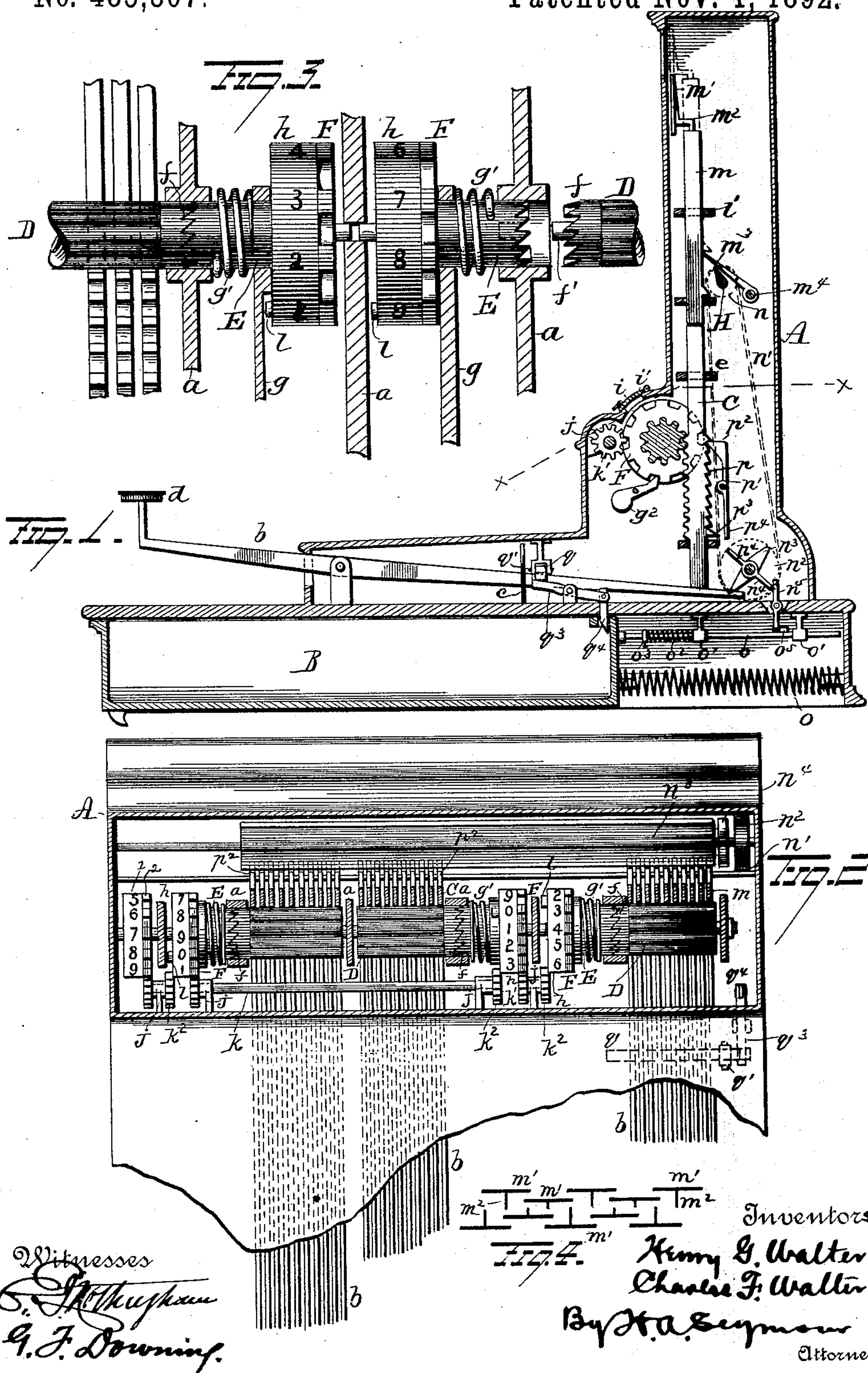


(No Model.)

H. G. & C. F. WALTER.
CASH REGISTER AND INDICATOR.

No. 485,307.

Patented Nov. 1, 1892.



UNITED STATES PATENT OFFICE.

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CASH REGISTER AND INDICATOR.

SPECIFICATION forming part of Letters Patent No. 485,307, dated November 1, 1892.

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To all whom it may concern:

Be it known that we, HENRY G. WALTER and CHARLES F. WALTER, of Scranton, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Cash Registers and Indicators; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in cash registers and indicators, its object being to construct a machine of this class in such manner that a depression of a key will display a target indicating the amount of a sale and simultaneously register the amount so indicated.

A further object is to so construct the apparatus that by pressing upon a key a target will be displaced indicating the amount of a sale, register such amount, and simultaneously and automatically transfer the total amount registered by a wheel indicating one denomination of money to the next wheel indicating a higher denomination of money, and so on throughout the series of registering-wheels.

A further object is to so construct a cash indicator and register that by pressing a key the amount of a sale will be indicated on a target and the money-drawer will be released and so that when the drawer is again opened the target or targets displayed by the previous operating of the machine will be released and permitted to drop out of view.

A further object is to provide simple and efficient means for locking and unlocking the cash-drawer of a cash indicator and register.

A further object is to construct a cash indicator and register having a series of key-bars and rack-bars adapted to control the operation of the indicating and registering mechanism and to provide means whereby said rack-bars will be prevented from a downward movement if the key-bar be not pressed to a sufficient extent to operate the indicating and registering mechanism, said means being so constructed and arranged that when a key is pressed down to its full extent the

rack-bar will be released and permitted to drop.

A further object is to construct the machine in such manner that the total amount of money in the drawer can be registered, so that the proprietor can see at a glance the exact amount of money in the drawer at any time.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a face view of our improved cash indicator and register, showing a portion of the casing broken away to show a portion of the operating mechanism. Fig. 2 is a sectional view of the apparatus on line *xx* of Fig. 1. Fig. 3 is a view in enlarged detail, parts being in section. Fig. 4 is a plan view illustrating the arrangement of the targets.

A represents the casing for inclosing the operating parts of the apparatus, in which casing a series of uprights or standards *a* is located, between each two of which one series of indicating and registering devices is located, and in the lower portion of the casing a drawer B is located for the reception of money, said drawer being adapted to be locked and unlocked in a manner presently explained. Pivottally supported near their inner ends in the bottom of the casing A are key-bars *b*, adapted to be guided between suitably-arranged pins *c*, secured to the bottom of the casing and carrying at their outer ends keys *d*, having marked thereon different denominations of money, said key-bars, keys, and mechanism to be operated thereby being arranged in several series, one series representing cents, another dimes, and another dollars. Cross bars or guides *e* are arranged between the uprights *a*, having perforations for the accommodation of a series of rack-bars C, one of such rack-bars being located over and adapted to be operated by each key-bar. The rack-bars C are adapted to mesh with grooved drums or cylinders D, one of said grooved drums or cylinders being mounted between each pair of uprights *a*. The

rack-bars C are arranged in series corresponding with the series of keys and key-bars, and the rack-bars comprising each series are provided with a different number of teeth. For instance, the rack-bar corresponding with the key representing one cent is provided with one tooth, so as to rotate the drum or cylinder D one notch and register one cent on a wheel hereinafter explained. The next rack-bar is provided with two teeth, so as to rotate the drum or cylinder D sufficiently to indicate two cents, and so on throughout the series of cents. One end of the drums or cylinders D is provided with teeth *f*, adapted to mesh with similar teeth on the ends of a series of short shafts E, said short shafts also having journals *f'*, adapted to enter suitable sockets in the ends of the journals of the drums or cylinders D. The opposite ends of the short shafts E from their connection with the drums D are mounted in suitable supports *g*, and have encircled about them coiled springs *g'*, one end of said coiled spring being secured to the short shafts E and their other ends adapted to bear against the supports or uprights *g*, and thus maintain the toothed ends of said short shafts normally in mesh with the toothed ends of the drums or cylinders D. Fixed to one end of each short shaft E in close proximity to the upright *g* is a ratchet-wheel F, with which a dog or pawl *g²* is adapted to engage, said dog or pawl permitting a rotation of said ratchet-wheel and shaft in one direction, but preventing rotation thereof in the other direction. A wheel or rim *h* is carried by each ratchet-wheel F, and has marked on its periphery a series of figures representing cents, dimes, dollars, or some other denomination of money.

The front of the casing is provided with openings *i*, through which the figures on the wheels or rims *h* may be readily observed when a cover or door *i'* is removed from said opening, which door or cover may be maintained normally locked, if desired. Mounted in suitable brackets or uprights *j*, arranged near the drums or cylinders D, are shafts *k*, on the ends of which pinions *k¹* *k²* are secured, the pinions *k¹* being adapted to mesh with the ratchet wheels or pinions F, and the pinions *k²* being adapted to be engaged by lugs *l*, projecting from the wheels or rims *h*, said lugs being so arranged that when the wheels or rims *h* make one revolution the lug will strike the adjacent pinion *k²* and rotate it one tooth, which partial rotation will be transmitted through the shaft of the pinion *k²* to the pinion *k¹*, and then to the adjacent ratchet-wheel F and its attached rim *h*. By this arrangement it will be seen that a rim *h*, denoting one denomination of money, has made a complete revolution. The amount of money represented by the complete revolution of said rim *h* will be transferred to the rim *h* representing the next highest denomination of money, and when that rim has made a complete revolution the next rim will be re-

moved one tooth, thus adding the amount of money represented by the complete revolution of the second rim *h* to the third rim *h*, and so on throughout the series of rims *h*. Thus it will be seen that at any time the proprietor can by looking at the several rims tell precisely the amount of money in the drawer.

Bars or guides *l'* are arranged between the uprights *a* for the accommodation of a series of bars or rods *m*, these rods or bars being equal in number to the rack-bars C and adapted to rest normally upon the ends of said rack-bars and carrying at their upper ends targets *m'*, having figures thereon corresponding, respectively, with the figures on the key-bars. The targets *m'* are secured to the target rods or bars *m* by means of short bent arms *m²*, so that said targets will assume the positions shown in Fig. 4, thereby arranging said targets in such manner that they occupy very little space.

When the key-bars are pressed to register the amount of money to be placed in the drawer, as above explained, one of the targets will be forced up and made to display the amount of money, so that the purchaser can see it, said targets each being maintained exhibited for the time being by an independent arm or pawl *m³*, carried by a rod or shaft *m⁴*, said arm or pawl engaging a notch in the target-bar and resting in close proximity to an eccentric-shaft H, which extends from one end of the machine to the other and through all the series of operating devices, which shaft H is adapted to be turned or rotated to release the target-bars by means of mechanism which will now be explained.

One end of the eccentric-shaft H is extended beyond its bearing in the casing or upright at one end of the casing and provided with a sprocket-wheel *n*, over which a sprocket-chain *n'* passes, said chain also passing around a sprocket-wheel *n²* of about twice the diameter of the sprocket-wheel *n*, said sprocket-wheel *n²* being carried by a revoluble bar *n³*, mounted in the lower part of the machine. Extending perpendicularly to the revoluble bar *n³* are arms *n⁴*, adapted when the bar is rotated to engage a lever *n⁵*, pivoted in the bottom of the casing of the machine. A rod *o* projects from the rear end of the drawer B, and is supported in a normally-horizontal position by means of a series of brackets *o'*. A spring *o²* is coiled about the rod *o*, bearing at one end against one of the brackets *o'* and at the other against a pin or disk *o³* on the rod and adapted to maintain said rod in proper working condition. The rod *o* is provided at a point between its ends with a lug or projection *o⁵* in the path of the lower end of the pivoted lever *n⁵*. Supposing, now, that the machine has been previously operated and one or more of the targets are presented to view. When one of the keys is operated, its key-bar will operate to register the amount of the sale, as above explained, throw up the proper tar-

get, and at the same time engage the revoluble bar n^3 , thus causing it to make a partial rotation. This partial rotation of the bar n^3 will be transmitted through the chain n' and sprocket-wheels n n^2 to the eccentric-shaft H, and the partial rotation of this eccentric-shaft will be sufficient to cause it to strike the arms or pawls m^3 of the elevated target-shafts and release all of said target-shafts which had been raised by the previous operation of the machine. When a key is struck, the drawer B will be released by devices presently explained and forced out by means of a spring O. As the drawer moves out the lug or projection o^5 will pass the lever n^5 . When the drawer is closed, the lug or projection o^5 will strike the other side of the lever n^5 and cause its upper end to engage the arm n^4 of the revoluble bar n^3 and bring it into proper position to be again operated upon when a key is pressed. As the machine is continuously operated the end of a key-bar will strike one or the other edge or wing of the revoluble bar n^3 , and each time the drawer is closed the lever o^5 will be caused to strike one or the other arm n^4 and move the bar n^3 in proper position to be again operated upon by a key-bar. It frequently happens that in operating the key-bars they are but partially depressed when first touched and allowed to again drop without indicating the amount of the purchase by a target or opening the drawer, the mechanism being moved sufficiently far, however, to register the amount of the sale. The operator then depresses the key again, and consequently re-registers the amount of the sale. To avoid this inconvenience, each rack-bar C is provided on its rear face with ratchet-teeth p , adapted to be engaged by a pivoted dog p' , the weighted tooth p^2 of said pivoted dog being adapted to engage the upper tooth of a series of ratchet-teeth p on the back of the rack-bar. When a key is depressed, the rack-bar is elevated and prevented from falling by the engagement of the dog p' with one of the ratchet-teeth p . At the lower end of the series of ratchet-teeth p a large tooth p^3 is provided, which when the rack-bar has moved upwardly to its full extent engages the tooth of the dog p' and releases it from the ratchet-teeth p , and the rack-bar is then free to fall. When the rack-bar falls, it engages the lower arm p^4 of the pivoted dog p' and forces the tooth g^2 of said dog into engagement with the upper tooth of the series of teeth p on the rack-bar.

Extending over the series of key-bars whose keys represent "cents" is a lever q , which is pivoted near its end at the point marked q' . The short arm of said lever q projects slightly downwardly and bears at its other end on one end of a pivoted lever q^3 . To the other end of the lever q^3 a bar or bolt q^4 is connected, which bolt enters the drawer B and rests normally against the end thereof, said bolt having a beveled edge, so that when the drawer is closed it will lock automatically in a man-

ner similar to an ordinary spring-lock. With this construction and arrangement of parts it will be seen that when a key in the cents-series is depressed the lever q will be elevated, the lever q^3 depressed at one end and elevated at the other, and the bolt q^4 elevated, thus releasing the drawer B, which latter will be forced open by the spring O.

In order to provide means whereby a large amount of money may be registered, a wheel or rim 1 will be mounted at one end of the machine and provided with a ratchet-wheel 2, said ratchet-wheel being adapted to be engaged by a lug l on the last of the series of wheels or rims h . Figures representing dollars are made on the large wheel or rim 1, and this wheel is preferably made about three times as large as the rims h . The rim 1 and ratchet-wheel 2 may, if desired, be made several times as large as the other registering wheels or rims and ratchet-wheels.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a cash-indicator, the combination, with a series of key-bars, of a bar disconnected from and resting normally on each key-bar, a target-bar normally resting upon said disconnected bars, a pawl for maintaining a target-bar elevated after the corresponding key-bar has been operated, an eccentric-shaft in proximity to said pawls, and devices adapted to be operated by the key-bars for releasing said pawls from the target-bars when the machine is again operated, substantially as set forth.

2. In a cash-indicator, the combination, with a series of key-bars, of a bar disconnected from and resting normally on each key-bar, target-bars normally resting on said disconnected bars, pawls for maintaining the target-bars elevated after the corresponding key-bar has been operated, an eccentric-shaft in proximity to said pawls, devices adapted to be operated by the key-bars, sprocket-chain extending from said devices to the eccentric-shaft, and devices adapted to be operated by the drawer of the machine for resetting the devices which operate the eccentric-shaft, substantially as set forth.

3. In a cash-indicator, the combination, with several series of key-bars, a bar disconnected from and adapted to normally rest on each key-bar, and a target-bar adapted to normally rest on each of said disconnected bars, of pawls adapted to engage said target-bars when they are elevated and maintain them in their elevated position when the corresponding key-bar is operated, an eccentric-shaft extending from one end of the machine to the other in proximity to all the series of target-bars, and mechanism for rotating said eccentric-shaft when the machine is again operated and cause any and all the target-bars of any and all the series of target-bars to be released and permitted to drop, substantially as set forth.

4. In a cash-indicator, the combination, with

a series of key-bars and a series of vertical bars adapted to rest normally thereon, of a series of target-bars adapted to normally rest on the vertical bars, pawl adapted to engage
5 said target-bars when they are elevated, an eccentric-shaft, a revoluble bar, gearing connecting said eccentric-shaft and revoluble bar, arms projecting from said revoluble bar and adapted to be engaged by a key-bar to rotate
10 it and transmit motion through the connecting-gearing to the eccentric-shaft to release the pawls from the target-bars, and devices adapted to be operated by the drawer of the machine for resetting said revoluble bar and
15 eccentric-shaft, substantially as set forth.

5. In a cash-indicator, the combination, with a series of key-bars and a series of vertical bars adapted to rest normally thereon, of a series of target-bars adapted to normally rest

on the vertical bars, pawls adapted to engage 20 said target-bars when they are elevated, an eccentric-shaft, a revoluble bar, gearing connecting said eccentric-shaft and revoluble bar, arms projecting from said revoluble bar and adapted to be engaged by a key-bar, a 25 money-drawer, a rod projecting therefrom, a lug on said rod, and a pivoted lever adapted to be engaged by said lug and caused to operate the revoluble bar to reset it, substantially as set forth. 30

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

HENRY G. WALTER.
CHARLES F. WALTER.

Witnesses:

R. H. PATTERSON,
WM. K. WILCOX.