

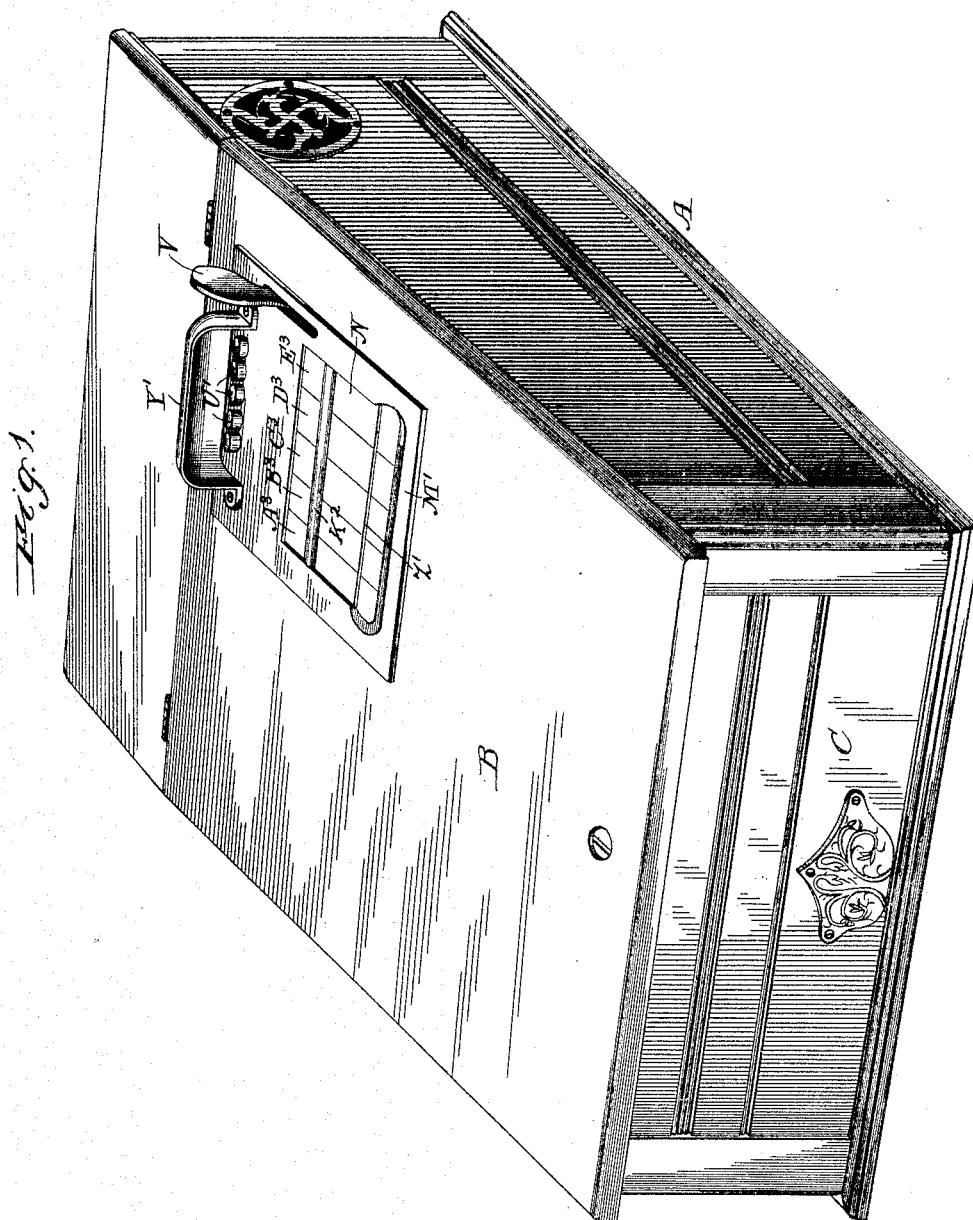
(No Model.)

5 Sheets—Sheet 1.

J. PFEIFER.
MANUAL RECORDER.

No. 491,784.

Patented Feb. 14, 1893.



Witnesses:
Wm. L. Heming
Wm. M. Rheem

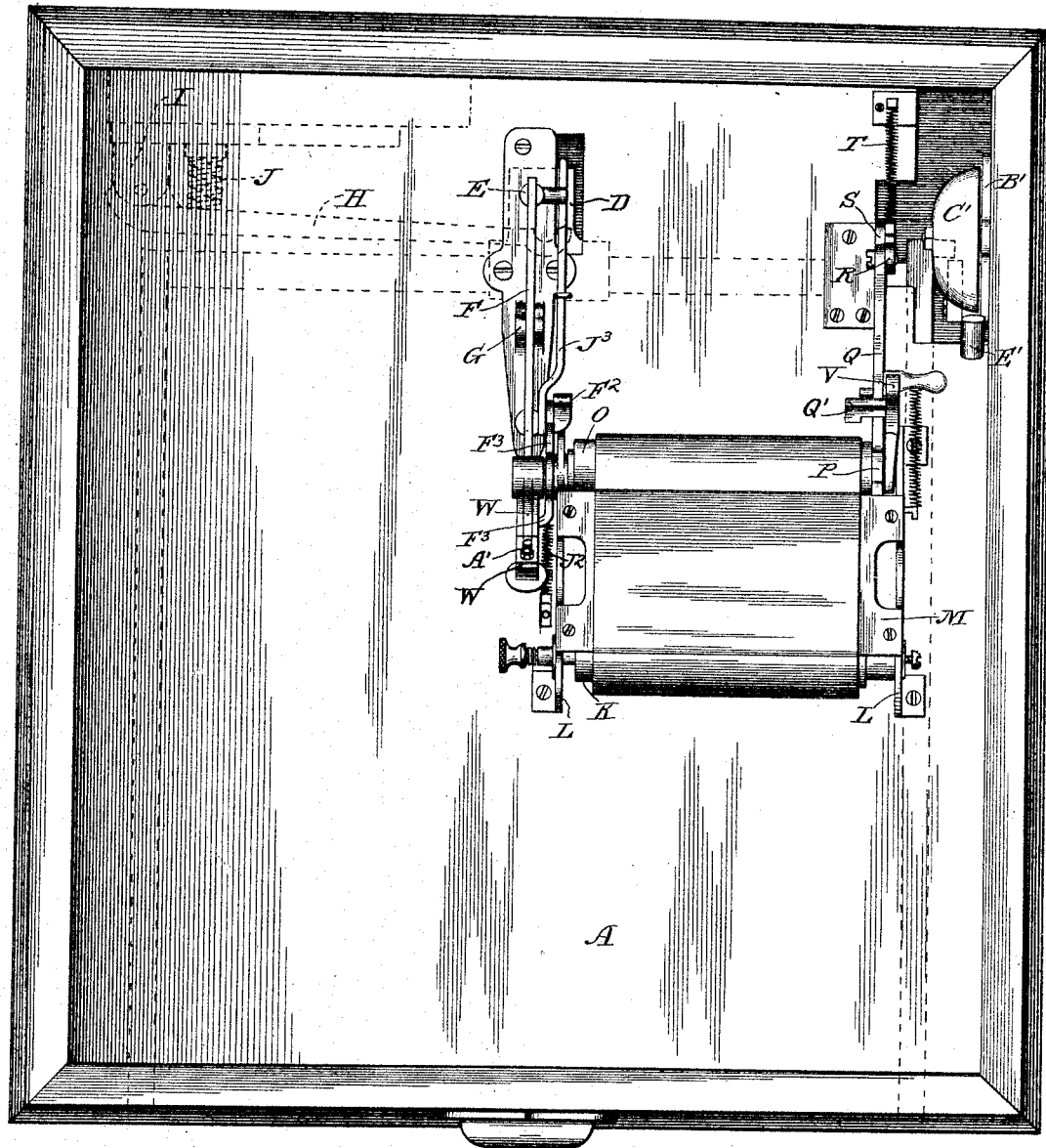
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By Edward Rector
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Fig. 2.



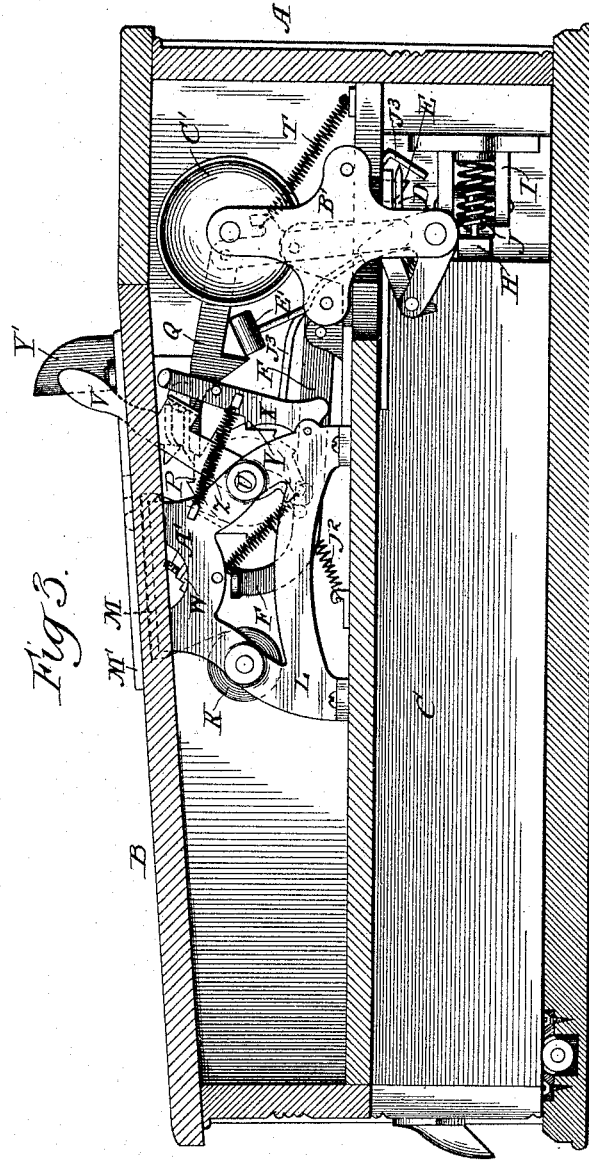
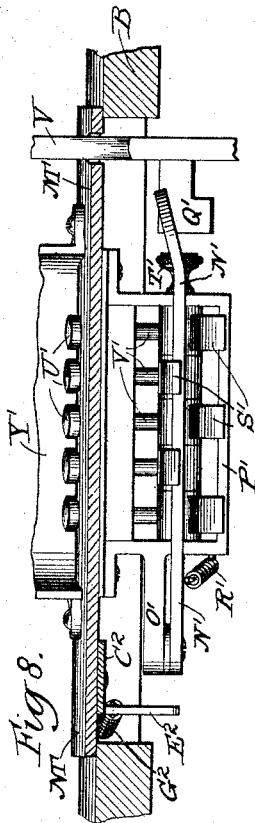
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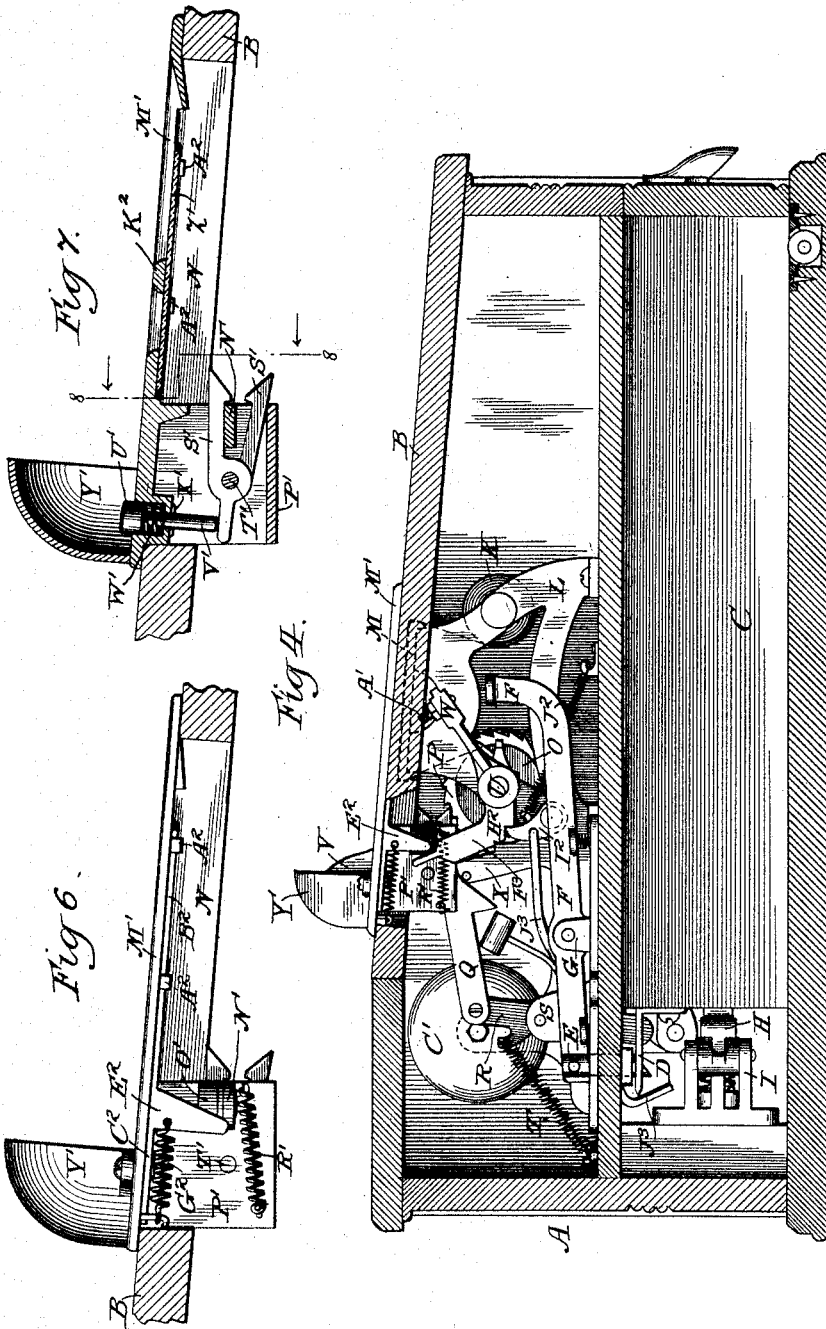
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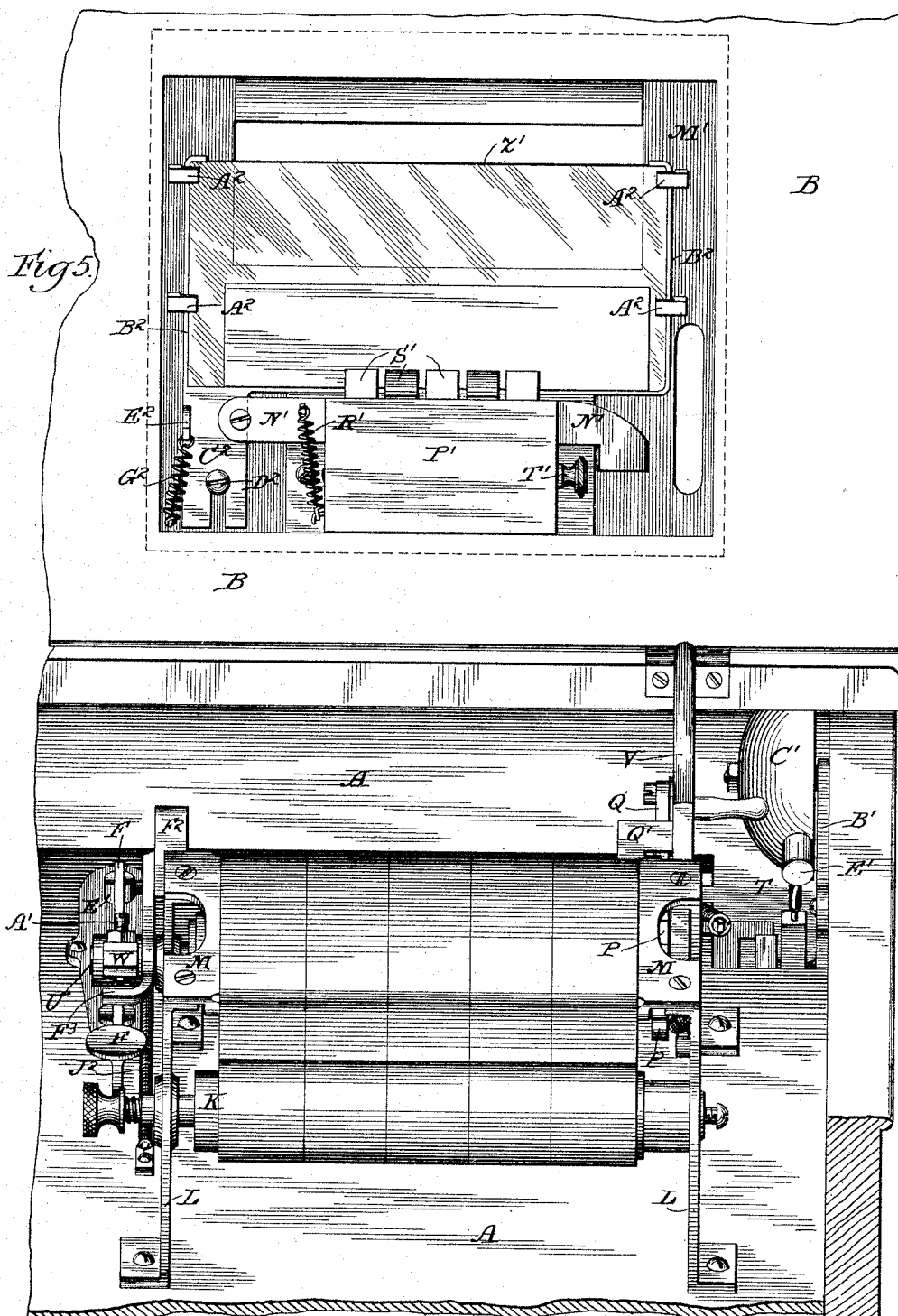
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Patented Feb. 14, 1893.



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UNITED STATES PATENT OFFICE.

JOHN PFEIFER, OF DAYTON, OHIO, ASSIGNOR TO THE NATIONAL CASH REGISTER COMPANY, OF SAME PLACE.

MANUAL RECORDER.

SPECIFICATION forming part of Letters Patent No. 491,784, dated February 14, 1893.

Application filed May 17, 1892. Serial No. 433,275. (No model.)

To all whom it may concern:

Be it known that I, JOHN PFEIFER, 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-Recorders, of which the following is a description, reference being had to the accompanying drawings, forming part of this specification.

My invention belongs to that class of machines in which the record to be preserved is written upon a paper strip carried upon rollers within the machine and led over a plate or tablet exposed through an opening in the casing, where the desired memoranda may be written upon it. The machine also contains a cash drawer which is unlocked and opened at each operation of the machine.

My invention relates to the novel combination of the cash drawer with the feeding mechanism for advancing the record strip, and with other elements of the machine; the provision of means for more effectually preventing alterations of the record made upon the paper strip; and in the application of a combination lock to the releasing devices of the cash drawer; and it consists in the various novel constructions, arrangements and combinations of parts which will be hereinafter set forth and specifically pointed out in the claims.

In the accompanying drawings Figure 1 is a perspective view of the complete machine; Fig. 2 a top plan view of the same with the lid and top of the casing in rear thereof removed; Fig. 3 a longitudinal vertical section of the machine just within the right hand side of the casing, looking toward the left; Fig. 4 a longitudinal vertical section just within the left hand side of the casing, looking toward the right; Fig. 5 an enlarged view of the rear right hand corner of the machine with the lid thrown open, showing a bottom plan view of the parts carried upon the under side of the lid and a perspective view of the working parts of the machine which lie immediately beneath such portion of the lid when the latter is closed; Fig. 6 an enlarged detail section of the lid on a line immediately to the left of the opening therein, and looking toward the right of the machine; Fig. 7 a corresponding

view on a line through the middle of the opening in the lid; and Fig. 8 a detail view of the parts carried by the lid, on the line 8—8 of Fig. 7, looking toward the rear of the machine.

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

The principal working parts of the machine are inclosed in a suitable casing A having a hinged lid B and divided by a horizontal partition into an upper and lower compartment, in the latter of which fits the cash drawer C adapted to be slid in and out. This drawer has secured to its rear side a locking plate D, Fig. 4, with which co-operates a bolt E carried by the rear end of the lever F pivoted between ears G projecting upward from a metal plate resting on the bottom of the upper compartment. When the front end of the lever F is depressed, in the manner hereinafter explained, the bolt E will be lifted out of the hole in the locking plate D, with which it has been engaged, and the drawer be thereby released. A suitable spring is preferably employed to automatically throw the drawer open when so released, though it might be pulled out by hand. In the drawings, (see dotted lines in Fig. 2) I have shown a spring applied to the drawer through the medium of an arm H pivoted at one end to a bracket I secured to a support within the casing and bearing at its opposite end against the rear side of the drawer near its middle, a coiled spring J being confined between the arm near its pivotal point and the metal plate which supports the bracket I.

The paper strip upon which the record is to be entered is carried upon a supply reel K whose spindle is journaled in an upright framework L in the upper compartment of the machine, and is led thence upward over a horizontal plate M supported on said framework beneath an opening N in the lid of the machine, Fig. 1, and from the plate M the strip passes downward to and is wound upon a storage reel O. This reel has secured upon its right hand end a ratchet P with which co-operates the forward end of a pawl-arm Q, Fig. 3, whose rear end is pivoted to the upper end of a lever R, Fig. 4. This lever is pivoted near its middle to a bracket S pro-

jecting upward from the base plate on the bottom of the compartment and its lower end extends down through an opening into the lower compartment, behind the money drawer, as seen in Fig. 4. A spring T connected at one end to the upper end of the lever R and at its other to a fixed point in rear thereof tends to pull the upper end of the lever rearward, but the engagement of the lower end of the lever with the rear side of the drawer normally holds its upper end thrown forward. Under this arrangement of parts, when the drawer is released and thrown open by its spring the spring T will draw the upper end of the lever R and the pawl arm Q rearward and cause the front end of the pawl arm to engage a new notch in the ratchet on the storage reel, and when the drawer is pushed in again the pawl arm will be thrown forward and the storage reel will be turned and a portion of the paper strip drawn forward and wound upon it.

The storage reel O is loosely mounted upon a rock shaft U journaled in the framework L. Fast upon the right hand end of the shaft is an operating handle or lever V which projects up through a slot in the lid of the machine, while fast upon the left hand end of it is an arm W, Figs. 2 and 4, whose outer end is adapted to strike the front end of the lever F when the handle V is pulled forward, and thereby lift the bolt E and release the drawer, in the manner before explained.

The operation of the machine as thus far described consists in writing the desired memoranda upon the paper strip as it rests upon the plate M beneath the opening in the lid, pulling forward the lever V and releasing the money drawer, and then closing the drawer after the money received has been deposited in it. The closing of the drawer will advance the paper strip, so as to bring a fresh portion of it into position to be written upon at the next operation of the machine. An arm X, Fig. 3, pivoted at its lower end to the framework L is pulled forward by a spring Z and a tooth Y upon it engages with the ratchet P to prevent backward movement of the storage reel.

A set screw A' passed through the outer end of the arm W may be adjusted to vary the time of opening of the drawer in relation to the stroke of the handle V.

A gong C' supported upon a plate B' fastened to the inner face of the right side of the casing, Fig. 3, is sounded at each opening of the drawer by a striker E' actuated by intermediate mechanism which need not be described in detail.

For the purpose of preventing operation of the machine and opening of the cash drawer by unauthorized persons I combine with the operating handle or lever a latch controlled by a combination lock, which may be now described. The latch and lock and associated parts are carried in a framework upon the under side of a metal plate M' which fits

over the opening N in the lid of the machine, Fig. 1. The latch consists of an arm N', Fig. 5, pivoted at one end to the under side of a bracket O', Figs. 6 and 8, projecting from the side of the frame plate P' and extending to the right in Figs. 5 and 8, toward the lever V. The latter has secured to it a plate Q' which projects to the left in line with the end of the latch arm N', the latter standing immediately in front of the plate Q' when the lever is in its normal position of rest, as seen in Fig. 8. It will be seen from this that whenever the lever is pulled forward, to release the drawer in the manner before explained, it will swing the right hand end of the latch arm N' forward with it. A spring R' yieldingly holds the arm N' in and returns it to normal position.

The combination lock before referred to is applied to the latch arm N', to lock it from forward movement except when released by the lock, and to thereby lock the lever V. It consists of a series of reversely arranged hooked levers S', Fig. 6, strung on a shaft T' mounted in the sides of the frame plate P'. The forward hooked ends of these reversely arranged levers extend over and under the latch arm N', the upper ones normally resting upon it, with their hooks locking it from forward movement, and the hooks of the lower levers resting a short distance below its forward edge. By depressing the rear ends of only those levers whose front ends extend above the latch arm the latter will be released, but if any one of the levers extending below said arm is operated it will lock the arm. As shown in the drawings the arm is normally locked by the second and fourth levers, so that it is only by operating these two levers alone that the arm can be released. The levers are operated by push buttons U' fitted in sockets in the top plate M' and having depending stems V' adapted to engage the rear ends of the levers S' when the buttons are depressed. Springs W', Fig. 7, surrounding the stems V' between the buttons U' and the bottoms of the sockets in which they fit yieldingly hold them in and restore them to normal position, their upward movement being limited by pins X'. By changing the relative positions of the locking levers the combination may be varied as desired. A suitable shield Y' is secured upon the upper face of the lid above the buttons U'.

In using the machine the clerk first writes the memoranda upon the record strip, then with his left hand depresses the proper buttons to release the latch arm, and, while holding them depressed, with his right hand pulls forward the lever V to unlock and open the drawer.

For the purpose of preventing alteration of the record made upon the paper strip and yet permit several of the records last made to remain exposed to view, I provide, Figs. 5, 6, 7 and 8, a glass slide Z', which fits in guides A—² secured upon the under side of the plate

M' and normally closes the entire opening through said plate except a narrow space at the bottom thereof, as seen in Fig. 1. The edges of this slide are protected by a metal frame B—² surrounding three sides of it, as shown in Fig. 5. Secured to this frame at its lower left hand corner in Fig. 5, is a metal plate C—² provided with a slot which embraces a stud or screw D—² on the under side of the plate M'. Depending at right angles from this plate is an arm E—², Fig. 7, which extends down into the inside of the casing when the lid is closed, as seen in Fig. 4. In this position its lower end rests immediately in front of the upper end of a plate F—², Fig. 9, carried by or forming part of a bent lever F—³, Fig. 4, hung upon the left hand end of the rock shaft U heretofore described. The forward end of this lever is bent to the left into the path of the arm W on the rock shaft U, as seen in Fig. 2. When the operating lever V is pulled forward, therefore, and the arm W thrown downward to release the drawer, the arm W will carry the lower forward end of the lever F—³ down with it and throw its upper rear end forward. The upper end of this lever or plate F—², in its forward movement will engage the arm E—² depending from the plate C—² and will carry said plate, and consequently the glass slide Z', forward with it, causing said slide to completely close the opening through which the record has been entered upon the record strip. A coiled spring G—², Figs. 5, 6, and 8 connected at one end to the plate C—² or arm E—² and at its other to the fixed plate M', yieldingly holds the plate C—² and glass slide in normal position, and it is against the resistance of this spring that said plate and slide are moved forward by the upper end of the lever F—³ in the manner above described. The slide is held in this forward position until the drawer is pushed in again and the paper strip moved thereby to carry the record away from the writing point, by the following means: As seen in Fig. 4 the elbow-shaped portion of the lever F—³ in rear of the shaft U is provided with a notch H—² in which fits the upper end of a latch or pawl I—² pivoted to the frame L. A spring J—² tends to pull this pawl forward. When the upper end of the lever F—³ is thrown forward, carrying the glass slide with it, the notch H—² is carried above the pawl I—² and the latter catches under the horizontal portion of the lever F—³ below and in front of the notch, and holds it in the position to which it has been moved. A bent rod J—³ is connected at its forward end to the pawl I—² and its rear hooked end extends down into the drawer compartment behind the locking plate D upon the rear side of the drawer, as seen in Figs. 2, 3 and 4. When the drawer is pushed in the plate D engages the hooked end of this rod and pulls the rod rearward, carrying the pawl I—² back to the position shown in the drawings and permitting the spring G—² to restore the glass slide and the lever F—³ to normal position. In this manner, whenever a

record is entered upon the paper strip through the narrow opening in front of the glass slide and the operating lever is then pulled forward, to release and open the drawer, the slide is automatically carried forward to close said opening and cover the record and prevent any alteration of it. Then when the drawer is pushed in the record strip is moved by the pawl arm Q, in the manner before described, to carry the record away from the writing point, before the record strip is uncovered by the return of the glass slide, the adjustment of the parts being such that the rear hooked end of the rod J—³ is not engaged by the plate D on the drawer until the latter has been nearly closed. It will thus be seen that as soon as a record has been entered and the hand lever operated to release the drawer the record is protected by the glass slide, and, while it remains exposed to view until the next operation of the machine, or during several succeeding operations, no access can be had to it.

Extending across the opening N in the plate M', Fig. 1, is a bar K—². Beneath the portion of the opening in rear of this bar, either upon the glass slide or fixed in the plate M', are a series of headings for the ruled columns upon the record strip. Thus, upon the left, in the space A—³ may be the words "Clerk's number" to indicate that the clerk using the machine is to enter his number in the column in line with such heading. The next space, B—³, may contain the word "Cash" to indicate that the cash sales are to be entered in the corresponding column on the record strip. The third space, C—³, may contain the word "Charged" to indicate that the credit sales are to be entered in that column. The fourth and fifth spaces, D—³ and E—³, may contain the words "Received on account" and "Paid on account" respectively, to show that the amounts received on charged accounts and the amounts paid out on accounts or bills presented are to be entered in the respective columns under those headings.

I have described in the foregoing specification simply the particular construction, arrangement and co-operation of parts shown in the drawings; but it will have been understood that my improved machine embodies various combinations and modes of operation which are broader than and independent of any particular construction or arrangement of the separate elements. Thus, the particular form of mechanism between the drawer and storage reel, for actuating the latter to wind up the record strip, may be varied without departing from the broader scope of this feature of my invention. So, the particular mode of application of the combination lock to the drawer releasing device, as well as the particular construction of the lock itself, may be varied. Again, I believe myself to be the first in the art to combine a movable plate with the writing tablet and cash drawer of a cash recorder by any sort of intermediate

mechanism which will cause the plate to be moved over the writing point at the release or opening of the drawer, to cover the record strip, and to be moved away from the writing point at the closing of the drawer, to expose the record strip; and I desire to claim said combination and mode of operation broadly, regardless of the particular construction, arrangement or co-operation of the various parts. The movable plate which I have illustrated and described is a sliding glass plate, and while a transparent plate is preferable because it enables the record to be seen while it covers the record strip at the writing point, yet a part of the advantages of my invention may be obtained from the use of a metal or other opaque plate. In such event the movable plate would be employed simply to cover and uncover the record strip at the writing point, and the record strip could be drawn thence under an opening covered by a glass plate through which the recently made records could be observed.

Having thus fully described my invention, I claim:

1. In a cash recorder, the combination of a supply-reel for the record-strip, a storage-reel therefor, an interposed writing tablet over which the record strip is drawn by the storage-reel, a money drawer, mechanism intermediate said money drawer and the storage-reel for actuating the latter by the movement of the drawer, a latch for holding the drawer closed, a lever connected with the latch for disengaging it from the drawer, and a combination lock co-operating with said lever to prevent operation of it without first operating the combination lock to release it, substantially as described.

2. In a cash recorder, the combination of a supply-reel for the record-strip, a storage-reel therefor, an interposed writing tablet over which the record-strip is drawn by the storage-reel, a money drawer, mechanism intermediate said drawer and the storage-reel for actuating the latter by the movement of the drawer, a lock for the drawer, a lever connected with the lock for releasing the drawer, a latch co-operating with the lever, and a combination lock applied to the latch for preventing movement of the lever without first operating such combination lock, substantially as described.

3. In a cash recorder, the combination with a writing tablet over which the record strip is passed, of a movable plate mounted above the same and adapted to be moved to alternately cover and uncover the record strip at the writing point, means for moving the plate into position to cover the record strip, a money drawer, and mechanism intermediate the drawer and plate for returning the latter to normal position and uncovering the record strip at the closing of the drawer.

4. In a cash recorder, the combination with a writing tablet over which the record strip is passed, of the movable plate mounted above

the same, and adapted to cover and uncover the record strip at the writing point, a money drawer, a lock and releasing device therefor, connections between said releasing device and the movable plate for moving said plate into position to cover the record strip by the act of releasing the drawer, and means intermediate the drawer and plate for restoring the latter to normal position upon the closing of the drawer.

5. In a cash recorder, the combination with the writing tablet, of the movable plate mounted above the same and adapted to cover and uncover the record strip at the writing point, a spring for yieldingly holding the plate in and returning it to normal position, a money drawer, a lock and releasing device therefor, connections between said releasing device and movable plate, for moving the latter against the resistance of its spring into position to cover the record strip when the drawer is released, a latch for holding it in such position against the stress of its spring, and a trip for the latch actuated by the closing of the drawer.

6. In a cash recorder, the combination of a supply reel and a storage reel for the record strip, an interposed writing tablet, a money drawer, a lock and releasing device therefor, connections between the drawer and storage reel for turning the latter by the closing of the drawer, a movable plate mounted above the writing tablet and adapted to cover and uncover the record strip at the writing point, connections between said plate and the drawer-releasing device for moving the plate into position to cover the record strip upon releasing the drawer, and connections between the drawer and plate for restoring it to normal position and uncovering the record strip at the closing of the drawer.

7. In a cash recorder, the combination of a supply reel and a storage reel for the record strip, the latter provided with a ratchet, a writing tablet over which the record strip is drawn from the supply reel, a money drawer, a lock and releasing device therefor, a pawl co-operating with the ratchet of the storage reel and actuated by the closing of the drawer to turn the reel, a glass plate mounted to reciprocate above the writing tablet to cover and uncover the record strip at the writing point, connections between said plate and the drawer-releasing device for moving the plate over the writing point upon the release of the drawer, and connections between the drawer and said plate for restoring the latter to normal position, to uncover the record strip, at the closing of the drawer.

8. In a cash recorder, the combination of a supply reel and a storage reel for the record strip, the latter provided with a ratchet, a writing tablet over which the record strip is drawn from the supply reel, a money drawer, a lock and releasing device therefor, a pawl co-operating with the ratchet of the storage reel and actuated by the closing of the drawer

to turn the reel, a glass plate mounted to reciprocate above the writing tablet to cover and uncover the record strip at the writing point, a spring for yieldingly holding said plate in 5 and restoring it to normal position, connections between said plate and the drawer releasing device for moving the plate over the writing point upon the release of the drawer, a latch for holding it in such position while 10 the drawer remains open, and a trip for the latch operated by the closing of the drawer.

9. In a cash recorder, the combination of the reciprocating glass plate Z' arranged above the writing tablet and provided with 15 the pendent projection E—², the re-setting spring G—² for said plate, the rock shaft U, lever V and arm W fast thereon, lever F—³ loose thereon and co-operating with the pendent projection of the plate Z', the latch I—² co- 20 operating with the lever F—³, the trip rod J—³ for the latch I—², and the money drawer C co-

operating with the rod J—³, substantially as described.

10. In a cash recorder, the combination of the supply reel K and storage reel O for the 25 record strip, the interposed writing tablet M, the ratchet P fast on the storage reel, the pawl arm Q, lever R and drawer C, the locking bolt E for the drawer, releasing lever F, rock shaft U, lever V and arm W fast there- 30 on, the reciprocating plate Z' above the writing tablet, the re-setting spring G—² therefor, the pendent projection E—² carried by the plate, the lever F—³ co-operating with the pro- 35 jection E—² and arm W, the latch I—² for the lever F—³, and the trip rod J—³ for the latch, actuated by the drawer, substantially as described.

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