Jan. 3, 1928. 1,654,834

G. S. RIDER

CHECK DISPENSING MACHINE

Filed Jan. 30, 1926 4 Sheets-Sheet 1

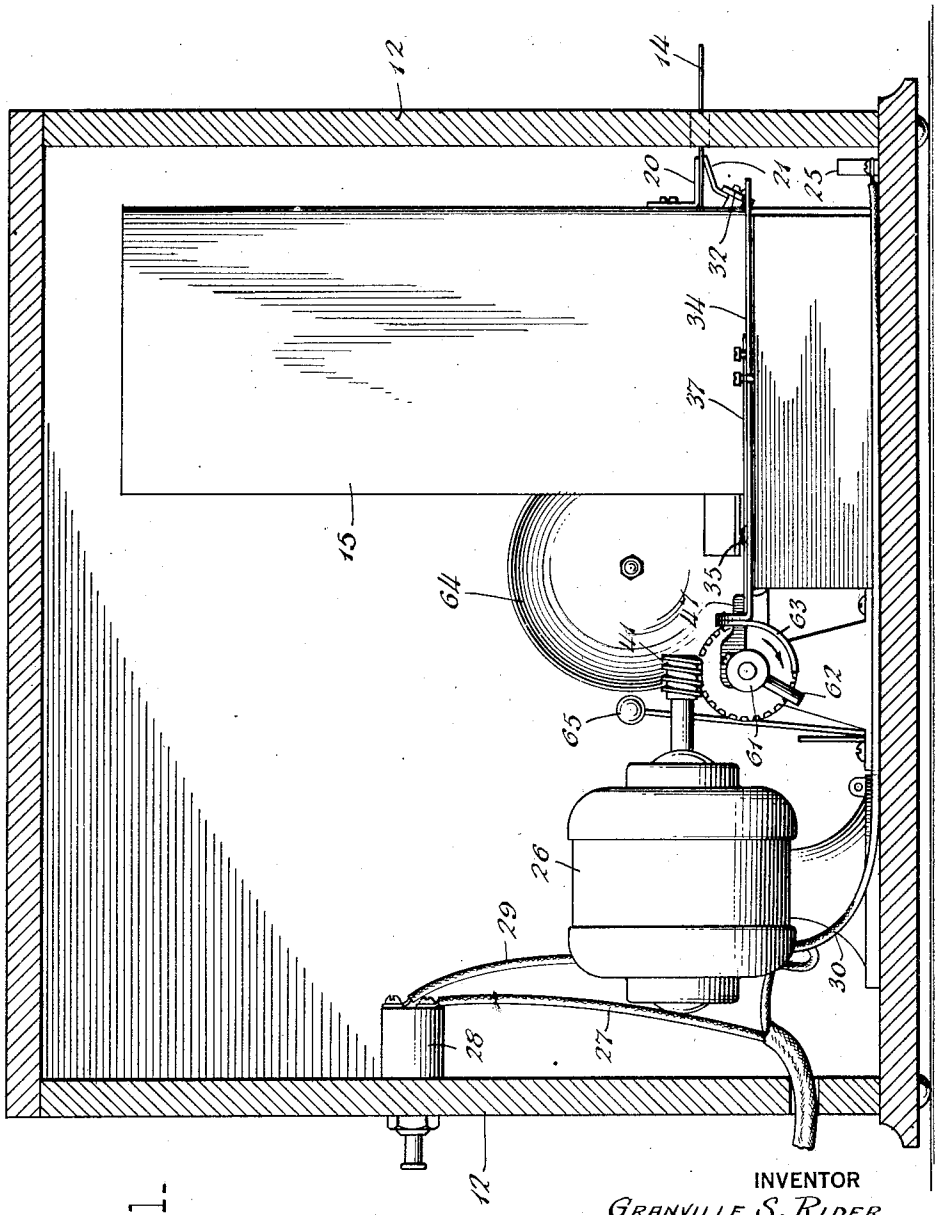


Fig. 1.

INVENTOR
GRANVILLE S. RIDER
BY Richards & Geier
ATTORNEYS

Jan. 3, 1928. 1,654,834

G. S. RIDER

CHECK DISPENSING MACHINE

Filed Jan. 30, 1926 4 Sheets-Sheet 2

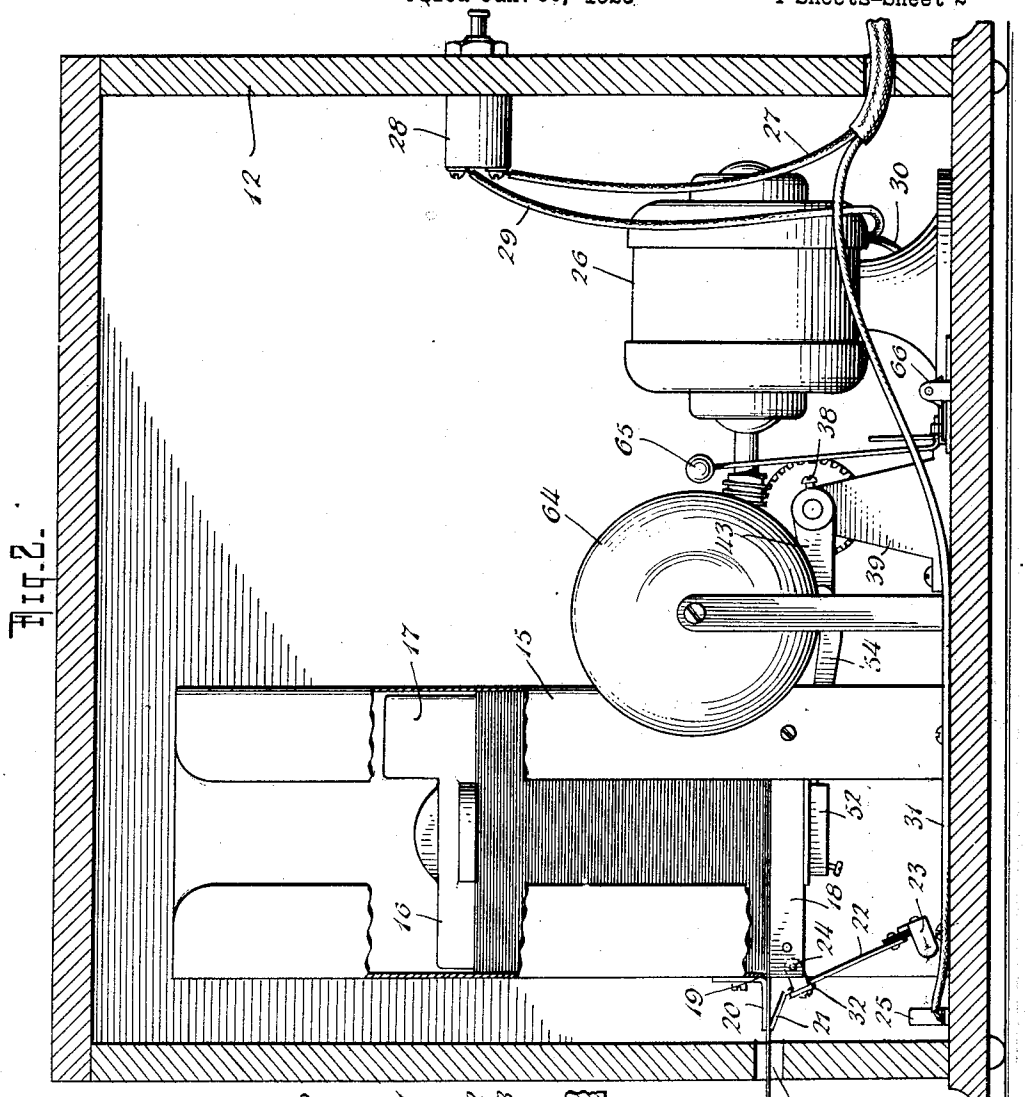


Fig. 2.

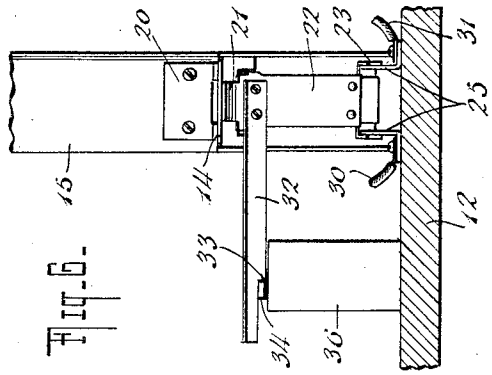


Fig. 6.

INVENTOR
GRANVILLE S. RIDER
BY Richards & Geier
ATTORNEYS

Jan. 3, 1928. 1,654,834

G. S. RIDER

CHECK DISPENSING MACHINE

Filed Jan. 30, 1926 4 Sheets-Sheet 3

FIG. 3.

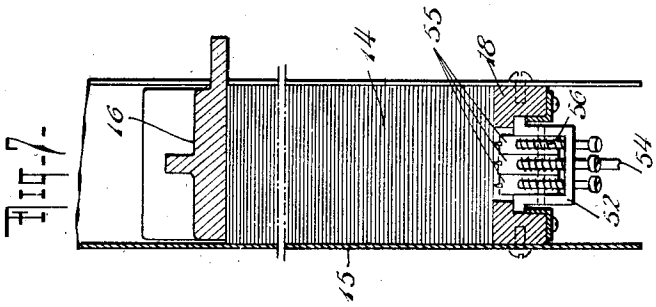
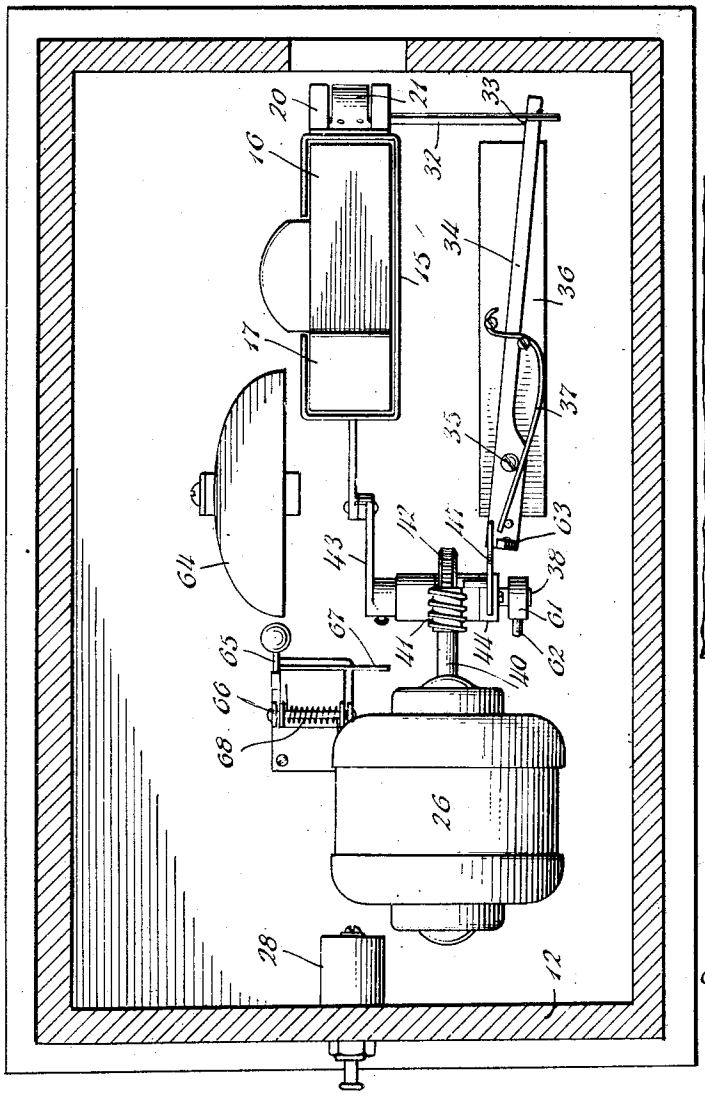


FIG. 1.



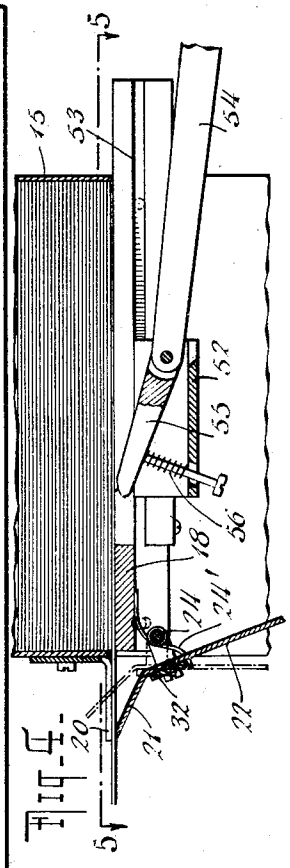


FIG. 2.

INVENTOR
GRANVILLE S. RIDER
BY Richards & Geier
ATTORNEYS

Jan. 3, 1928. 1,654,834

G. S. RIDER

CHECK DISPENSING MACHINE

Filed Jan. 30, 1926 4 Sheets-Sheet 4

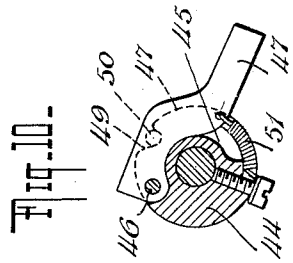


Fig. 10.

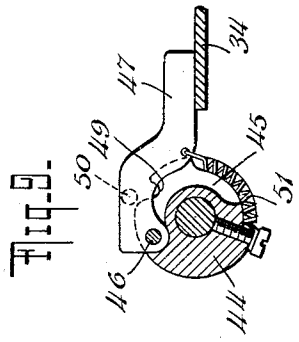


Fig. 9.

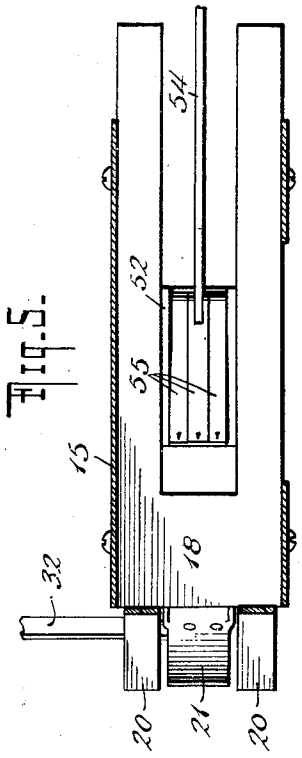


Fig. 5.

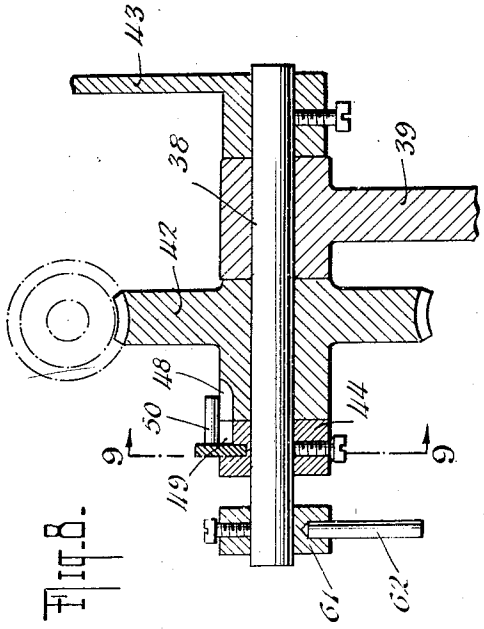


Fig. 8.

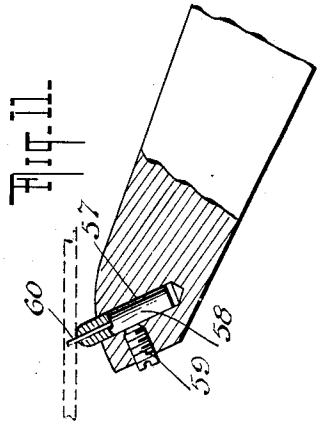


Fig. 11.

INVENTOR
GRANVILLE S. RIDER
BY Richards & Geier
ATTORNEYS

Patented Jan. 3, 1928. 1,654,834

UNITED STATES PATENT OFFICE.

GRANVILLE S. RIDER, OF NEW YORK, N. Y., ASSIGNOR TO LOCK-STUB CHECK COMPANY, INCORPORATED, OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

CHECK-DISPENSING MACHINE.

Application filed January 30, 1926. Serial No. 84,844.

This invention relates to improvements in check dispensing machines, and has particular reference to a machine of the type disclosed in my co-pending application, Serial No. 24905, filed April 21, 1925.

Briefly, in the machine of said application an ejecting mechanism is controlled by the withdrawal of a partially ejected check from the machine to cause the partial ejection of another check therefrom. In thus controlling the ejecting mechanism, use is made of a magnetically governed and motor-driven clutch device with the electro-magnet thereof included in a circuit having a switch therein, the contacts of which are under the control of the checks being partially ejected and withdrawn from the machine.

With a machine constructed in accordance with the present invention, it has been found that a more positive operation of the check ejecting mechanism may be obtained by the substitution of a mechanical control for the clutch in lieu of the electro-magnetic device above referred to, and that by the use of such a control the electrical contacts of the switch device may be arranged at such a distance from the checks being ejected that said checks will be unaffected by any sparking of said contacts.

The invention further provides an improvided construction for the check ejecting mechanism which will be effective in causing the partial ejection of only the lowermost check of the stack each time said mechanism is operated.

The inventive idea involved is capable of receiving a variety of mechanical expressions, one of which is shown in the accompanying drawings; but it is to be expressly understood that said drawings are used merely for the purpose of facilitating the description of the invention as a whole and not to define the limits thereof, reference being had to the appended claims for this purpose.

In the drawings—

Figure 1 is a side elevation of the machine, the casing therefor being shown in section;

Figure 2 is a similar view looking from the opposite side of the machine;

Figure 3 is a top plan view of the interior mechanism;

Figure 4 is a longitudinal section through the ejecting mechanism;

Figure 5 is a plan view thereof taken on the line 5—5 of Figure 4;

Figure 6 is a front elevation of the check-controlled switch device utilized in connection with the ejecting mechanism;

Figure 7 is a transverse sectional view through the check magazine and ejecting mechanism;

Figure 8 is a sectional view of the clutch device utilized for coupling the driving motor to the ejecting mechanism;

Figure 9 is a section substantially on the line 9—9 of Figure 8, illustrating the clutch device in its inoperative position;

Figure 10 is a similar view illustrating the clutch device in operation; and

Figure 11 is a detail view, partly in section, of one of the check propelling arms and the means utilized in connection therewith for engaging the check.

The machine is preferably enclosed within a cabinet 12 having an opening 13 in its front wall through which a partially ejected check 14 protrudes prior to its complete withdrawal from the machine.

The bottom of the casing supports, adjacent the front wall, a check-containing magazine 15 in which a stack of the checks 14 is disposed with a weight 16 resting upon the top of the stack and provided at one end with an enlargement 17 so as to exert more pressure upon the rear ends of the checks for a purpose which will later appear. The stack of checks rests upon a platform 18 secured in position between the walls of the magazine in any preferred manner such as, for instance, that shown and described in said co-pending application, and the front wall of said magazine is provided with an opening 19 adjacent the forward end of said platform through which the lowermost check in the stack may be ejected to the position shown in Figure 1 by the ejecting mechanism presently to be described.

When a check is partially ejected the forward portion thereof, after passing through the opening 19 in the magazine, engages between the upper and lower guides 20 and 21, the former of which is bifurcated at its free end and secured to the front of the magazine, while the latter forms the upper end of a switch device 22, the lower end of which terminates in the spaced electrical contacts 23. This switch device is pivoted to the forward end of the platform 18, as indicated at 24. The partially ejected check exerts a downward pressure upon the lower

guide 21 to normally retain the contacts 23 out of engagement wih the associated stationary contacts 25 secured to the base of the casing 12. However, when the check is completely withdrawn from the machine the lower end of the switch device will swing forwardly about its pivot under the influence of the spring 24' with the lower guide 21 entering the bifurcation of the upper guide 20. This forward movement continues until the contacts 23 and 25 are engaged, thereby closing a circuit for a source of power such as the electric motor 26 secured to the base of the casing adjacent the rear thereof. This circuit extends from one terminal of a suitable source through the conductor 27 to a terminal of a switch device, conventionally shown at 28, mounted upon the back of the casing and utilized as an auxiliary control for the circuit. From the other terminal of said switch device there extends a conductor 29 secured to the motor 26. From thence the circuit extends through a conductor 30 connected to one of the contacts 25. The other of the latter contacts is joined to the other terminal of said source of current by means of the conductor 31 thereby completing the circuit for the motor when the contacts 23 and 25 are engaged. The motor is thus operated to cause one complete operation of the ejecting mechanism which effects the partial ejection of the lowermost check in the stack to the position shown in the drawings and as soon as the forward end of the check being ejected passes between the guides 20 and 21 the switch device 22 is restored to its normal position by reason of the pressure of the check upon the lower guide 21 thus disengaging the contacts 23 and 25 to open the circuit for the motor which then continues to run for a short interval under its own impetus.

The withdrawal of the check from the machine, as previously described, and the consequent movement of the switch device about its pivot to engage the contacts 23 and 25 is utilized to control the coupling of the motor 26 with the ejecting mechanism so that the latter will be operated to eject a check. To this end, the switch 22 carries adjacent its upper end a laterally extending arm 32, the free end of which is reduced to form a shoulder 33 adapted to be engaged by one end of a latching device 34 pivoted at 35 upon a suitable block 36 secured to the bottom of the casing, said device being retained in its normal or latching position by said arm until such time when the latter is lifted slightly upon the forward movement of the switch 22. This lifting movement will disengage the shoulder 33 from the latching device and permit the same to be swung about its pivot, under the influence of the spring 37, to a releasing position. The latching device is utilized to control the operation of a clutch which, in turn, controls the coupling or connection of the motor-driven means with the ejecting mechanism. This driven means, which is normally inoperative and rendered effective by the clutch device, consists of a shaft 38 journaled in a suitable bearing 39 supported upon the base of the casing and adapted to be connected to the shaft 40 of the motor through the intermediary of a worm gear 41 carried by the latter shaft and meshing with a gear 42 normally loose upon the shaft 38. When the latter gear is coupled to the shaft 38 by the clutch previously referred to said shaft is rotated to drive the crank arm 43 secured to the end of the shaft and connected to the ejecting mechanism presently to be described.

The clutch device utilized to couple the shafts 38 and 40 consists of a disk 44 secured to the shaft 38 and provided in its periphery with a recess 45 in one end of which is pivoted at 46 a coupling member 47, the free end of which rests upon the adjacent end of the latch device 34 when the latter is in its normal position so as to prevent the coupling member from becoming effective to operatively connect the shafts 38 and 40. When, however, the latching device is swung about its pivot under the influence of the spring 37 as previously described, the end of said device is withdrawn from engagement with the free end of the coupling member 47. At this time the circuit for the motor 26 has been closed by engagement of the contacts 23 and 25 and rotation will consequently be imparted to the gear 42. This rotation will be relative to the shaft 38 until a recess 48 in the hub of said gear comes into alignment with a recess 49 in the disk 44 and a laterally extending pin 50 carried by the coupling member 47. Then, under the influence of a coil spring 51 connected at one end to the coupling member and at its other end to the disk, said coupling member will be withdrawn into the recess 45, as shown in Figure 10, and thus engage the pin 50 in the aligned recesses 48 and 49. The motor shaft 40 is thereby directly coupled to the shaft 38 and the latter will be caused to rotate and start the operation of the ejecting mechanism.

The slide member 52 of the ejecting mechanism is mounted for reciprocating movement in guide grooves 53 formed in opposite sides of the platform 18 and is connected to the crank arm 43 by means of a pitman 54. Mounted for vertical movement on the pivotal connection of the pitman 54 with the slide member are a plurality of check propelling members 55 each of which is yieldably forced in an upward direction by a coil spring 56. Each member

55 is provided in its forward end with a forwardly inclined recess 57 in which is removably mounted a stylus holder 58 secured in position by means of a set screw 59. Each holder 58 carries a stylus 60, made of tunsgten or any other suitable material, which projects slightly beyond the holder as illustrated in Figure 11, so as to partially penetrate the lowermost check 14 in the magazine and thus assist the same toward its ejected position when the slide is moved forwardly. The slide 52 normally assumes the advanced position as shown in Figures 2 and 4 so that the initial movement of the shaft 38, after its connection to the motor, will result in a rearward movement of the slide member. The forward inclination of the styli and their respective holders is such that during this rearward movement the styli will not penetrate or otherwise affect the lowermost check. As soon as the slide 52 starts forwardly said styli will, however, partially penetrate the lowermost check due to the pressure of the springs 56 on their respective members 55 and the ejection of the lowermost check thereupon starts. The initial forward movement of the slide and consequent penetration of the lowermost check by the styli may have a slight tendency to lift the rear ends of the stack of checks in the magazine, particularly if there are only a few checks therein. It is for the purpose of overcoming this lifting tendency that the weight 16 is provided with the enlargement 17 upon one end thereof. When the forward end of the check being ejected passes between and engages the guides 20 and 21 the switch 22 will be moved to its normal position against the pressure of the spring 24' and the contacts 23 and 25 will be disengaged to open the circuit for the motor 26, the shaft 40 of which, however, continues to rotate for a short interval. Just previous to the restoration of the switch 22, which also results in the return to normal position of the arm 32 associated with the latching device, said device is also restored to its normal position under the influence of a trip 61 in the form of a collar secured to one end of the shaft 38 and having a pin 62 extending radially therefrom. This pin is shown in its normal position in Figure 1 and it will be seen that immediately after the same has completed a half revolution with the shaft 38, at which time the slide 52 of the ejecting mechanism will start forwardly, said pin will engage an arcuate cam 63 secured to the adjacent end of the latch 34. This engagement of the pin with the cam will force the latch to its normal position against the tension of the spring 37 and into the path of movement of the coupling member 47 of the clutch. Immediately upon return of the latch to its normal position the arm 32 is also restored causing the shoulder 33 to again engage the adjacent end of the latch. This re-engagement of the arm 32 and latch 34 takes effect before the pin 62 has become disengaged from the cam 63.

Under the impetus of the shaft 40 of the motor and also the slide of the ejecting mechanism the shaft 38 continues to rotate until the free end of the coupling member 47 strikes the adjacent end of the latch 34. When this occurs further movement of the coupling member is prevented, but the disk 44 continues to rotate thus disengaging the pin 50 from the recesses 48 and 49. The gear 42 is thereby uncoupled from the shaft 38 and the latter immediately stops rotating thus bringing the ejecting mechanism to a stop with the slide 52 thereof in its advanced position and the partially ejected check in position to be withdrawn from the machine. Any continued rotation of the gear 42 under the influence of the shaft 40 of the motor will now be relative to the shaft 38 and the clutch device so that the ejecting mechanism will be unaffected.

The operation of the crank arm 43 of the ejecting mechanism is utilized to operate a signal each time a check is withdrawn from the machine and another check is partially ejected. This signal is preferably in the form of a bell 64 mounted upon the base of the casing and provided with a striker 65 pivoted to a bracket 66 also secured to said base. The striker has a laterally extending arm 67 arranged in the path of movement of the crank arm 43 so that when said parts are engaged the striker will be forced away from the bell 64 against the tension of a spring 68 coiled about the pivot of said striker. When said arms 43 and 67 are disengaged by reason of the continued rotation of the arm 43 the spring 68 will swing the striker forwardly and into contact with the bell thus sounding the same.

What is claimed is:

1. In a check dispensing machine, a check-containing magazine, an ejecting mechanism operable upon each actuation thereof to partially eject a check from the machine, operating means for said mechanism normally disconnected therefrom, means for coupling said operating means to said mechanism and uncoupling the same therefrom upon each withdrawal from the machine of a partially ejected check, a latching device normally retaining said coupling means disconnected from said operating means, means contacting said latching device and disengaged therefrom upon withdrawal of a check to release said device and thereby permit said coupling and operating means to be connected, and a trip device actuated by the operation of said operating means to restore said latching device to its normal position and

thereby prevent more than one operation of said ejecting mechanism at a time.

2. In a check dispensing machine, a check ejecting mechanism operable to partially eject a check from the machine, operating means for said mechanism, means for connecting said operating means to said ejecting mechanism, a latching device for said connecting means normally retaining the same inactive, means normally engaged with said latching device and disengaged therefrom by the withdrawal of a check to release said device and thereby render effective said connecting means, and a trip device actuated by the operation of said operating means to restore said latching device to its normal position and thereby prevent more than one operation of said ejecting mechanism at a time.

3. In a check dispensing machine, a check ejecting mechanism operable to partially eject a check from the machine, operating means for said mechanism, means for connecting said operating means to said ejecting mechanism, a latching device for said connecting means normally retaining the same inactive, a switch, operable upon withdrawal of a check from the machine, for rendering effective said operating means, and an arm carried by said switch and engageable with said latching device to retain the same in normal position, said arm being actuated by the operation of said switch to release said device and thereby permit said connecting means to operate.

4. In a check dispensing machine, a check ejecting mechanism operable to partially eject a check from the machine, operating means for said mechanism, means for connecting said operating means to said ejecting mechanism, a latching device for said connecting means normally retaining the same inactive, a switch, operable upon withdrawal of a check from the machine, for rendering effective said operating means, an arm carried by said switch and engageable with said latching device to retain the same in normal position, said arm being actuated by the operation of said switch to release said device and thereby permit said connecting means to operate, and a trip driven by said operating means to engage said latching device and thereby restore the latter to normal position to prevent more than one operation of said ejecting mechanism.

5. In a check dispensing machine, a check-containing magazine, an ejecting mechanism operable upon each actuation thereof to partially eject a check from the machine, a shaft for driving said mechanism, a motor for operating said shaft normally disconnected therefrom, a clutch device for coupling said motor to said shaft and uncoupling the same therefrom upon each withdrawal from the machine of a partially ejected check, a latching device normally retaining said clutch device in inoperative position, an arm contacting said latching device when a check is in partially ejected position and disengaged therefrom upon withdrawal of a check to release said latching device and thereby permit said clutch device and motor to be connected, and means controlled by said shaft for restoring said latching device to its normal position to prevent more than one operation of said ejecting mechanism at a time.

6. In a check dispensing machine, a check-containing magazine, an ejecting mechanism operable upon each actuation thereof to partially eject a check from the machine, a shaft for driving said mechanism, a motor for operating said shaft normally disconnected therefrom, a clutch device for coupling said motor to said shaft and uncoupling the same therefrom upon each withdrawal from the machine of a partially ejected check, a latching device normally retaining said clutch device in inoperative position, an arm contacting said latching device and disengaged therefrom upon withdrawal of a check to release said latching device and thereby permit said clutch device and motor to be connected, and a trip device carried by said shaft and actuated thereby to restore said latching device to its normal position and thereby prevent more than one operation of said ejecting mechanism at a time.

7. In a check dispensing machine, a check ejecting mechanism operable to partially eject a check from the machine, a motor for operating said mechanism, a clutch device for connecting said motor to said ejecting mechanism, a latching device for said clutch normally retaining the same inactive, a switch operable upon withdrawal of a check from the machine for rendering said motor effective, and an arm carried by said switch and engageable with said latching device to retain the same in normal position, said arm being actuated by the operation of said switch to release said device and thereby permit said clutch device to operate.

In testimony whereof I have affixed my signature.

GRANVILLE S. RIDER.