

(No Model.)

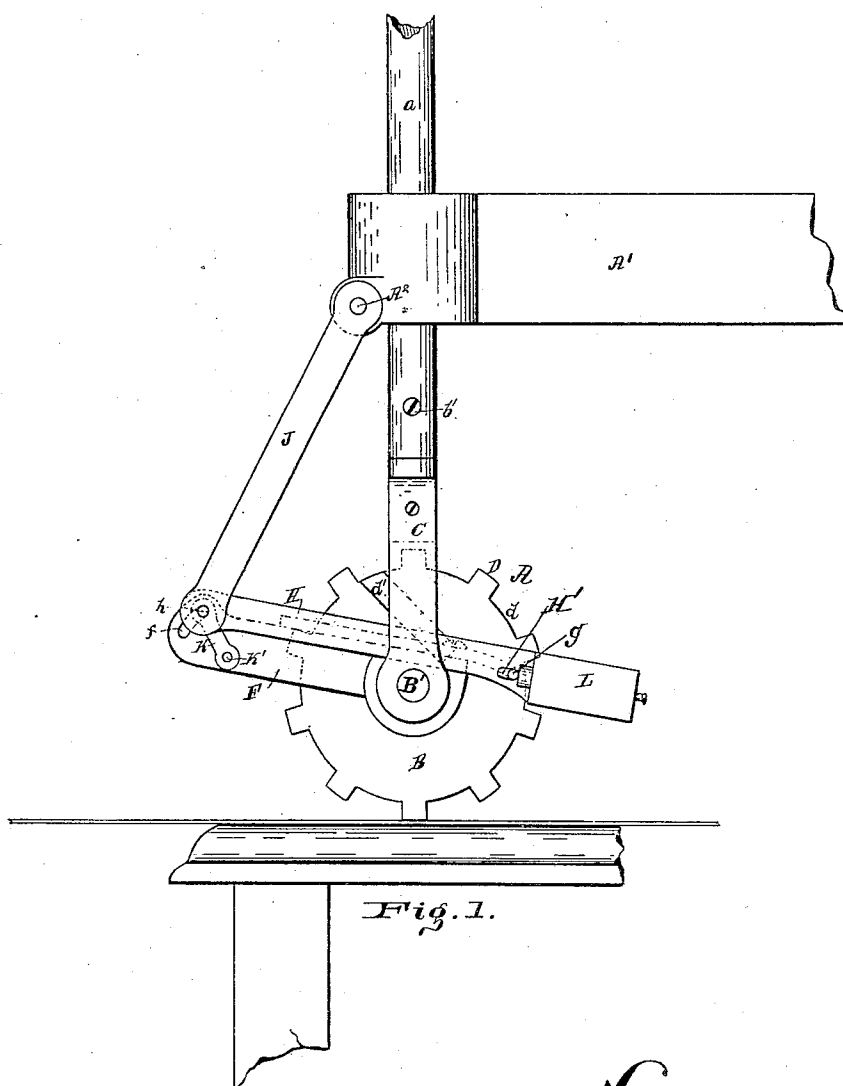
2 Sheets—Sheet 1.

C. SEYBOLD.

PAGING AND NUMBERING MACHINE.

No. 293,199.

Patented Feb. 5, 1884.



Attest:

E. R. Hill
W. P. Mulick

Inventor:
Charles Seybold
per Wm. Hubbell Fisher,
Atty.

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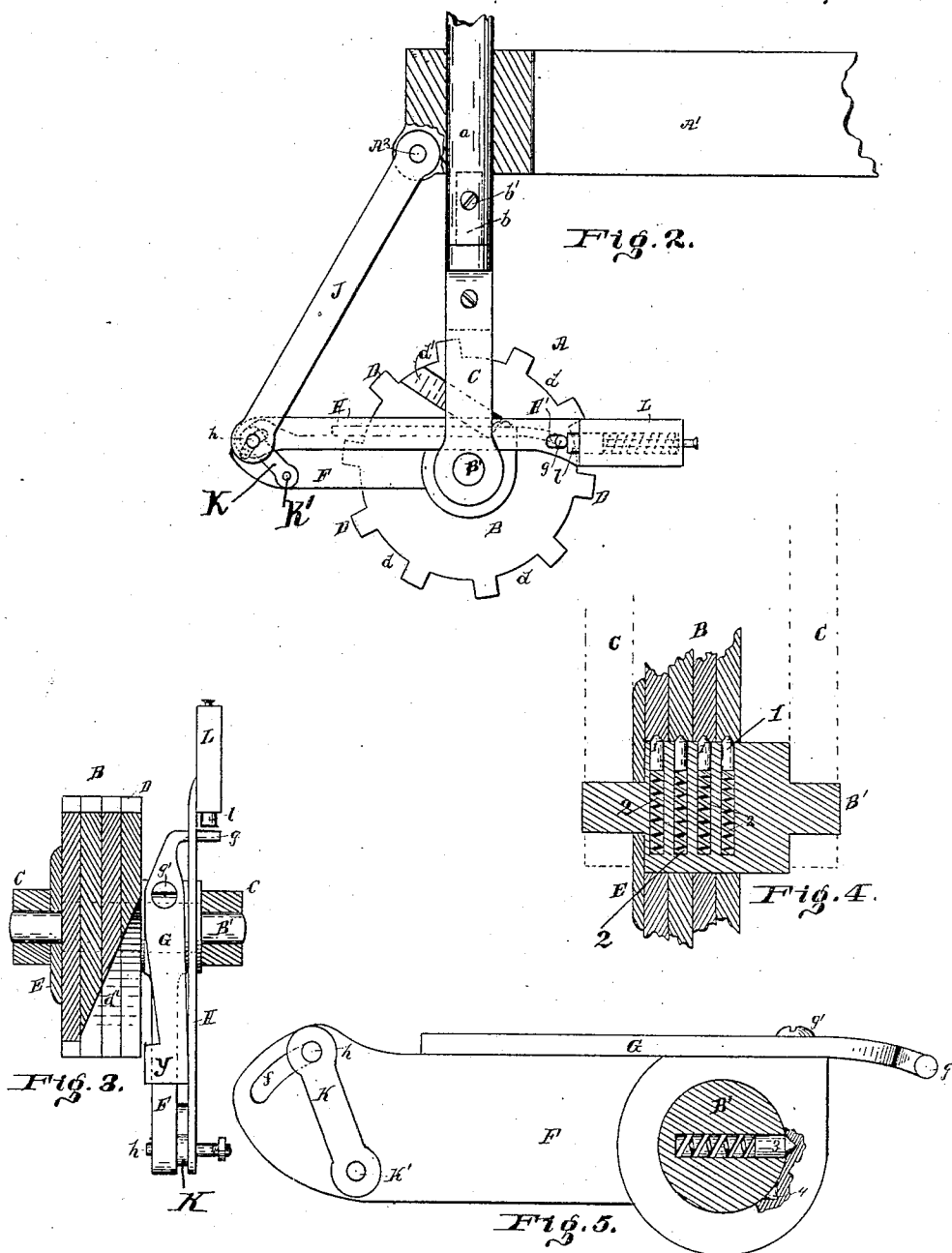
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UNITED STATES PATENT OFFICE.

CHARLES SEYBOLD, OF CINCINNATI, OHIO, ASSIGNOR OF ONE-HALF TO
ALEXANDER REID, OF SAME PLACE.

PAGING AND NUMBERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 293,199, dated February 5, 1884.

Application filed August 30, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SEYBOLD, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Paging and Numbering Machines, of which the following is a specification.

The object of my invention is to provide a head for paging and numbering machines which may be readily attached to the machines now in use, and when so attached will be simple of construction and more efficient in operation than the heads now used. The simplicity of the head constructed according to my invention is such that it is not liable to get out of repair.

The various features of my invention will be apparent from the following description and claims, and the accompanying drawings, forming a part of this specification.

Figure 1, Sheet 1, is a side elevation of my invention connected to the neck of a numbering-machine. Fig. 2 is a side elevation of same, showing the device in another of its working positions, part of the neck of the numbering-machine through which the shaft *a* moves being shown in section. Fig. 3 represents a sectional view, the section being taken a little above the axle upon which the numbering-disks turn, the disks being turned so that the deep slopes or notches in said disks are horizontal. In this figure the yoke in which the axle turns is sectioned at the axle. Fig. 4 represents a central section through the axle and the various disks. Fig. 5 is an enlarged detailed view of certain of the operating parts of my invention.

A represents the head, which is connected to the neck A' of the machine, in the manner hereinafter described. This machine, with the exception of the head, may, as before stated, be of the form of any of the machines now in use, in which the head is caused to be raised and lowered, and the mechanism for causing it to be so raised and lowered need not be altered when my invention is attached to said machine. In the end of the neck A' is placed a sliding rod or plunger, *a*, to which the head A is connected. This head consists of a series of disks, B, which turn on an axle, B', the

ends of which latter are journaled in a yoke, C, and mechanism for operating said disks. The yoke C is provided with a neck, *b*, (shown in dotted lines in Fig. 1,) which enters a socket in the end of the plunger *a*, and is retained therein by suitable means, preferably by set-screw *b'*. The disks B are each provided with ten peripheral projections, D, upon which are formed the nine digits and the cipher, and between these projections are formed the notches or recesses *d*. The disks are each provided with a deeper notch or slot, *d'*, varying in depth, as shown in Fig. 3, the deepest notch being in the disk which marks the units-figure. These notches *d'* do not enter the disks in a direction toward their center, but are placed a little to one side of the center of the disks, as shown in Fig. 1.

At one side of the disks B is a washer, E, placed between the outer disk and the yoke C. At the opposite side of the disks B is a vibrating lever, F, through one end of which the axle B' passes, the lever being between the disks B and the yoke C. The forward end of this lever F extends a short distance beyond the periphery of the disks B.

To the upper edge of the lever F is pivoted pawl G, the pivoted point *g'* (see Figs. 3 and 5) being near that end of the lever through which the axle passes. The purpose of this pawl G is to engage with the notches in the disks B and cause them to turn at the proper time. One end of the pawl G is provided near its pivoted point with a lateral arm, *g*, which enters a slot, H', located in sliding bar H, and near one end of the latter. The other end of the pawl is free to play (see Fig. 3) to the left. This opposite end of this bar H is connected to the forward end of the lever F by a pin, *h*, which passes through the end of said sliding bar, one end of said pin passing through a slot, *f*, in the forward end of the vibrating lever F, the other end of the pin being connected to one end of a connecting-rod, J. The other end of the rod J is connected to the neck A' of the machine by a pivotal connection, as A². The pin *h* vibrates in the slot *f*, and, to prevent undue friction between the pin and the sides of the slot, a link, K, is con-

nected by one end to the pin *h*, the other end of said link being pivoted at *K* to the vibrating lever *F*.

To the end of the sliding bar *H*, through which the arm *g* of the pawl *G* passes, is connected a box, *L*, in which is placed a spring-stud, *l*, which stud presses against the arm *g*, tending to keep the latter constantly against the forward end of the slot in the bar *H*, through which it (the arm *g*) passes.

To prevent the disks *B* from turning too freely on the axle *B'*, the latter is provided with spring-studs *1*, located in openings *2*, formed in the axle, one of said studs being provided for each disk. The edges of the central opening in the disks, through which the axle *B'* passes, are provided with slight depressions, into which the ends of the studs *1* enter, and these depressions are so placed that the figures on the various disks will be held in line and not be displaced by the ink-roller as it passes over the figures.

The operation of my invention as above described is as follows: The head *A* having been attached to the reciprocating plunger *a* of the machine, and the connecting-rod *J* having been connected at one end to the pin *h* and at the other end to the neck *A'* of the machine, this plunger is caused to be raised and lowered by any suitable mechanism—such, for example, as is now employed in machines of this class. All of the disks *B*, except the one for units figures, are, when the machine is first started, held in such positions on the axle that their figures will not come in contact with the paper when the head *A* is depressed. Each time the head *A* is raised the first disk, *B*, is turned by the pawl *G* one notch, so that the next time the head is depressed the succeeding number to the one previously stamped will be presented at the bottom of the disk. The manner in which this turning is accomplished is as follows: When the head has descended onto the paper to stamp a number, the parts occupy the position shown in Fig. 1 and the head is ready to be raised. While the head is in this position the pin *h* is at the upper end of the slot *f*. The vibrating lever *F* is prevented from too free a movement on the axle by a spring-stud, *3*, similar to the studs *1*. The inner surface of the opening in the end of the lever *F*, through which the axle passes, is provided with two depressions, *4*, into which the end of the stud may enter one of the depressions, being located so that the stud will enter it when the forward end of the lever is at its greatest elevation, as in Fig. 1, and the other depression, so the stud will enter it when the forward end of the lever is at its lowest point, as when the head *A* is at its greatest elevation. In Fig. 5, the link *K*, carrying the pin *h*, the spring-stud *3*, and depressions *4* are shown in the position which they will occupy when the head is depressed, in which position the lever *F* will be inclined, as shown in Fig. 1; but for convenience in drawing, the lever *F* in said Fig. 5 is shown in a horizon-

tal position. As, now, the head *A* starts to rise, the stud *3* prevents the lever *F* from being moved until the pin *h* has reached the lower end of slot *f*, which the pin *h* does when the head has been raised slightly. While the pin *h* is moving toward the lower end of slot *f* it causes the sliding bar *H* to move forward, and this movement, by pulling on the arm *g* of the pawl *G* in the direction of the shaft *a*, causes the free end of this pawl to move toward the disks, and the head *g* of the pawl thus enters one of the recesses *d* in the periphery of the first disk, and as the head continues to rise the connecting-rod *J* prevents the forward end of lever *F* from rising, and the pawl *G*, impinging against one of the projections *D*, causes the first disk, *B*, to be rotated one notch. When the head has reached its greatest elevation, another of the projections *D* has been brought to the lowest point of the disk. When, now, the head starts down again, the forward end of the lever *F* is at its lowest point, and the stud *3*, entering one of the recesses *4*, holds it in this position until the pin *h* has reached the upper end of the slot *f*, and while this movement is being accomplished the sliding bar *H* is moved rearward and caused to push against the arm *g* of the pawl *G*, which causes the forward end of said pawl to be moved away from the disk, whereupon it occupies the position shown in Fig. 3.

The above-described movements are repeated as often as the head *A* is elevated and depressed, and when the numbers up to 9 have been printed the deep notch *d'* in the first disk has reached a point where it will be entered by the pawl *G* at the next elevation of the head, and as the head is so elevated the pawl enters this deep notch, and, passing through it, engages with a projection, *D*, on the second disk, and the first two disks are thus turned, and the number 10 is thus presented. At the next nine movements of the head the first disk only is moved, to produce the numbers up to and including 19, and at the next move the pawl *G* again enters the deep notch *d'* in the first disk and engages with the second disk, which are again both turned and the number 20 is presented. This movement is repeated until 99 has been printed, when the disks have reached such a position that at the next movement of the head the pawl *G* will enter the deep notches in the first and second disks and engage with the third, and thus the first three disks will be turned and the number 100 is presented. In this manner the numbers are produced in regular succession to as high a number as desired. By a head having four disks like that shown in the drawings, numbers up to and including 9,999 may be produced, and if it is desired to mark a number higher than this the necessary disk or disks may be added.

A head for numbering-machines constructed as above described may, as before stated, be readily attached to machines as now constructed, and its simplicity of construction and perfection of operation give it many advantages

over the numbering-machine heads now in use, as will be apparent to one acquainted with the state of the art in mechanism for paging and numbering.

5 Having thus described my invention, what I claim as new and of my invention, and desire to secure by Letters Patent, is as follows:

10 1. The combination of the disks B, vibrating lever F, provided with pawl G, and means, substantially as described, for causing said pawl to approach and recede from the disks, and the connecting-rod J, connecting the end of the lever to the neck of the machine, substantially as and for the purposes specified.

15 2. The combination of the disks B, provided with notches *d* and the inclined notches *d'*, and the vibrating lever F, provided with the pawl G and sliding bar H, and the connecting-rod J, connected at one end to the sliding rod and at the other end to the neck of the machine, substantially as and for the purposes specified.

20 3. The disks B, provided with notches, substantially as described, in combination with the vibrating lever F, pawl G, sliding bar H, and connecting-rod J, the pawl G being pivoted at *g'* to the vibrating lever, and one

end of said pawl being provided with an arm, *g*, which passes through an opening near one end of the sliding bar, substantially as and for the purposes specified.

30 4. In combination with the disks B, the pawl G, pivoted at *g'* to the vibrating lever F, and provided with arm *g*, the sliding bar H, provided with slot H', through which the arm *g* passes, and the connecting-rod J, connected at one end to the neck of the machine and at the other end connected to the sliding bar H by the pin *h*, said pin being capable of moving in the slot *f* in the end of the vibrating lever F, substantially as and for the purposes specified.

5. The combination of the connecting-rod J, sliding bar H, and vibrating lever F, the end of the rod being connected to the end of the sliding bar by a pin, *h*, said pin being connected to the vibrating lever by a link, *K*, and located in a slot, *f*, in the end of said lever, substantially as and for the purposes specified.

CHARLES SEYBOLD.

Attest:

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W. P. GULICK.