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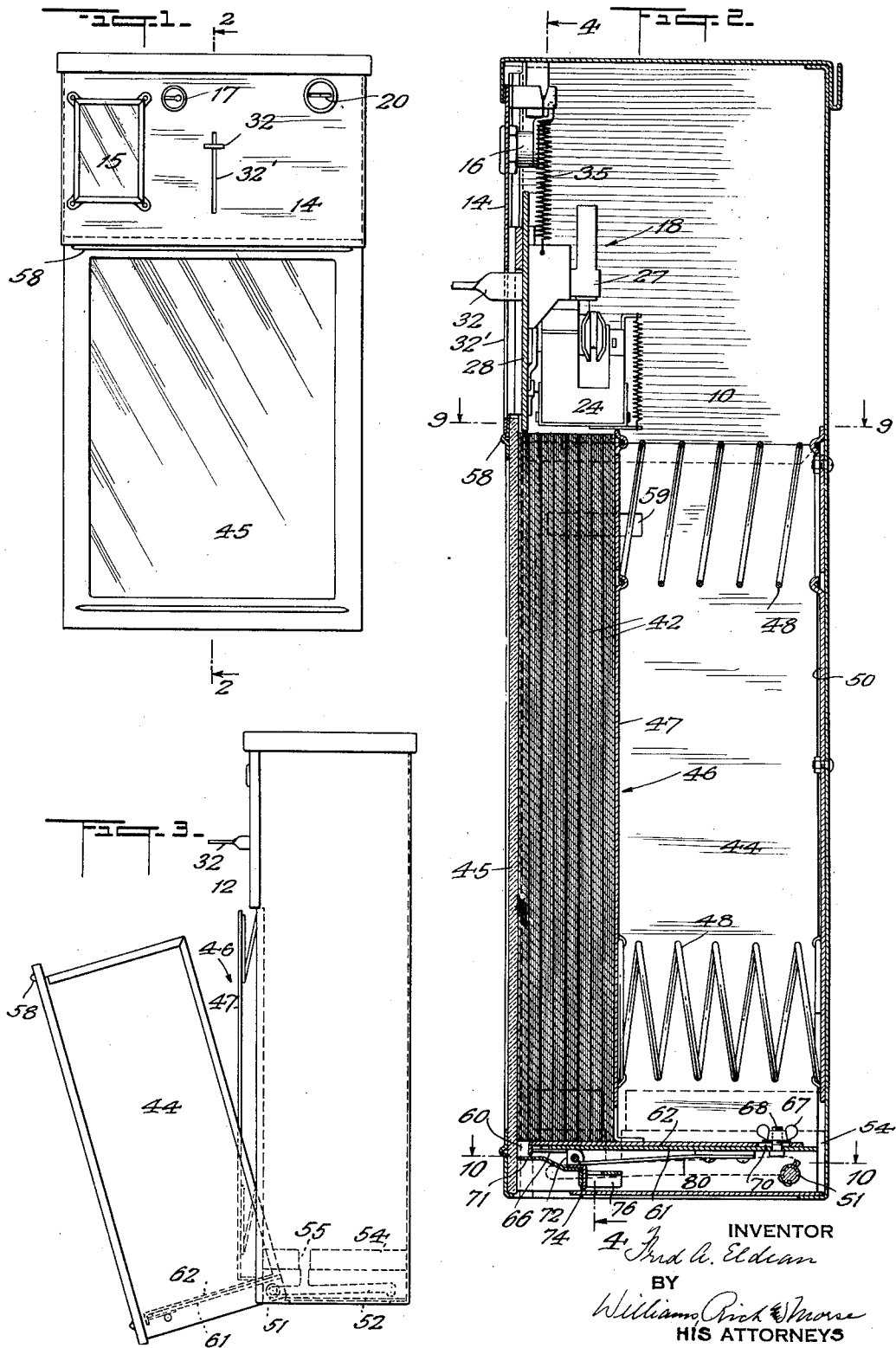
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MAGAZINE VENDING MACHINE

Filed March 18, 1932

3 Sheets-Sheet 1



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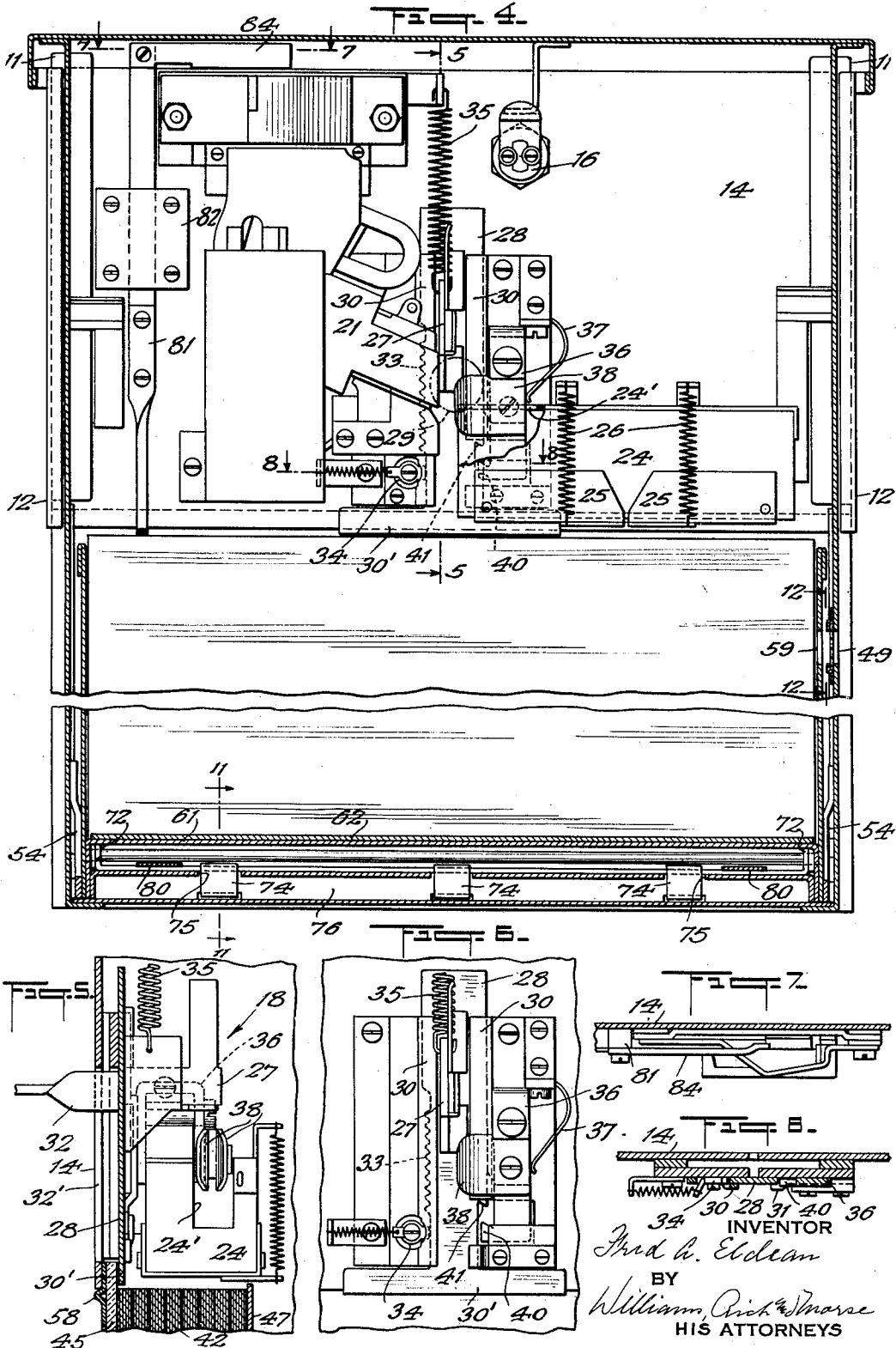
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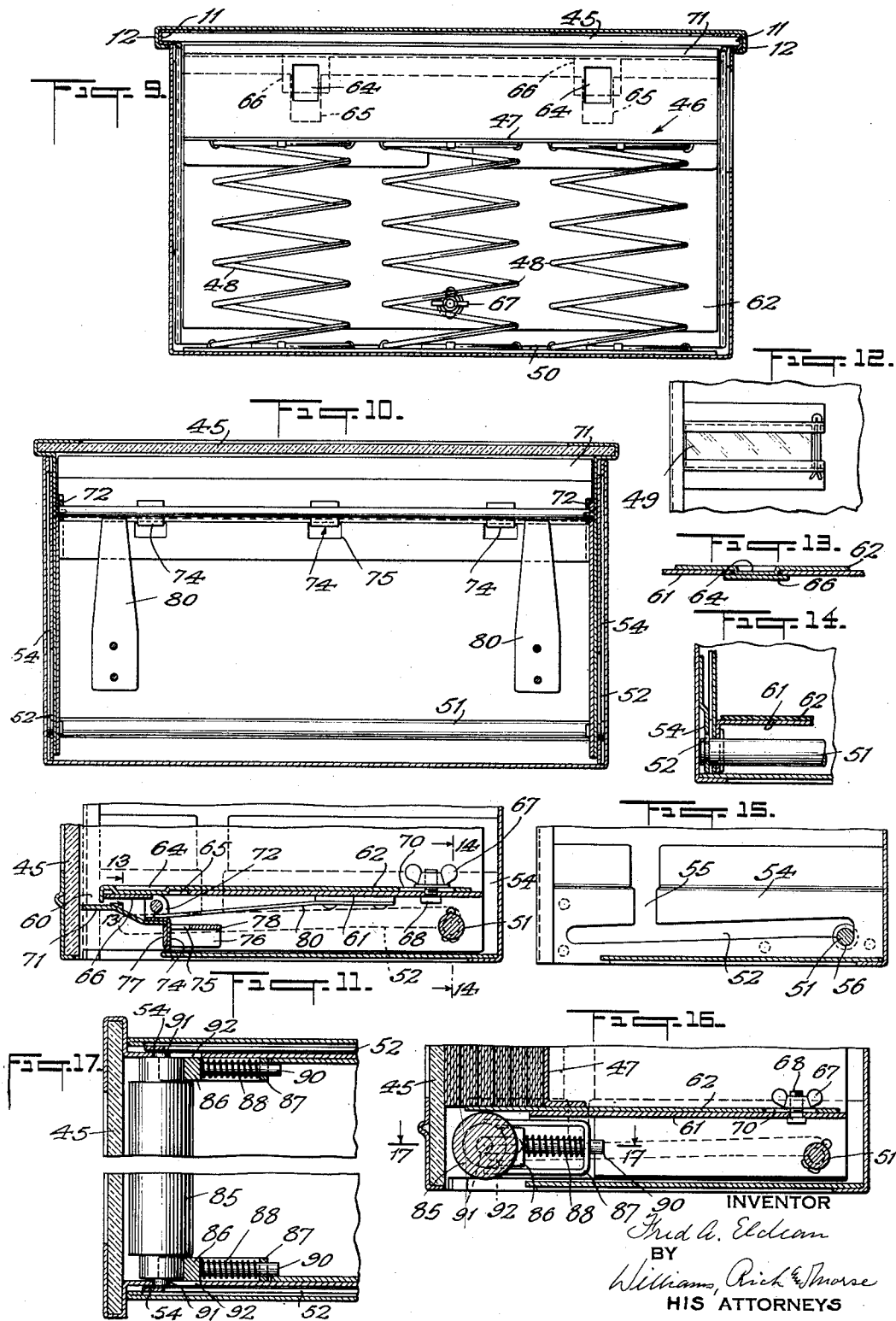
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UNITED STATES PATENT OFFICE

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MAGAZINE VENDING MACHINE

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5 Claims. (Cl. 312—56)

This invention relates to magazine vending machines of the manually-operated coin-controlled type.

An object of the invention is to provide an improved machine of the character mentioned which is simple in construction, inexpensive to manufacture, reliable in operation and which offers certain advantages from a servicing or maintenance standpoint as will hereinafter clearly appear.

To the above ends, the invention contemplates a housing adapted for the reception of a magazine receptacle, which is so connected to the housing as to permit it to be easily withdrawn therefrom to a sufficient extent to enable it to be tilted at such an angle as will permit the magazines to be readily introduced into the receptacle, after which such receptacle is slid back into the housing where the magazines are so held, under the influence of a pressure device, as to permit them to be ejected one by one, through a suitable opening in the bottom of the magazine receptacle, by a manually-operated coin-controlled ejector mechanism carried by a vertically slidable retaining plate, which forms a part of the housing and is adapted to so cooperate with the front wall of the magazine receptacle as to retain such receptacle against undue displacement within the housing and which is provided with a lock, whereby the retaining plate may be held in a cooperative relation to the front wall of the magazine receptacle to prevent one from obtaining unauthorized access to the money receptacle of the coin-controlled ejector mechanism and to the contents of the magazine receptacle.

In the drawings—

Fig. 1 is a front view of a vending machine embodying the invention;

Fig. 2 is an enlarged vertical sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a side view of the machine with the magazine receptacle withdrawn to filling position;

Fig. 4 is an enlarged fragmental view taken on line 4—4 of Fig. 2 and showing particularly the coin-control mechanism;

Fig. 5 is a fragmental sectional view taken on line 5—5 of Fig. 4;

Fig. 6 is a fragmental view showing in front elevation the coin-controlled releasing device for the magazine ejecting plunger;

Fig. 7 is a horizontal sectional view taken on line 7—7 of Fig. 4;

Fig. 8 is a horizontal sectional view taken on line 8—8 of Fig. 4;

Fig. 9 is a horizontal sectional view taken on line 9—9 of Fig. 2;

Fig. 10 is a horizontal sectional view taken on line 10—10 of Fig. 2;

Fig. 11 is a vertical sectional view taken on line 11—11 of Fig. 4 and showing in detail an adjustable slide for varying the width of the opening through which the magazines are successively ejected and showing in detail a closure for such opening;

Fig. 12 is a fragmental view showing means for mounting a glass window in one side wall of the housing through which an observation may be made to determine the number of magazines remaining in the magazine receptacle;

Fig. 13 is a vertical sectional view taken on line 13—13 of Fig. 11 and showing means by which the adjustable slide, for varying the width of the opening through which the magazines are ejected, may be slidably connected to the bottom wall of the magazine receptacle;

Fig. 14 is a vertical sectional view taken on line 14—14 of Fig. 11 and showing in detail means by which the magazine receptacle is slidably and pivotally connected to the housing;

Fig. 15 is a view, partly in section and partly in elevation, showing one of the guide plates which are connected, respectively, to opposite sides of the magazine receptacle and form part of the means for slidably and pivotally connecting the magazine receptacle to the housing;

Fig. 16 is a view similar to that of Fig. 11 and showing a modified form of closure for the slot through which the magazines are successively ejected; and

Fig. 17 is a horizontal sectional view taken on line 17—17 of Fig. 16.

The vending machine herein shown as embodying the invention includes a housing 10, the upper portion of the respective side walls of which are provided at their forward margins with outwardly projecting wings or ribs 11 each of which is of a length equal to substantially one-third the height of the housing. These ribs or wings are confined within channel-like portions 12, formed at the opposite side margins of a retaining plate 14, and serve in connection with such channel-like portions to slidably connect the retaining plate to the front of the housing so as to enable it to be moved vertically, as and for the purpose hereinafter more particularly described. The retaining plate may be provided on its outer face with a mirror 15, or it may, as will be readily understood, be provided with advertising or such

other descriptive matter as may be desired. In order that the retaining plate 14 may be secured in its lowermost position, as shown in Figs. 1 and 2, a suitable lock 16 may be provided, which is shown as carried by the retaining plate and as accessible from the front thereof.

Secured to the retaining plate 14 on the inner wall thereof, is a coin-control mechanism 18, to which coins may be supplied by way of a coin slot 20 formed in the retaining plate. This coin-control mechanism is of standard design, and because of such it is deemed unnecessary to describe the same in greater detail than is necessary to set forth its peculiar relation, from a structural and a functional standpoint, to the various other elements entering into the combination embodied in the vending machine herein disclosed. Generally speaking, the coin-control mechanism includes a coin chute 21, into which coins may be introduced by way of the coin slot 20 and from which such coins are deposited in a coin receptacle 24, access to which may be had by way of a pair of normally closed downwardly movable trap doors 25, which are pivotally connected to the coin receptacle and are held closed, as shown in Fig. 4, by tension springs 26. The coins, in passing from the coin chute 21 to the coin receptacle 24, are obstructed in their travel and come to rest, as indicated by the position of the obstructed coin 29 outlined by the dotted line in Fig. 4, in an off-center relation to a downwardly movable coin-engaging finger 27, carried by a vertically movable T-shaped ejector plunger 28 which includes a head portion 30' and is slidably mounted in a pair of guides 30, secured to the retaining plate 14. To the ejector plunger, is secured a handle 32 which projects through a slot 32', formed in the retaining plate 14, and which is provided at one of its vertical side margins with a plurality of teeth 33, adapted to cooperate with a restraining dog 34, of the usual pivoted type, so as to prevent the ejector plunger, once the ejecting operation has been initiated, from returning to its normal position, under the influence of its associated spring 35, until such time as the plunger has been moved to its lowermost position.

The obstructed coin, shown in dotted lines in Fig. 4, in passing from the coin chute 21 to the coin receptacle 24 is temporarily held in a position to be engaged at the left of its vertical center line, as viewed in Fig. 4, by the coin-engaging finger 27, and in this position the coin is supported by reason of the fact that it engages the lower edge of the coin chute and is in contact with the lower end of a pivotally supported release-finger 36, which projects through a slot 24' formed in the upper wall of the coin receptacle 24. This release-finger is held in its normal position, shown in Figs. 4 and 6, by a pressure spring 37 and carries at its lower end a pair of guide wings 38, the outer ends of which diverge so as to insure entrance of the coin therebetween as it assumes its position of rest preparatory to the ejecting operation of the plunger 28. The release-finger 36, as shown most clearly in Fig. 5, is U-shaped and its outer leg, namely, the leg that is located wholly outside of the coin receptacle 24, is provided with a latch 40, Fig. 6, which is adapted to be moved to the right, when the release-finger 36 is moved against the action of the spring 37, the latch being normally positioned in the path of and adapted to engage a shoulder 41, formed in the adjacent vertical margin of the ejector plunger, whereby such plunger is nor-

mally, that is, in the absence of a coin, prevented from moving downwardly except for a relatively short distance. In the presence, however, of a temporarily supported coin, the ejector plunger 23 is free to move in an unobstructed manner, because the initial downward movement of the plunger, such as would be permitted due to the normally spaced relation of the latch 40 to the shoulder 41, is sufficient to cause the coin-engaging finger 27 to engage the coin and force it to the right, as viewed in Fig. 4, thereby swinging the release-finger 36 a sufficient distance about its pivot to cause the latch 40 to move out of the path of the shoulder 41 before that shoulder can engage the latch. As the ejector plunger continues its downward movement, the coin is forced further to the right until sufficient clearance is afforded between the coin-engaging finger 27 and the release-finger 36 to permit the coin to clear or pass the lower end of the release-finger and drop into the coin receptacle 24, by which time the shoulder 41 will have moved well past the latch 40. Upon release of the coin, that is to say the instant the coin moves past the lower end of the release-finger 36, the spring 37 tends to return the latch to its normal position, but the latch cannot then assume its normal position, because of its engagement with the side of the ejector plunger above the shoulder 41. Upon return, however, of the ejector plunger 28 to its normal position, the latch 40 is moved under the action of the spring 37 to its position shown in Fig. 6, in which position it serves, in the absence of a coin positioned as indicated by the dotted lines in Fig. 4, to lock the plunger 28 against other than a slight downward movement which is insufficient to effect magazine displacement.

The magazines to be dispensed, of which several are shown in Figs. 2 and 5 and are there indicated by the numeral 42, are supported within a magazine receptacle 44, directly beneath the coin-control mechanism where they may be ejected one by one by the ejector plunger 28. This magazine receptacle includes a pair of side walls and a front wall which includes a glass panel 45, through which the cover page of the front magazine may be viewed and against which the magazines are held in a face-to-face relation by a pressure device 46. This pressure device comprises a pressure plate 47, to which are suitably connected a plurality of compression springs 48, which are connected to a spring-retaining plate 50, secured to the inner wall of the housing 10 at the rear thereof. From an inspection of Fig. 3, it will be understood that the magazines may be readily placed in the magazine receptacle 44 when it is withdrawn from the housing and tilted to filling position. It will also be understood from Fig. 3, especially when considered in connection with Fig. 2, that as the magazine receptacle, pursuant to its being supplied with magazines, is moved back into the housing 10, the pressure plate 47 engages the rearmost magazine and thereafter, by reason of the compression springs 48, exerts a pressure on the magazines which is utilized to retain them in a vertical face-to-face relation and to move them forward as they are dispensed one by one in the manner hereinafter more particularly described.

The magazine receptacle 44 is pivotally and slidably connected to the housing 10 by a rod 51, which extends transversely of the magazine receptacle and projects at opposite ends through the side walls thereof and into slots 52, formed in guides 54, secured to opposite sides of the housing 10. In order to permit the maga-

zine receptacle 44 to be wholly removed or detached from the housing 10, the guides 54 are provided with notches 55, which communicate with the respective slots intermediate their opposite ends and are sufficiently wide to accommodate the opposite ends of the rod 51, it being understood that these slots may be utilized to facilitate expeditious assembling as well as dis-assembling of the magazine receptacle with respect to the housing, whether in the factory or in the field of operation. The guides 54 are provided with detents 56, formed adjacent the rear of the respective slots 53, within which detents the transverse rod 51 normally rests. These detents, when considered in connection with the retaining plate 14, function effectively to retain the magazine receptacle 44 against removal from the housing, it being noted in this connection that the retaining plate 14 is so constructed that the lower margin thereof embraces the upper margin of the front wall of the magazine and engages a horizontal rib 58 formed in the front wall relatively near the upper edge thereof. By reason of the fact that the transverse rod 51 rests in the detents 56, when the magazine receptacle is in its normal position within the housing 10, and because of the embracing relation of the retaining plate 14 to the front wall of the magazine receptacle and its engagement with the rib 58 of that wall, it is apparent that, when the retaining plate is locked in its position shown in Figs. 1 and 2, the magazine receptacle will be effectively held within the housing and there retained against undue displacement.

Inasmuch as different issues of magazines vary in thickness, it is desirable to accordingly vary the width of the dispensing opening 60, provided in the bottom of the magazine receptacle, through which opening the magazines are ejected or dispensed one by one, and to this end the bottom wall 61 of the receptacle is provided with a laterally shiftable adjusting or gage plate 62. This plate is provided with a plurality of bosses 64, which project through openings 65 formed in the bottom wall 61 of the magazine receptacle, the bosses being provided with retaining plates 66, which overlie the margins of the openings and thereby prevent removal of the plate from the bottom of the receptacle without obstructing lateral movement of the same toward or away from the front wall of the magazine to vary the width of the dispensing opening 60. The gage plate 62 may be locked in a desired position of adjustment by any suitable means, such as a wing nut 67, carried by a bolt 68, which is carried by the bottom wall 61 of the magazine receptacle and projects through a slot 70 formed in the gage plate.

In order to prevent undue displacement of the magazines, particular reference being had to the front magazine, after filling the magazine receptacle 44 and prior to such time as the magazine receptacle is introduced into the housing, a closure 71 is provided for the dispensing opening 60. This closure 71 is in the form of a plate, the forward margin of which normally obstructs the dispensing opening and the rear portion of which is provided with a pair of ears 72, which are pivotally connected to the side walls of the magazine receptacle. Secured to the rear margin of the closure 71, are a plurality of angle members 74, which project downwardly through openings 75 formed in a transversely disposed angle bar 76, the arms 77 and 78 of which

cooperate with the angle members 74 to prevent undue movement of the closure 71 in opposite directions, respectively, under various conditions that may arise other than those incident to the dispensing operation. The closure 71 is normally held in its closed position, and is returned to that position pursuant to the dispensing operation, by a plurality of springs 80, secured to the bottom wall 61 of the magazine receptacle and adapted to engage the closure at points directly beneath the axis of its pivotal connection with the side walls of the magazine receptacle.

After the last magazine has been ejected from the magazine receptacle, it is desirable to guard against the introduction of further coins into the coin-control mechanism, and to this end a lock-out device is provided which includes a vertically movable bar 81, slidably connected to the inner wall of the retaining plate 14 by a yoke plate 82, the lower end of the bar being adapted to engage and normally rest on the upper edge of the foremost magazine, whereby its shutter extension 84 is held up out of obstructing position with respect to the coin slot 20 and with respect to the entrance of the coin chute 21. As the last magazine is being ejected from the magazine receptacle, the coin lock-out device will move by gravity to coin-obstructing position and will thereafter definitely maintain such position in the absence of further magazines to be dispensed.

In order to enable one to readily determine, by observation, whether or not the magazine receptacle 44 is in immediate need of a new supply of magazines, one of the side walls of the housing 10 is provided with a suitable window 49, which, when the magazine receptacle is housed within the housing 10 as shown in Fig. 2, registers with an opening 59 formed in one of the side walls of the magazine receptacle relatively near the front thereof.

Assuming that the machine is conditioned for operation, as shown in Fig. 2, the coin-control mechanism 18, upon the receipt of a coin which assumes the temporary position indicated in Fig. 4, becomes effective, upon a slight downward movement of the operating handle 32, to move the latch 40 out of the path of the shoulder 41 formed on the ejector plunger 28. Upon movement of the latch to an unobstructing position with respect to the plunger 28, such plunger is free to continue in its downward movement, whereby the foremost magazine, with which the head 31 of the plunger engages, is moved downwardly with respect to the remaining magazines and is projected through the dispensing opening 60 a sufficient distance to enable the customer to grasp its lower margin and withdraw it from the machine. After the plunger has been moved downwardly to its maximum extent, the restraining dog 34 assumes such a position with respect to the teeth 33 of the plunger 28 as will permit the plunger to return to its normal position under the action of the spring 35, the coin having been moved in the meantime from its temporary position of rest into the coin receptacle 24 and out of the path of the next coin to be introduced preparatory to the next dispensing operation. As the magazines are ejected one by one, under control of the coin-control device 18, the remaining magazines are moved forward within the magazine receptacle by the pressure device 46, so that the successive magazines, as considered from left to right in Fig. 2, assume dispensing positions in that order, the foremost magazines being normally maintained in inti-

mate contact with the inner wall of the glass panel 45 through which its cover page is displayed.

As a modified form of closure for the dispensing opening 60, a roller 85, Figs. 16 and 17, may be employed. This roller is journaled at the opposite ends to horizontally movable bearing blocks 86, which are suitably supported, as between the arms of a pair of U-shaped guides 87 secured to the side walls of the magazine receptacle, and are urged toward the left, as viewed in Figs. 16 and 17, by a pair of compression springs 88, surrounding a pair of stems 90, which are connected to the bearing blocks and project through the connecting portions of the yokes, between which and the bearing blocks are interposed the compression springs. Forward movement of the bearing blocks may be limited by a pair of bosses 91, which are provided at opposite ends of the roller 85 and are adapted to engage the front wall of a pair of slots 92 formed in opposite sides of the magazine receptacle. As to the roller 85, it is to be noted that the space afforded between it and the inner surface of the glass panel 45 should be normally such as to prevent accidental displacement of the magazines, particular reference being had to the foremost magazine, pursuant to the filling operation and prior to such time as the magazine receptacle is introduced into the housing 10.

From the description of this modified form of closure, it will be understood that its operation is generally the same as that of the closure 71 in that it is permitted to move or yield in response to the downward displacement of a magazine being ejected and in that it is adapted to return to magazine-obstructing position upon completion of the dispensing operation.

It will be understood that various other changes and modifications, other than those herein disclosed, may be resorted to without departing from the spirit of the invention or the scope of the following claims.

What is claimed is:

1. In a magazine vending machine, a housing, a magazine receptacle therein adapted for the reception of a plurality of magazines to be held vertically and in a face-to-face relation, said receptacle being pivotally and slidably connected to said housing whereby it may be slid out of said housing and thereafter tilted to filling position, a retaining plate slidably connected to said housing and adapted to be moved into an obstructing position with respect to the upper and front portion of said magazine receptacle to normally retain such receptacle within said housing.

2. In a magazine vending machine, a housing, a magazine receptacle normally housed within said housing and adapted for the reception of a plurality of magazines to be held vertically and in a face-to-face relation, said receptacle being provided at its lower end with a dispensing opening and being pivotally and slidably connected to said housing whereby it may be slid out of said housing and thereafter tilted to filling position, a retaining plate slidably connected

to said housing and adapted to be moved into an obstructing position with respect to the upper and front portion of said magazine receptacle to normally retain such receptacle within said housing, and ejector means carried by said retaining plate and adapted to displace the foremost magazine by way of said dispensing opening.

3. In a magazine vending machine, a housing, a magazine receptacle therein adapted for the reception of a plurality of magazines to be held vertically and in a face-to-face relation, said receptacle being pivotally and slidably connected to said housing whereby it may be slid out of said housing and thereafter tilted to filling position, means for normally retaining said receptacle within said housing, and a pressure device associated with said housing and with respect to which said receptacle may be moved as it is slid out of said housing and thereafter tilted to filling position, said pressure device being adapted to engage the rearmost of the magazines as said receptacle is returned to its normal position and thereafter retain such magazines vertically and in a face-to-face relation.

4. In a magazine vending machine, a housing, a magazine receptacle therein adapted for the reception of a plurality of magazines to be held vertically and in a face-to-face relation, and connecting means pivotally and slidably connecting said receptacle to said housing whereby said receptacle may be slid out of said housing and thereafter tilted to filling position, said connecting means including a pair of slotted guides secured to the inner wall of said housing at opposite sides thereof and a rod extending transversely of said receptacle and projecting at opposite ends through the side walls thereof and into the slots of said guides, said guides being provided with notches communicating with the slots and serving as passages by way of which opposite ends of said rod may be lifted from the slots of said guides to facilitate complete removal of said receptacle from said housing.

5. In a magazine vending machine, a housing, a magazine receptacle therein adapted for the reception of a plurality of magazines to be held vertically and in a face-to-face relation, connecting means pivotally and slidably connecting said receptacle to said housing whereby said receptacle may be slid out of said housing and thereafter tilted to filling position, said connecting means including a pair of slotted guides secured to the inner wall of said housing at opposite sides thereof and a rod extending transversely of said receptacle and projecting at opposite ends through the side walls thereof and into the slots of said guides, said guides being provided with detents adapted to receive said rod and cooperate therewith to retain said receptacle normally against sliding movement, and retaining means carried by said housing and adapted to engage the upper and front portion of said receptacle and thereby augment the retaining effect of said notches and said rod on said receptacle.

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