

(No Model.)

2 Sheets—Sheet 1.

W. F. BROWN.
COMBINED CASH DRAWER AND RECORDER.

No. 470,742.

Patented Mar. 15, 1892.

Fig 1.

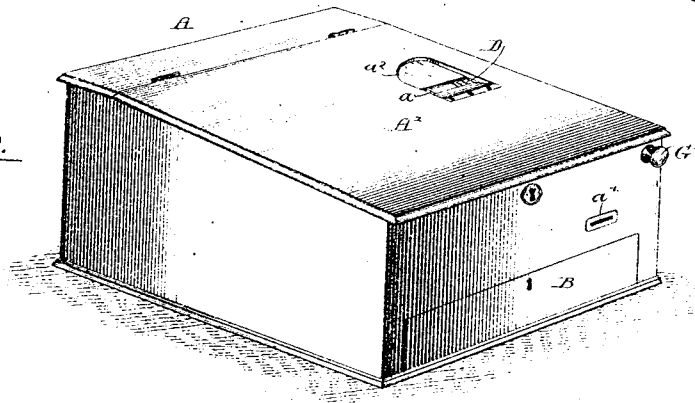
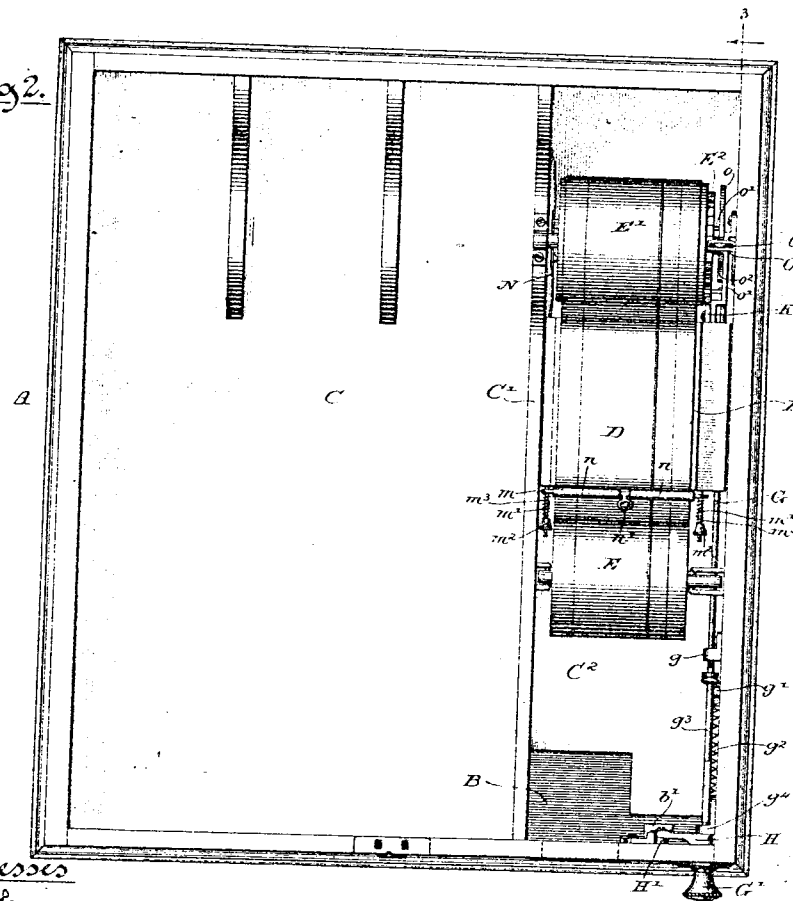


Fig 2.



Witnesses

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(No Model.)

2 Sheets—Sheet 2

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Fig 3.

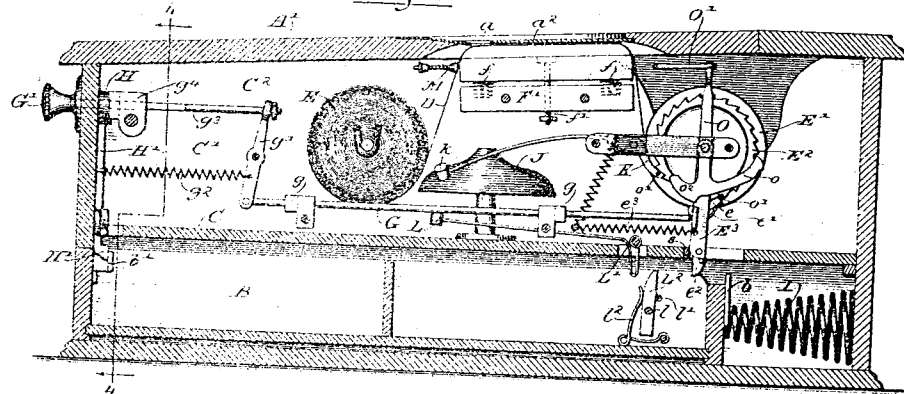


Fig 4.

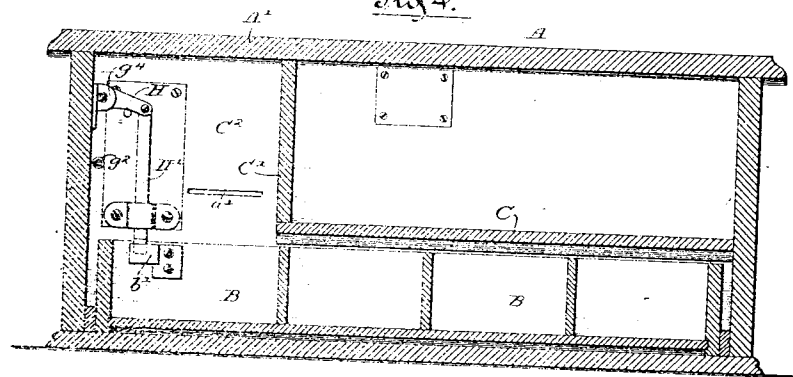


Fig 5.

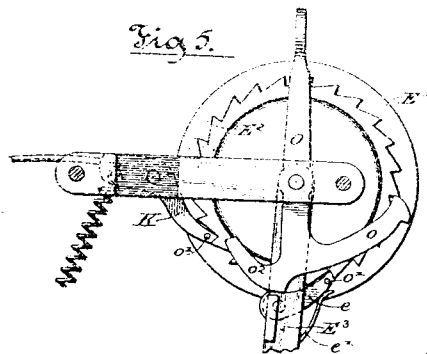
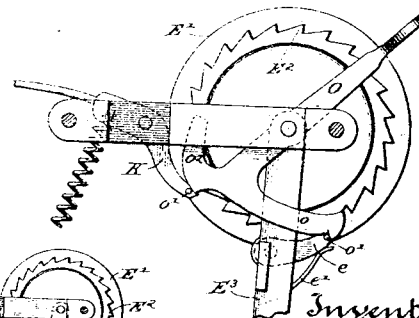
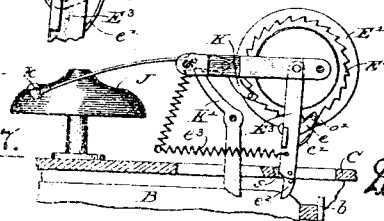


Fig 6.



Witnesses
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Fig 7.



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UNITED STATES PATENT OFFICE.

WILLARD F. BROWN, OF CHICAGO, ILLINOIS.

COMBINED CASH DRAWER AND RECORDER.

SPECIFICATION forming part of Letters Patent No. 470,742, dated March 15, 1892.

Application filed July 1, 1890. Serial No. 357,425. (No model.)

To all whom it may concern:

Be it known that I, WILLARD F. BROWN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in a Combined Cash Drawer and Recorder; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention has for its object to provide an improved construction in combined cash drawers and recorders.

The nature of the invention will be understood from the following specification and the appended claims.

In the accompanying drawings, Figure 1 is a perspective view of a desk containing the combined cash drawer and recorder. Fig. 2 is a top view of the desk when open, showing the recording devices at one side thereof. Fig. 3 is a vertical section in the line 3 3 of Fig. 2. Fig. 4 is a vertical section in the indirect line 4 4 of Fig. 3. Figs. 5 and 6 are enlarged side views of the ratchet feed mechanism of the recording device, showing means for throwing the ratchet-pawls out of action. In Fig. 5 the ratchet-pawls are shown in engagement with the ratchet-wheel, and in Fig. 6 the pawls are illustrated as being held out of engagement with the ratchet-wheel. Fig. 7 shows a modification in which a single bell-hammer is adapted to be operated both upon opening and upon closing the drawer.

A represents a desk having a lid A', and B a drawer in the bottom of the desk and separated from the desk proper by a horizontal partition C, Figs. 2, 3, and 4. Above said partition C is a vertical partition C', Fig. 2, which runs from front to rear of the desk-space, cutting off a compartment C², in which is located mechanism for advancing a strip of paper by a step-by-step motion, and herein called the "recording mechanism." Said strip of paper is shown at D. It is supplied by a roller E, from which it is drawn forward to a roll E', over an elevated guide-block F, by which it is supported adjacent to an opening a in the desk-lid, through which the cashier may inscribe on said strip the successive

amounts of sales which he may have occasion to record. The roll E' is that to which the ratchet mechanism is applied, as shown in Figs. 2 and 3, and said ratchet mechanism is adapted to be actuated either by the drawer when opened or by a separate pull, which may be operated without opening the drawer—as, for example, when coins are dropped into the drawer through a slit in the case, as indicated at a', and no change is to be made.

The improvements which I here claim relate to the mechanism for locking and opening the drawer, to mechanism for holding the paper taut and smooth as it passes over the guide-block, to the mechanism for actuating the take-up roller and bell, and to mechanism for throwing the ratchet mechanism out of action when desired.

To the end of the take-up roller E' or to the shaft thereof is applied the ratchet-wheel E², and pivoted to the shaft of said roller and ratchet is a depending pawl-arm E³, carrying the pawl e, which is held in engagement with the ratchet by a spring e'. The pawl-arm E³ is normally held forward against a stop s by a spring e² and is adapted to be vibrated by the closing movement of the drawer by being provided with a pivoted trip e² at its lower end, which swings forward over the back of the drawer or over a metal plate b, attached thereto when the drawer is pulled out, but is rigid with the arm E³ as against the backward movement of the drawer, so that on closing the drawer the plate b strikes said trip and swings the pawl-arm backward, giving to the ratchet a rotary movement to the extent of one tooth of said ratchet. Said pawl-arm E³ is also adapted to be vibrated by the longitudinally-movable bar G, arranged in guides g g and bearing at its rear end against the front face of the said pawl-arm. Said bar G may obviously be operated by either a pushing or a pulling movement of an exposed knob G'. A pulling movement being preferred, it is provided for in the present instance by employing between the said knob G' and the bar G a centrally-pivoted lever g' and a second rod g². The spring e³ may manifestly serve to retract the rod G and the pull G', as well as the pawl-arm E³; but as it is desirable to hold the pull G' inward independently of the position of the pawl-arm E³ a sec-

and spring g^2 is proposed, being connected with the vibrating lever g' , as shown in Fig. 3.

The knob G' and its rod g^3 are rotatable, and said rod is provided with a squared portion near its outer end and inside the inner face of the desk-front. Upon this squared portion is fitted a laterally-projecting arm H, through which the rod g^3 may freely slide, but which will be vibrated by the rotation of said rod. The said arm H is held in place by the desk-front on one side and the rod-guide g^4 on the other, or otherwise, so that it is not displaced by the longitudinal movement of said rod.

To the outer end of the arm H is pivoted a vertical bolt H' , which passes through the partition C into engagement with a plate or keeper b' upon the drawer when the latter is closed, for the purpose of holding it in its closed position. The rotation of the knob G' in one direction will therefore lift the bolt H' out of engagement with the drawer and allow the latter to open under the impulse of the back spring I. The weight of the bolt H' and of the arm H may be relied upon to give the bolt its downward movement, or, if preferred, a spring may be applied in a familiar manner for this purpose. The bolt is desirably beveled on its lower end, as indicated in Fig. 3, to allow the plate or keeper b' to pass it when the drawer is being closed.

J is a bell, located in the compartment C^2 , and K is a pawl, engaged with the ratchet E^2 and provided with a bell-hammer k for striking the bell J whenever the take-up roller E' is actuated, whether so actuated through the medium of the trip e^2 when closing the drawer or by the operation of the pull G' .

L is a second bell-hammer, secured to a pivoted arm L' , which is arranged in the path of a pivoted trip L^2 , attached to the drawer for ringing the bell when the drawer opens. Said trip is pivoted at l , and bears against a stop l' above the pivot l , being normally held in position to thus bear against the stop by a weak spring $\mathcal{F}$. Upon the inward or closing movement of the drawer the trip L^2 , which strikes the arm L' , swings past said arm; but on the outward movement of the drawer said trip L^2 in striking the arm is unyielding and causes the arm to vibrate and to throw the hammer L against the bell. No movement of the drawer and no movement of the register or recording mechanism can therefore be made without sounding the bell.

In Fig. 7 a modification is shown by which a single bell-hammer only is used to signal both the opening and the closing movements of the drawer. In this modification K' is a lever, pivoted between its ends and operating upon the hammer k by engagement with the plate b , attached to the rear of the drawer. The guide-block F, over which the paper-strip D is conducted from the supply-roller E to the take-up roller E' , is supported by springs ff , arranged between said block and a sub-jacent fixed support F' . Suitable headed

bolts f' , passing from the block F into the support or supports F' , retain said block in place while allowing the same a limited vertical movement under the action of said springs ff . The action of the springs ff is to force the guide-block F snug against a suitable surface above it. Such surface is afforded in the present case by a glass plate a^2 , set in the lid of the desk on that side of the opening a which is toward the take-up roller E' , the object of said glass plate being to allow the records last made upon the strip D to be read after the strip shall have been advanced. The pressure of the paper strip D against the under surface of the glass plate a^2 by means of the springs ff tends to keep said paper taut and smooth; but in addition to these devices I have provided a spring-presser or tension device at the front edge of said guide-block, as indicated at M in Figs. 2 and 3. This tension device M consists of a cross-bar m , having holes through its ends, through which pass studs m' , which are inserted in the edge of the block F. Between the rod m and the nuts m^2 , which are prew-threaded upon the studs m' , are inserted coiled springs m^3 . By this means the cross-bar m exerts a yielding pressure constantly upon the paper strip E, tending to resist its undue movement over the guide-block and to hold it taut equally when the desk-lid is open and when it is closed. The cross-bar m is desirably round, as when made of wire, and is covered with rubber tubes n , which will roll on the cross-bar when the paper is moved, and thus, while holding the paper taut, will prevent it tearing. Said cross-bar is provided with a central eye or handle n' , by which it may be retracted from contact with the guide-block F in inserting a new strip D.

A friction-brake is desirably applied to the take-up roller E' for the purpose of holding it steady and preventing the slackening of the paper strip from that side. Such a friction device is illustrated in Fig. 2 as consisting of a spring N, arranged to bear against the end of the said take-up roller. This may obviate the necessity of a detent pawl or dog, the office of which is now performed by the pawl K, having the bell-hammer k , as illustrated in Fig. 3, and when said pawl is omitted the hammer may be otherwise actuated.

As it will sometimes be desirable to throw the pawl e out of engagement with the ratchet E^2 , I have provided a lever O, mounted on the axis of said take-up roller and provided with a cam o , which is arranged to bear on a projection o' on said pawl. If the pawl K is also employed (as will usually be the case) and it is also desired to at the same time disengage the said pawl from the ratchet E^2 , the lever O may have a second cam o^2 , as illustrated in Figs. 3, 5, and 6, arranged to bear on a similar projection o^2 on said pawl. The lever O in its vertical position holds the cam or cams out of action, as best shown in Fig. 5; but in its inclined position (illustrated in Fig.

6) it engages the pawl or pawls and swings it or them out of contact with the ratchet-wheel. The lever O is held in its normal or disengaged position by any suitable form of spring-latch—
 5 as, for example, such as is illustrated in Fig. 3, wherein O' is a spring wire fastened to the adjacent side of the compartment C² and provided with an eye to admit the upper end of the lever O. A similar catch may be employed, if desired to hold the lever in its inclined position.

It will be understood that the desk feature of the apparatus is not essential, and also that it is not a necessity that the mechanism
 15 shall have the precise relative arrangement shown with respect to the drawer. These and various other changes in arrangement and in details of construction may be made without departure from the invention.

20 I claim as my invention—

1. The combination, with a spring-opening drawer, a lock therefor, and a registering or recording mechanism, of a longitudinally movable and rotatable pushing or pulling device arranged to actuate the recorder by its
 25 longitudinal movement and to unlock the drawer by its rotative movement.

2. The combination, with a spring-opening drawer and a recording mechanism, of a longitudinally movable and rotatable rod provided
 30 with a squared portion and actuating the carrying mechanism of the recorder by its longitudinal movement, an arm fitted to slide on

the squared part of the rod, and a drawer-locking bolt connected with said arm.

3. In combination with the ratchet-wheel E² of the take-up roller of the recording mechanism, the vibrating pawl-arm E³, carrying the pawl e, and the vibrating lever O, provided with a cam o, engaged with said pawl and
 40 adapted to hold the pawl out of engagement with the ratchet.

4. In combination with the supply and take-up rollers E E', carrying a paper strip D, a guide-block F, provided with a spring-tension
 45 device on its side remote from the take-up roller.

5. In combination with the supply and take-up rollers carrying a paper strip D, a guide-block, and a spring-presser comprising a
 50 round rod m, having a rubber tube or tubes thereon.

6. The combination, with strip-carrying rolls, of a fixed longitudinal support F', a longitudinal guide-block F above the same,
 55 springs f interposed between the support and block near their ends, and headed bolts f' for guiding and limiting the upward motion of the block.

In testimony that I claim the foregoing as
 60 my invention I affix my signature in presence of two witnesses.

WILLARD F. BROWN.

Witnesses:

M. E. DAYTON.

C. CLARENCE POOLE.