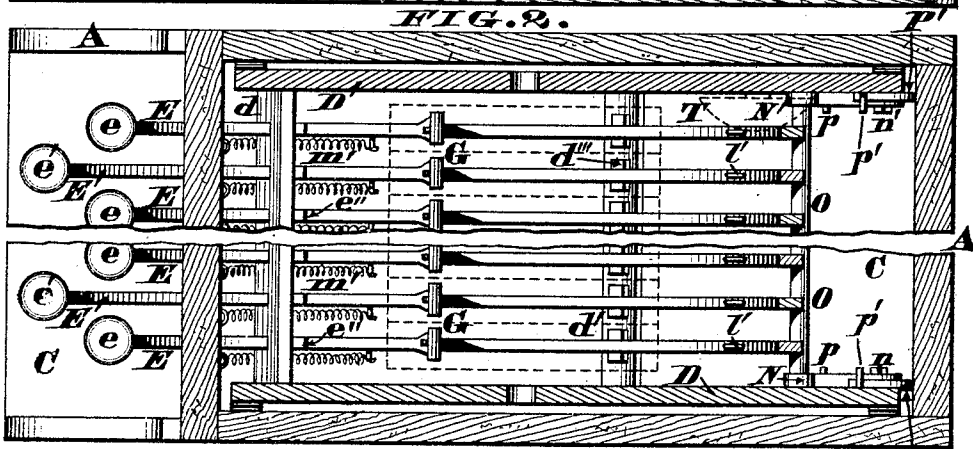
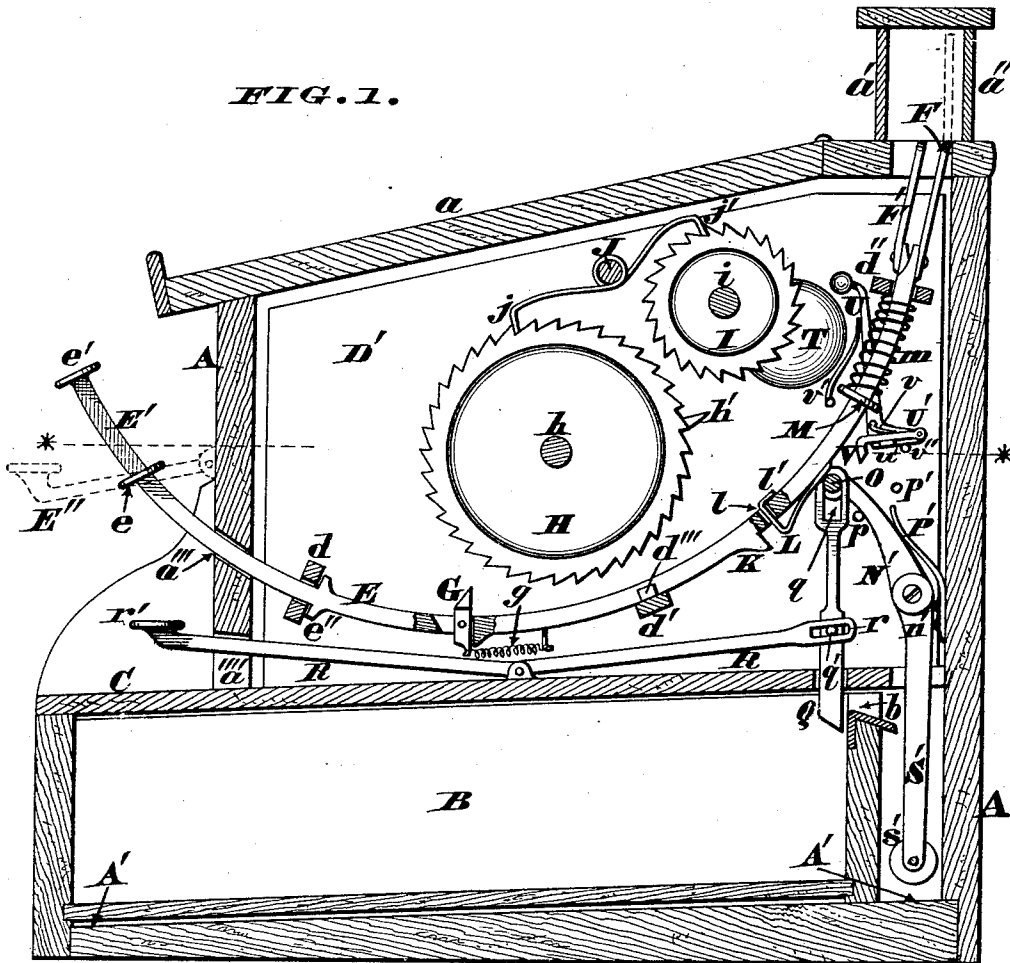


W. G. SCHICKNER & L. K. MARTY.

CASH INDICATOR AND REGISTER.

No. 436,383.

Patented Sept. 16, 1890.



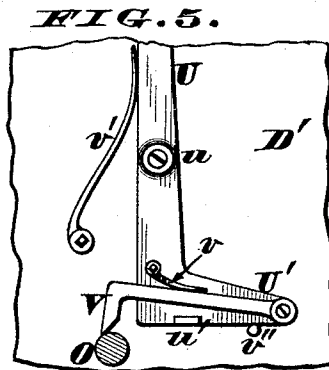
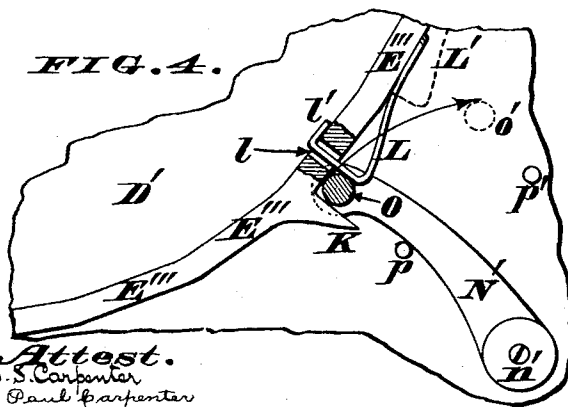
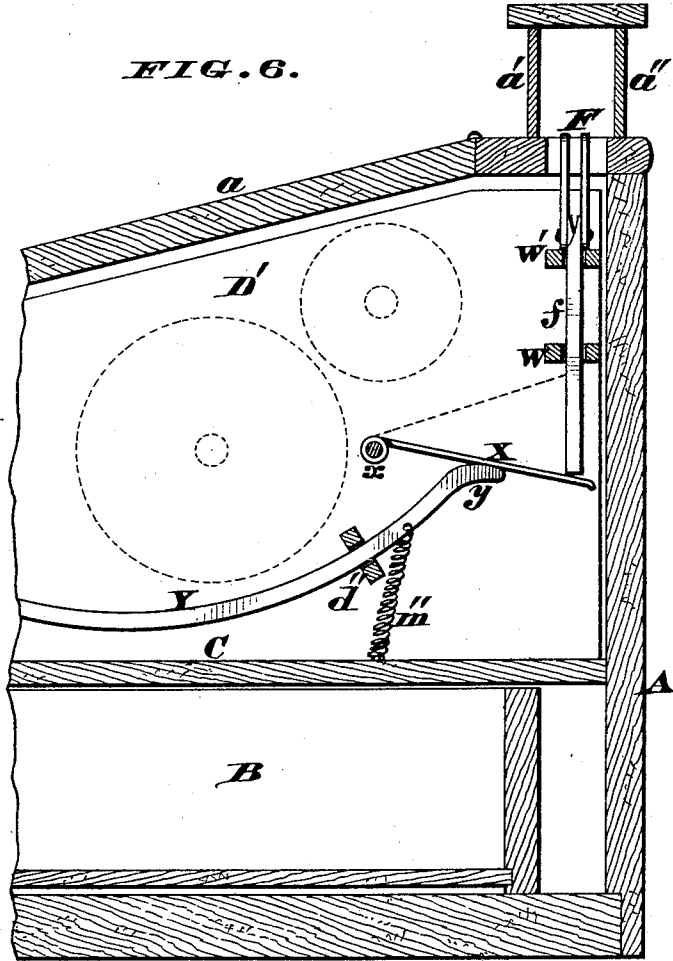
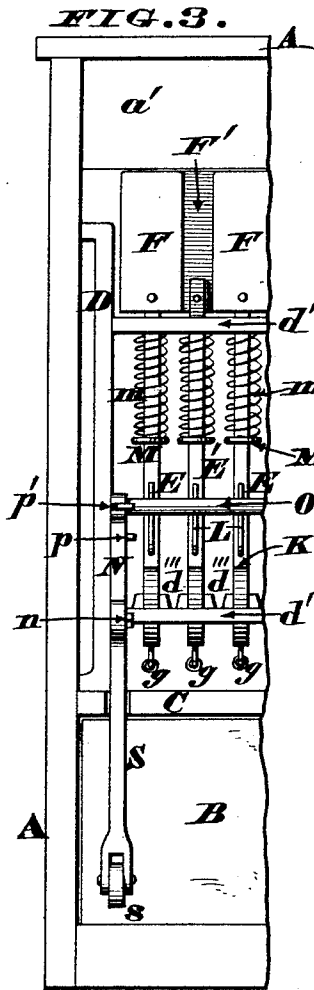
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UNITED STATES PATENT OFFICE.

WILLIAM G. SCHICKNER AND LOUIS K. MARTY, OF CINCINNATI, OHIO; SAID
MARTY ASSIGNOR TO SAID SCHICKNER.

CASH INDICATOR AND REGISTER.

SPECIFICATION forming part of Letters Patent No. 436,383, dated September 16, 1890.

Application filed October 13, 1888. Serial No. 287,991. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM G. SCHICKNER and LOUIS K. MARTY, both citizens of the United States of America, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Cash Indicators and Registers, of which the following is a specification, reference being had therein to the accompanying drawings.

Our invention comprises certain improvements in the peculiar form of cash indicators and registers patented by William G. Schickner September 21, 1886, No. 349,522, and by William G. Schickner and Ernest Rothlisberger January 10, 1888, No. 376,262, the details of said improvements, their mode of operation, and the advantages resulting from their use being hereinafter fully described.

In the annexed drawings, Figure 1 is a vertical section of a cash register and indicator embodying our improvements, the various keys of the apparatus being seen in their normal positions and the money-drawer being closed and locked. Fig. 2 is a horizontal section of a portion of the apparatus, taken at the line * * of the preceding illustration, the primary registering-disks being omitted and their positions indicated by dotted lines. Fig. 3 is a rear elevation of a portion of the apparatus. Fig. 4 is an enlarged sectional elevation showing one of the keys engaged with the common lock-bar and about to operate the latter. Fig. 5 is an enlarged elevation of the lower portion of the bell-striker. Fig. 6 is a vertical section of a modification of our invention.

A represents the case of the apparatus, *a* the lid of the same, *a'* *a''* the windows at which the tablets are exposed, and B the money-drawer, which latter is situated below a partition C of said case. Fitted within this case are side plates D D', that support the principal operative parts of the register, said plates being connected by guides *d* *d'* *d''*, the outer guides *d* and *d''* being perforated, while the central guide *d'* is furnished with short upwardly-projecting lugs *d'''*, as more clearly seen in Fig. 3. These guides confine to a proper path the various operating-keys, of which as many may be employed as circumstances suggest,

and as said keys are alike, excepting a slight difference in length between the upper and lower banks, a description of one will answer for all. Referring therefore to Fig. 1, it will be noticed that the lower-bank key E is a curved bar or rod, whose front or exposed end projects through a suitable opening *a'''* of the case and is provided with a button *e*, while the opposite or concealed end acts as a lifter that carries a tablet F. Furthermore, this curved key is armed with a pawl G, that is held in its normal or operative position by a suitable spring *g*, said pawl being adapted to engage with the ratchet-teeth of a primary registering-disk H, mounted upon a shaft *h* and having a spur *h'*, that actuates a secondary registering-disk I, journaled upon a shaft *i*.

J is a shaft secured to the side plates and carrying a double-ended spring *j* *j'*, that engages with the ratchet-teeth of disks H I, so as to prevent retrograde turning of the latter.

K is a rigid shoulder on the key, and *l* a transverse slot in the key, which slot has a catch-spring L fitted therein, as more clearly seen in Fig. 4, a bend *l'* preventing the spring pulling out of said slot. In addition to this shoulder, the key has a fixed collar or other projection M, between which and the guide *d''* a coiled spring *m* is located for the purpose of retracting said key to its normal position. *e''* is a stop for this key. The upper-bank key E' is provided with a precisely-similar arrangement of button, tablet, pawl, shoulder, collar, and springs, the button being seen at *e'* and the tablet at F'.

Pivoted to the side plates D D', as at *n* *n'*, are swinging levers N N', whose free ends are connected by a common lock-bar O, said levers being maintained in their normal position by springs P P'.

p *p'* are stop-pins that limit the play of levers N N'.

Depending from the lock-bar O is a gravitating catch Q, slotted at *q*, so as to be lifted independently of said rod and having a pin *q'* traversing a slot *r* at the inner end of a lever R, the latter being pivoted to the partition C, as shown, and having a button *r'* at its outer or exposed end. This portion of said lever traverses a slot *a''''* of the case. The lower end of catch Q is chamfered off, so as to

ride freely over the notch *b* of drawer B, the latter being inclined at any suitable angle that will facilitate its opening, which opening is initiated by rollers *s s'*, journaled in the lower ends of arms *S S'*. These arms are prolongations of the levers *N N'*, or, in other words, said levers *N N'* and arms *S S'* constitute bell-cranks.

T is a gong, the hammer of which U is pivoted to one of the side plates, as seen at *u* in Fig. 5, said hammer being provided with a toe-piece *U'*, to which a trip V is coupled, said trip being normally held against the top *u'* by a spring *v*.

v' is a spring that normally holds the toe-piece against a stop-pin *v''*.

Our improved cash register and indicator is operated in the following manner: In the normal condition of the apparatus the stress of the various springs *m* retracts all the keys and brings their stops *e''* against the guide *d*, as shown in Fig. 1, thereby drawing down the tablets *F F'*, so as to prevent their being seen at the windows *a' a''*, and throwing the pawls G out of gear with the primary registering-disks H. Furthermore, in this condition of the register the springs L and shoulders K are a slight distance below the lock-bar O, which is now quite close to the under side of the keys, being maintained in this position by the pressure of springs *P P'* against the swinging levers *N N'*, the stop-pins *p p'* limiting the forward stroke of said levers. Owing to this position of the lock-bar the gravitating catch Q is dropped, as seen, and serves as a lock for the drawer B, the rollers *s s'* being now thrown back, so as to permit said drawer being completely closed. Again, in this normal condition of the register the spring *v'* throws the hammer U back and causes its toe *U'* to rest upon the pin *v''*, while at the same time the other spring *v* forces the trip V against the stop *u'*; but the instant either one of the upper or lower bank of keys is struck all the operative parts of the apparatus assume new positions. Presuming then that the key E has been struck with sufficient force, it is evident the bearings *d d' d''* will so guide said key as to compel it to describe a circular path within the case, the result of this movement being to depress the exposed end of the key and cause a corresponding elevation of its concealed end, which act raises the tablet F a little higher than is necessary and renders it visible at the windows *a' a''*. This movement of the key brings the pawl G in contact with the teeth of disk H, thereby turning it the distance of one ratchet. Furthermore, this shifting of the key causes the spring L to be compressed against the now stationary lock-bar O; but as soon as the latter has been fairly passed said spring instantly assumes its normal or open position. Consequently the bar O is temporarily locked between this spring and shoulder K, as seen in Fig. 4, which coupling of the key to the bar causes the latter to swing a limited distance, on account of the

levers *N N'* turning on their pivots until arrested by the pins *p p'*, the circular path of said bar being indicated by the arrow in Fig. 4. This swing of the bar not only lifts the catch Q above the notch *b* of the drawer, but causes said bar to strike the square end of trip V with sufficient force to overcome the tension of spring *v'*, and thus compels the hammer U to strike one blow on the bell T. The trip V is at the same time raised to allow the lock-bar to pass behind it; but when said bar swings forward it comes in contact with the chamfered end of said trip, which now gives readily, and thus prevents action of the hammer. (See Fig. 5.) Simultaneous with this rearward swing of the levers *N N'* the arms *S S'* necessarily swing forward and initiate the opening of the drawer, which readily slides down the inclined bottom *A'* of the case or cabinet. These various movements are performed almost simultaneously, and the moment pressure is removed from the button *e* the spring *m* retracts the key and causes the levers *N N'* to again bear upon the pins *p p'*, because the bar O is now coupled to said key by being locked between the shoulder K and spring L. This retraction of the key causes a slight dropping of the tablet F, but not sufficient to prevent its number or other character being plainly seen, and said tablet will remain thus exposed until another key is struck, which act causes a repetition of the above-described movements and compels the complete dropping of said tablet F. The method of dropping this tablet will be understood by referring to Fig. 4, where the dotted line *L'* indicates the position reached by the spring L when a key is first struck, while the arrow in said illustration shows the curved path described by the swinging lock-bar. Furthermore, the dotted circle *O'* indicates the position of said bar at the termination of its upward swing. It is therefore apparent that when the spring of the second key reaches the position *L'*, the spring of the first key, which is also at the position *L'*, will have ample space to clear the bar O when the latter reaches the position *O'*. Consequently there is nothing now to support the spring of the first key, and the latter is retracted immediately to its normal position by the continued stress of spring *m*, which operations are repeated every time a key is struck—that is to say, the movement that elevates one tablet necessitates the dropping of the tablet previously exposed to view.

In order that the drawer may be opened at any time without operating the registering-disks, and thereby making a false charge against the custodian of the indicator, the lever R is provided, and by depressing the exposed end of this lever the gravitating catch Q will be raised sufficiently to clear the notch *b* of said drawer, which elevation is readily effected, because said catch is suspended from the lock-bar O by the slot *q*.

The dotted lines *E'* in Fig. 1 indicate a

supplementary key, which may be pivoted to the front of the case or to an attachment of the same, and so coupled to the keys E or E' as to operate the latter, which arrangement 5 may be very advantageous with some forms of registers.

Another modification of our invention is seen in Fig. 2, where horizontal springs *m'* are employed for retracting the keys to their 10 normal positions. In Fig. 4 the key is shown as being made up of a series of continuous angular sections E''', capable of describing a curved or circular path when properly guided within the case. In all these modifications 15 the bar O performs four distinct functions, to wit: First, it serves to unlock the money-drawer; second, it then initiates the opening of said drawer; third, it serves as a common support for the keys when the latter are so 20 shifted as to expose the tablets, and, fourth, it operates the bell-striker of the register.

In the modification seen in Fig. 6 the tablets are not carried directly by the keys, but are attached to the upper ends of rods *f*, which 25 latter are confined to a vertical path by guides W W'. X is a lifter, of which devices there is one for each key, and said devices are hung upon a bar *z*, connected to the side plates D D', while the free ends of each lifter support 30 a tablet-rod. The end of each key Y is preferably rounded at *y* to operate against the under side of the lifter, a spring *m''* being employed for retracting said key. Finally, if desired, the key may be arranged in all 35 other respects the same as seen in Fig. 1; but in some cases it may not be desirable to have the key operate either the drawer-catch, drawer-openers, lock-bar, or bell-striker. Therefore these optional features are omitted from 40 Fig. 6.

We claim as our invention—

1. The combination, in a cash indicator and register, of a reciprocating bent key, guides that confine it to a curved path within the

case, and devices for actuating a registering-disk and exposing a tablet when said key is operated, substantially as herein described. 45

2. The combination, in a cash indicator and register, of a series of keys operating registering-disks, and a common swinging lock-bar, each key being provided with a catch-spring and shoulder, and the relative position of said devices being such as to cause said bar to engage between said spring and shoulder when one key is struck to raise a tablet, 50 and then to re-engage with said spring and shoulder when another key is struck, substantially as herein described. 55

3. The combination, in a cash indicator and register, of a series of keys operating the registering-disks, a common swinging lock-bar operated by said keys, a drawer-catch depending from said bar, drawer-opening devices actuated by it, and a bell-striker which is set in motion by said lock-bar, substantially as 65 herein described. 65

4. In a cash indicator and register, the bent key E, suitably guided within the case and provided with pawl G *g*, shoulder K, catch-spring L, retracting-spring *m*, and tablet F, 70 in combination with the swinging levers N *n* N' *n'*, common lock-bar O, springs P P', stops *p p' p p'*, and registering-disks H, for the purpose described. 75

5. The combination, with the common lock-bar O, of a cash indicator and register operated by a set of keys, as herein described, the bell T, pivoted hammer U *u*, toe U', stop *u'*, hinged latch V, springs *v v'*, and pin *v''*, 80 for the purpose described. 80

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM G. SCHICKNER.
LOUIS K. MARTY.

Witnesses:

JAMES H. LAYMAN,
S. S. CARPENTER.