No. 709,870. Patented Sept. 30, 1902.

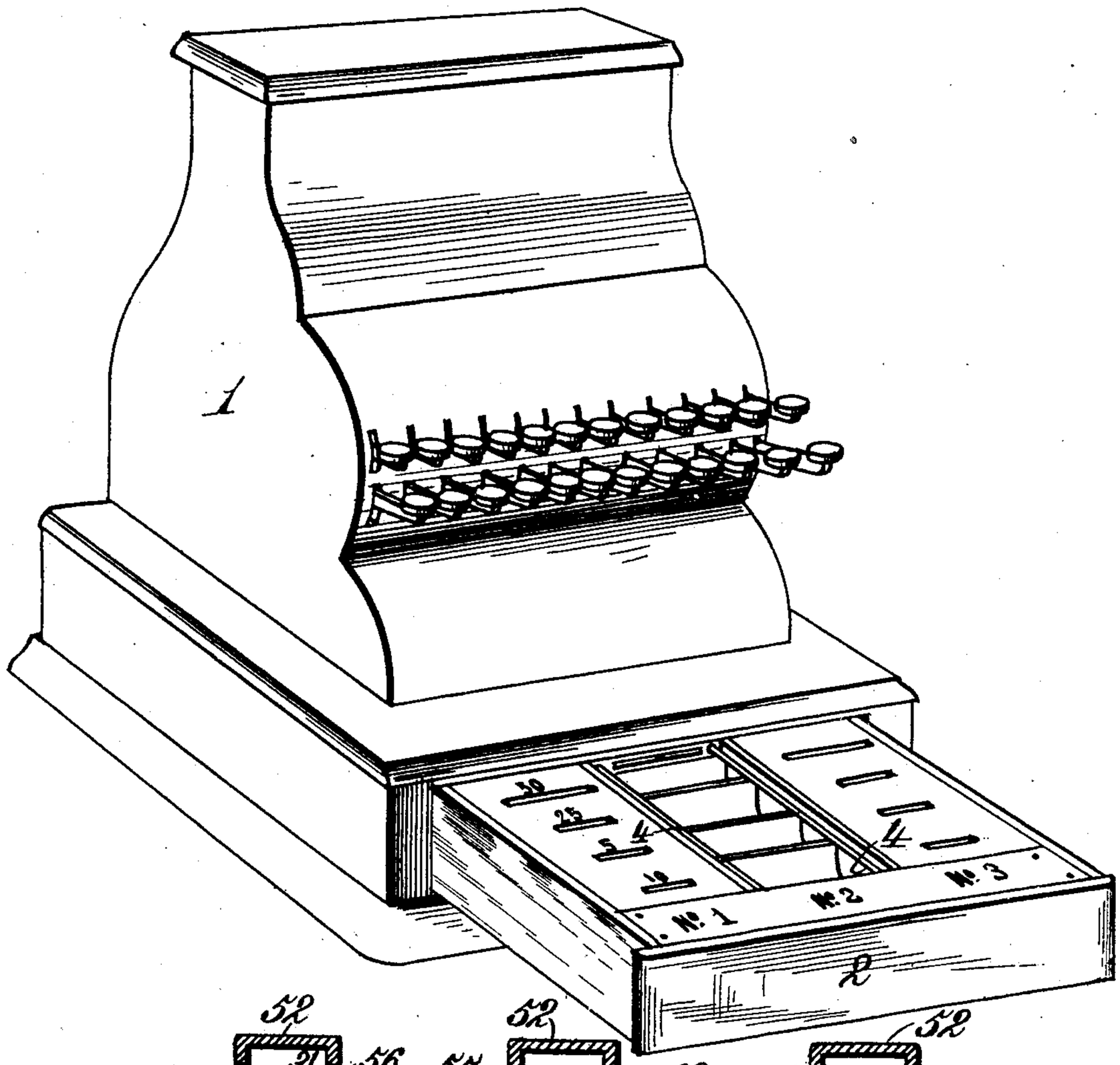
C. S. CLARK & J. T. JONES.

TILL.

(Application filed Oct. 11, 1901.)

(No Model.) 3 Sheets—Sheet 1.

Fig. 1.



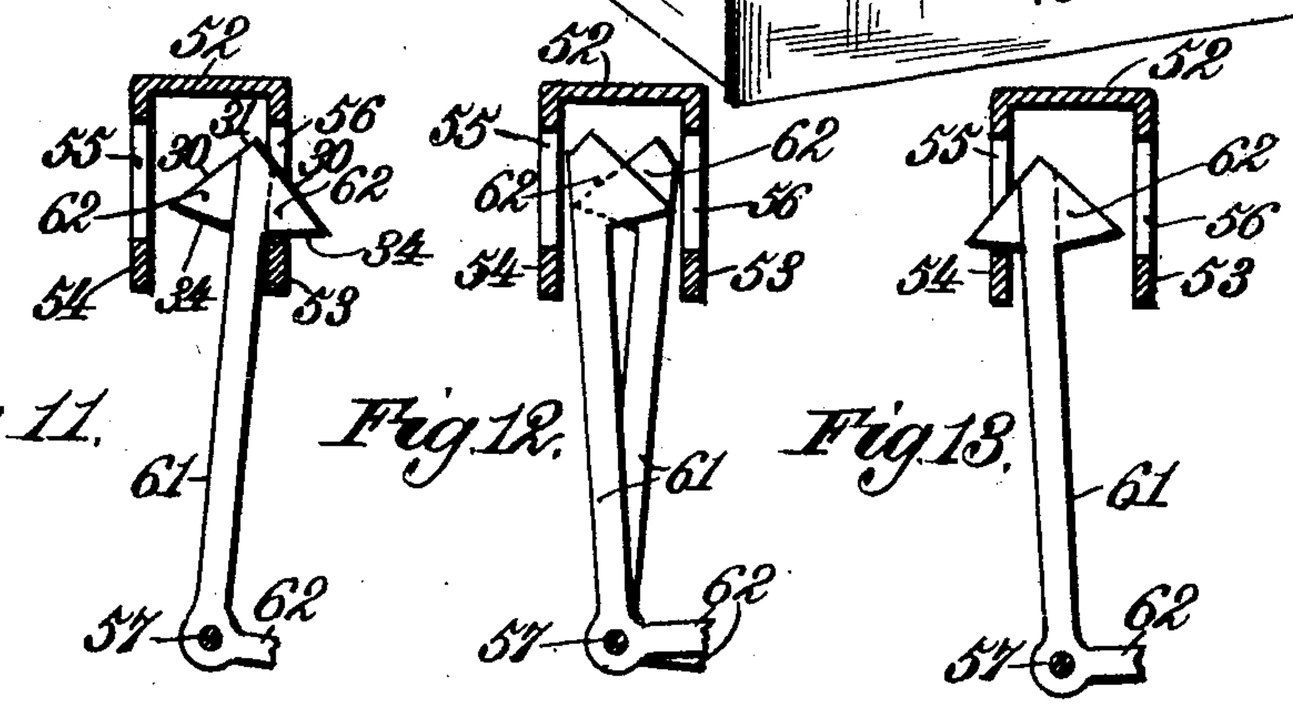


Fig. 11. *Fig. 12.* *Fig. 13.*

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(No Model.) 3 Sheets—Sheet 2.

Fig. 2.

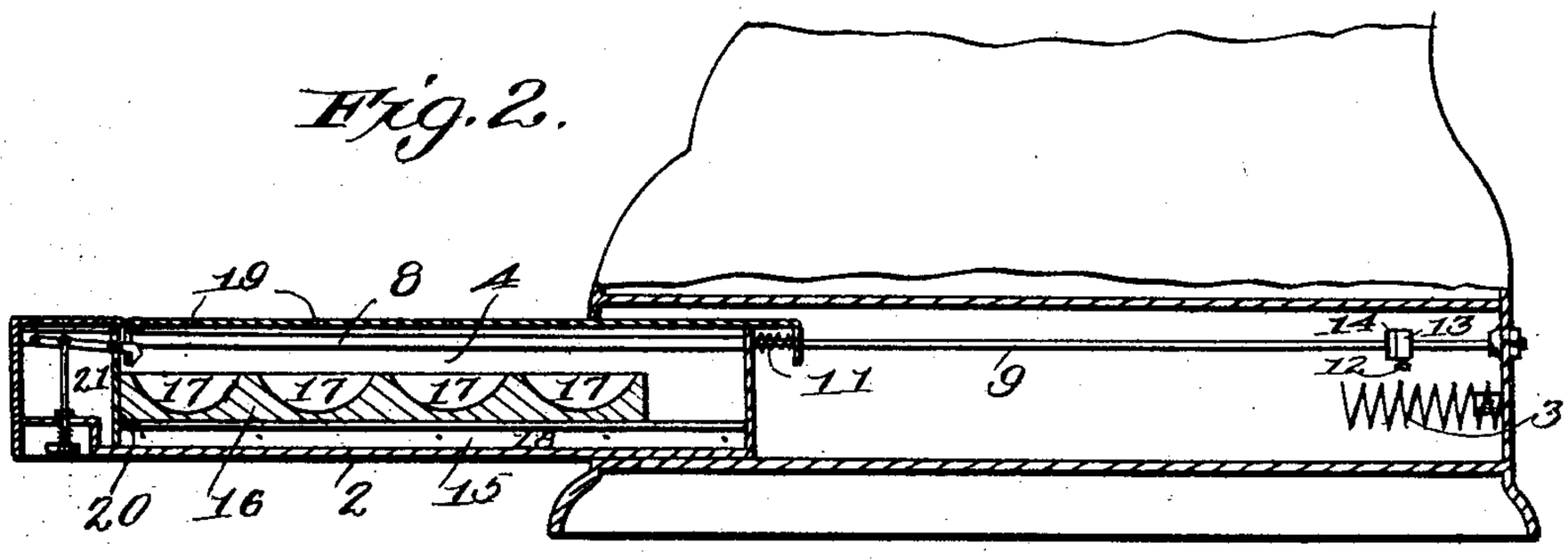


Fig. 3.

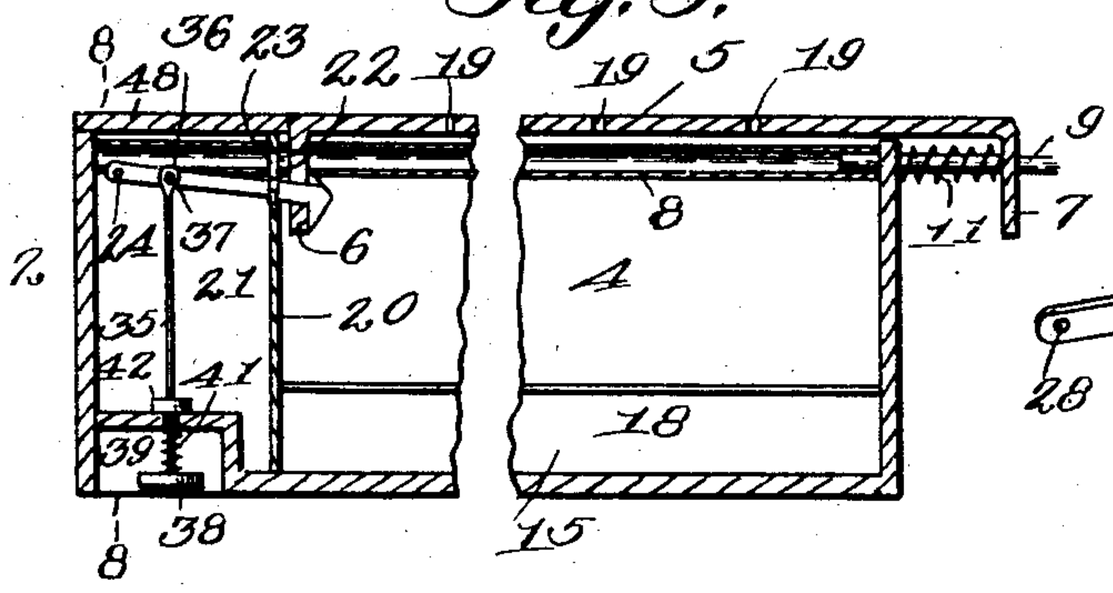


Fig. 7.

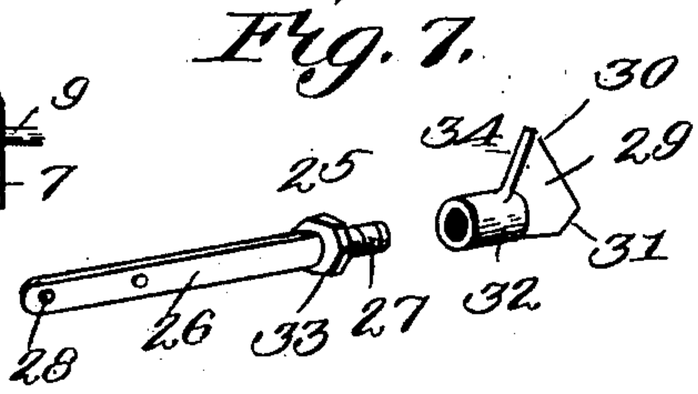


Fig. 4

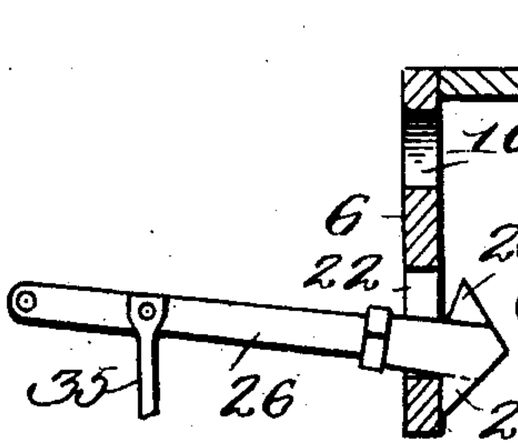


Fig. 5

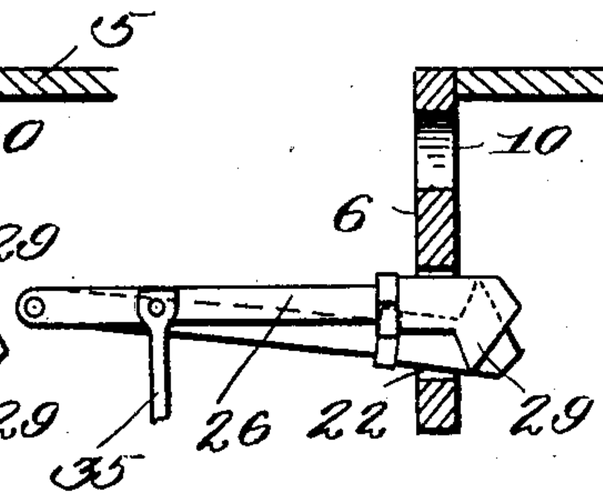
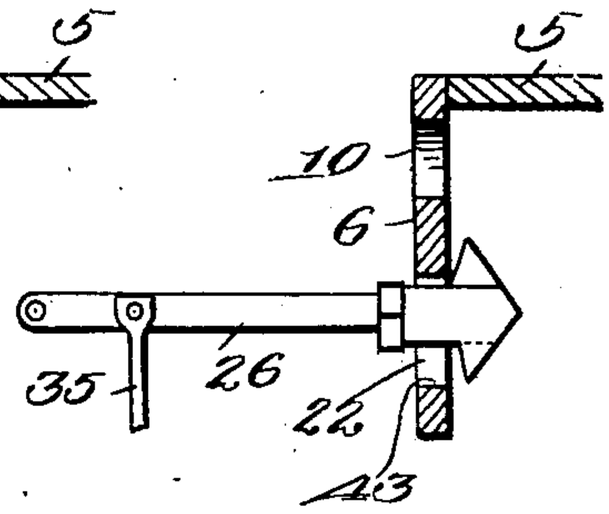


Fig. 6.



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No. 709,870. Patented Sept. 30, 1902.

C. S. CLARK & J. T. JONES.

TILL.

(Application filed Oct. 11, 1901.)

(No Model.) 3 Sheets—Sheet 3.

Fig. 9.

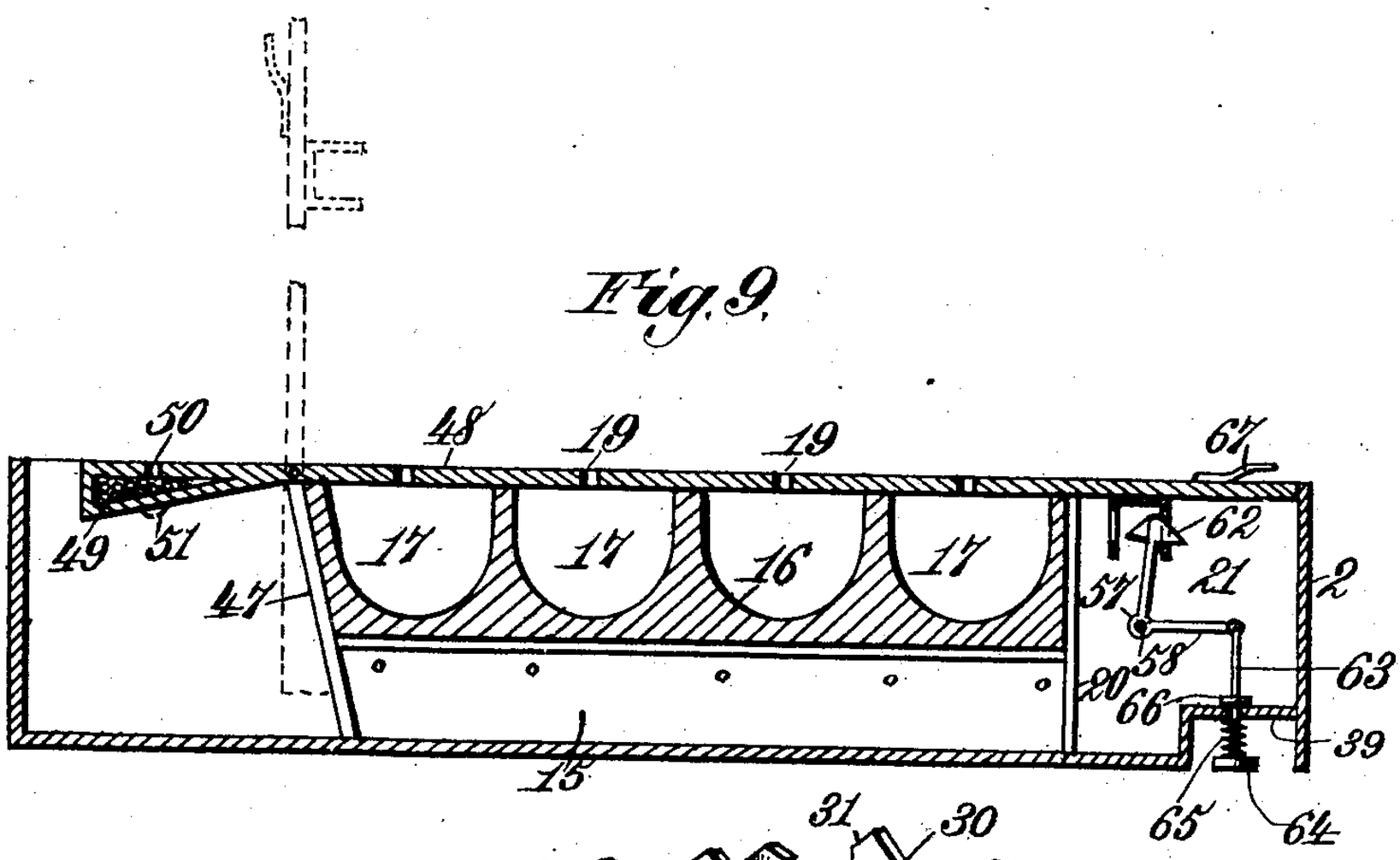


Fig. 14.

Fig. 10.

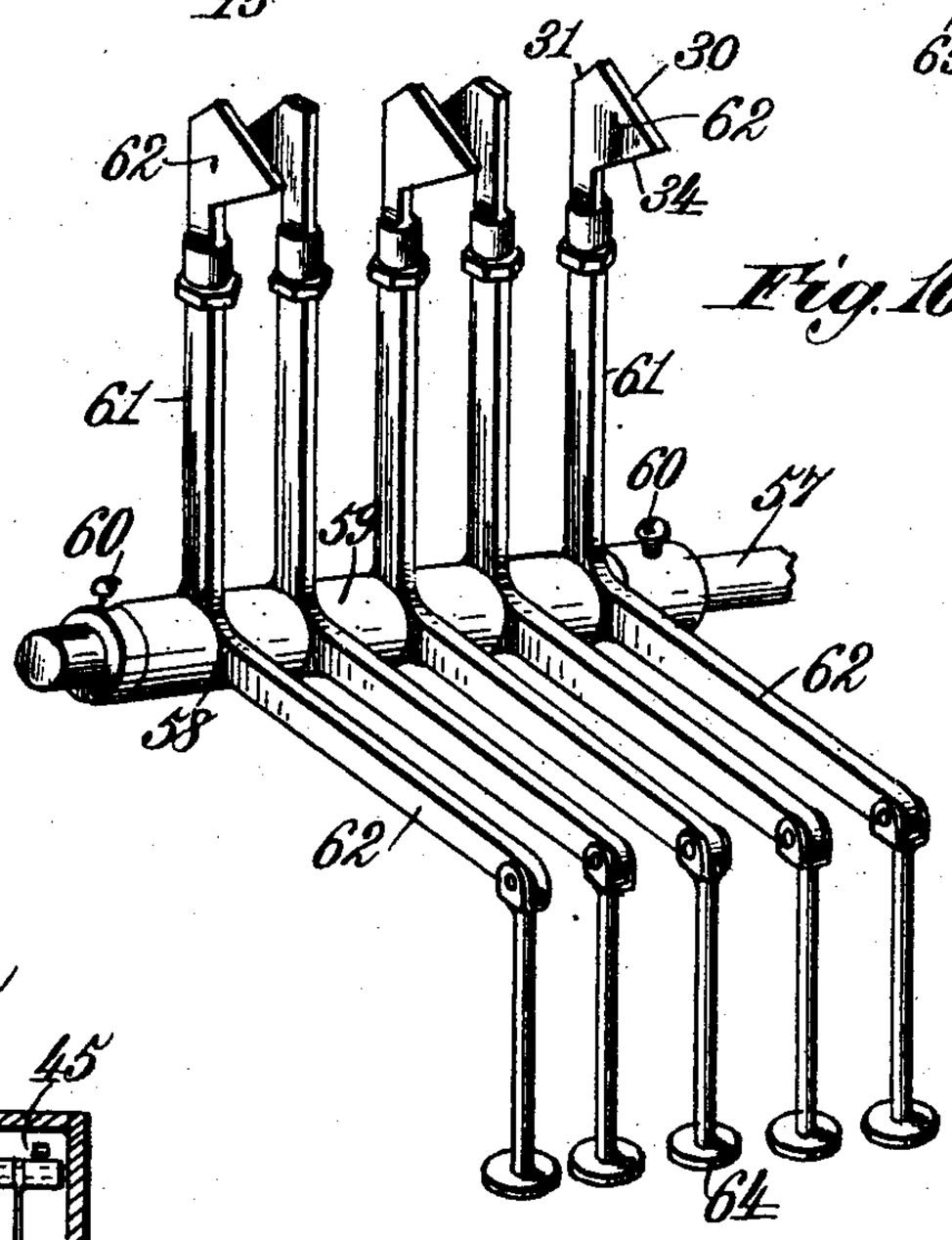
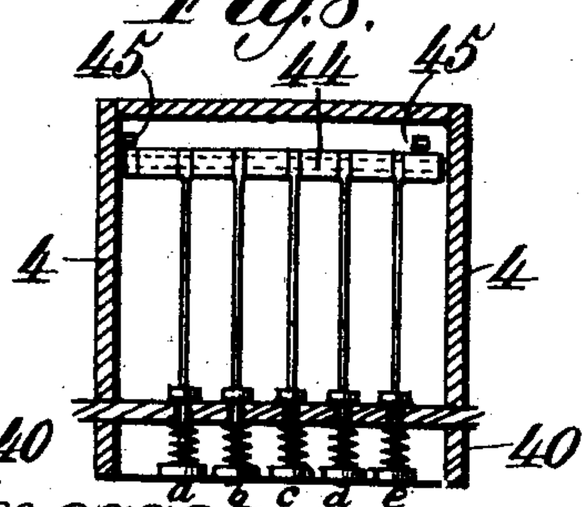


Fig. 8.



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UNITED STATES PATENT OFFICE.

CORNELIUS S. CLARK AND JOSIAH T. JONES, OF NORFOLK, VIRGINIA; SAID CLARK ASSIGNOR TO SAID JONES.

TILL.

SPECIFICATION forming part of Letters Patent No. 709,870, dated September 30, 1902.

Application filed October 11, 1901. Serial No. 78,359. (No model.)

To all whom it may concern:

Be it known that we, CORNELIUS S. CLARK and JOSIAH T. JONES, citizens of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented new and useful Improvements in Tills, of which the following is a specification.

This invention relates to tills, and more especially to money-drawers for cash-registers; but it will be manifest that it may be advantageously employed for many different purposes and applied to various different uses.

The invention has for its object to provide a money-drawer with a plurality of separate compartments each provided with an independent lid or cover, the lids or covers being provided with independent locking mechanisms, whereby a separate compartment may be assigned to each individual salesman or employee or set of salesmen or employees, who will be put in possession of means for opening only his or their individual compartment, and whereby each salesman or employee or set of salesmen or employees cannot gain access to any other of the compartments, the purpose being to prevent dishonest salesmen or employees from abstracting money or other articles of value from any but his own compartment.

To these and other ends, which will hereinafter become apparent, our invention consists in the features and in the construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a perspective view of a cash-register provided with an improved cash-drawer construced in accordance with our invention, the drawer being shown open and one of the sliding covers moved back to uncover one of the compartments. Fig. 2 is a transverse vertical sectional view taken through one of the closed compartments. Fig. 3 is a similar view, on an enlarged scale, of the drawer, a portion of the latter being shown broken away. Figs. 4, 5, and 6 are detail views of the locking mechanism, showing the parts in three different positions. Fig. 7 is a detail perspective view of one of the reversible latches. Fig. 8 is a vertical sectional view taken on the line 8 8 of Fig. 3. Fig. 9 is a vertical longitudinal sectional view taken through one of the compartments, showing each of the latter provided with a hinged lid or cover. Fig. 10 is a perspective view of the latches shown in Fig. 9 and their actuating mechanism. Figs. 11, 12, and 13 show said locking mechanism in three different positions. Fig. 14 is a detail view illustrating one of the stops and buffers for arresting the backward movement of the covers.

Referring to Figs. 1 to 8 of the drawings, the numeral 1 indicates a cash-register, which may be of any usual well known or preferred construction, provided with a drawer 2, which is ejected from the register-casing by a spring 3 whenever one of the register-keys is struck in the usual manner. In the present instance the drawer is shown as being divided into a plurality of compartments by longitudinal vertical partitions 4, each provided with an independent sliding cover 5, consisting of a rectangular plate of sheet metal bent downward at right angles at its opposite ends to form depending flanges 6 and 7. Fixed in the front and back of the drawer are a number of tubular rods 8, two such tubes being provided for each compartment in the drawer, said tubes being arranged on opposite sides of the compartments in close proximity to the upper edges of the partitions 4. The rear ends of the tubes are open, and loosely fitted therein are the free ends of longitudinal rods 9, the opposite ends of said rods being rigidly fixed in the back of the cash-register casing, the arrangement being such that said tubes and rods are adapted to freely telescope one within the other as the drawer is opened and closed. The flanges 6 and 7 of the covers 5 are each provided with two perforations 10, the tubes 8 passing loosely through the perforations in the front flange 6 and the rods 9 in like manner passing through the rear flange 7, the covers being so arranged that their rear flanges 7 depend in rear of the drawer 2, as most clearly shown in Figs. 3 and 4 of the drawings. Said tubes and rods constitute guides and rails for the covers to slide on as said covers are opened and closed. Arranged on each of the rods 9, between the rear flange 7 and the back of the drawer, is a coiled spring 11. When the covers are

closed, said springs are compressed, and whenever any one of the covers is released said springs operate to instantly force the cover back from over its compartment and into the cash-register casing. Adjustably fixed on the rear end of each of the rods 9 by a set-screw 12 is a collar 13, and arranged on the rod contiguous to and immediately in front of the collar is an elastic washer 14, of rubber or other suitable material, said collars and washers forming stops and buffers to receive the impact of the blow struck by the cover when the latter is released and forced back by the springs 11 and limit the backward movement of the cover. Attached to the sides of the partitions 4 at their lower edges are cleats or battens 15, forming ledges on which rest trays 16, there being one such tray in each compartment. Said trays may be constructed of wood, metal, or any suitable material, either cut, bent, or molded into shape, and each of said trays is provided with a plurality of pockets or coin-receptacles 17, each designed for the reception of coins of a particular denomination. By seating the trays 16 on the cleats 15 the bottoms of the trays are raised above the bottom of the drawer 2, whereby spaces 18 are formed beneath the trays for the reception of bills or notes and the like, and as the trays rest loosely on the cleats and are shorter than the drawer, as shown, access may be readily had to the spaces beneath the trays for the insertion or removal of notes by simply sliding said trays back toward the rear of the drawer. Slots 19 are formed in the trays over each pocket 17, so that coins may be dropped into the trays through the slots without opening the covers when it is merely desired to deposit coins without removing any cash from the drawer. Transverse partitions 20 are fixed near the front of the drawer between the longitudinal partitions 4, thereby forming chambers 21, in which are arranged the locking mechanisms, which will now be described, it being first necessary to explain that each flange 6 of the covers is provided with a horizontal rectangular slot 22, and a corresponding slot 23 is formed in each of the partitions 20. In describing the locking mechanism the slotted flange 6 will hereinafter be referred to as a "keeper" for the sake of brevity and clearness.

Fixed in the upper front portion of each chamber 21 is a transverse rod or shaft 24, or instead of providing a single rod or shaft for each chamber a single rod or shaft may extend from side to side of the drawer through each compartment 21. Pivoted on said shaft in each compartment is a plurality of latches 25, each comprising a latch-lever 26, (see Fig. 7,) consisting of a metallic lever, preferably rectangular in cross-section and rounded and threaded at one end, as indicated at 27, and at its other end provided with a perforation 28, through which passes the shaft 24. Fixed on the threaded end of each latch-lever 26 is a latch-head 29, consisting of a flat plate having one straight edge or face 30, beveled or inclined at approximately an angle of forty-five degrees to the longitudinal axis of the latch and having a reversely inclined or beveled face 31 on its opposite edge. Said head is provided with a cylindrical or tubular and internally-threaded shank or socket 32, which is screwed onto the threaded end 27 of the latch-lever, a jam-nut 33 being screwed on said threaded end of the latch-lever in rear of the latch-head and adapted to be screwed up against the end of the threaded shank thereof to prevent the latch-head from turning. The engaging face 34 of the latch-head instead of being formed at a right angle to the longitudinal axis of the latch is beveled or inclined slightly, as shown and for the purpose hereinafter made apparent. As before stated, a number of latches are arranged in each chamber 21, five such latches in the present instance being provided for each chamber. The free ends of the latches project through the slots 23 in the partitions 20, and pivoted to each of the latch-levers intermediate their free or headed ends and their fulcrums are rods 35. Each rod at its upper end is forked, as at 36, and straddles or loosely embraces a corresponding latch-lever, to which it is pivotally connected by a pivot-pin 37. The lower ends of said rods project through the botom of the drawer and have screwed thereon keys or buttons 38. As shown most clearly in Fig. 3, the forward under side of the drawer is provided with a transverse recess 39, in which the keys are disposed, vertical partitions 40 being arranged in said recess between the groups of keys, as shown in Fig. 8. Arranged on each rod 35, between the top of the recess 39 and the keys 38, are coiled springs 41, which operate to depress said rods and the free ends of the latches, and fixed on each of said rods is a collar 42, which is adapted to rest on the top of the recess 39 and limit the downward movement of the rods and latches. The collars 42 are not absolutely essential, as the lower wall of the slots 23 can be caused to serve as stops for limiting the downward movement of the latches; but the collars are preferred for the purpose as being more accurate. When a cover 5 is open, the heads of the latches lie in the same horizontal plane as the slot 22 of the keeper 6, and when said cover is closed the lower wall 43 of said slot engages the lower beveled edges 30 of the latches and lift the latter, so that the latch-heads will pass through the slot 22, and when the cover is completely closed the latch-heads will be drawn behind the keeper by the springs 41 and will lock the cover in its closed position. In practice certain of the latch-heads will be turned so that their inclined portions 30 and 34 will project vertically downward, while the other latch-heads will be turned to reverse position—that is to say, so that their laterally projecting or inclined portions 30 and 34 will project ver-

tically upward. For example, let it be assumed that three of the latch-heads, corresponding to the keys lettered *a*, *c*, and *e* in Fig. 8, be turned so as to project downward and the two latch-heads corresponding to the keys lettered *b* and *d* be turned so as to project upward, the latches controlled by the keys *a*, *c*, and *e* will then be "active" latches and those controlled by the keys *b* and *d* will be "detector-latches," as will now be explained. Normally the latches are held slightly depressed below the horizontal by the springs 41, as shown in Figs. 3 and 4, and the latches which are turned downward will then project below the lower wall 43 of the slot in the keeper and will hold the cover locked, so that it cannot be slid back to uncover the compartment. The latches that are turned upward, however, will lie wholly opposite the slot 22, as shown in Fig. 4, so that if the cover could be moved backward said upturned latches would offer no obstruction to such movement of the cover. Any one then knowing the combination or the manner in which the latch-heads are turned has merely to place three fingers of the hand against the keys *a*, *c*, and *e* and press the latter upward, thereby raising the corresponding downward-turned latches to a substantially horizontal position, as shown in Fig. 5, whereby the downwardly-projecting portions of said latches will be lifted from behind that portion of the keeper lying below the slot 22 and all the latch-heads will lie wholly opposite the slot. The moment this occurs the spring 11 will instantly expand and thrust back the cover thus released into the cash-register casing, access to the keys being obviously had only when the drawer is open. Should one, however, who is not acquainted with the combination, attempt to operate the keys, he would almost infallibly lift one of the keys corresponding to the upturned latch-heads, and the moment this occurs, even if by accident he had struck the proper keys forming the combination, and thus lifted the active latches out of engagement with the keeper, such upturned latch-head would be raised up behind the keeper so as to engage the latter above the slot 22, thereby effectually locking the cover against movement, as clearly shown in Fig. 6. In order then to actuate the permutation locking mechanism to release and open the cover the party seeking to do so must raise the proper keys forming the combination to lift all the active latches and use care not to raise one of the detector-keys—a manipulation that could not be performed unless the party is fully acquainted with the combination on which the latches are set. The latch-heads may be turned to project either upward or downward, as desired, by giving them a half-revolution on the threaded ends 27 of their latch-levers, and are securely held in their adjusted positions by screwing up the jam-nuts 33 tightly against the ends of the shanks 32. Hence the combination on which any of the groups of latches is set may be quickly changed. It will of course be evident that any one or any number of the latch-heads may be adjusted to form active latches or detector-latches, and by employing five latches in each group it is possible to set the latches on a large number of different combinations. In order that the latch-levers may be properly spaced apart, so that the keys 38 will not interfere with one another, I place a sleeve or washer 44 on the shaft 37 between each two adjacent latch-levers and between the two outermost of said levers and the partitions 4, the outermost sleeves being held in place by set-screws 45. A stationary detachable cover 46 is preferably fitted over all the chambers 21.

When any one of the keys of the cash-register is depressed and the drawer is opened, all the covers of the compartments remain locked, so that only authorized parties can gain access to any one of the compartments, and even then a salesman or employee can only gain access to his own individual compartment, as he is unacquainted with the combinations of the other compartments.

In Figs. 9 to 13 is shown a modified construction in which a hinged cover is employed instead of a sliding cover, as above described. Referring to said figures of drawings, the numeral 2 indicates the drawer, 16 the coin-tray, and 15 the battens or cleats on which the tray is supported. Arranged in the rear portion of the drawer 2 is a rearwardly-inclined transverse partition 47, which forms the back or rear wall of all the compartments, each of which latter is closed by an independent hinged cover 48, pivoted at its rear end to the upper edge of the partition 47 and extending to the front wall of the drawer. Each cover 48 is provided at its rear end with a hollow extension 49, filled with shot, mercury, or other heavy material, which may be conveniently introduced into the hollow extension through an aperture 50, formed in the upper side of the extension, after which the aperture may be closed by a suitable plug. It will of course be manifest that the well-known equivalent—a spring—may be substituted for the weight. When the drawer is open and the cover is released, the weighted extension will operate to automatically raise the cover 48 to a vertical position, as indicated by dotted lines in Fig. 9, and uncover the compartment. A pad or cushion 51, of rubber or other suitable elastic material, is attached to the under side of the weighted extension of each cover, so that when the latter is swung up into a vertical position by the weight said pad or cushion will strike the inclined partition 47 and yieldingly arrest the upward movement of the cover and prevent the latter from striking the cash-register casing.

Attached to the under side of the forward end of each cover 48 is a keeper 52, consisting of a metallic plate bent in substantially

inverted-U shape to form two depending flanges 53 and 54, respectively, provided with horizontal rectangular slots 55 and 56. Fixed transversely in each chamber 21, formed in the forward end of each compartment, is a shaft or rod 57, said rod or shaft being arranged directly beneath the keeper, assuming the cover to be closed, or instead of fixing a separate shaft in each compartment a single shaft may extend through all the compartments. Arranged in each chamber 21 is a group of bell-crank levers journaled at their angles, as at 58, on the shaft 57, sleeves or tubular washers 59 being arranged on the shaft between the bell-crank levers and adjacent to the outer levers, the latter being fixed on the shaft by set-screws 60. The bell-crank levers constitute latch-levers, and the vertical members 61 thereof are constructed in the same manner as the latch-levers 26 before described and are also provided with reversible latch-heads 62, constructed and fixed on the arms 61 in precisely the same manner as the latch-heads 29, each latch-head having the inclined faces 30, 31, and 34, before described. To the ends of the horizontal members 62 are pivotally connected the upper ends of rods 63, the lower ends of which pass through the bottom of the drawer and have screwed thereon keys 64, said keys being disposed in the recess 39, formed in the bottom of the drawer. Between the top of the recess and said keys 64 coiled springs 65 are arranged on the rods 63 and operate to depress the latter, collars 66 being fixed on the rods and adapted to bear against the top of the recess and limit the downward movement of said rods, the construction and arrangement being identically the same as that before described.

When the proper keys 64 of any group of latches which form the combination on which the locking mechanism is set are struck or raised, the bell-crank levers connected to said keys will be oscillated on their shaft and the active latches carried by said bell-crank levers will be withdrawn from the slot 56 in the flange 53 of the keeper and said detector-latches will lie wholly between the flanges 53 and 54 and out of engagement with both of them. The moment this occurs the weighted extension 49 of the cover 48 thus released will be swung down, tilting the cover up to a vertical position, as shown by dotted lines in Fig. 9, and thus uncovering the compartment.

With a view to causing the keepers to engage and lock with the latches with certainty a leaf-spring 67 is attached to the upper forward end of each cover 48 and projects slightly above the upper surface of the latter, whereby when the drawer is pushed back into the register-casing said springs exert a downward pressure on the outer ends of the covers and force the keepers with a spring-pressure against the latch-heads, insuring the covers locking with the latches.

In both the forms of locking mechanisms herein described the latch-heads are shown as being provided on their inoperative edges with inclined faces 31, which are inclined in reverse directions to the inclined faces 30, the purpose being to avoid the liability of the keepers as the lids approach their closed positions from striking against or engaging the ends of the detector-latches. The engaging or locking edges 34 of the latch-heads are also shown as being slightly inclined, the purpose being to permit said edges to freely swing into engagement with the keepers and to engage the latter squarely.

We have shown a novel, simple, and effective permutation-lock for locking the compartments; but we wish to be understood as not limiting ourselves to such means for independently locking the covers to the compartments, as other locking means may manifestly be employed for the purpose. We also wish it to be understood that we do not confine our invention to cash-register drawers, as the same may be applied to tills, money-drawers, and trays or receptacles of various different descriptions.

Having described our invention, what we claim is—

1. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for independently locking all of said covers as long as said drawer remains closed, and means for independently releasing said covers after the drawer has been opened, substantially as described.

2. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for separately locking all of said covers independently of the movement of the drawer, and means operative only when the drawer is open for independently releasing said covers, substantially as described.

3. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for separately locking all of said covers, means for independently releasing said covers after the drawer has been opened, and means for automatically opening said covers when they are released, substantially as described.

4. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for separately locking all of said covers, and means for separately releasing any number of said covers after the drawer has been opened, substantially as described.

5. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for separately locking all of said covers, means for independently releasing said covers after the drawer has been opened, and means for preventing access to the releasing

mechanism while the drawer is closed, substantially as described.

6. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, independent permutation-locks for separately locking said covers, and means for preventing access to said locks until the drawer is opened, substantially as described.

7. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, independent permutation-locks set on different combinations for separately locking said covers, and means for preventing access to said locks until the drawer is opened, substantially as described.

8. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, independent permutation-locks set on different combinations for separately locking said covers, means for locking the locks when the drawer is closed, and means for preventing access to said locks until the drawer is opened, substantially as described.

9. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, independent permutation-locks set on different combinations for separately locking said covers, means for preventing access to said locks until the drawer is opened, and means for closing and locking said covers when the drawer is closed, substantially as described.

10. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for separately locking all of said covers, means for releasing any one of said covers after the drawer has been opened, means for automatically opening the covers when they are released, and means for closing the covers when the drawer is closed, substantially as described.

11. The combination with a drawer provided with a plurality of separate compartments, of independent covers for said compartments, means for independently locking all of said covers, means for releasing any of said covers after the drawer has been opened, means for automatically opening the covers when they are released, means for automatically closing the covers when the drawer is closed, and means for preventing access to said releasing mechanism when the drawer is closed, substantially as described.

12. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments, means for independently locking all of said covers, and means for releasing any of said covers after the drawer has been opened, substantially as described.

13. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments, means for independently locking all of said covers, means for releasing any of said covers after the drawer has been opened, and means for automatically sliding the covers from off the compartments when said covers are released, substantially as described.

14. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments, means for independently locking all of said covers, means for releasing any of said covers after the drawer has been opened, means for automatically sliding the covers from off the compartments when said covers are released, and means for preventing access to the releasing mechanism until the drawer is opened, substantially as described.

15. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments, means for independently locking all of said covers, means for releasing any of said covers after the drawer has been opened, and springs arranged to draw the covers from off the compartments when said covers are released, substantially as described.

16. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments, means for independently locking all of said covers, means for releasing any of said covers after the drawer has been opened, springs arranged to draw the covers from off the compartments when said covers are released, and means for compressing the springs when the drawer is closed, substantially as described.

17. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments, means for independently locking all of said covers, means for releasing any of said covers after the drawer has been opened, springs arranged to draw the covers from off the compartments when said covers are released, and means for yieldingly arresting the movement of the covers when the latter are retracted from over the compartments, substantially as described.

18. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments each having depending flanges at their opposite ends, longitudinal rods passing through said flanges and on which said covers are arranged to travel, springs interposed between the rear of the drawer and the rear flanges of the covers and operating to retract the covers when the latter are released, means for independently locking said covers, and means for releasing any of the covers after the drawer has been opened, substantially as described.

19. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said

compartments each having depending flanges at their opposite ends, longitudinal rods passing through said flanges and on which the covers are arranged to slide, springs interposed between the rear of the drawer and the rear flanges of the covers and operating to retract the covers when the latter are released, fixed stops arranged to arrest the movement of the covers when the latter are retracted, means for independently locking said covers, and means for releasing any of the covers after the drawer has been operated substantially as described.

20. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments each having depending flanges at their opposite ends, longitudinal tubes passing through said flanges and fixed in the opposite ends of the drawer, stationary rods fixed at their rear ends in rear of the drawer and telescoping at their forward ends in said tubes, means for independently locking the covers, means for releasing any of the covers after the drawer has been opened, and springs arranged to retract the sliding covers from over the compartments when said covers are released, substantially as described.

21. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments each having a depending slotted flange, latches carried by the drawer for engaging said slotted flanges and holding the covers closed, and means for independently releasing said latches at will after the drawer has been opened, substantially as described.

22. The combination with a drawer provided with a plurality of separate compartments, of independent sliding covers for said compartments each having depending slotted flanges, latches carried by the drawer arranged to automatically engage said slotted flanges and lock the covers when the drawer is closed, means for independently releasing said catches at will after the drawer has been opened, and means for automatically retracting said covers from over the compartments when the covers are released, substantially as described.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CORNELIUS S. CLARK.
JOSIAH T. JONES.

Witnesses:
GEO. W. DEY,
GEO. P. DYSON.