

(No Model.)

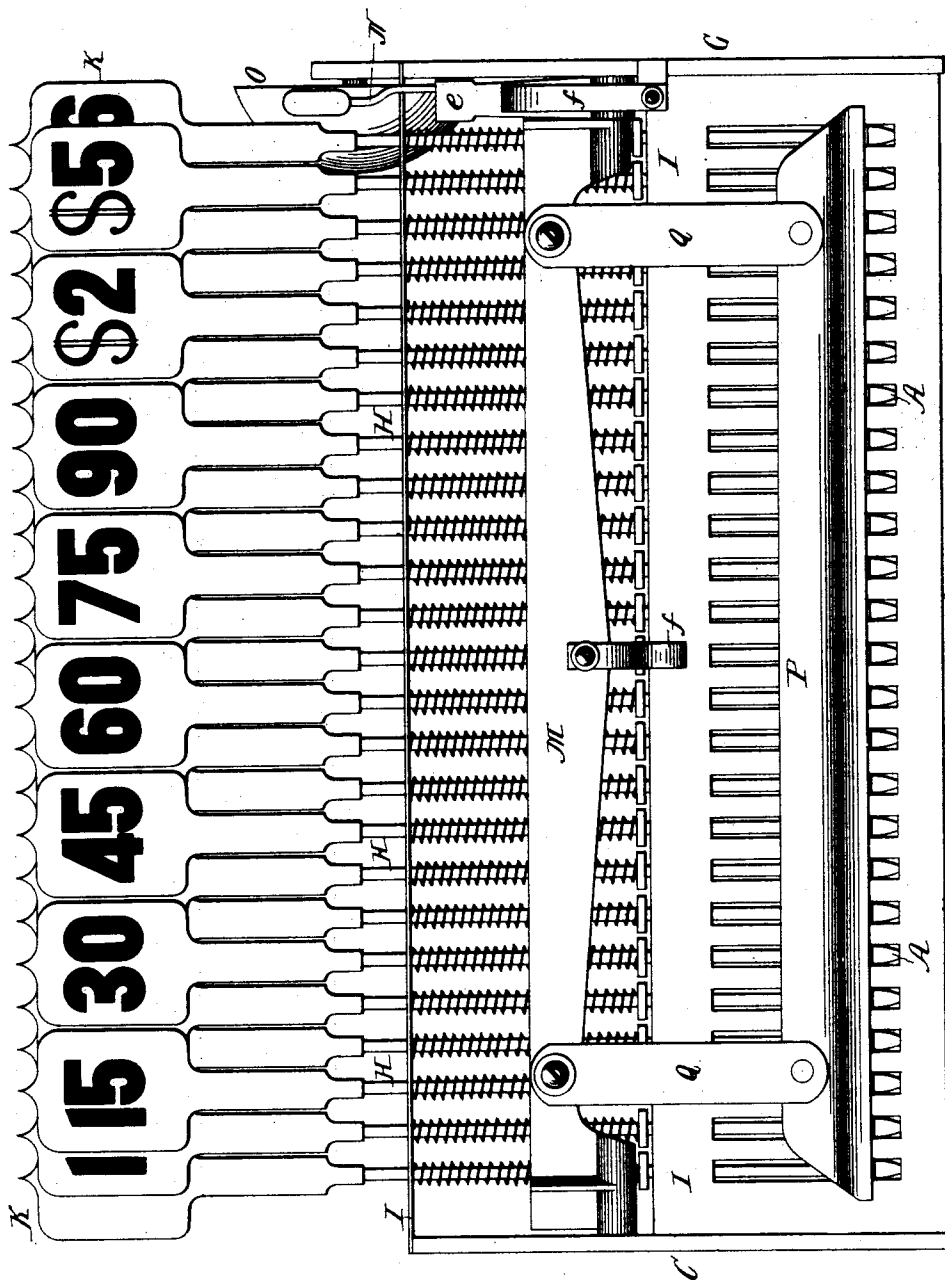
2 Sheets—Sheet 1.

C. D. GRIMES.
CASH REGISTER AND INDICATOR.

No. 445,672.

Patented Feb. 3, 1891.

Fig. 1.



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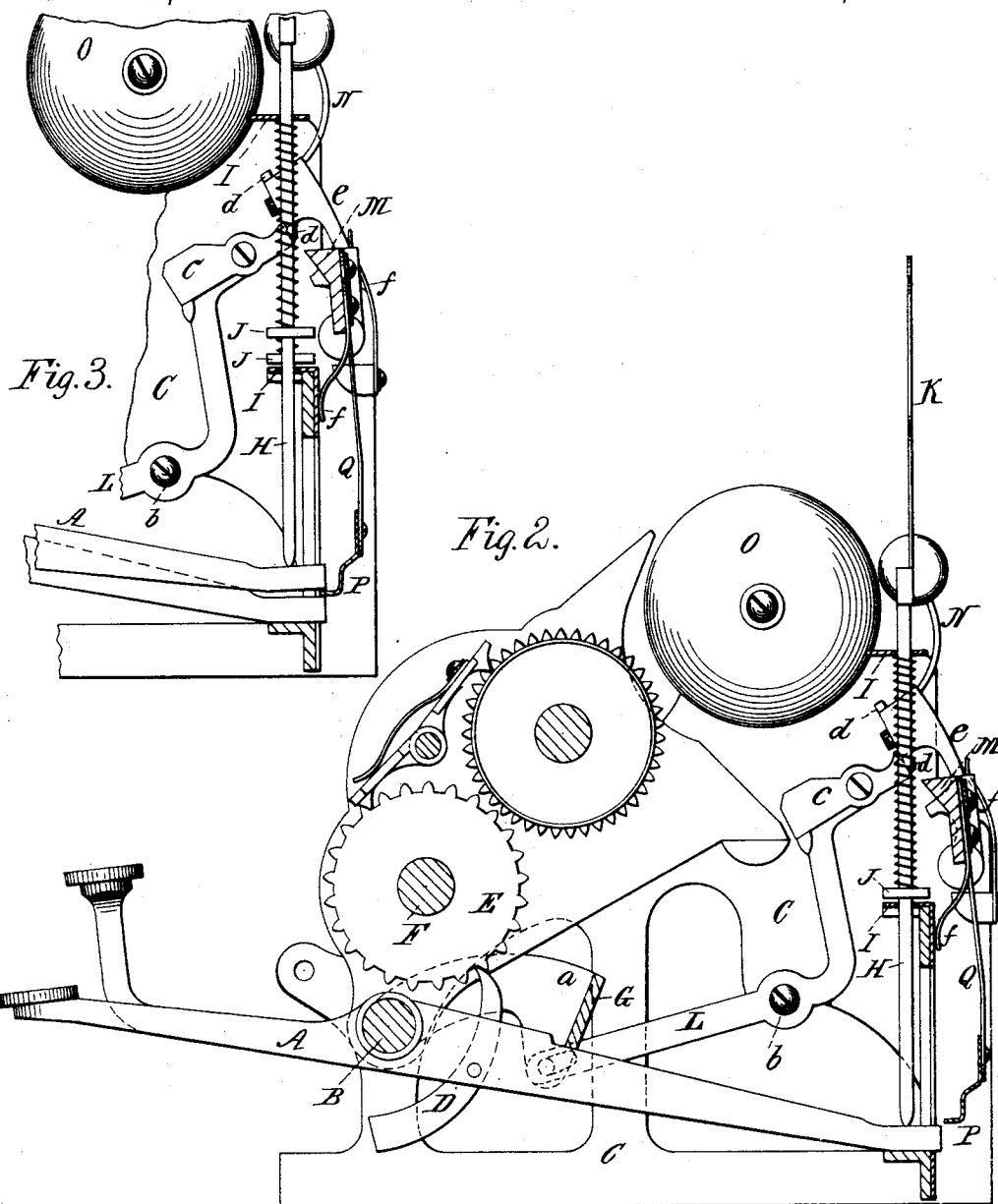
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UNITED STATES PATENT OFFICE.

CHARLES D. GRIMES, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 445,672, dated February 3, 1891.

Application filed May 23, 1888. Serial No. 274,783. (No model.)

To all whom it may concern:

Be it known that I, CHARLES D. GRIMES, 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 and Indicators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention has for its object the production of a novel key-arrester in this class of machines, and its novelty will be herein set forth, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1, Sheet 1, is a rear elevation of a cash register and indicator removed from its case and embodying my invention. Fig. 2, Sheet 2, is a sectional side elevation of the same. Fig. 3, Sheet 2, is a sectional detail inside elevation.

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

The machine illustrated is of the usual construction, intended to be inclosed in a locked case or cabinet having glass-covered openings at the top for the exposure of the indicating-tablets.

The keys A, projecting from the front of the case, are pivoted upon the shaft B, which is supported in the upright sides C of the framework, and each is provided with a pivoted dog D, engaging with its superimposed registering-wheel E, the set of which is strung upon the shaft F, all in the usual or any suitable manner.

G is the usual resetting-frame resting on the keys in rear of the shaft B and hung by side arms a to said shaft.

H are the vertical tablet-rods, supported in guides I, provided with shoulders J, carrying the tablets K and resting upon the rear ends of the keys in the usual manner.

L is the bell-crank tripping-arm, pivoted, as at b, to the upright side C and having loose pivotal connection at its forward end with a lower extension of the adjacent side arm a of the resetting-frame. The upper end of the bell-crank L has pivoted to it the usual tripping-dog c, whose nose engages with an ad-

justable wiper-block d, secured to an extension e of the usual pivoted supporting-wing M, located in rear of the tablet-rods and held normally forward in engaging position by springs f. The gong-hammer N is carried by the extension e and is arranged to strike the gong O whenever any key is operated to its farthest limit. The parts are so adjusted that by the depression of any key and the raising of the tablet-rod and tablet, as well as the frame G thereby, the dog c presses back the wing and gong-hammer against the resistance of the springs f until the key having reached its limit of depression the nose of the dog c slips past the wiper-block d and the springs f cause the hammer to strike the gong and the wing to be reset to hold up the exposed tablet, as is customary in this class of machines, and as will be readily understood.

In the operation of machines of this character the finger of the operator will sometimes slip off of the button of the key before the latter has been sufficiently depressed to sound the gong and throw the tablet-rod into engagement with the wing, but perhaps not before the dog D has turned its wheel E one notch and effected the proper registration. As the machines have heretofore been constructed the slipping of the finger from the button would at once permit the key to be reset and the tablet-rod to drop back, and if the operator then attempted to work this same key properly by depressing it to its full extent to sound the gong and expose the tablet a second registration would take place, and he would be required to account twice for one sale. This defect in construction might in theory be partially remedied by so adjusting and timing the operation of the various parts of the machine that the gong would be sounded, the elevated tablet-rod caught by the wing, and the registration effected at exactly the same moment; but it is difficult to attain such exact adjustment and operation, and unless such adjustment were perfect there would be opportunity for a dishonest operator to so manipulate a key as to expose its tablet and sound the gong without registering its value. The machines are therefore generally so constructed and adjusted that the registering op-

eration takes place slightly in advance of the sounding of the gong and complete exposure of the tablet, and, while this is necessary for the protection of the proprietor, it is also desirable that there be some means of protecting the operator from the result of accidents or slight carelessness such as above referred to.

To prevent the resetting of a partially-operated key and the consequent fresh engagement of its dog with its registering-wheel, as in the case above described, I have provided a novel key-arrester, in this instance secured to and vibrating with the wing, which, should any key be only partially depressed and the finger of the operator slip therefrom, would hold up the key and tablet-rod, thereby preventing its dog D from effecting a fresh engagement with its wheel E, so that upon completing the stroke of this key to sound the gong and completely expose its tablet only the one registration would be made, and which preferably, by this engagement with a partially-operated key, would form a lock for all the other keys, so that none of them could be operated to any extent until the partially-operated key had been given its complete and proper operation. For this purpose I provide a bar P, connected to the wing M by spring-arms Q and located just in rear of the upper edges of the rear ends of the keys, so that upon a slight depression of a key-button the upper rear edge of the key in rising will just clear the forward edge of the bar P, and upon further depressing the key, as its rear end continues to rise and the wing M is being pressed back through the medium of the bell-crank L and its connections, said bar P is pressed against the rear end of the key until the lower edge of the key, having passed above the forward top edge of the bar, the latter is thrown, by the action of the spring-arms Q, under the key thus operated and over the tops of all the other keys, as seen in Fig. 3, thus preventing the resetting of the partially-operated key and locking all the other keys. When, however, the partially-operated key has completed its stroke and the wing has been released, the resetting of the latter will throw the bar P back out of the way to permit the key and other parts of the machine to be reset, as will be readily understood.

While I have shown the bar P as composed of a piece of sheet metal with its lower edge bent inward to form an arresting and locking shoulder, the particular shape of this bar is immaterial, as any suitable bar arranged to be moved beneath the rear end of the partially-operated key, in the manner described, may be employed, whether its shape be similar to that of the one I have shown or not; and while the locking feature of this bar, by which all the unoperated keys are locked from operation until the partially-operated key has been fully operated and the wing re-

leased and reset, is an advantageous one, it is not of the essence of my invention, and a bar having a beveled lower side which would not accomplish this function might be used; also, while I have shown and described one form of tripping mechanism for the wing, it is evident that other usual and well-known forms of such mechanism might be employed. Again, while in the construction herein illustrated and described the wing M, to which the bar P is secured, and by which it is actuated, is the usual wing arranged to engage with the shoulders of the tablet-rods to hold the tablets exposed to view. This latter function of the wing is distinct from its connection with the key-arresting bar, and where similar tablet mechanism is not employed this wing may be a pivoted bar of any suitable construction.

The broad invention, consisting in the combination, with the operating-keys, of a key-lock arranged upon the partial operation of a key to lock the unoperated keys and to hold them from operation until the partially-operated key has completed its stroke, and to then unlock and release said key, is not claimed herein, but is hereby specifically disclaimed.

Having thus fully described my invention, I claim—

1. In a cash register and indicator, the combination, with the registering mechanism, the operating-keys, the pivoted wing, and the tripping mechanism interposed between said keys and wing, of a horizontal key-arresting bar located immediately above and in rear of the rear ends of the keys and secured to the wing by spring-arms, whereby upon partially operating any key the vibration of the wing moves said bar inward beneath the rear end of said key, and whereby upon fully operating said key the resetting of the wing moves said bar outward from beneath the rear end of said key to permit the latter to be reset to its normal position of rest, substantially as and for the purpose described.

2. In a cash register and indicator, the combination, with the registering mechanism, the operating-keys, the pivoted wing, and the tripping mechanism interposed between said keys and wing, of a horizontal key-arresting bar located immediately above and in rear of the rear ends of the keys, secured to the wing by spring-arms and having a lower locking-surface, whereby upon partially operating any key the vibration of the wing moves said bar inward beneath the rear end of said key, and thereby locks all the unoperated keys, and whereby upon fully operating said key the resetting of the wing moves said bar outward from beneath the rear end of said key to permit it to be reset and to unlock the unoperated keys, substantially as and for the purpose described.

3. The combination, with the registering-wheels E, the operating-keys A, pivoted wing M, and the tripping mechanism interposed

between said keys and wing, of the key-arresting bar P, secured to the wing M by the arms Q, substantially as and for the purpose described.

5 4. The combination of the registering-wheels E, the operating-keys A, vibrating frame G, bell-crank lever L, carrying the tripping-dog c, wing M, provided with an exten-

sion e engaged by said tripping-dog, and key-arresting bar P, secured to the wing M by the 10 spring-arms Q, substantially as and for the purpose described.

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