numbering-head in position. Fig. 4 is a detail view in section of one of the numbering-heads.

The invention is not conceived with the construction of the numbering-head as such, and it has not been thought necessary to illustrate the same in detail. It may comprise, as usual, a series of numbering-wheels *a a*, mounted upon a shaft *b* and having each a ratchet-wheel *c*, a swinging pawl-frame *d*, adapted by its reciprocations to advance the numbering-wheels, and a supporting frame or case having end plates *e e*. Any suitable means may be employed for securing the numbering-heads upon the carrying-shaft *f*. I have shown the frame as having in its bottom a dovetailed groove *e'*, adapted to be engaged by the projecting lugs or toes *g' g'* of a clamping-ring *g*, which may be clamped in the desired position upon the shaft *f*.

In suitable ways *e²* upon one of the end plates *e* is mounted a slide *h*, which has a limited vertical movement and is connected by a pin *d'* with the swinging pawl-frame *d*, the pin *d'* being fixed in the frame and passing through an arc-shaped slot *e³* in the plate *e* and entering a transverse slot *h'* in the slide *h*, whereby the reciprocations of the slide impart to the pawl-frame *d* the reciprocations necessary to effect the required movements of the numbering-wheels. The reciprocations of the slide *h* are effected by the following means, wherein the invention particularly resides: Upon the shaft *f* is loosely mounted a cage, consisting of end rings or plates *k k* and longitudinal rods *l l*. Each ring *k* has an internal diameter greater than that of the shaft *f*, so that the cage may have free play transversely upon the shaft, the amount of movement being equal to the amount of movement of the slide *h*. Externally the rings or plates *k* bear against the impression-cylinder, which is sufficiently represented at *m*. The num-

bering-heads are arranged about the shaft *f*, so that each head shall correspond with a rod *l*, the end plates *ee* having holes *e^t* to receive the rod loosely and the slide *h* having a transverse slot *h²* to receive the rod.

As the shaft *f* rotates, the numbering-heads are carried with it and therefore compel the rotation of the cage *kl*, but as each rod revolves about the axis of the shaft it is obvious that it moves toward and from the axis of the shaft by reason of the bearing of the rings *k* against the cylinder *m*. The rod therefore imparts to the corresponding slide a similar movement toward and from the axis of the shaft and thereby effects the required movement of the pawl-frame *d*. As the full movement of the end rod takes place gradually during the entire revolution it is obvious that the movement of the slide is also gradual and that it is not effected with the suddenness of a hammer-like blow. Consequently the mechanism of the numbering-head responds always to the action of the slide, and is not subjected to sudden and severe shocks.

It is to be understood that I do not intend to limit my invention to the precise details of construction and arrangement herein shown and described.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of a shaft adapted to

support a numbering-head having a pawl-frame, a cage comprising rings or end plates loosely mounted upon said shaft and a rod supported by said rings or end plates, and a connection from said rod to the pawl-frame of the numbering-head, substantially as shown and described.

2. The combination with a shaft and a numbering-head adapted to be secured thereto and having a pawl-frame, of a slide mounted on said numbering-head and connected to said pawl-frame, ring or end plates mounted loosely on said shaft and a rod supported by said rings or end plates and engaging said slide, substantially as shown and described.

3. The combination with an impression-cylinder, of a shaft in proximity thereto and adapted to support a numbering-head having a pawl-frame, rings or end plates mounted loosely upon said shaft and adapted to bear against said impression-cylinder, a rod supported by said rings or end plates and a connection from said rod to the pawl-frame of the numbering-head, substantially as shown and described.

This specification signed and witnessed this 4th day of October, A. D. 1895.

FRANK SANDERS.

In presence of—

WM. WENZ,

HENRY FR. KOCH.