

(No Model.)

2 Sheets—Sheet 1.

E. K. HELLER.
CASH REGISTER.

No. 533,892.

Patented Feb. 12, 1895.

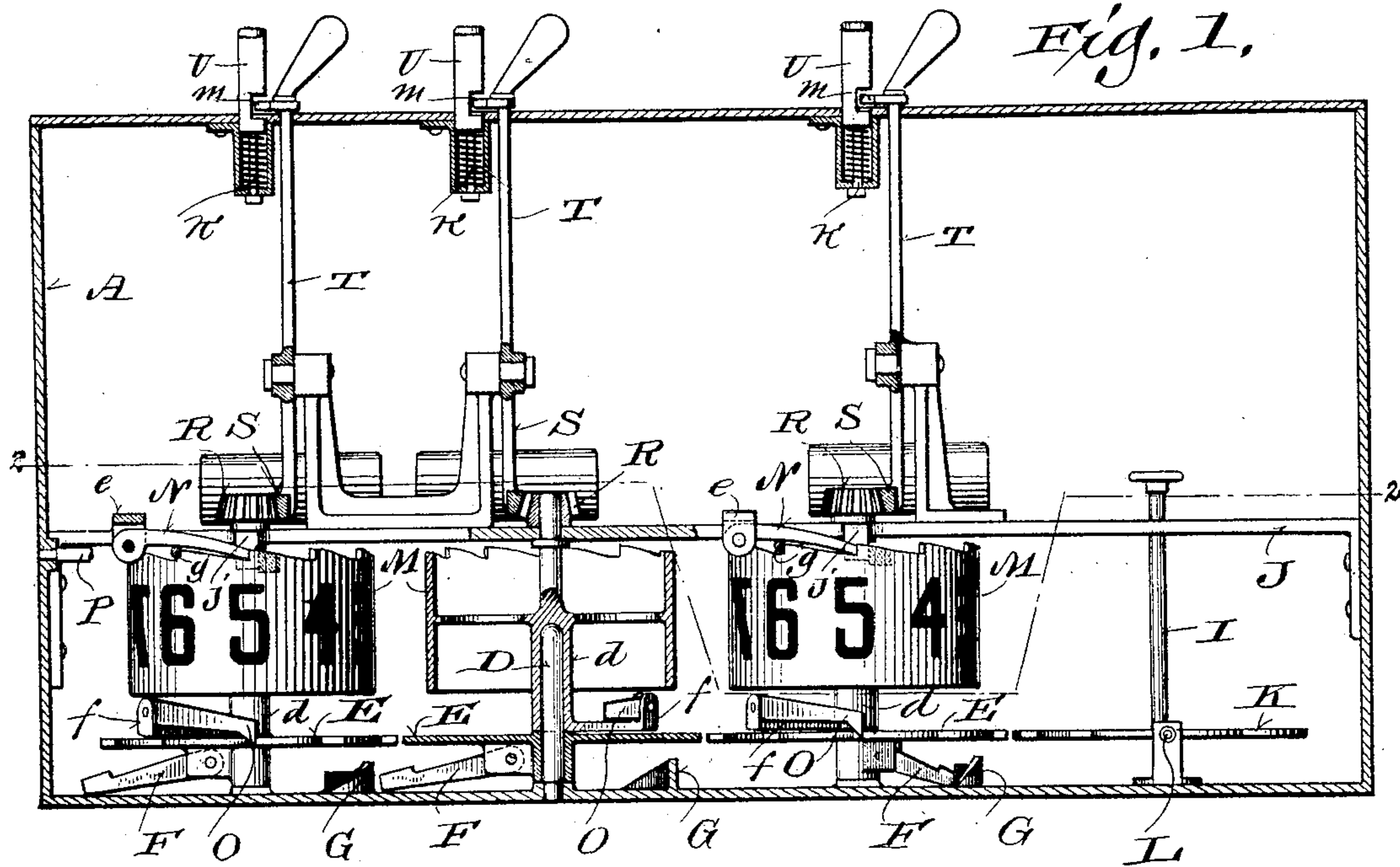
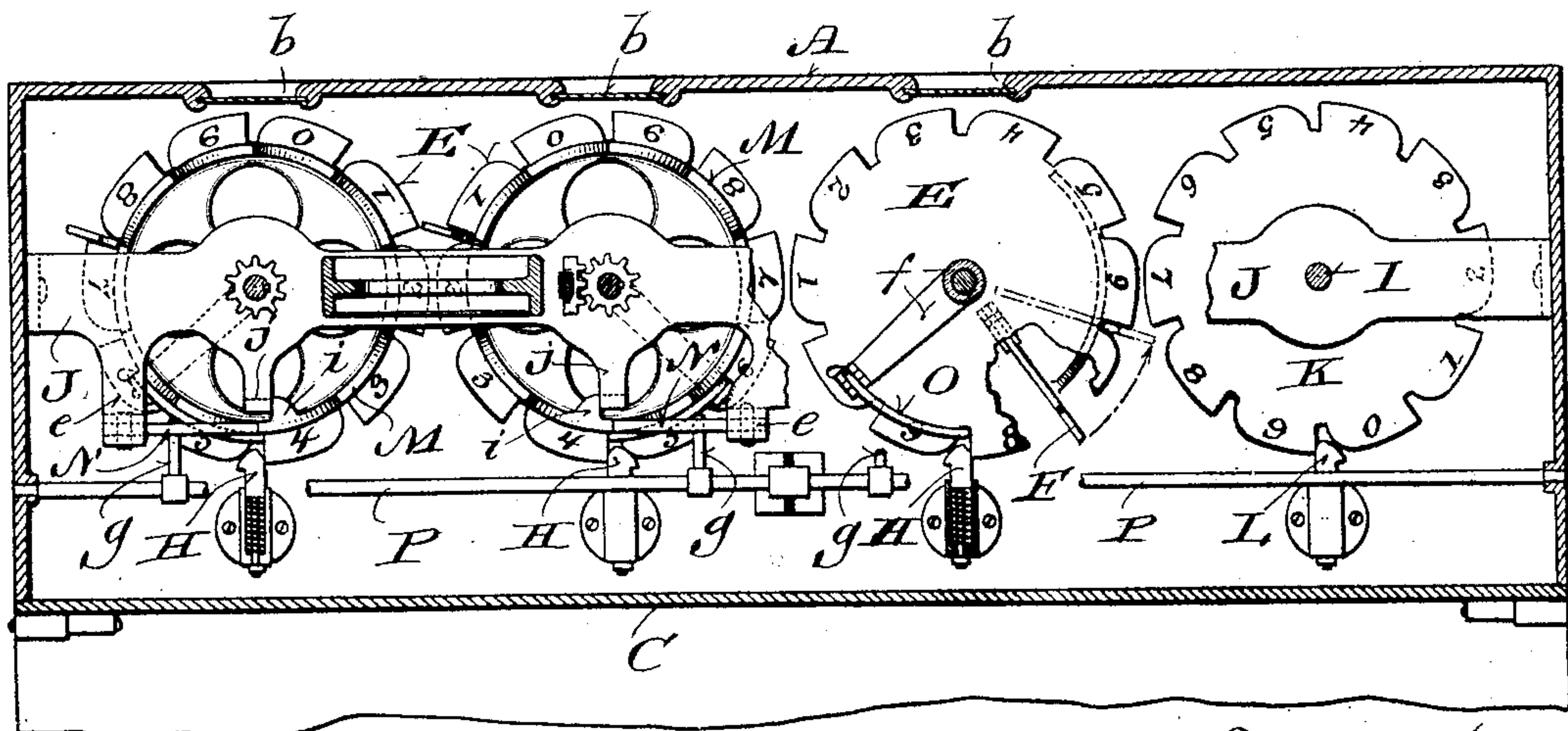


Fig. 2.



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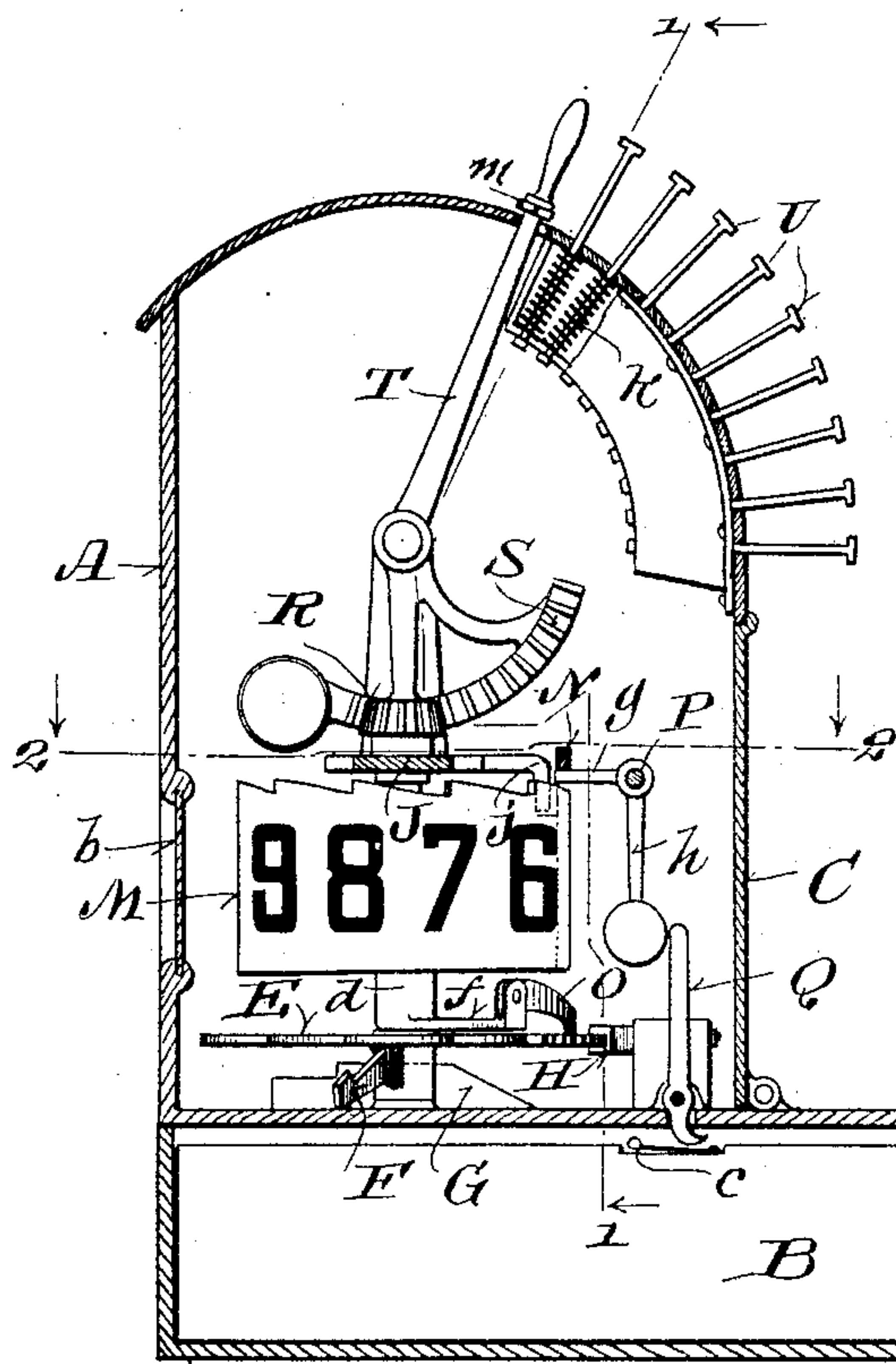


Fig. 4

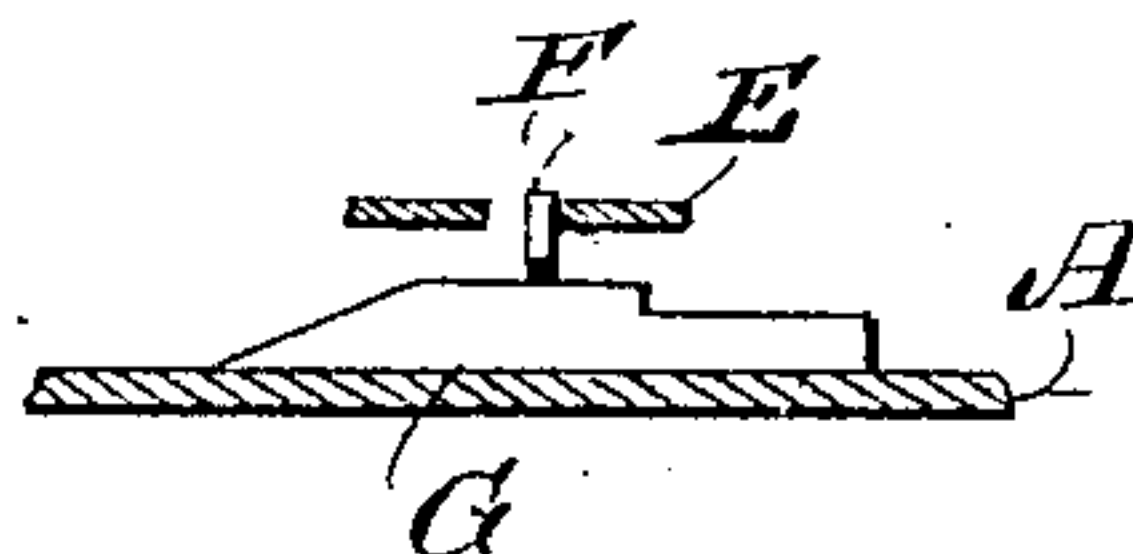


Fig. 3.

Fig. 5.

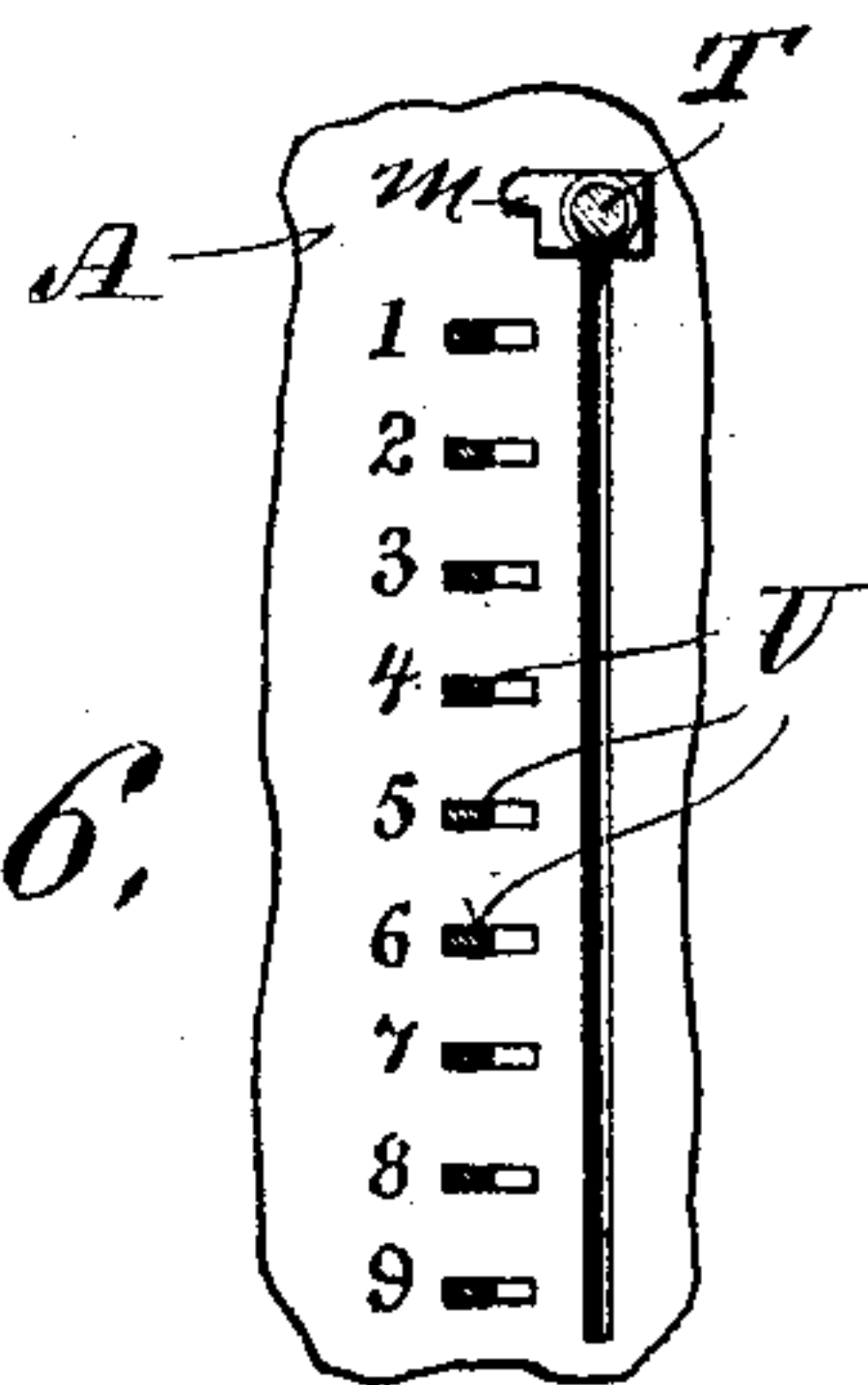
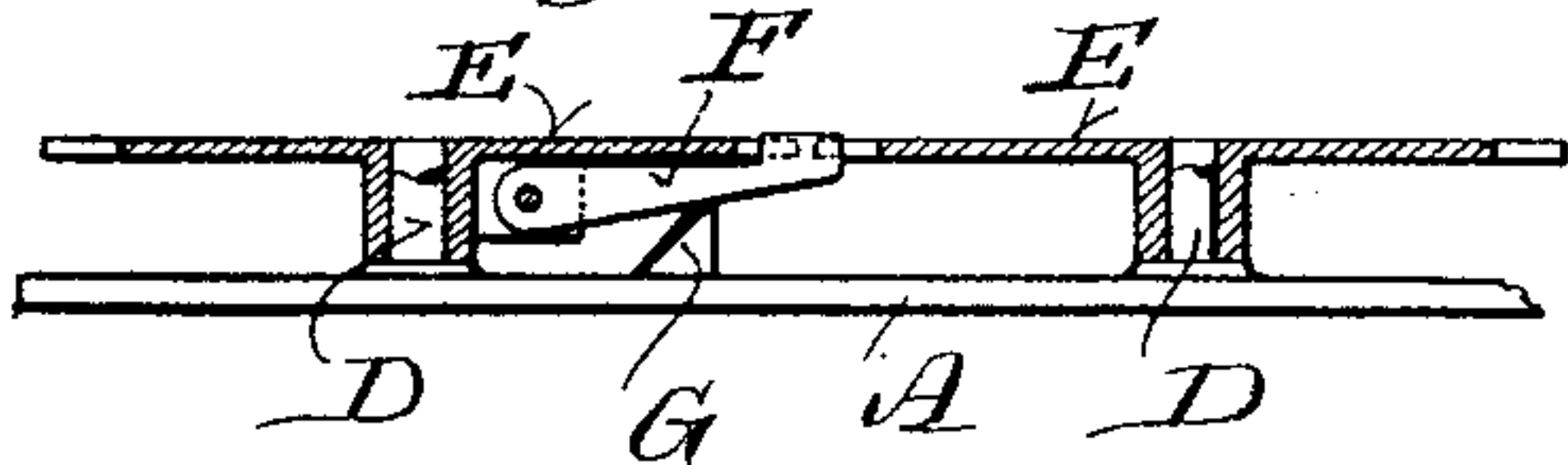
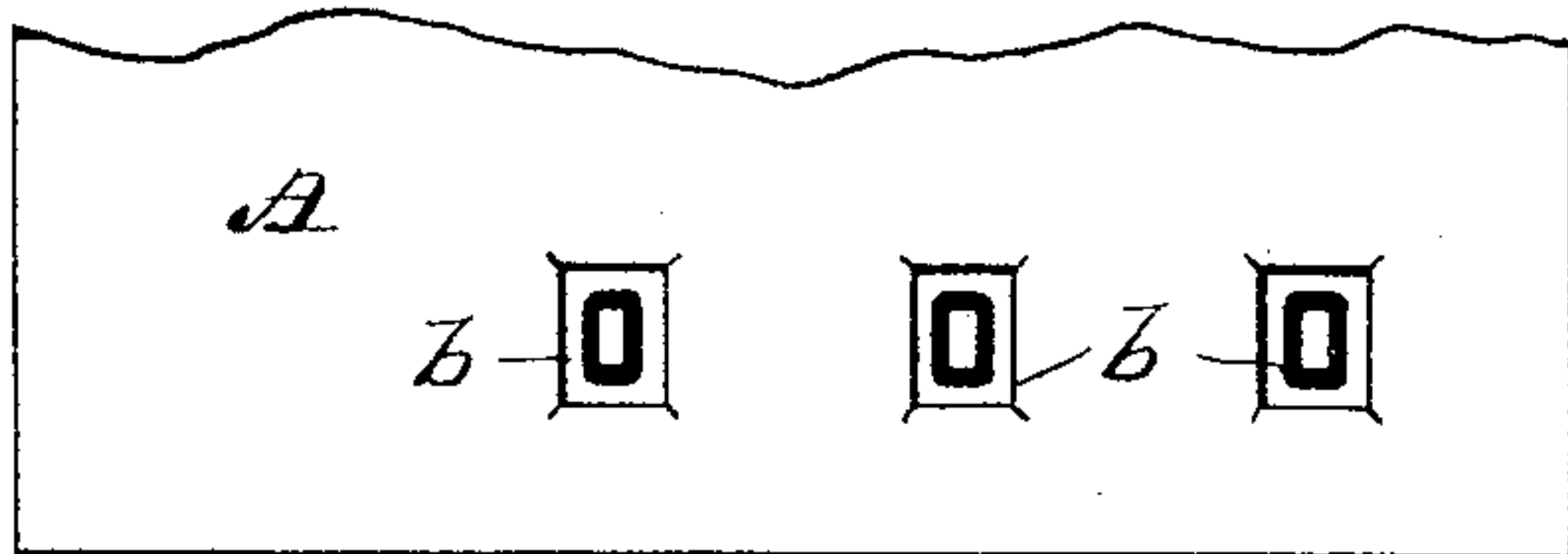


Fig. 6.

Fig. 7.



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UNITED STATES PATENT OFFICE.

EUGENE K. HELLER, OF SAUK CITY, WISCONSIN.

CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 533,892, dated February 12, 1895.

Application filed July 9, 1894. Serial No. 516,957. (No model.)

To all whom it may concern:

Be it known that I, EUGENE K. HELLER, a citizen of the United States, and a resident of Sauk City, in the county of Sauk, and in the State of Wisconsin, have invented certain new and useful Improvements in Cash-Registers; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide a simple, economical and accurate cash register; the same consisting in certain peculiarities of construction and combination of parts hereinafter set forth with reference to the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a vertical longitudinal section of my improved cash-register, the section being taken on line 1—1 of Fig. 3; Fig. 2, a horizontal section of the register viewed on line 2—2 of the preceding and succeeding figures; Fig. 3, a vertical transverse section of said register; Fig. 4, a detail sectional view illustrating a portion of an adding disk, a pivotal dog carried by the same and a cam in the path of the dog; Fig. 5, a similar view illustrating the aforesaid dog in clutch with a pair of adding disks; Fig. 6, a detail elevation partly in section illustrating a lever-and-stop mechanism embodied in my invention, and Fig. 7, a detail elevation of the portion of the aforesaid register at which the amount of a purchase is indicated by the salesman.

Referring by letter to the drawings, A represents a casing of any suitable design and dimensions provided with apertures *b* through which the amount of a purchase may be indicated, these apertures being either front or rear as may be found most convenient or desirable and preferably glazed. The casing may be supported over a cash-drawer B as shown in Fig. 3, and in this event the drawer will be provided with a spring-catch *c* or other suitable means forming part of a mechanism for releasing gravity pawls or latches hereinafter specified.

The interior of the casing A is accessible through an opening that is closed by a door C and this door is normally locked. Rising from the bottom of the casing are a series of stems D, and loose on each stem is a ratchet-

disk E that in every instance has a dog F pivotally connected to its hub. Arranged on the bottom of the casing is a lifting cam G in the path of each of the aforesaid dogs, and spring-detent H are supported on said casing-bottom to automatically engage the notches of the ratchet-disks E, these notches being radial and of such number as may be suited to fractional divisions of any currency, said disks herein shown being schemed to denote cents, dimes and dollars, or in other words each of the aforesaid disks is provided with ten notches indicated by characters of the Arabic notation. By means of its relative detent each disk is locked against movement, except in one direction, the inner ends of said detent and the disk-notches being suitably beveled to permit a ready disengagement of one from the other when rotary motion is imparted to said disk by the means hereinafter specified.

A vertical stem I turns loose in the casing-bottom and a plate J parallel thereto. Fast on the latter stem is another disk K provided with radial notches that are engageable with a spring-detent L and indicated by characters of the Arabic notation, this latter disk being for the registration of amounts in excess of what can be registered by the preceding disk, and according to the scheme of the present register, said latter disk is for the registration of dollars in amounts of ten. The disk E, their cam-actuated dogs and spring detents may be indefinitely multiplied, and succeeded by the disk K or the latter may be omitted.

Loose on the stems D above the disks E are hubs *d* of cylindrical shells M having their upper edges provided with notches corresponding in number to those in said disks, and these notched edges of the shells are engaged by gravity latches N hung from arms *e* of the plate J above specified. The periphery of each shell is provided with characters similar to those on the adjacent disk, and these characters come in view through the apertures in the casing.

An arm *f* radiates from the hub of each cylindrical shell, and carried by this arm is a gravity-pawl O that engages with the adjacent disk to cause rotation of the latter in the proper direction.

Each shell and disk that operates in conjunction therewith rotate in a direction op-

posite that of the adjacent similar devices, and it will be apparent that any amount indicated by rotation of either shell will be registered by the corresponding disk. It is
 5 also to be noted that in progressive order of the series each disk adds on to the other, or in other words the dog F pertaining to one disk is lifted by its relative cam G to come in clutch with a notch of the succeeding disk
 10 as the former disk is about to complete one revolution, and consequently said succeeding disk is automatically moved one degree of its total revolution to register a full turn of its predecessor, after which said dog drops to its
 15 normal position.

A rod P loose in suitable bearings is provided with lateral pins *g* that come under the gravity latches N, and a weighted arm *h* depending from the rod is herein shown as being in the path of a lever Q that is actuated
 20 by the spring-catch *c* or other suitable device on the cash-drawer when the latter is drawn out, the result of this operation being a lift of the gravity-latches to free the indicating shells and thereby permit of the latter being returned to normal position by any
 25 suitable automatic mechanism, said normal position of the shells being such that the cipher on each will appear through the adjacent aperture in the casing. The weighted
 30 arm automatically returns the rod to its normal position and thus permits the gravity latches to come again in engagement with the ratchet-edges of the indicating shells, but
 35 while I have described said rod actuated by mechanism in connection with a cash-drawer it may be extended through the casing and rocked by hand to lift said pawls.

The hubs *d* of the cylindrical indicating
 40 shells turn in the plate J above specified and are provided with pinions R that mesh with weighted segmental racks S at the inner ends of levers T that work in slots in the casing.

By means of the levers and rack-gear, the
 45 cylindrical shells are operated to indicate the amount of a purchase through the apertures in the casing and when the gravity latches N are lifted out of engagement with said shells the weighted racks operate to cause the au-
 50 tomatic return of any depressed levers and corresponding shells to normal position, these shells being provided with lugs *i* that come against stops *j* projecting from the plate J set forth in the foregoing.

55 Adjacent to the casing slot for each lever T, I provide a series of push-keys U that are resisted by springs *k*, the latter serving to automatically return said keys to normal position after being depressed. Each key is pro-
 60 vided with a notch normally in the path of the lug *m* on the adjacent lever, whereby said lug may clear all of the keys preceding the one depressed. As a matter of convenience the keys in each series are preferably
 65 numbered from 1 upward in successive order as shown in Fig. 6, and from the foregoing it will be understood that when any one

of said keys is pushed in and held, it will act as a stop to prevent the relative lever from being pulled farther than necessary to bring
 70 the desired character on the corresponding shell in register with the observation aperture in the casing.

From the foregoing it will be seen that the amount of a sale may be readily indicated
 75 and registered, while at the same time said amount is automatically added to previous sales and the total amount at any time may be readily determined when the casing is
 80 opened to bring the adding disks to view.

The adding disks may be readily adjusted to have them all start from 0, this operation being accomplished by turning said disks in
 successive order from the lowest to the highest denominations when the spring-detents
 85 and gravity-pawls are held out of working position.

Inasmuch as some variation may be made in the structural detail of the cash-register herein shown and described without effecting
 90 a change of results, I do not wish to be understood as limiting myself to any specific means for rotating each indicating shell and effecting a simultaneous rotation of the rela-
 95 tive adding disk, nor to the specific means for effecting an independent automatic return of the shells to normal position; neither do I wish to be understood as limiting myself to specific devices for locking the adding
 100 disks against reverse movement, nor to any particular means for communicating motion from one of said disks to the next in the series.

Having thus described my invention, what I claim as new, and desire to secure by Letters
 105 Patent, is—

1. In a cash-register, the combination of a suitable casing, a series of rotating adding disks, a pivotal dog carried by each disk, cams on the bottom of the casing in the path of the
 110 dogs, rotative indicators, gravity pawls carried by the indicators for engagement with notches in the disks, gravity latches engageable with the indicators, a tilt-rod provided with lifting pins opposed to said latches, and
 115 suitable means for returning each indicator to normal position upon release of its relative latch.

2. In a cash-register, the combination of a suitable casing, a series of rotative adding
 120 disks, a pivotal dog carried by each disk, cams on the bottom of the casing in the paths of the dogs, rotative indicators, gravity-pawls carried by the indicators for engagement with notches in the disks, gravity-latches engage-
 125 able with the indicators, a tilt-rod provided with lifting-pins opposed to said latches, pinions fast to the indicators, weighted segmental racks in mesh with the pinions, and levers extending from the racks through slots in said
 130 casing.

3. In a cash-register, the combination of a series of adding disks, suitable means for rotating each disk independent of others in the

series, other suitable means for communicating motion from one disk to another in successive order, a series of indicators, suitable means for rotating each indicator simultaneously with a corresponding adding disk, stop-latches engageable with the indicators, a loose counter-weighted rod provided with lifting pins opposed to the latches, a tilt-lever for the rod arranged to be actuated by a device on a cash drawer, and suitable means for automatically returning the indicators to normal position upon release of said latches.

4. In a cash-register, the combination of a series of rigid stems, adding disks loose on the stems, cylindrical indicating shells also loose on the stems and in slip-clutch with the disks, suitable means for actuating the shells, other suitable means for automatically returning said shells to normal position, and a cam-actuated device carried by each disk for intermittent engagement with the next succeeding disk.

5. In a cash-register, the combination of a series of rigid stems, adding disks loose on the stems, cylindrical indicating shells also loose on the stems and in slip-clutch with the disks, counter-weighted levers in gear-connection with the shells, stop-keys capable of being brought in the path of the levers at will, stop

latches for said shells, a tilt-rod provided with lifting pins opposing the latches, and suitable means for communicating motion from one adding disk to another in successive order.

6. In a cash-register, the combination of a series of rigid stems, adding disks loose on the stems, cylindrical indicating shells also loose on said stems and in slip-clutch with the disks, suitable means for actuating the shells, stop-latches for said shells, and a tilt-rod provided with lifting pins opposing the latches.

7. In a cash register, the combination of a series of rigid stems, adding disks, loose on the stems, cylindrical indicating shells also loose on said stems and in slip-clutch connection with the disks, pinions rigid with the shells, lever-controlled segmental racks in mesh with the pinions, stop-latches for said shells, and a tilt-rod provided with lifting-pins opposing the latches.

In testimony that I claim the foregoing I have hereunto set my hand, at Sauk City, in the county of Sauk and State of Wisconsin, in the presence of two witnesses.

EUGENE K. HELLER.

Witnesses:

CHAS. NAFFZ,

C. F. NINMAN.