(No Model.) 3 Sheets—Sheet 1.

J. P. CLEAL.

CASH REGISTER AND INDICATOR.

No. 523,462. Patented July 24, 1894.

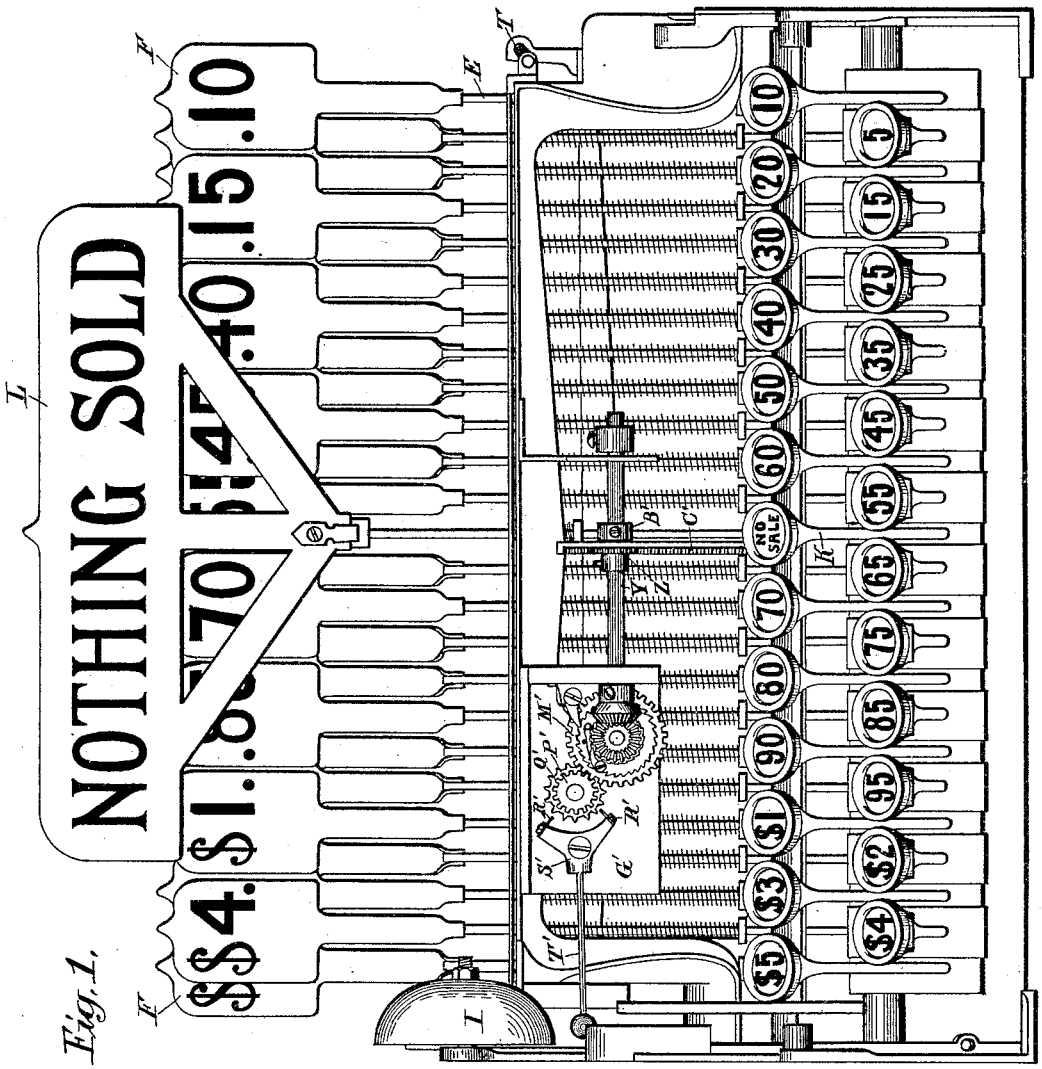

Fig. 1.

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Inventor.
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by Edward Rector
his atty.

(No Model.) 3 Sheets—Sheet 2.

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Fig. 5.

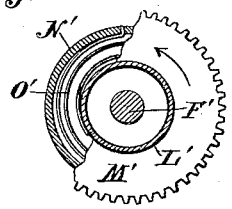
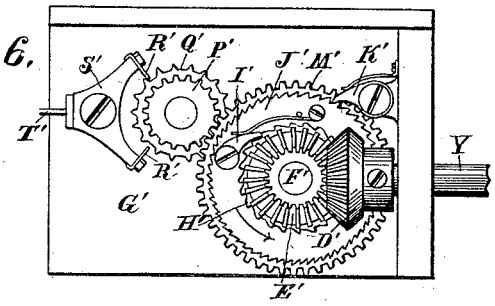


Fig. 6.



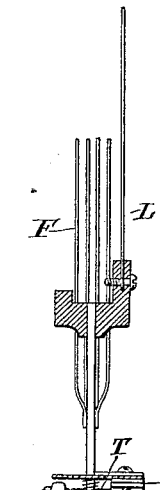


Fig. 7.

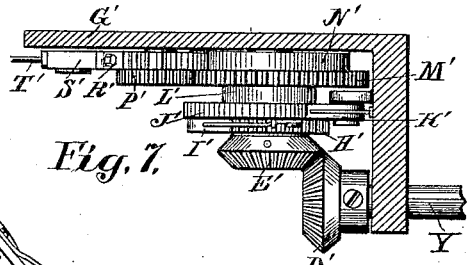
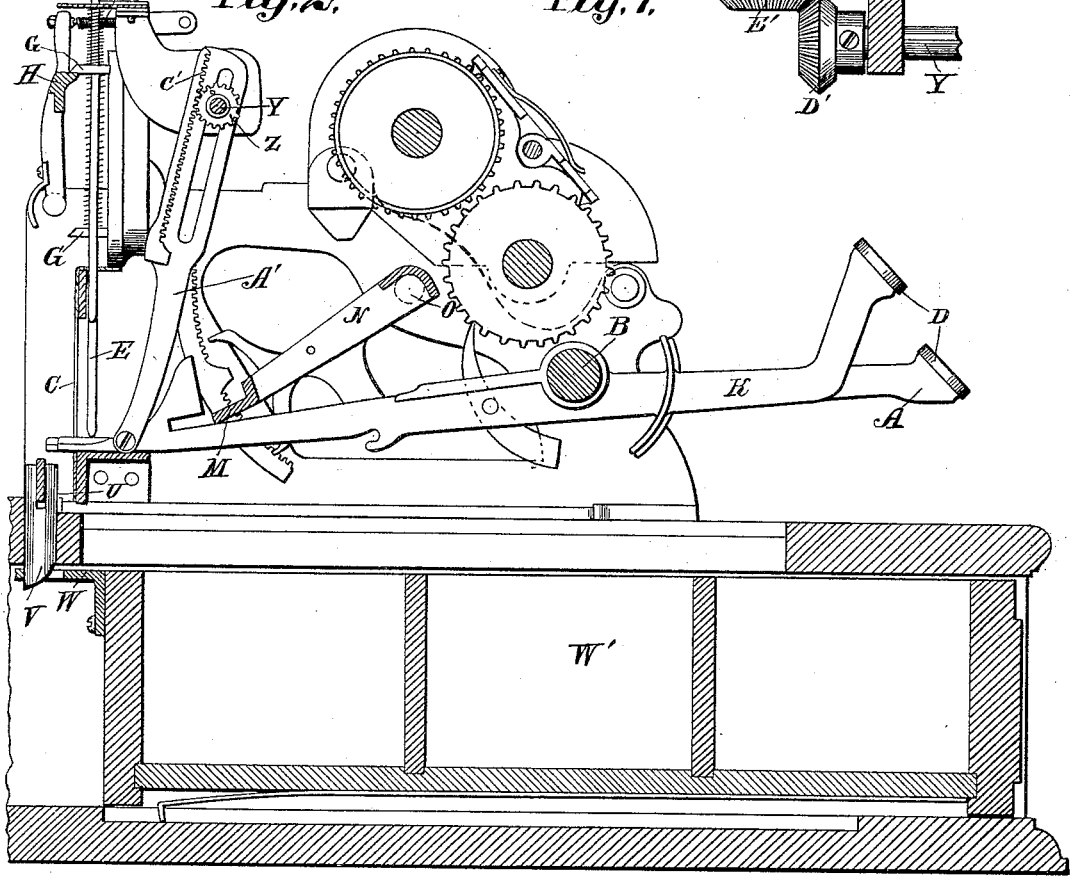


Fig. 2.



Witnesses,
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(No Model.) 3 Sheets—Sheet 3.

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Fig. 4.

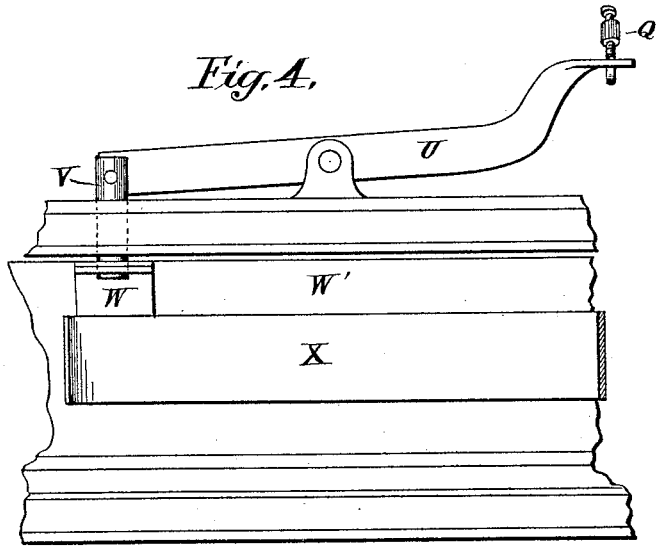

Fig. 3.

Witnesses.
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UNITED STATES PATENT OFFICE.

JOSEPH P. CLEAL, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 523,462, dated July 24, 1894.

Application filed January 17, 1894. Serial No. 497,152. (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 a certain new and useful Improvement in Cash Registers and Indicators, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention has for its object the provision of means for more effectually preventing fraudulent manipulation of machines of this character. The machines are usually provided with a money drawer which is normally locked and which cannot be unlocked and opened without operating some one of the keys; but it is sometimes desired to obtain access to the drawer when no sale has been made or other transaction requiring the operation of any one of the regular keys has taken place, as for instance where it is desired to make change for some one as a matter of accommodation; and for the purpose of enabling the drawer to be opened at such times there is provided a special key whose operation will release the drawer in the same manner as that of any other key, but which will not affect the cash-registering mechanism of the machine. The finger button of this key may bear any suitable sign or word to indicate that the key is a special one, and an indicator bearing a corresponding sign or word is usually arranged to co-operate with it. In some instances a special registering mechanism is provided upon which the number of operations of the key is registered. Dishonest clerks have been in the habit of making use of this special key for fraudulent manipulation of the machine by operating it for cash sales whenever the customer was not standing where he could plainly see the indicator or his attention was otherwise engaged. The operation of the key would sound the alarm and release and open the money drawer of the machine, so that the customer would know that the clerk had operated the machine, even though he did not know the proper key had not been used.

It is the object of my invention to prevent fraudulent manipulation of the machine in this manner, and to that end it consists in the provision of a special alarm mechanism actuated by said special key alone and giving forth an alarm different from that of the regular keys, and in the provision of a special indicator for such key, said indicator being much larger and more conspicuous than those of the regular keys and bearing in large letters some suitable words indicating that no sale has been made and no cash registered at the operation of that key.

I have illustrated my invention as applied to a well known form of cash register, of which, in the accompanying drawings, Figure 1 is a front view; Fig. 2 a vertical cross section looking toward the right of the machine; Fig. 3 a vertical cross section near the left side of the machine and looking toward the left; Fig. 4 a detail view of the drawer-locking mechanism; and Figs. 5, 6 and 7 detail views of the special alarm mechanism.

The same letters of reference are used to indicate identical parts in all the figures.

The operating keys of the machine consist of the usual levers A fulcrumed on a horizontal rod B in the lower forward part of the machine and resting at their rear ends in the lower ends of vertical slots in a guide plate C secured to the rear side of the frame-work. They are provided upon their front ends with finger buttons D bearing numbers representing the values of the respective keys, while upon their rear ends rest the lower ends of the vertically guided indicator rods E carrying the indicators F at their upper ends and provided with the collars G which co-operate with the pivoted wing or bar H in the well known manner to temporarily support the operated indicators in elevated position. The indicators bear upon their faces figures of larger size corresponding to the numbers upon the key buttons of their respective keys. The alarm gong I is arranged to be sounded at each operation of the machine by a striker J carried by the wing H, in the usual manner.

The special key for opening the drawer at times when no sale has been made and no cash is to be registered, as before described, is shown in the drawings as being located

near the middle of the machine, Fig. 1, and is lettered K. Its finger button in this instance bears the words "No sale." The rod E resting upon its rear end carries an indicator L consisting of a horizontal plate whose length is one half or more of the machine, and bearing in large letters the words "Nothing sold."

Extending across and resting upon the upper sides of the keys near their rear ends is the cross bar M of the usual vibrating frame, composed of said bar and its supporting side arms N by which it is hung to the framework at O. Pivoted to the frame work at P, Fig. 3, is the three-armed lever Q whose forwardly extending arm is connected by a slot and pin to one of the side arms N of the vibrating frame and whose upper end carries the pivoted trip R adapted to bear against a plate S upon the wing and force the latter backward against the resistance of its spring T when any one of the keys is operated and the bar M lifted. When the nose of the trip clears the lower end of the plate S and thereby releases the wing the spring T will throw the wing and gong hammer forward, causing the latter to sound the gong and the former to catch under the collar of the newly lifted indicator rod to hold its indicator exposed to view, in the manner well known in this sort of machines.

The rear end of the rearwardly extending arm of the lever Q co-operates with the left hand end of a lever U pivoted near its middle, Fig. 4, and carrying at its right hand end the vertically movable drawer-bolt V which extends down through the base of the machine into the drawer compartment and co-operates with the locking plate W upon the upper edge of the rear wall of the drawer W′ in the usual manner. When any one of the keys is operated the lifting of the cross bar M rocks the lever Q and causes its rearwardly projecting arm to depress the left hand end of the lever U and lift the bolt V out of engagement with the drawer, thereby releasing the latter and permitting the spring X behind it to force it open.

From the foregoing description it will be seen that the gong is sounded by the striker and the drawer unlocked when either the special key or any one of the others is operated; but in addition to the sounding of the gong by the regular striker there is a special sounding mechanism actuated only by the special key, as before explained, and co-operating either with the same gong as the regular striker, or with a special gong, as desired; in this instance with the same gong. This special sounding mechanism may now be described as follows:

Journaled in suitable bearings supported by the frame-work in the upper rear part of the machine is a rock shaft Y having fast upon it a pinion Z. Pivoted to the special key K below this shaft is an upwardly extending bar A′ whose upper end is slotted and embraces the shaft Y and is confined between the pinion Z on one side and a collar B′ fast upon the shaft Y on the other. This bar A′ carries a rack C′ which meshes with the pinion Z, by which means when the special key is operated and the bar A′ reciprocated the shaft Y is turned forward and backward. At its left hand end the shaft Y has fast upon it a beveled pinion D′, Figs. 6 and 7, which meshes with a similar pinion E′ fast upon the front end of a stub shaft F′ journaled at its rear end in a vertical plate G′ secured upon the framework. Fast upon the rear side of the pinion E′ is a ratchet H′ which is engaged by a pawl L′ pivoted upon the side of a larger ratchet J′ which is in turn engaged by a fixed holding pawl K′. It results from this connection that the movement of the reciprocating parts in one direction will turn the ratchet J′, while it will be unaffected by their movement in the opposite direction. The ratchet J′ has a rearwardly extending hub or sleeve L′ upon which is loosely mounted a gear wheel M′ having fast upon its rear side a circular casing N′ in which is inclosed a coiled spring O′, Fig. 5, whose outer end is fast to the casing N′ and whose inner end is fast to the hub L′ of the ratchet J′. When the ratchet is turned in the direction of the arrow by the operation of the special key it will tend to turn the gear M′ with it, but if the gear be held from turning, or not permitted to turn as rapidly as the ratchet, the spring O′ will be wound up and will spend its power in turning the gear after the ratchet has come to rest. The gear meshes with a pinion P′ loose upon a second stub shaft supported in the plate G′. The pinion P′ has fast upon its rear side a toothed wheel Q′ with which co-operate two pallets R′ upon the pivoted supporting plate S′ of a second gong-striker T′. When the toothed wheel is turned by the gear M′ the passage of its teeth beneath the pallets will vibrate the plate S′ and striker T′ and cause the latter to rapidly strike the gong. The engagement of the pallets with the teeth of the wheel Q′ limits the speed at which the latter can be turned, so that if the special key be quickly depressed, as it is in the ordinary operation of the machine, the ratchet J′ will be turned more rapidly than the gear M′ can turn. This will cause the spring O′ to be wound up, so that after the key has been released the spring will continue to turn the gear M′ and sound the alarm.

The rapid vibration of the striker T′ against the gong of course produces a very different sort of alarm from the single stroke of the striker J against it, while the continued sounding of the gong after the clerk has released the key and perhaps turned away from the machine will serve to still further draw the attention of the customer to the machine and cause him to notice the large indicator bearing the no sale sign. The sounding of this peculiar alarm and the simultane-

ous displaying of the conspicuous indicator bearing a sign that nothing has been registered upon the machine by the operation of the key constitute an efficient safeguard against fraudulent manipulation of the machine in the manner described.

Inasmuch as it is only essential that the alarm sounded by the special key should be of a distinct and different character from that sounded by the regular keys, this feature of my invention is not restricted, in its broader scope, to the novel sounding mechanism which I have shown and described. Instead of such mechanism a separate gong giving forth an entirely different sound from that of the regular one might be employed and an ordinary striker be arranged to be actuated by the special key to give such gong a single blow at each operation of the key; or if the two strikers are arranged to co-operate with the same gong any other suitable mechanism for actuating the auxiliary striker by the operation of the special key may be employed.

Machines of this character are sometimes equipped with special keys for other purposes than the mere opening of the drawer, and in such cases the auxiliary alarm mechanism may be arranged to co-operate with those keys for the same purpose as in the present instance.

Having thus fully described my invention, I claim—

1. In a cash register and indicator, the combination of a series of cash keys for registering different values, a special key or keys not co-operating with the cash-registering mechanism, a money drawer, a lock therefor actuated by all of the keys in common, to release the drawer upon the operation of any one of them, an alarm mechanism actuated by the cash keys, and a special alarm mechanism actuated by the special key or keys, substantially as and for the purpose described.

2. In a cash register and indicator, the combination of a series of cash keys for registering different values, a money drawer and locking mechanism, a special key for actuating the locking mechanism to release the drawer, an alarm mechanism actuated in common by all of the keys, and a special alarm mechanism actuated by the special key when the latter is operated to release the drawer, substantially as and for the purpose described.

3. In a cash register and indicator, the combination of a series of cash keys for registering different values, a special key or keys not co-operating with the cash registering mechanism, a money drawer with locking mechanism actuated in common by all of the keys, to release the drawer upon the operation of any one of them, an alarm mechanism actuated in common by all of the keys, and a special alarm mechanism actuated by the special key or keys alone, substantially as and for the purpose described.

4. In a cash register and indicator, the combination of an operating key, a rotary member as a ratchet wheel, means intermediate the key and such rotary member for causing the reciprocation of the former to rotate the latter constantly in one direction, a toothed wheel, a spring connection between such wheel and the rotary member to permit the latter to be turned independently of the toothed wheel and put the spring under tension, an alarm gong, and a vibrating striker actuated by the toothed wheel and co-operating with the gong, substantially as and for the purpose described.

5. In a cash register and indicator, the combination of an operating key, a reciprocating rack actuated thereby, a pinion meshing with the rack, a rotary member, a ratchet and pawl connection between the same and the pinion for causing the pinion to turn it in one direction, a toothed wheel, a spring connection between the same and the rotary member, an alarm gong, and a vibrating striker actuated by the toothed wheel and co-operating with the gong, substantially as and for the purpose described.

6. In a cash register and indicator, the combination of an operating key, a reciprocating rack actuated thereby, a rotary shaft, a pinion fast thereon and meshing with the rack, a rotary member, as a ratchet a ratchet and pawl connection between the same and the rotary shaft, a gear wheel, a coiled spring connected at one end to said wheel and at its other to the rotary member, a pinion meshing with the gear wheel, a toothed wheel turning with the pinion, an alarm gong, and a vibrating striker actuated by the toothed wheel and co-operating with the alarm gong, substantially as and for the purpose described.

7. In a cash register and indicator, the combination of a series of cash keys for registering different values, a series of indicators actuated thereby and bearing numbers representing the values of their respective keys, a special key not co-operating with the cash-registering mechanism, an indicator actuated by such special key and consisting of a horizontal plate extending laterally across a considerable number of the cash indicators and bearing suitable words indicating that nothing has been sold or no cash registered at the operation of the machine which exposes such indicator, an alarm mechanism common to and actuated by the cash keys, and a special alarm mechanism actuated by the operation of the special key to call attention to the aforesaid special indicator, substantially as described.

8. In a cash register and indicator, the combination of a series of cash keys for registering different values, a series of indicators actuated thereby and bearing numbers representing the values of their respective keys, a special key not co-operating with the cash-registering mechanism, an indicator actuated by such special key and consisting of a horizontal plate extending laterally across a con-

siderable number of the cash indicators and bearing suitable words indicating that nothing has been sold or no cash registered at the operation of the machine which exposes such indicator, a money drawer, locking mechanism therefor common to all of the keys, an alarm mechanism also common to all of the keys, and a special alarm mechanism actuated by the special key alone to call attention to the aforesaid special indicator, substantially as described.

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