

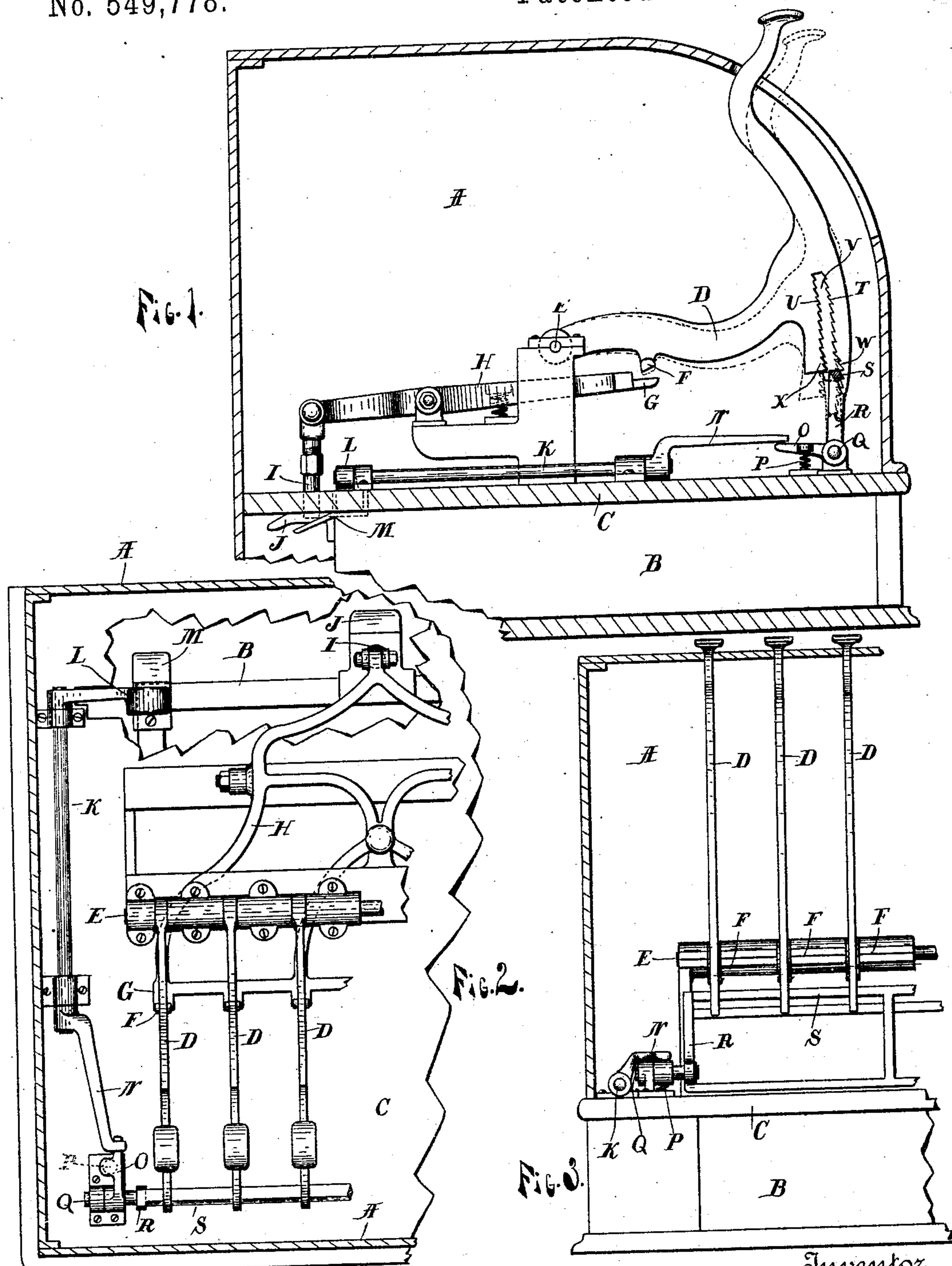
(No Model.)

H. M. GEIGER.

KEY OPERATING MECHANISM FOR CASH REGISTERS AND RECORDERS.

No. 549,778.

Patented Nov. 12, 1895.



Witnesses

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# UNITED STATES PATENT OFFICE.

HARRY M. GEIGER, OF GRAND RAPIDS, MICHIGAN, ASSIGNOR TO THE  
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## KEY-OPERATING MECHANISM FOR CASH REGISTERS AND RECORDERS.

SPECIFICATION forming part of Letters Patent No. 549,778, dated November 12, 1895.

Application filed February 16, 1895. Serial No. 538,706. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY M. GEIGER, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Manual Cash-Recorders, of which the following is a specification.

This invention relates to certain new and useful improvements in manual cash-recorders, and relates to that class of recorders used in connection with a cash-drawer; and the objects of my invention are, first, to lock each key on its downward movement until the operation of turning the spool and registration upon the paper or other material carried upon the spool has been completed; second, to produce a mechanism so that when one of the keys has been depressed or partially depressed all the other keys will be locked until the key operated upon has completed its operation and performed the work for which it is intended; third, to prevent any one of the keys, after the downward movement has been partially completed, from returning to its normal position until the cash-drawer has been opened; fourth, to so construct and arrange the mechanism that when the cash drawer is open it cannot be closed or locked until the depressed key has been returned to its normal position, and, fifth, to so construct and arrange the mechanism that when the cash-drawer has been opened and all the keys have been returned to normal position all the keys will remain locked until the drawer shall have been closed and locked.

I have found it desirable in such a machine to have all the checks which are issued from the machine of uniform length, and as the length of the downward stroke of the key decides the length of the check I have therefore provided that the length of all the strips shall be equal, and in order to avoid confusion and liability of mistakes I have found it necessary and desirable to prevent more than one key from being operated at a time. Since no key should be depressed without the honest intention of getting access to the money-drawer, I have so arranged it that no key can return to normal position without the open-

ing of the money-drawer, and in order to prevent any one of the keys from being retained out of normal position I have constructed the machine so that it will be practically inoperative until the drawer has been opened and the depressed key has been returned to normal position, and so that the drawer will not lock until the key has been returned to normal position.

As the main object of my system is to give a complete history of the number of times each clerk goes to the cash-drawer, the mechanism which moves the strips upon which the registrations are made is inoperative so long as the cash-drawer remains open and inoperative when a key has been depressed until the drawer has been opened and closed. Consequently my device prevents the moving of any one of the keys from normal position while the cash-drawer is open, thus making it necessary to close the drawer at the end of each operation before the next transaction can be recorded. These objects I accomplish by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my newly-invented manual cash-recorder with the side of the case removed in order to show the internal arrangement and construction thereof. Fig. 2 is a plan view with the upper part of the case removed, showing the general arrangement of the keys, lever mechanism, &c.; and Fig. 3 is a front elevation with the front portion of the case removed, giving a front view of the keys and the locking and unlocking mechanism.

I have shown in the drawings such parts as are necessary to illustrate the improvements invented, and which may be applied to any suitable structures used for recording cash, and which are usually called "manual recorders" or "cash-registers."

Similar letters refer to similar parts throughout the several views.

A represents the outside of the case, which is preferably of metal and is made in any suitable form.

B represents the cash-drawer, of any ordinary construction.

C is the support or partition between the cash-drawer and the key mechanism.



D D D show the key-levers, the same being shown in all three of the figures, Fig. 1 showing the peculiar construction and the means for locking the same in various positions.

5 E represents the pivot or pivots on which the keys oscillate or turn. This may be a single rod extending through all the keys or may be short rivets or other suitable pivotal bearings.

10 F F F represent lugs, one for each of the key-bars D, which lugs engage with the lugs G G G on the rocking beam H. As any key is depressed, its corresponding lug F is brought in contact with the lug G, thereby  
15 operating the rocking beam H, which rocking beam H has a detent or dog at its rear end, (shown by I,) and which is adapted to engage with the locking-plate J for the purpose of locking the drawer when closed.

20 K is a shaft supported in suitable bearings and adapted to rock for the purpose herein-after described.

L is a crank-lever, preferably weighted, so as to drop downward by gravity.

25 M is a cam-surface so situated and inclined that as the drawer is closed it raises the crank-lever L, turns the shaft K, and with it the arm N, said arm N being made rigid with the shaft K and having its front end in position to en-  
30 gage with the end of the lever O, which lever O is rigid with and operates the shaft Q. This is fully shown in Figs. 1, 2, and 3. At-  
35 tached to the shaft Q are the crank-supports R, which support the swinging bar S, which bar S passes into the several slots in the key-  
40 levers and is adapted to engage with the ratchet-teeth T on the front of the slots V and also with the ratchet-teeth U on the rear of the slots V, said slots V being slots in each  
45 of the key-levers, the operation of which is more fully described hereinafter. The slots V are each provided with a cam-surface W, which presses upon the bar S, moving it back from normal position upon the depression of  
50 any one key under the shoulders X of the keys not depressed, said shoulders or abutments X on the key-bar D serving as a lock for holding the inoperative keys in normal position while the key operated upon is out of normal position.

The operation of my invention is as follows: Starting with the drawer closed and all the keys in normal position, depress any one of the key-levers D by means of its corre-  
55 sponding key and its lug F comes in contact with the lug G on the rocking beam H, depressing the front end of the beam H and raising its rear end, lifting the detent or lug I out of the locking-plate J, thereby unlocking the  
60 drawer, which may be drawn out by hand or forced out by any other suitable means. As the key-bar D is depressed, the cam-surface W on the depressed key is brought in contact with the swinging bar or shaft S, forcing it  
65 backward beneath the abutments of the key-levers not depressed or partially depressed,

thereby locking the same in normal position. The spring P, lifting upon the crank O, turns the shaft Q and with it the crank-supports R, pressing the bar S against the ratchet-teeth  
70 T of the slot V, thereby preventing any backward movement of the key which is being operated upon until it has completed its full operation and opened the drawer B, and when  
75 the drawer is drawn or thrown open it draws the cam M from beneath the weighted crank-lever L, which then drops by gravity, turning the shaft K, causing the arm N to engage with the lever O, depressing the same, turning the  
80 shaft K, and swinging the crank-arms R, and with them the shaft S, out of engagement with the teeth T and into engagement with the teeth U, thereby allowing the depressed key to re-  
85 turn to its normal position. The drawer is now open and the keys and the bar S are in locking position under shoulders X and remain there until the drawer is closed and locked.

Having thus described my invention, what I claim to have invented, and desire to se-  
90 cure by Letters Patent, is—

1. In combination with a cash drawer, a plu-  
95 rality of keys each having a slotted key lever provided with locking notches, and a swinging bar adapted to register with said notched slots, the depression of any one of said keys  
100 operating to move said bar into position to lock the unmoved keys in normal position and cause said bar to engage the slotted notch of the depressed key and prevent it from return-  
105 ing to normal position until it has been completely depressed to unlock the drawer, substantially as described.

2. In combination with a cash drawer, of a plurality of keys, each key being provided  
110 with a slot having locking notches, a swinging bar adapted to register with said slots the depression of any one of said keys from normal position operating to lock the unmoved  
115 keys in normal position and cause said swinging bar to engage the notched slot of the depressed key and prevent it from returning to normal position until it has been completely depressed, and means for locking all the keys in normal position when the drawer is open and retaining the same locked until the drawer  
120 has been closed, substantially as described.

3. In combination with a cash drawer, a key and key lever, a rocking bar adapted to be  
125 moved from normal position by the depression of the key, a detent or locking dog lifted from locking position by the depression of the key, a rock shaft having a weighted lever adapted to turn the shaft when its support is removed by the opening of the drawer, a pro-  
130 jection on the rock shaft adapted to move a locking lever into position to lock all the keys in normal position when the drawer has been moved from its closed and locked position and to retain it locked until the drawer has again been closed, substantially as described.

4. The combination of a key and key lever, a rocking beam having a locking dog, said



beam moved from normal position by the depression of the key, a rock shaft provided with a weighted lever adapted to turn the rock shaft when the support of the weighted  
5 lever is withdrawn by the opening of the drawer, a projection on the rock shaft adapted to swing a rocking lever into position to lock the keys in normal position when the drawer has been opened, and a spring adapted

to unlock the key when the drawer has been closed, substantially as described.

In witness whereof I have hereunto set my hand and seal in the presence of two witnesses.

HARRY M. GEIGER. [L. S.]

Witnesses:

EDWARD TAGGART,

CHRISTOPHER HONDELINK.