No. 683,725. Patented Oct. 1, 1901.

# J. P. CLEAL.

## CASH REGISTER.

(Application filed Feb. 26, 1900.)

(No Model.) 2 Sheets—Sheet 1.

FIG. 1.

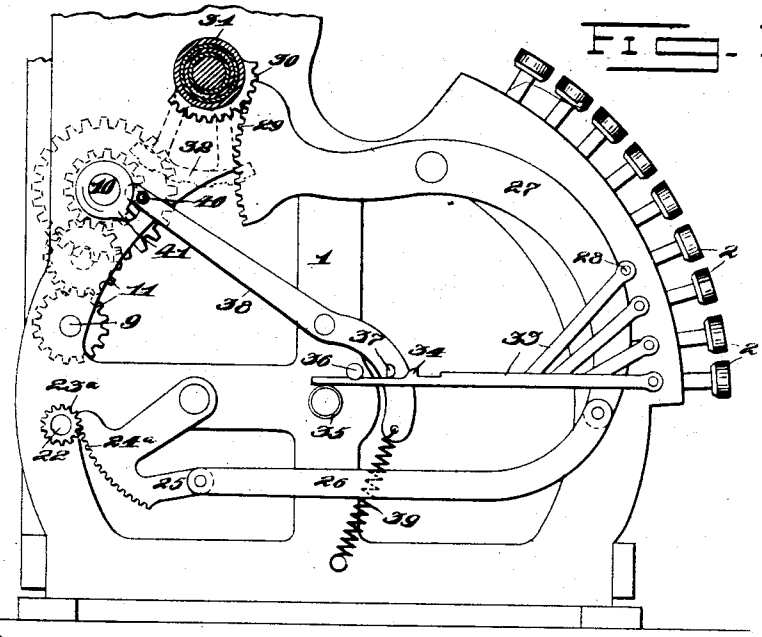
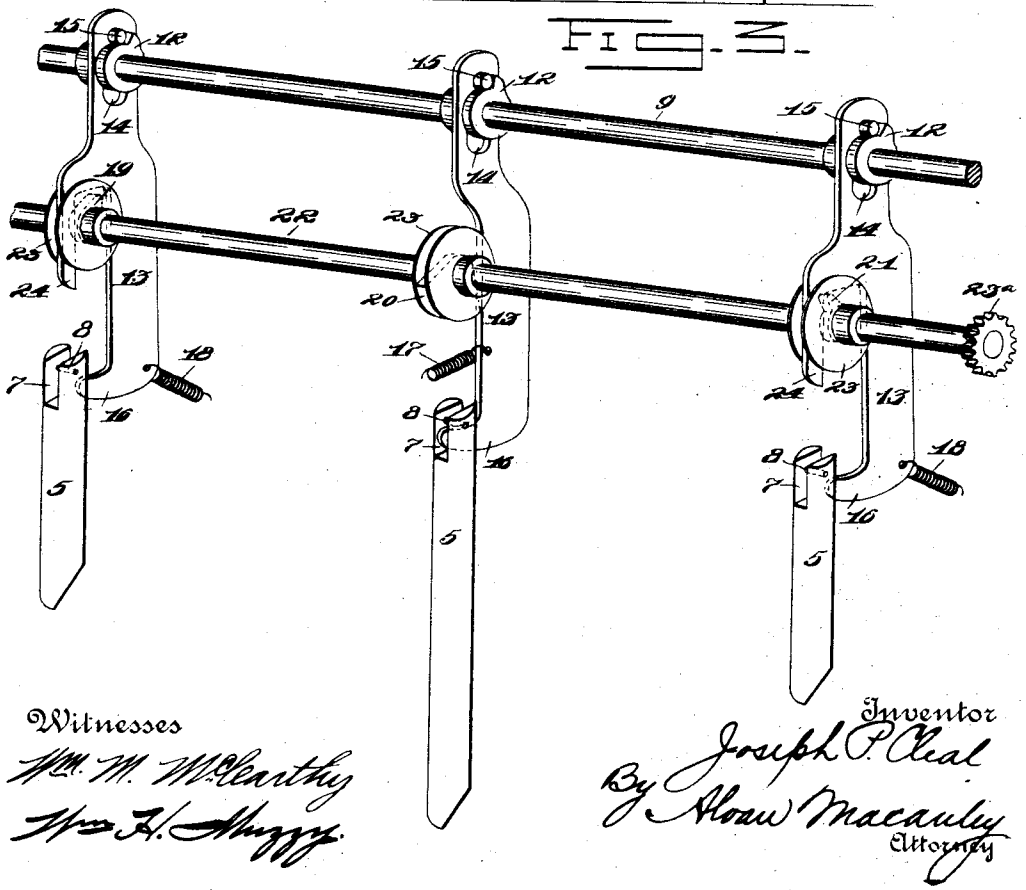



FIG. 2.




Witnesses

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(No Model.) 2 Sheets—Sheet 2.

Fig. 2.

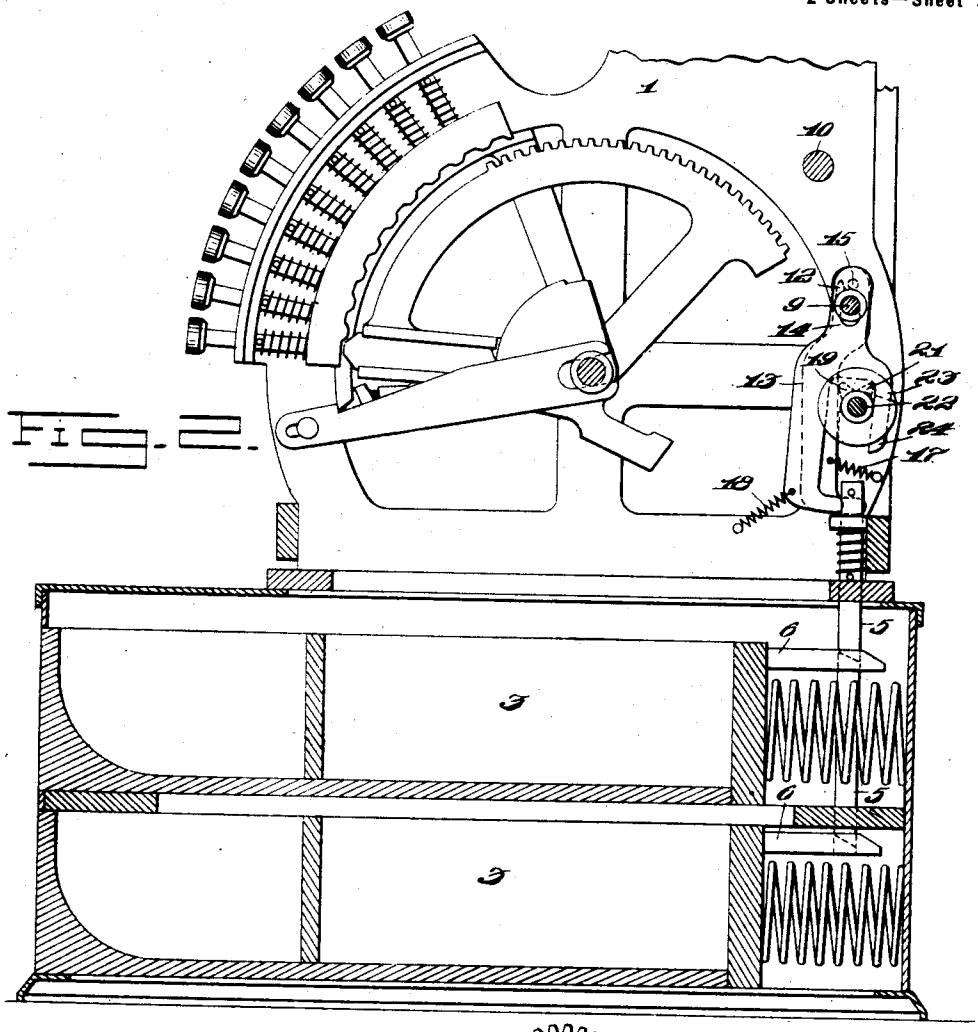
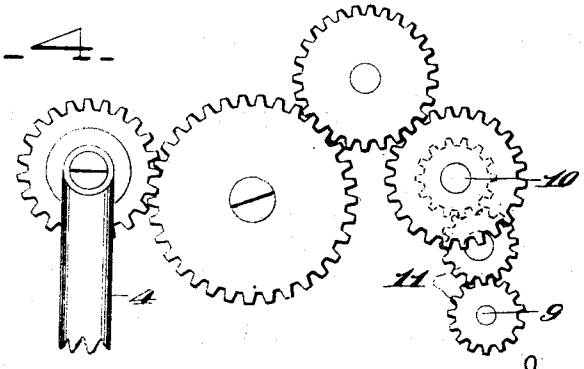



Fig. 4.




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# UNITED STATES PATENT OFFICE.

JOSEPH P. CLEAL, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF JERSEY CITY, NEW JERSEY.

## CASH-REGISTER.

SPECIFICATION forming part of Letters Patent No. 683,725, dated October 1, 1901.

Application filed February 26, 1900. Serial No. 6,564. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH P. CLEAL, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Cash-Registers, of which I declare the following to be a full, clear, and exact description.

This invention relates to improvements in cash-registers, and has more particular relation to improvements in registers of the type patented to Cleal and Reinhard, No. 580,378, dated April 13, 1897.

The object of the invention is to provide an improved construction of register having a series of independent cash drawers or receptacles.

In the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation, partly broken away, of a register of the type mentioned with my improvements applied thereto, the cash-drawers being omitted. Fig. 2 represents a central vertical section through the same with the cash-drawers in position. Fig. 3 represents an enlarged detail perspective view looking from the rear of the latches and latch-operating mechanism for the cash-drawers; and Fig. 4 represents a detail end elevation of the operating-gearing for the machine, the operating-handle being broken away.

In the aforesaid drawings, 1 represents the frame of the machine; 2, the special clerk's keys; 3, the cash-drawers, and 4 the operating-handle. The regular operation of said machine is substantially the same as described in said patent, with the exception that in lieu of the usual cash-drawer I employ three drawers suitably mounted in the drawer-casing $1^a$ and preferably arranged one large one below and two smaller ones above. This arrangement of the drawers can of course be changed without departing from the spirit of my invention. In lieu of the usual drawer-latch I employ three latch-plungers 5, which are suitably mounted on the main frame, so that their lower beveled ends coöperate with apertured latch-plates 6, mounted on the respective rear walls of the cash-drawers 3, so as to normally hold said drawers in their closed positions. Each of said plungers is formed at its upper end with a notch 7, containing a transverse pin 8.

A rotary shaft 9 is mounted in the main frame and is geared to the regular rotation-shaft 10, as shown in Figs. 1 and 4, by a train of gears 11, so as to make one complete revolution upon each operation of the machine. This shaft is provided with a series of cams 12 and forms a guide for the latch-operating levers or plates 13, each of which is formed with an elongated slot 14, through which said shaft projects. The operating-plates are provided with laterally-projecting pins 15, which are engaged and raised by the respective cams 12 upon each operation of the machine, and thus raise said plates correspondingly. The lower end of each plate is formed with a hook 16, which is arranged to coöperate with the pin 8 of its respective plunger to raise the latter when said plate is raised. The middle plate 13, which controls the plunger-latch for the large lower drawer, is normally drawn forward at its lower end to cause its hook to project into the notch 7 and under the pin 8 by a coil-spring 17, which connects it to the main frame. When the devices are in this normal position, the two end plates 13, which control the two small upper drawers, are drawn back by coil-springs 18, which connect them to the main frame, so that their hooks 16 are free of the pins 8 of their respective plungers. The respective plates 13 are controlled or rocked by cams 19, 20, and 21, fast to a rotation-shaft 22, which latter is also provided with guiding-disks 23, mounted at each side of the respective cams, to guide them in correct alinement with the edges ef their levers 13. The cams of the two end levers 13 are arranged to coact with fingers 24, formed on said levers, to force the levers forward against the tensions of their springs when said shaft 22 is rotated. The sizes and locations of the respective cams 19, 20, and 21 are such that the initial rotation of the shaft 22 will cause the cam 20 to throw its plate 13 forward, while the cam 21 will force its plate rearward, the remaining plate not being actuated. A further rotation of the shaft 22 disengages the cam 21 from its plate and causes the cam 19 to force its respective plate rearward. This

further movement of the shaft simply advances the cam 20 a little farther forward without affecting its plate 13. Now any further movement of the shaft 22 will disengage all the cams from their respective plates and allow the same to assume their normal positions. (Shown in Fig. 3.) The said shaft 22 is given its different degrees of movement according to the special key operated. The first and second keys from the bottom of the bank give the shaft the requisite movements to set the devices for operating the latches for one or the other of the two small upper drawers. Either one of the third or fourth keys from the bottom of the bank will rotate the shaft 22 sufficiently to give the cam 20 a complete rotation, and thus allow the parts to assume their normal positions, (shown in Fig. 3,) in which positions the operation of the crank-handle will unlatch the larger lower drawer. The connections for rotating the shaft 22 upon the operation of the special keys are as follows: Fast upon the end of the said shaft is a pinion $23^a$, which meshes with a segmental rack $24^a$, pivoted on the main frame. This rack is provided with an operating-arm 25, to which is pivotally connected a link-bar 26, the opposite end of said link being also pivotally connected to the lower end of a pivoted segmental lever 27. It will be observed by reference to Fig. 1 that the laterally-projecting pins 28 of the respective special keys are relatively located different distances from the periphery of the segmental lever 27, so that when operated they will impart different degrees of movement to said lever and the said shaft 22 through the connections aforesaid.

The rear end of the lever 27 is formed with a segmental rack 29, which meshes with a mutilated pinion 30, formed on a sleeve 31, which carries a special printing-segment 32, (shown in dotted lines,) so as to adjust said segment according to the key operated to print a character corresponding to said key. This printing-segment of course coöperates with the regular printing mechanism, which is substantially of the construction described in said patent.

Each of the pins 28 is provided with a pivoted detent-bar 33, having a locking-nose 34 formed on its upper side. The inner ends of these bars rest upon an antifriction-roller 35, mounted upon the main frame, and are held down in position by a retaining bar or pin 36, also mounted upon the main frame. The noses 34 are arranged to coöperate with a lug 37, mounted near the lower end of a lever 38, pivoted on the main frame. The lug 37 is normally held down upon the bars 33 by a coil-spring 39, which connects the lower end of the lever 38 with the main frame. The upper end of the said lever 38 is provided with a pin 40, which coöperates with a cam 41, mounted upon the shaft 10. When a special key is operated, its bar 33 is forced inward and its nose 34 engages and raises the stud 37 until it passes to the rear of the same, and thus becomes latched in its inner position. Now upon the operation of the machine the cam 41 engages the pin 40 and operates the lever 38 against the tension of its spring 39, and thus raises the stud 37 and releases the nose 34 of the operated bar 33. When the bar is thus released, the special key is returned to normal position by the usual key-spring, as said keys are mounted substantially in the same manner as the keys shown in the aforesaid patent.

It will be observed from the foregoing that when one of the special clerk's keys is operated its corresponding latch-operating plate 13 is set for operation, and when the crank-handle is subsequently operated and the shaft 9 revolved through the gearing aforesaid all of the latch-plates are raised, thus raising the desired latch-plunger and releasing the cash-drawer of the clerk to which the particular key belongs. The sleeve 31 may be connected to any suitable form of indicator for indicating which of the particular clerk's keys has been operated for any particular transaction.

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

1. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, latches for said drawers, movable plates for operating said latches, cams for setting said plates to operate their respective latches, and means operated by the keys for adjusting said cams.

2. In a cash-register, the combination with an operating mechanism, of a series of cash-drawers, latches for holding said drawers closed, operating devices for said latches, cams for setting said operating devices so that only one of the same will coöperate with a drawer-latch, and a series of keys for adjusting said cams.

3. In a cash-register, the combination with an operating mechanism, of a series of cash-drawers, means for holding them closed, operating devices for said means, cams for moving the desired operating device into proper operative position, and a series of keys for adjusting said cams.

4. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, latches for said drawers, pivoted plates for operating said latches and means operated by the keys for setting said plates for operation in connection with the latches.

5. In a cash-register, the combination with an operating mechanism, of a series of cash-drawers, a series of drawer-releasing devices, a series of cams coöperating with said devices, and means for simultaneously moving all of said cams so as to adjust the desired releasing device to render it operative and control all of the remaining devices to render them inoperative.

6. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, latch-plungers for said drawers, independent plates having hooks arranged to be brought into engagement with the respective plungers and means connected to the keys for setting said plates.

7. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, latches for said drawers, a series of movable plates arranged to be reciprocated by the operating mechanism at each operation of the machine and cams connected to the keys for setting the desired plate for coöperation with its drawer-latch.

8. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, latch-plungers for said drawers, a series of pivoted plates capable of vertical movement, a shaft carrying a series of cams arranged to engage the respective plates at different points in its rotation, and means connecting said keys with the shaft for rotating the latter.

9. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, plunger-latches for said drawers, operating-plates for said plungers, a shaft carrying cams for reciprocating said plates longitudinally, a shaft carrying cams for adjusting said plates for coöperation with their respective plungers, an operating-handle for actuating the first-mentioned shaft, and means connected to the keys for actuating the remaining shaft.

10. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, independent latches for said drawers, means connected to the keys for setting the latches for operation in connection with the operating mechanism, independent latch-bars connected to the respective keys, and a latch actuated by the operating mechanism and arranged to engage and hold the latch-bars.

11. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, independent latches for said drawers arranged to be set for operation by the keys, independent latch-bars for the respective keys having locking projections, and a pivoted lever having a latch-stud which coöperates with said projections and arranged to be actuated by said operating mechanism.

12. In a cash-register, the combination with an operating mechanism, of a series of cash-drawers, latches for holding said drawers closed, a series of hooked plates for operating said latches arranged to be reciprocated upon each operation of the machine, a series of cams for moving said plates to engagement with their respective latches, and a series of keys for adjusting said cams.

13. In a cash-register, the combination with an operating mechanism, of a series of keys, a series of cash-drawers, independent latches for said drawers arranged to be set for operation by the keys, latch-bars connected to the respective keys and formed with locking projections and a movable member arranged to be actuated by the operating mechanism and coöperating with said latch-bars.

14. In a cash-register, the combination with a series of keys, of a series of cash-drawers controlled respectively by said keys, a series of latch-bars pivoted to the respective keys and formed respectively with latching-noses, and a pivoted latch-lever for said bars actuated by the movable parts of the machine independently of the keys.

15. In a cash-register, the combination with a series of keys, of a series of cash-drawers controlled respectively by said keys, a series of independent latch-bars connected to the respective keys, and means adapted to be actuated independently of the keys and coöperating with said bars.

In testimony whereof I affix my signature in the presence of two witnesses.

JOSEPH P. CLEAL.

Witnesses:
WM. H. MUZZY,
IRA BERKSTRESSER.