(No Model.) 4 Sheets—Sheet 1.

F. R. WOODWARD.

RECORDER FOR CASH DRAWERS.

No. 432,468. Patented July 15, 1890.

Fig. 1.

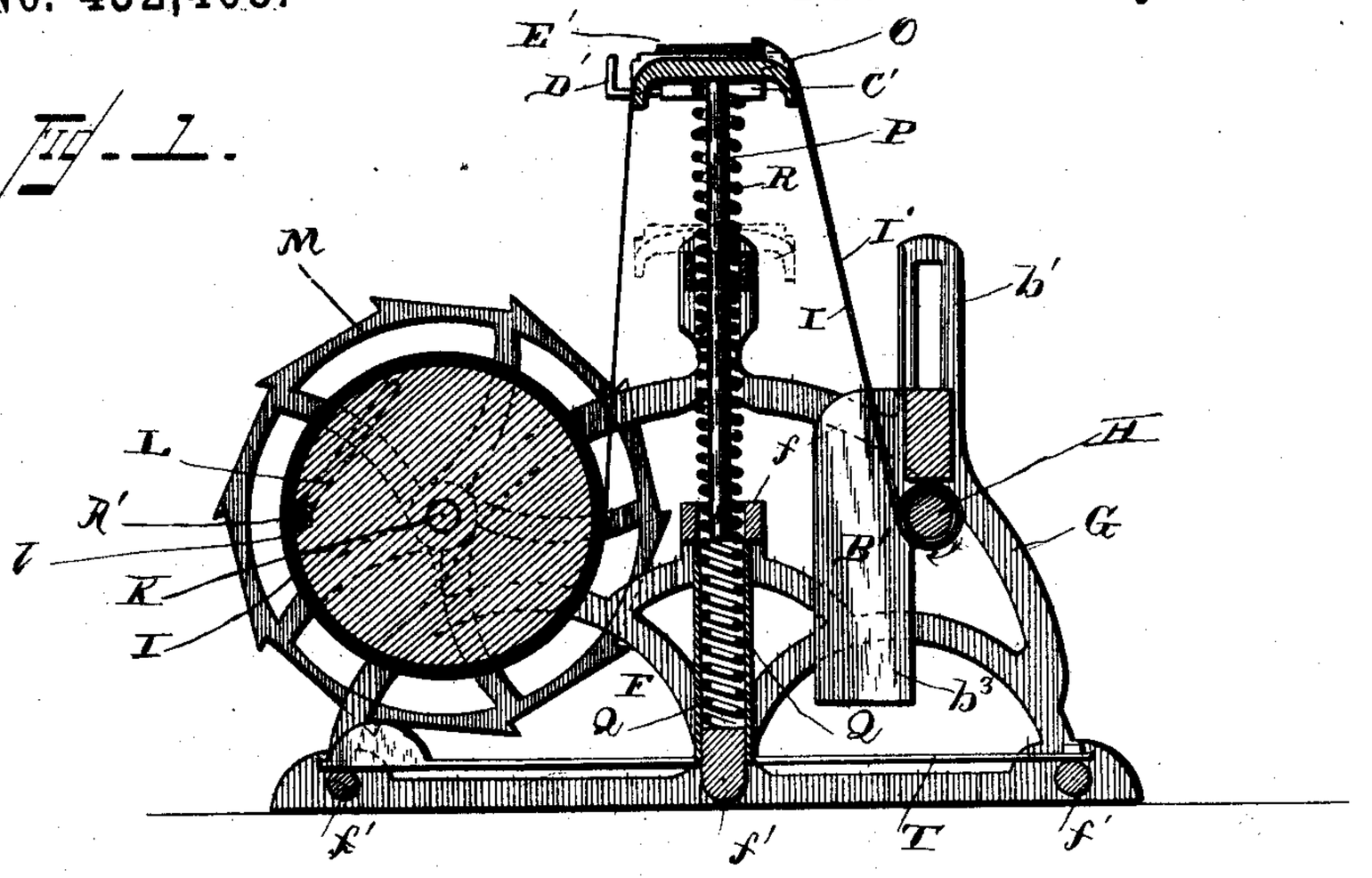
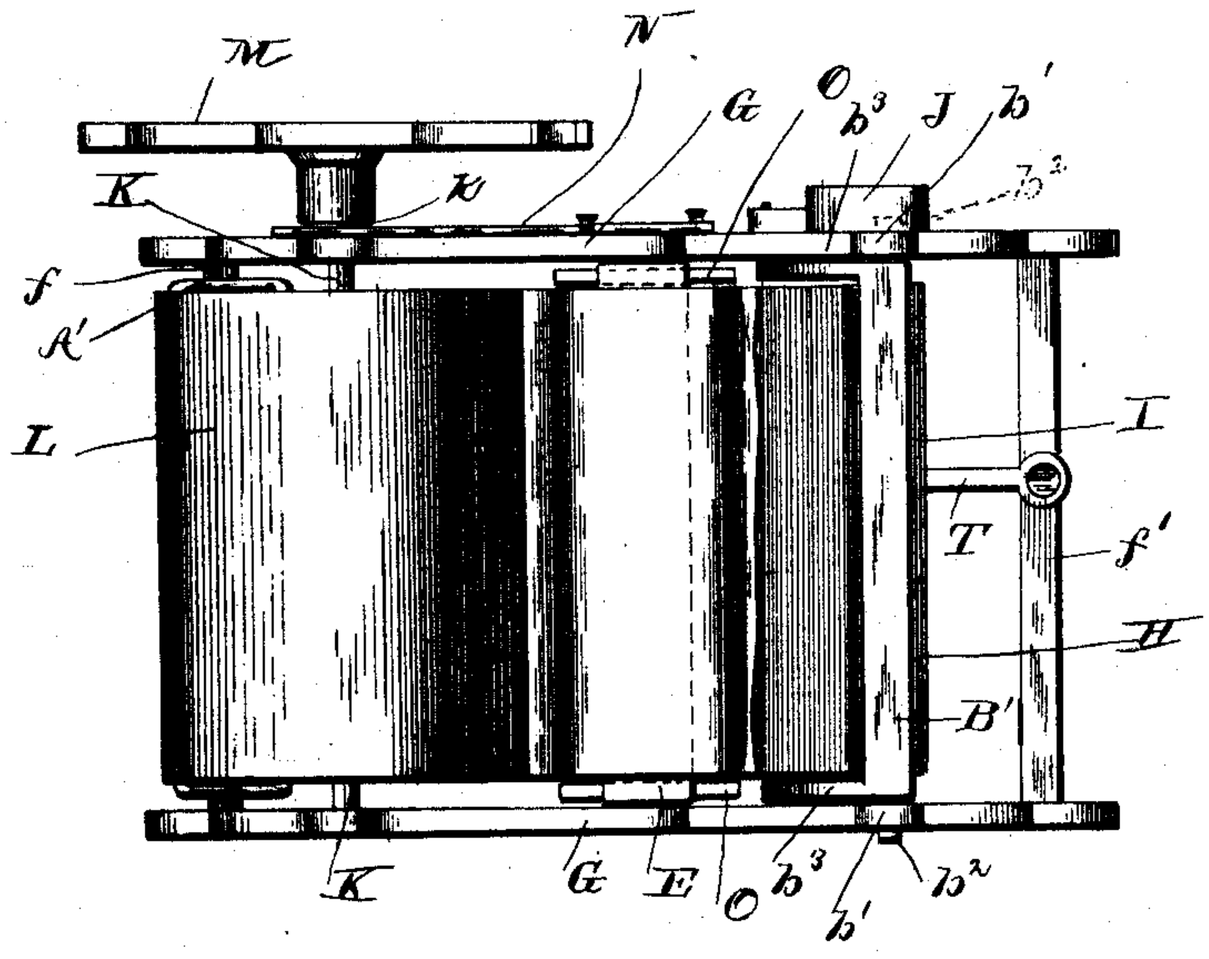


Fig. 2.



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(No Model.) 4 Sheets—Sheet 2.

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Fig. 3.

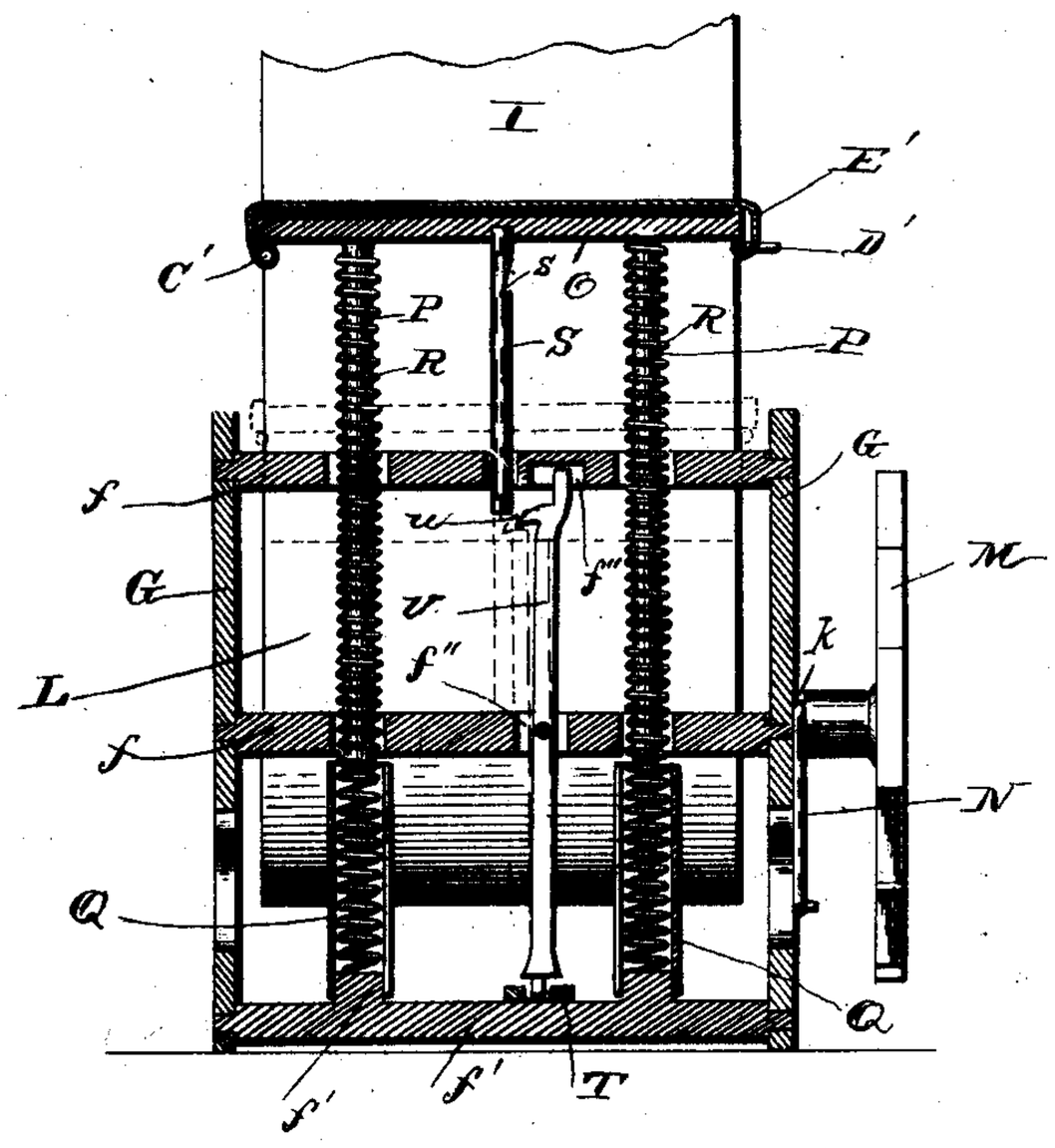

Fig. 4.

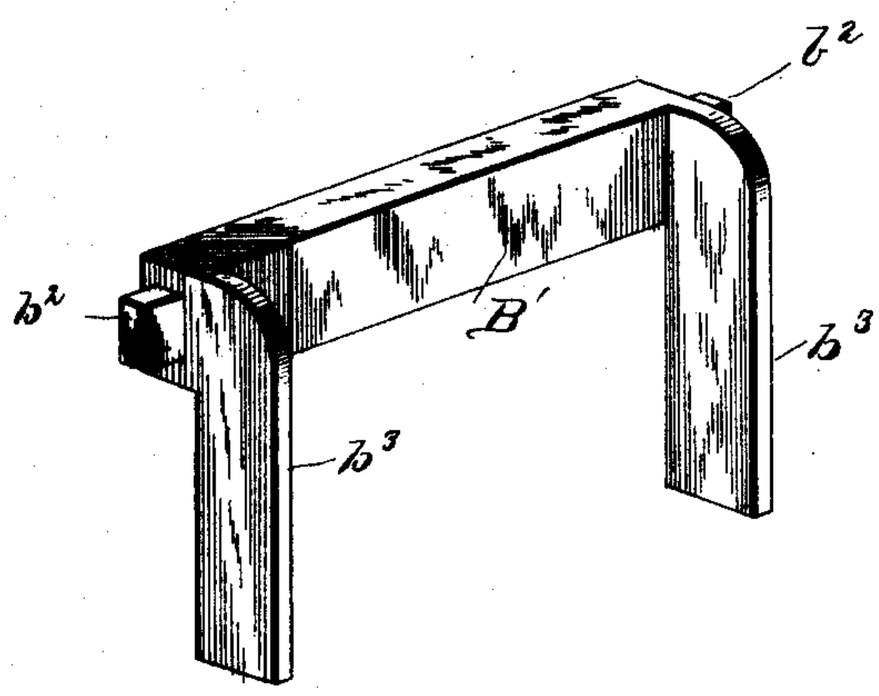

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Fig. 5.

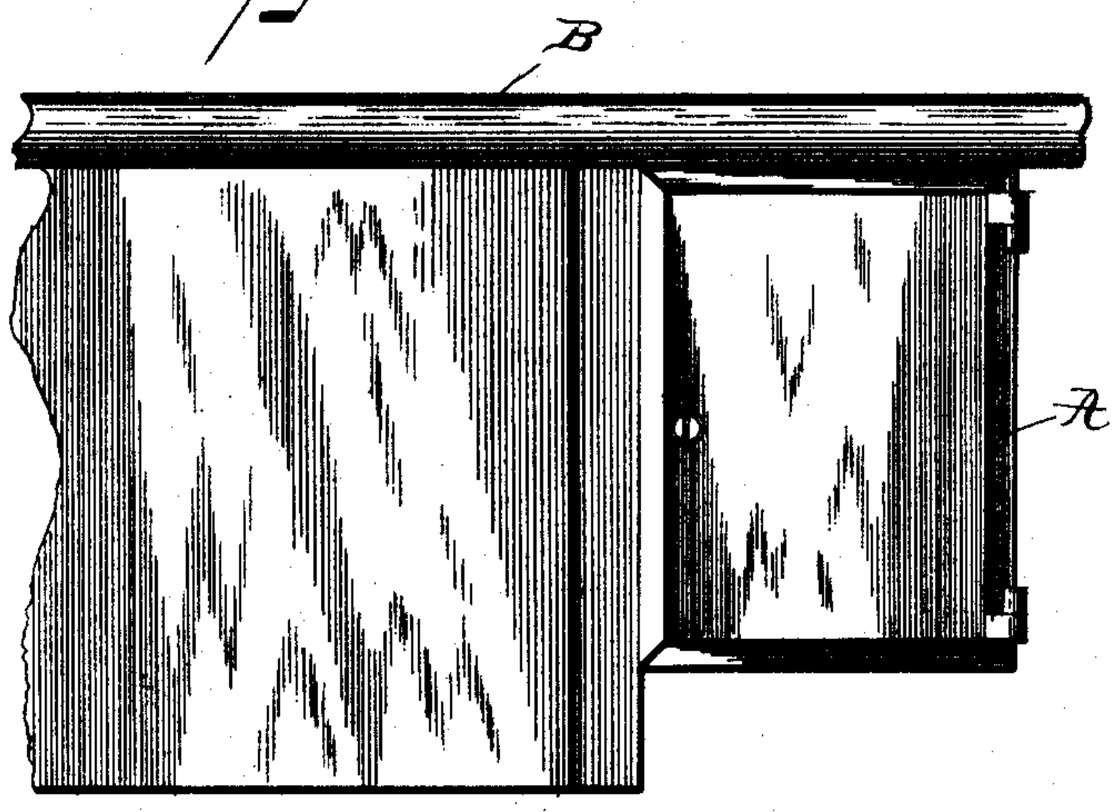

Fig. 6.

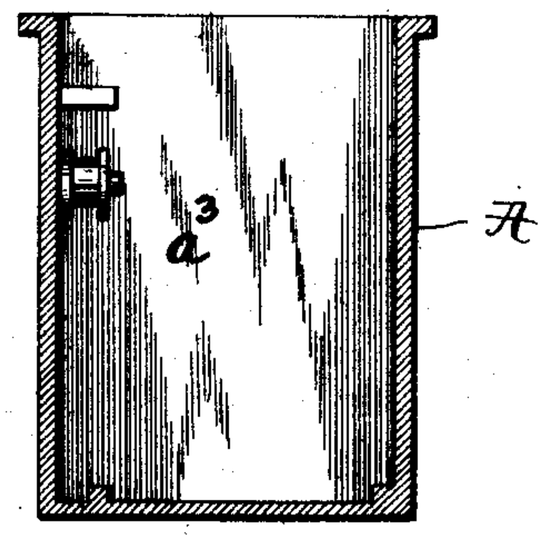

Fig. 9.

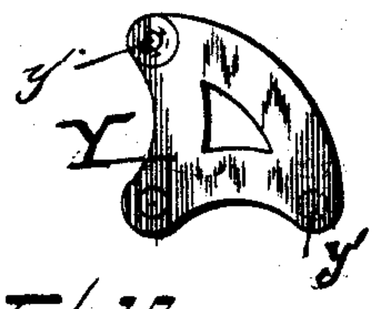

Fig. 14.

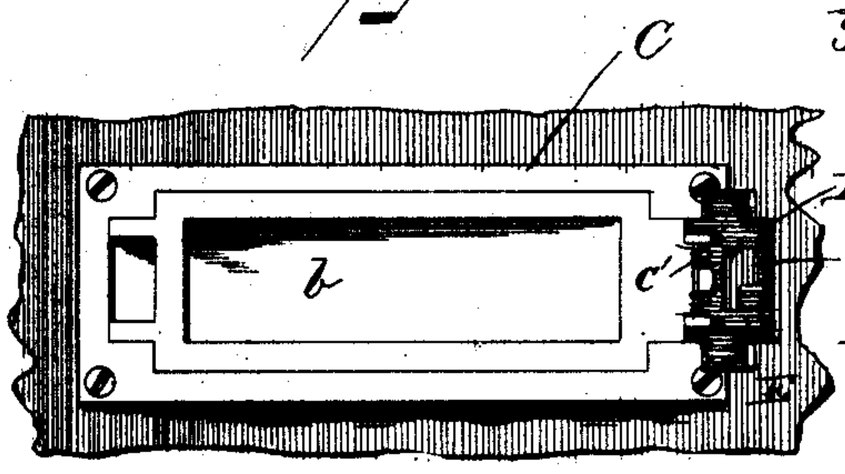

Fig. 12.

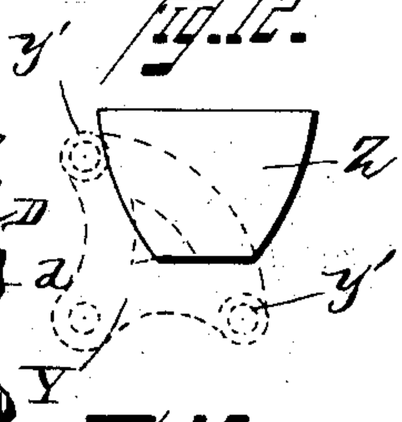

Fig. 10.

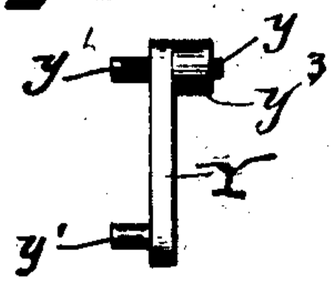

Fig. 15.

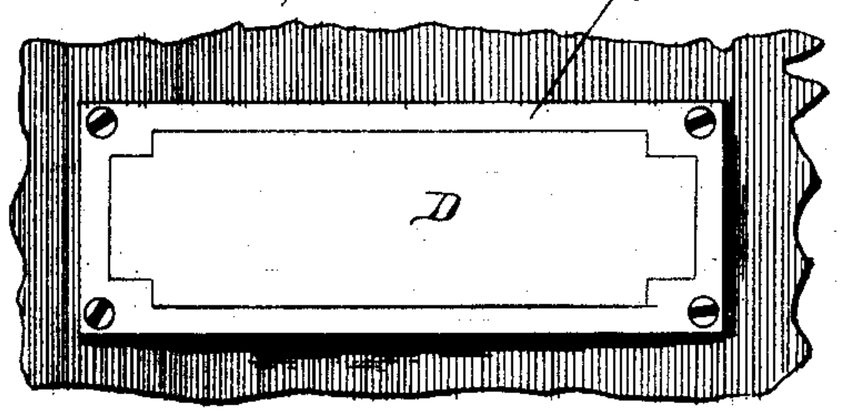

Fig. 13.

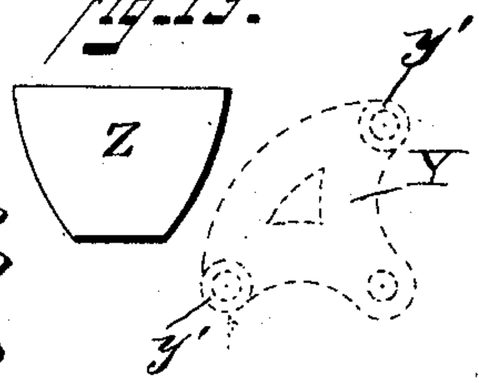

Fig. 11.

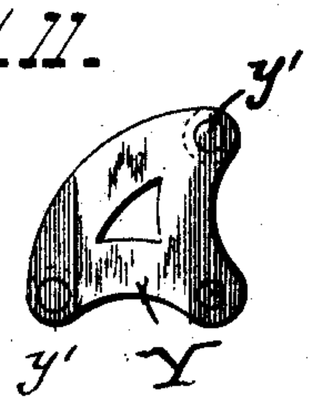

Fig. 17.

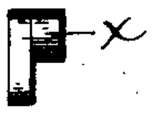

Fig. 16.

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(No Model.) 4 Sheets—Sheet 4.

F. R. WOODWARD.

RECORDER FOR CASH DRAWERS.

No. 432,468. Patented July 15, 1890.

Fig. 7.

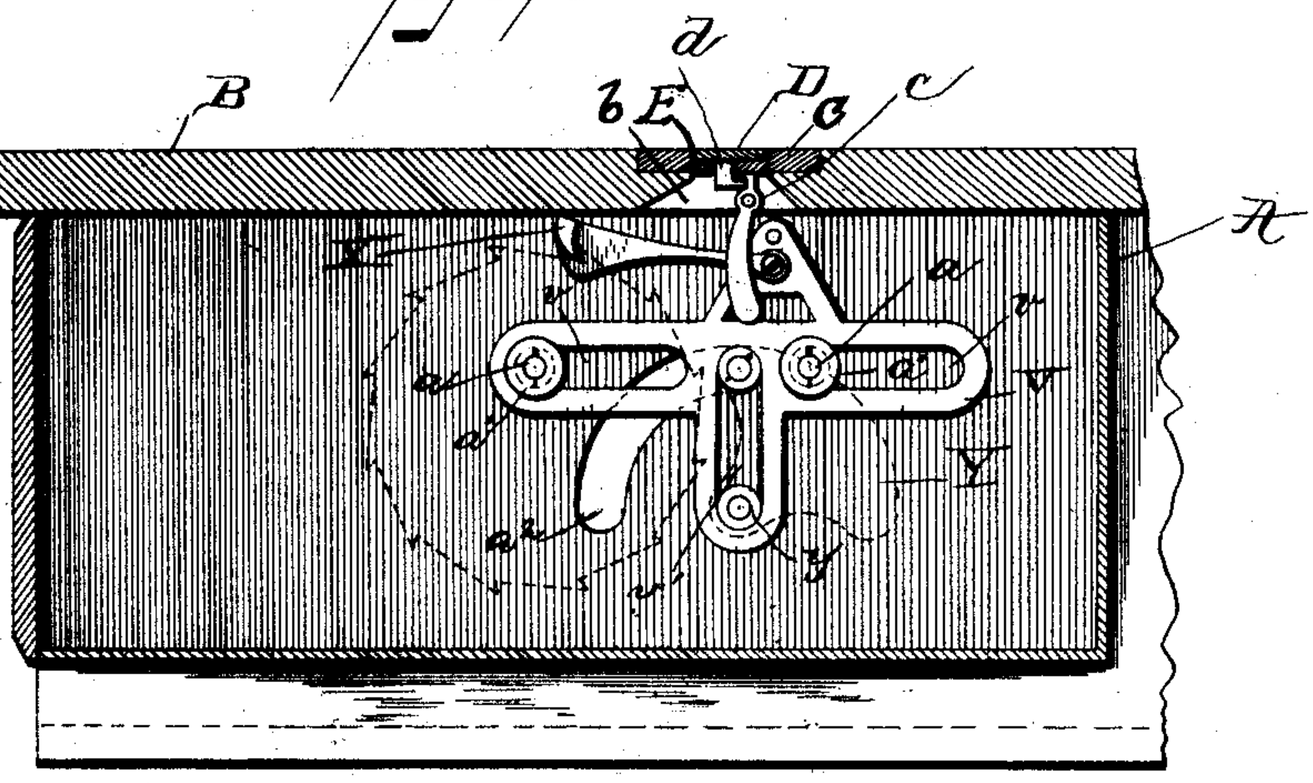
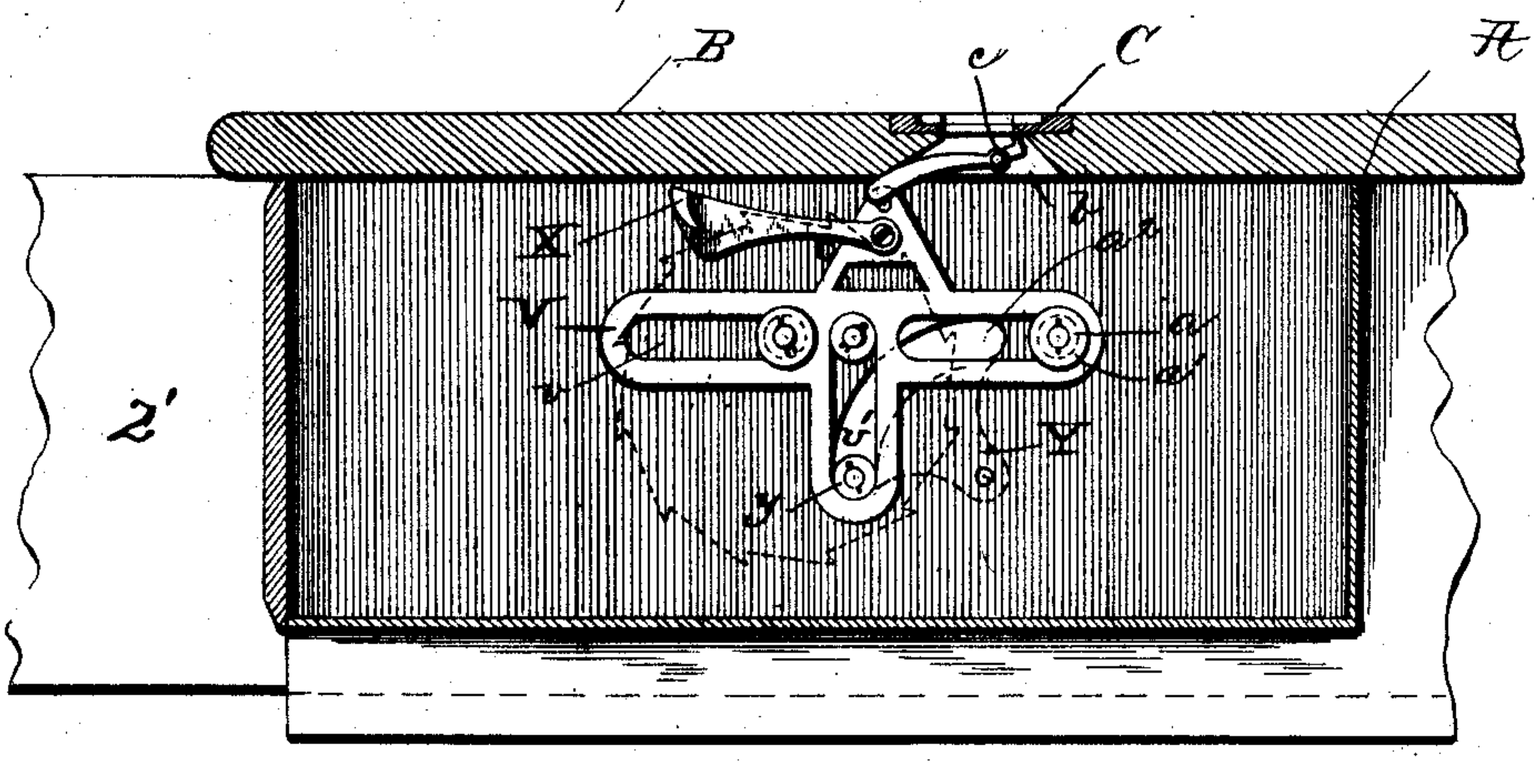


Fig. 8.



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UNITED STATES PATENT OFFICE.

FRANK R. WOODWARD, OF HILL, NEW HAMPSHIRE.

RECORDER FOR CASH-DRAWERS.

SPECIFICATION forming part of Letters Patent No. 432,468, dated July 15, 1890.

Application filed March 18, 1890. Serial No. 344,373. (No model.)

To all whom it may concern:

Be it known that I, FRANK R. WOODWARD, a citizen of the United States, and a resident of Hill, in the county of Merrimac and State of New Hampshire, have invented certain new and useful Improvements in Recorders for Cash-Drawers; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention has relation to improvements in recorders for cash-drawers designed to prevent errors in the cash by providing an accurate record of all sales; and it consists more particularly in certain improvements upon Letters Patent of the United States granted to William I. Blood, dated May 7, 1889, No. 402,797, which will more fully appear hereinafter, and be specifically pointed out in the claim.

As my improvement consists solely in the standard and its adjuncts described and shown in the above Letters Patent, and does not relate at all to the mechanism for automatically operating the paper rolls, I have not deemed it necessary to describe particularly that portion of the device.

In the accompanying drawings, Figure 1 is a longitudinal vertical sectional view of the standard or frame with its accompanying mechanism. Fig. 2 is a plan view of the same. Fig. 3 is a cross-sectional view. Fig. 4 is a detail view of the combined gravity frame and guide. Fig. 5 is a broken elevation showing a portion of a cash-drawer and a door of a case in which the standard and parts of the operating mechanism for moving the paper may be inclosed. Fig. 6 is a cross-sectional view of said case. Fig. 7 is a longitudinal section of said case and counter, showing the attached mechanism in elevation and the ratchet-wheel of the standard in dotted lines. Fig. 8 is a like view when the cash-drawer is opened. Fig. 9 is a detached elevation of a bell-crank, by which motion is communicated to the mechanism within the case. Fig. 10 is an edge view of the same part. Fig. 11 is an elevation of the same part, showing the reverse side to that shown in Fig. 9. Fig. 12 shows a portion of that side of the cash-drawer adjacent to the case containing the mechanism, having attached a cam for moving the bell-crank, and showing in dotted lines the said bell-crank in relative position when the cash-drawer is closed. Fig. 13 is a like view of the same parts, as shown, when the cash-drawer is opened. Fig. 14 is a plan view of that portion of a counter in which is formed the opening for exposing the paper upon which to make a record, showing the spring-cover for same as when opened. Fig. 15 is a similar view in which the spring-cover for said opening is down or closed. Fig. 16 is a side elevation in detail of the pawl for moving the ratchet-wheel, and Fig. 17 is a front end view of the same.

Referring to the drawings, the letter A indicates a case arranged to either side of the drawer-opening, but preferably to the right, which, perhaps, will be found the most convenient location.

In the counter B, directly over the case, is formed an opening *b*, for the purpose hereinafter explained, and a slotted metallic plate C, somewhat larger than said opening *b*, is set into a recess in said counter, and to this is attached a hinged cover D. This cover is provided upon its under side with an ink-pad E, as clearly shown in the drawings.

The letter F indicates the standard or frame, said frame consisting of the side pieces G G and the transverse stay-bars *f f'*. This standard is adapted to be inserted into the case or receptacle A. A transverse shaft H (see Fig. 1) is journaled in bearings in the side pieces, said shaft carrying two webs of paper I I'. One of these webs I passes over the top plate O under the impression-ribbon to the drum L, while the other I' passes over said ribbon and projects through a slit in the counter, as will hereinafter be described. A latch J is pivoted to one side of the frame, and is adapted to engage the head of shaft H, so as to prevent its working laterally out of its bearings. At the opposite end of the frame is journaled shaft K, upon which is mounted a drum L. One end of this shaft is extended and carries a ratchet-wheel M. The extended end is also provided with a circumferential groove *k*, into which bears the free bent end of a spring-arm N, which serves to prevent the shaft from rotating too rapidly, thus keeping the paper taut. A vertically-moving

frame is arranged centrally in the standard and consists of a top plate O, which is provided at its opposite ends upon the under side with depending rods P P, said rods passing freely through apertures in the upper and lower stay-bars *f* and into tubular rods Q Q, extending upwardly from the lower central stay-bar *f'*. These rods P P are encircled by helical springs R R, the upper ends thereof bearing against the under side of the top plate O and the lower ends passing down the entire length of the tubular rods Q Q and bearing against the lower central stay-bar *f'*. It will be readily seen that the helical springs R will effect the function of forcing the vertical frame upward. The top plate O has also centrally depending therefrom a rod S, which passes through a central perforation in the upper stay-bar *f*. A horizontal lever T, pivoted at its rear end to the rear stay-bar *f''*, and a vertical lever U, confined within slots *f'''*, formed for the purpose in each of the bars *f f*, its lower end being conveniently connected to said lever T, by which it is operated, serves the function of holding the vertically-movable frame in its lowermost position, as indicated in dotted lines, Fig. 1. For this purpose the upper end of the vertical lever U is provided with a hook *u*, adapted to engage a notch *s* in the central depending arm S.

Within the case A and upon that side nearest to the cash-drawer a sliding frame V is mounted, which forms an essential part of the mechanism, connecting that mounted on the frame F with the drawer, slots *v v* being adapted to receive the studs *a a*, projecting from the side of said case. In order to facilitate the movement of said frame, the said slots *v v* may be made wide enough to receive suitable friction-rollers a^3 when mounted upon said studs *a a*. Collars or caps *a' a'*, of a larger diameter than is the width of said slots *v v* or of said rollers, may also be secured to said studs for retaining the frame V in position. Upon this frame V is pivoted one end of the pawl X, at the free end of which is formed the hook *x* for engaging the teeth of the ratchet-wheel M, and between the two horizontal slots *v v* is formed a vertical slot *v'* for the reception of a pin or stud *y*, (which may be provided with a friction-roller,) projecting from a bell-crank or segment of a disk Y, pivoted to the case A, the latter having a curvilinear slot a^2, through which the said stud *y* may pass. The reverse side of said bell-crank Y has projecting studs *y'*, which may or may not be provided with friction-rollers. A cam Z, upon that side of the cash-drawer Z' adjacent to said case and the said bell-crank Y, is adapted to engage these studs *y'* of said bell-crank or disk-segment, as best seen in Figs. 12 and 13, communicating motion by means of the slotted frame V, its pawl X, and the ratchet-wheel M, to the roll of paper I. Within the opening *b* in the counter and pivoted to the plate C is a latch *c*, adapted to engage a lug *d*, formed upon the hinged cover D of said plate, and a helical spring *c'* is mounted upon its hinge-pin in a manner to open the said cover when the lug *d* shall be released from the latch *c*, this being effected by the movement of the frame V, caused by opening the cash-drawer, the lower end of said latch hanging normally in front of a suitable stud or projection formed for this purpose on said frame. The said latch is inoperative while the cash-drawer is open, but rests in a position after the drawer shall have been closed to immediately engage the lug *d* of the spring-cover D, from which it cannot be again released until the cash-drawer is again opened.

The drum L is provided with a wire bail A', over which the roll of paper I is passed, said bail passing into a groove *l* across the face of the drum.

The side pieces of the frame or standard A are provided at the ends upon which the shaft H is mounted with upward slotted extensions *b' b'*. B' indicates a transverse gravity block or frame, provided upon opposite ends with reduced extensions b^2 b^2, which pass into the slots of the upward extensions. The block is also provided with inwardly-extending wings or flanges b^3, between which the paper passes and which form a guide therefor. If it is desired to remove the shaft H for any purpose, the gravity-block is simply raised, when convenient access to the shaft may be gained. The function of this gravity-block is to bear upon the rolls of paper I and I', so as to keep the paper taut.

The top plate O has journaled in suitable bearings at opposite ends and upon the under side longitudinal shafts C' C', said shafts being provided on one of their ends with cranks D' D'. An inking-ribbon E' is wound around one of the shafts and its end connected to the other shaft. In this manner when the ribbon becomes worn considerably in one portion it may be readily shifted, so as to present a better surface by turning one of said shafts by means of its crank.

It will be seen that the web of paper I passes from the shaft H upwardly and beneath the inked ribbon E', and thence downwardly and around the drum L. The web of paper I', after leaving the shaft H, extends upwardly, so as to have its edge resting on the top plate O, the upward pressure of the spring-actuated rods against the cover D being sufficient to hold the end of the paper in place. When now the drawer is opened, both webs of paper are advanced, the top webs being advanced sufficiently to cover the ribbon by frictional contact with web I. The clerk making the sale then records the amount thereof upon the top strip and by means of the intervening ribbon the record of the sale is also transferred to the under strip, which latter, being wound upon the drum L, is preserved as a record of the entire day's sales. The upper web of paper, however, after the transaction is record-

ed, is pulled slightly through the slit *b* in the counter, and as the drawer is closed the cover D is closed down upon the same and the paper torn off across the edge, or it is obvious that the paper may be torn off across the edge before the cover is closed. This torn-off check is handed to the customer as a voucher for his purchase. In this manner no mistake can arise, nor can there be any opportunity to steal from the drawer without detection, as the under paper shows every entry and amount, and the cash in the drawer must correspond with the record each day.

It will be seen that my invention differs from Patent No. 402,797 in several particulars. Instead of employing the gravity-frame T shown in said patent, I use the combined gravity frame and guide which I have designated by the reference-letter B′. It will also be noticed that instead of having the helical springs upon the vertical bars or standards which depend from the top plate only partially surrounding said standards, I provide helical springs around the rods and extending their entire length, the upper ends bearing against the under side of the top plate and the lower ends passing through the tubular rods extending from the central lower stay-bar *f′* and bearing against said stay-bar. The most important improvement, however, is the arrangement of the two strips or rolls of paper, whereby the salesman is enabled to make a duplicate record, one for the customer and another as a complete record of the day's sales, as previously fully explained.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

In a recorder for cash-drawers, the combination, with a detachable mechanism or frame for insertion into the case of the counter, said frame consisting of side pieces and transverse stay-bars, said side pieces provided at one end with slotted upward extensions, of a shaft mounted in this end of the frame, carrying a roll of paper, and a gravity-block having inwardly-extending wings to form a guide for the paper and also provided with lateral arms passing into the slotted upward extensions of the sides of the frame and adapted to bear upon the roll of paper, substantially as described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

FRANK R. WOODWARD.

Witnesses:
FRANK PROCTOR,
JOHN P. PROCTOR.