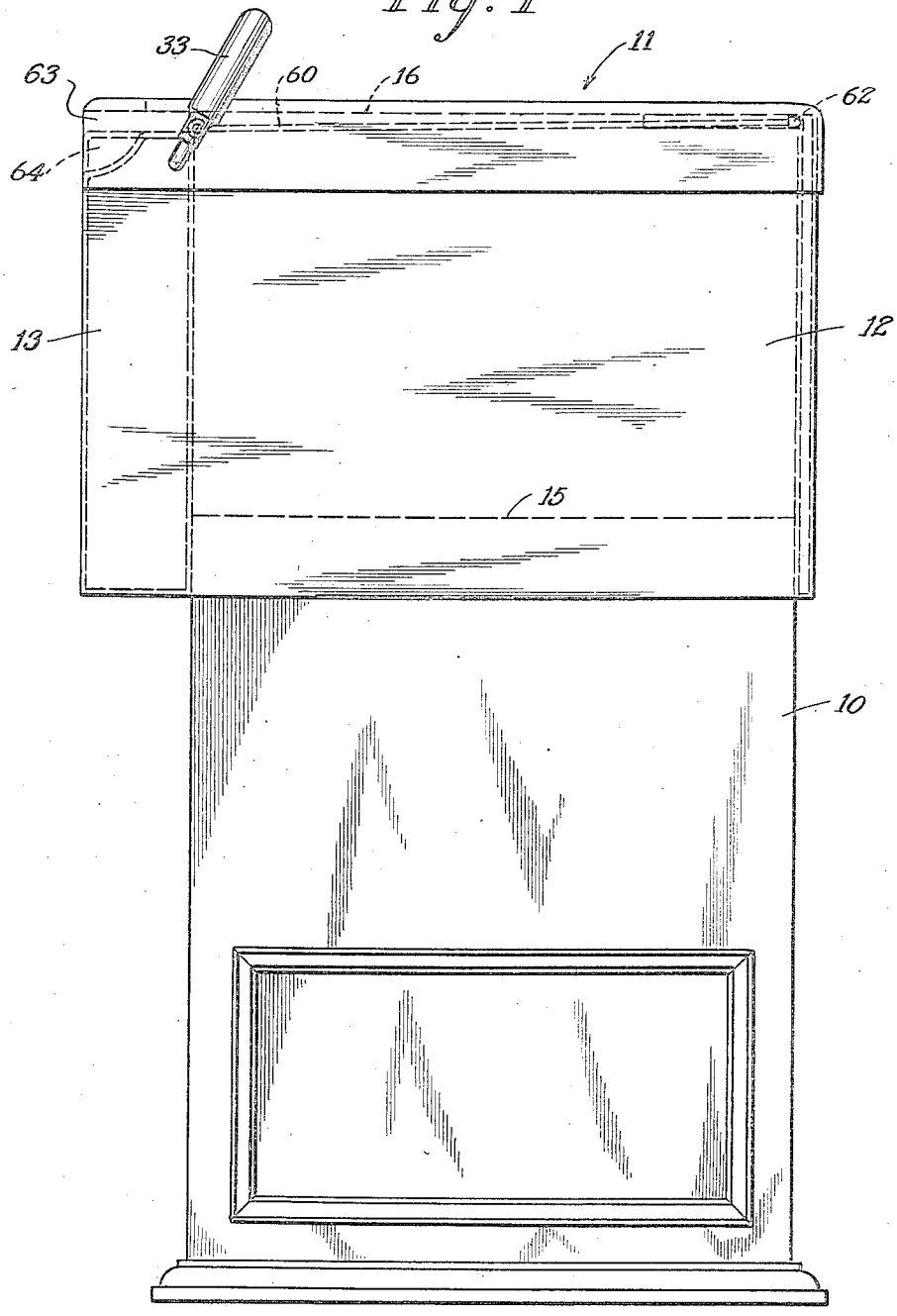
Feb. 25, 1936. A. GRAILLAT 2,032,278

MAGAZINE VENDING MACHINE

Filed May 15, 1934 4 Sheets-Sheet 1

Fig. 1



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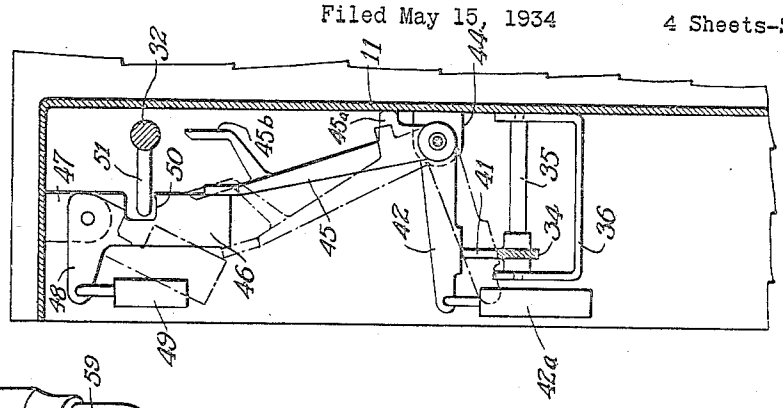

Fig. 3

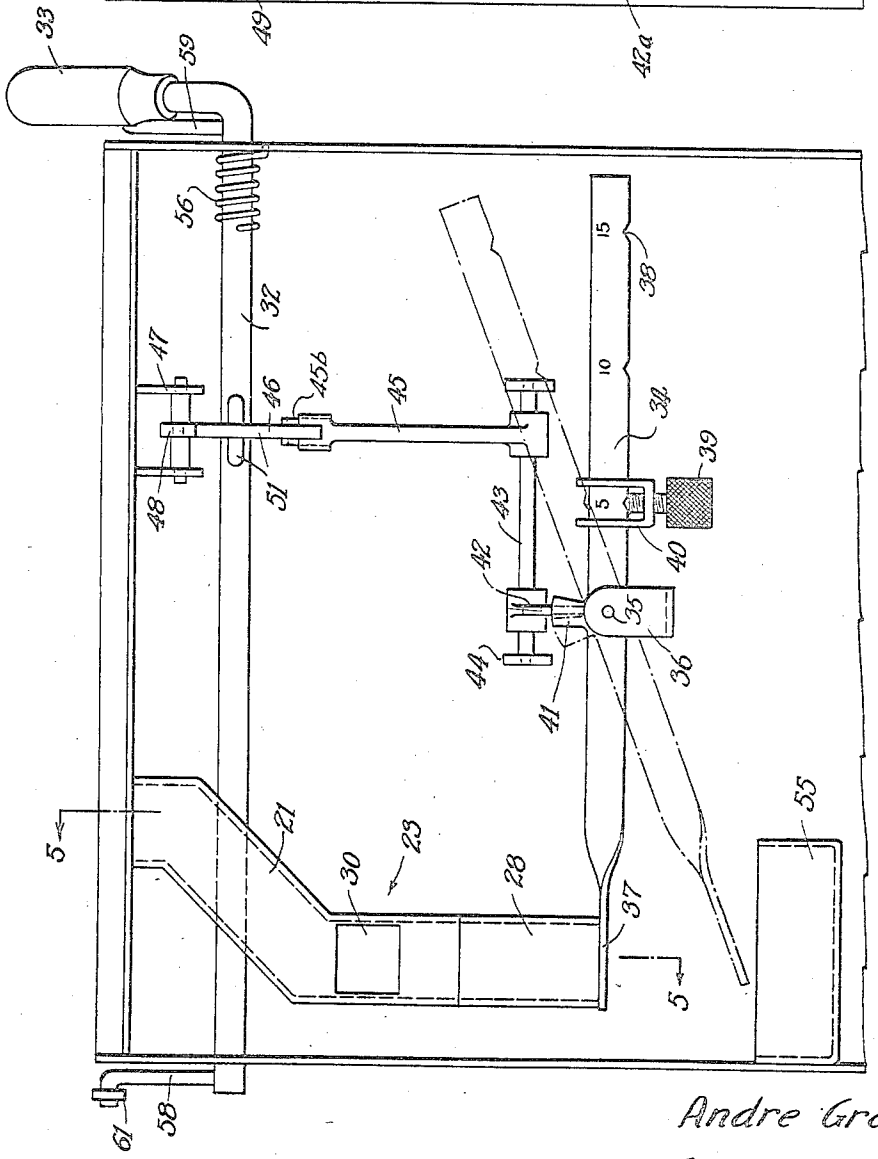

Fig. 2

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Filed May 15, 1934 4 Sheets-Sheet 3

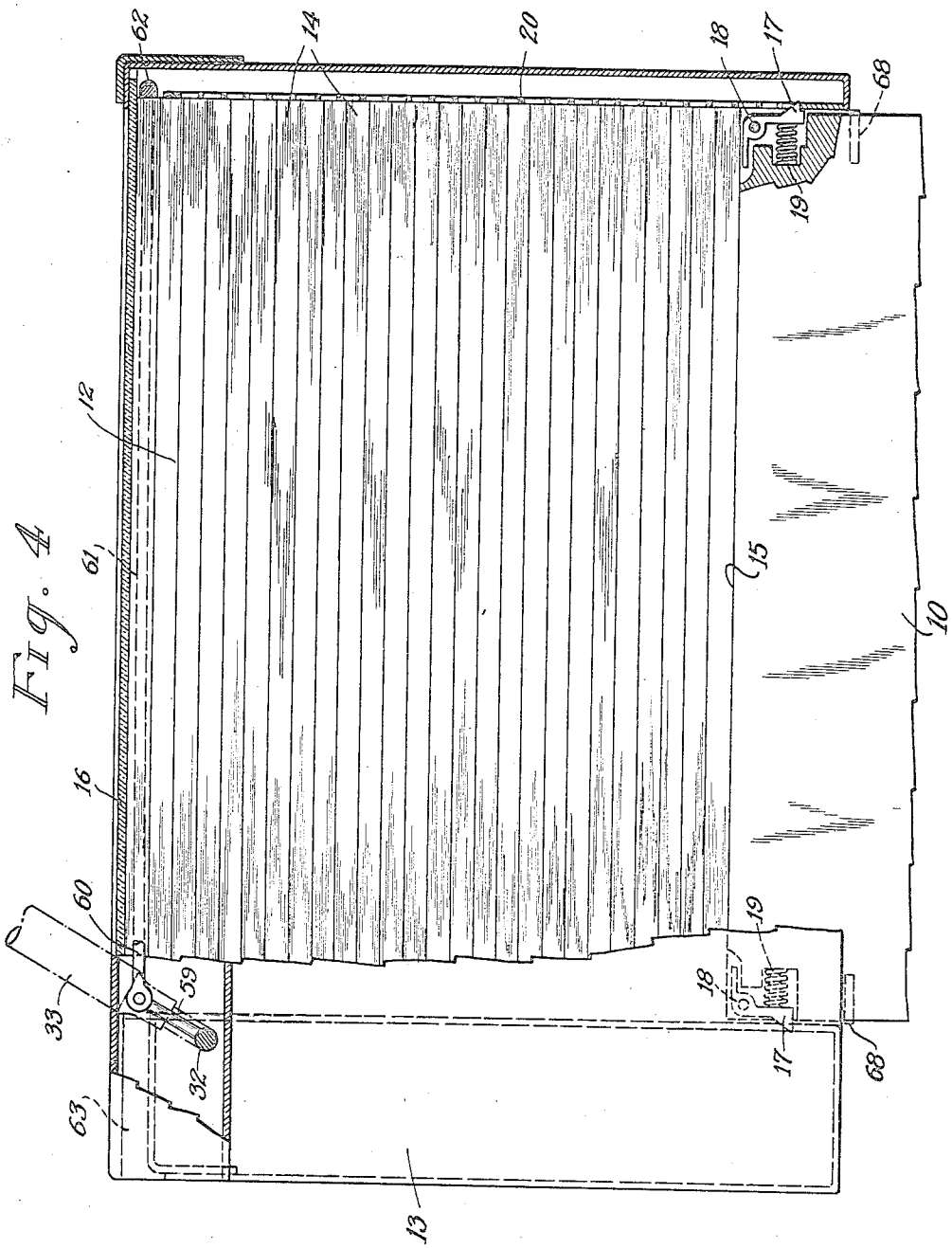

Fig. 4

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Filed May 15, 1934 4 Sheets-Sheet 4

Fig. 8

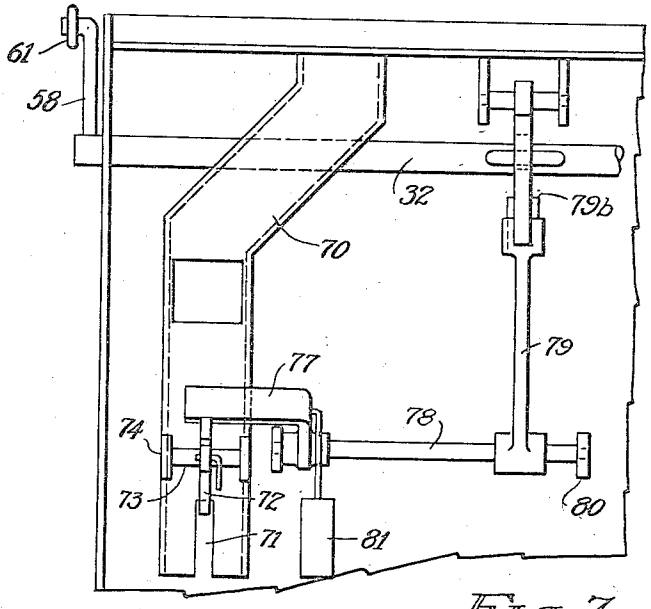


Fig. 9

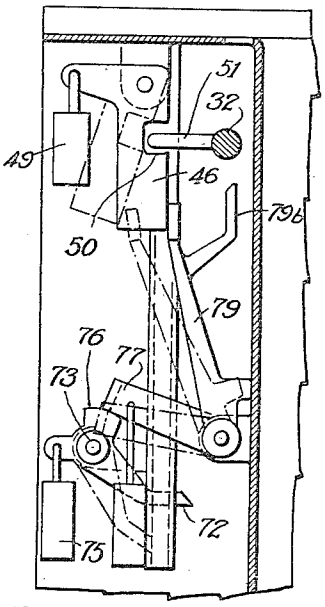


Fig. 7

Fig. 5

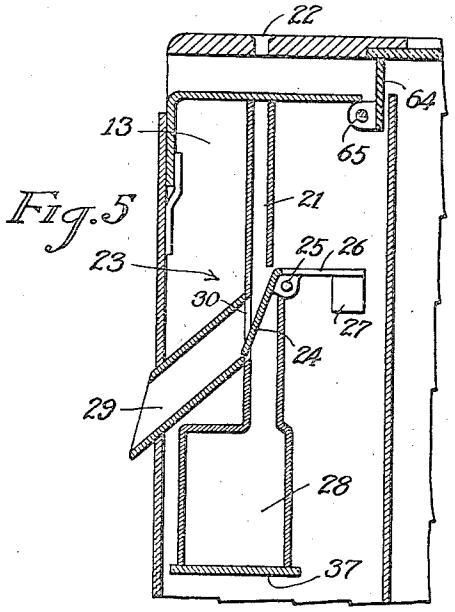
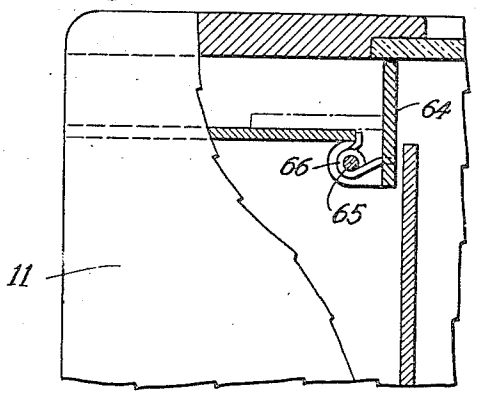


Fig. 6



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Patented Feb. 25, 1936 2,032,278

UNITED STATES PATENT OFFICE

2,032,278

MAGAZINE VENDING MACHINE

Andre Graillat, New York, N. Y.

Application May 15, 1934, Serial No. 725,791

3 Claims. (Cl. 312—55)

This invention relates to vending machines for magazines and other periodical publications wherein the deposit of a proper coin unlocks certain mechanism which, when operated, will discharge a single periodical from the machine.

It is the primary object of my invention to provide a machine of the character described which will embrace the desired features of simplicity, efficiency and durability and further to provide in a vending machine a coin-sorting device which will constantly distinguish coins of improper size or weight from the proper coins and will function to discharge these inferior coins out of the machine, this coin-sorting device being in cooperation with an unlocking mechanism adapted to be readily adjustable to function on either one, two or more like coins.

It is a further object of my invention to provide a method for the storage and dispensing of magazines which is of particular simple construction and operation.

The invention will be fully and comprehensively understood from a consideration of the following detailed description when read in connection with the accompanying drawings which form part of the application, with the understanding, however, that the improvement is capable of extended application and is not confined to the exact showing of the drawings nor to the precise construction described and, therefore, such changes and modifications may be made therein as do not affect the spirit of the invention nor exceed the scope thereof as expressed in the appended claims.

In describing the invention in detail and the particular physical embodiment illustrating the invention, reference is had to the accompanying drawings wherein like characters of reference designate corresponding parts thruout the several views.

In the drawings:

Fig. 1 is a general side elevational view of the apparatus.

Figs. 2 and 3 are front and side elevational views, respectively, of the coin-operated unlocking mechanism, element 42a being omitted from Fig. 2 for the sake of clarity.

Fig. 4 is a partial side elevational view, partly in section, of the magazine storage compartment.

Fig. 5 is a sectional view on line 5—5 of Fig. 2.

Fig. 6 is a detail sectional view of the magazine trap door.

Fig. 7 is a detail sectional view illustrating the method of discharging a magazine.

Figs. 8 and 9 are front and side elevational views, respectively, of a modified form of coin-operated mechanism, element 75 being omitted from Fig. 8 for the sake of clarity.

The apparatus in general comprises a number of major units consisting of a pedestal base 10 which provides the support for the apparatus and a housing 11 which includes a magazine compartment 12 and a mechanism compartment 13. The magazines 14 are stacked on the top platform 15 of the base 10 and are sustained in vertical alignment by their engagement with the interior walls of the compartment 12, which is bottomless and adapted to fit over and slide downwardly over the base 10 by its own weight so that as the top magazine of the stack is removed the entire housing lowers until its top 16 of transparent material rests against the remaining top magazine. To prevent the upward removal of the housing 11 from the base a ratchet mechanism is provided which comprises housing lock pawls 17 swingably mounted on the base at 18 and pressed into engagement by springs 19 with a series of slots 20 cut into the end walls of the magazine compartment 12, as shown in Fig. 4.

Reference now is directed to the coin-sorting device shown in Figs. 2 and 5. A coin chute 21, the upper end of which is in registry with a coin slot 22, is adapted to receive and transmit a deposited coin to the sorting device 23. This device comprises a bypass partition 24 pivotally mounted to the rear of the coin chute 21 on the pin 25 and having a rearwardly extending arm 26 upon the end of which is attached a counterweight 27, the force of which tends to hold the partition 24 in its diagonal position across the chute, as shown in Fig. 5. When the proper coin is deposited the gravitational pull on the coin engaging with the bypass partition 24 counteracts the force of the weight 27 to swing the partition 24 out of obstruction of the chute 21 and the coin is permitted to drop into the hopper 28. Should a coin of lesser weight be deposited the partition 24 remains in its normal position and this inferior coin is retained in the chute resting on the bypass partition where it remains until another proper coin is deposited, whence both coins are permitted to drop into hopper 28. Should a coin of the proper weight but of lesser diameter be deposited, this coin would be ejected thru the opening 30 before it functioned to displace the by-pass partition 24, the width of the opening 30 being slightly less than the diameter of a proper coin. The opening 30 has its vertical edges spaced only a sufficient amount to retain the proper sized coin within the chute and to permit all coins of a lesser diameter to pass thru same.

Attention is now directed to the coin-operated unlocking mechanism illustrated in Figs. 2 and 3, the function of which is to release the engagement of the ejector shaft **32** so that ejector handle **33** may be operated to discharge one magazine. A balance lever **34** is swingably supported by the shaft **35** which is journalled in the bracket **36** affixed to the housing. One end of the lever **34** is provided with a horizontal platform **37**, which in its normal position engages with the lower end of hopper **28** and forms the bottom thereof. Between the fulcrum and the opposite end of the lever **34** are formed a plurality of notches **38** which are conveniently marked to designate the proper setting for the adjustable counterweight **39**, the end of the threaded portion of which is adapted to engage in the notches **38**. The U-shaped fixture **40** supports the counterweight **39** on the lever **34**. If the price of the magazine to be sold is equivalent to one coin, the counterweight **39** is set in the first notch. If two or three of said coins are required the counterweight is set to the second or third notch. A latch dog **41** is integral with the lever **34** and disposed to normally engage with a latch bar **42** to hold same in upper position. The latch bar **42** is rigidly mounted on latch shaft **43** which is journalled in the brackets **44** and which also carries the releasing lever **45**. The free end of latch bar **42** supports a weight **42***a*. The free end of the releasing lever **45** engages with a locking member **46** which is swingably mounted on the brackets **47** and has an angularly extending arm **48** to which is suspended a weight **49**. The locking member **46** is further provided with a notch **50** which is adapted to engage a locking arm **51** rigidly attached to the ejector shaft **32**. The weight **49** holds the notch **50** of the locking member **46** in engagement with the locking arm **51**. When the proper coin is deposited it is carried thru the chute into hopper **28** where it rests on platform **37**, where, by the weight of the coin overbalancing the counterweight **39**, the lever **34** is caused to swing to the position shown in dot and dash outline, whence the coin slides off platform **37** into a coin receiver **55**. This swinging of the lever **34** moves its latch dog **41** out of engagement with latch bar **42** and permits same to swing downwardly actuated by the weight **42***a*. This swinging motion is transmitted thru shaft **43** to the releasing lever **45**, the free end of which engaging with locking member **46** causes same to swing out of engagement with the locking arm **51**. The gravitational pull on the weight **42***a* is ample to overcome the force of the weight **49** thru the mechanism as described. When two coins are required to complete the sale the counterweight **39**, being set in the second notch, holds lever **34** inactive until the second proper coin is deposited, at which time the unlocking mechanism will function as previously described. A torsional spring **56**, the ends of which are connected respectively to the housing **11** and the ejector shaft **32**, effects the return of the ejector handle **33** to its original position subsequent to the operation of the handle in ejecting a magazine. As soon as the coin or coins slide off the platform **37** the counter-weight **39** tends to return lever **34** to its normal position but is prevented from so acting by the engagement of latch bar **42** against the side of latch dog **41**. The release of lever **34** by the movement of latch bar **42** out of engagement with latch dog **41** and the return of the remaining correlated mechanism to its original locked position is accomplished during the operation of ejector handle **33** to eject a magazine. It is understood that the entire locking mechanism subsequent to its being reset to locked position is in the position shown in dot and dash outline in Fig. 3. During the operation of ejector handle **33**, locking arm **51**, being mounted on the ejector shaft **32**, swings downwardly, during which movement its end engages with reset member **45***b*, which member is integral with releasing lever **45**. The completion of the downward swinging of locking arm **51** in engagement with reset lever **45***b* moves levers **45** and **42** back to their normal positions whence stop **45***a* is engaged with the housing **11**, at which time lever **42** is moved out of engagement with latch dog **41** and lever **34** is released to swing back to its normal position. As soon as a magazine is ejected handle **33** is released and brought back by spring **56** to its normal position whence locking arm **51** is again engaged in notch **50**, the locking member **46** being actuated by the weight **49**.

After the coin-operated locking mechanism has functioned to release locking arm **51**, the magazine ejecting mechanism is free to be operated by the swinging of ejector handle **33**. Rigidly attached to ejector shaft **32** at opposite ends thereof are the crank arms **58** and **59** to the free ends of which are pivoted connecting rods **60** and **61**. The opposite ends of connecting rods **60** and **61** are attached to an ejector bar **62** disposed laterally at the rear of the housing **11** and adapted to engage the rear edge of the uppermost magazine. Upon movement of handle **33** forward the ejector bar **62** is caused to move forward and carry with it the top magazine thru the medium of the crank arms **58** and **59** and the connecting rods **60** and **61**. In this fashion the forward end of the magazine is brought into the delivery slot **63**, which is provided with a thumb notch **64**. In this position the top magazine may be grasped and completely removed from the housing. To forestall any possibility of the removal of a magazine by inserting a tool or other device into the delivery slot **63** and thus withdrawing the magazine, a trap door **64** is provided. This trap door is hingedly mounted on a rod **65** to the housing and is held in normally closed position by the spring **66**. The phantom view of the trap door **64**, shown in outline, illustrates its position during ejection of the magazine.

As soon as the entire contents of the vending machine is exhausted the supply of magazines is replenished as follows. It will be noted here that the housing **11** has lowered until its top **16** rests onto the platform **15** of the base. Housing **11** is held in this position by the pawls **17** engaging in the slots **20**. The top of the housing is removed and the housing is then raised as soon as the pawls **17** are disengaged. To facilitate the holding of housing **11** in uppermost position preparatory to loading same, the pins **68** in the base are provided. These pins are pulled out until they engage with the housing to hold it in raised position. A stack of magazines is then placed in the compartment **12** and the top is replaced. The pins **68** are pushed back to their former position and the housing is thus free to lower until its top **16** rests on the top magazine. The machine is now ready for vending.

In Figs. 8 and 9, in modified form, the coin-operated unlocking mechanism is illustrated. A coin slot **70** is provided similar to that in the first form except that it is substantially of uniform cross-section thruout its entire length and has at its lower end a longitudinal slot **71**. A coin

trip lever 72 is swingably mounted on the shaft 73 which is journalled in the bracket 74. The free end of lever 72 passes transversely thru slot 71. The counterweight 75 is suspended to lever 72 to hold it in normal position. A latch dog 76 is integral with lever 72 and disposed to engage with a latch bar 77 to hold it in upper position. Latch bar 77 is rigidly mounted on shaft 78, to which is also rigidly fixed the releasing lever 79, the shaft 78 being journalled in brackets 80. The latch bar 79 is identical to that provided in the first form and has its free end engageable with the locking member 50. This modified form is provided where the machine is to function by a single coin. The coin being inserted in the chute 70 actuates coin trip lever 72 and thus moves same to position shown in outline, in which position latch dog 76 has moved out of engagement with latch bar 77, thus permitting latch bar 77 and releasing lever 79 to swing to unlocked position actuated by weight 81 which is suspended to the free end of latch bar 77. This movement of lever 79 in engagement with locking member 50 effects the unlocking of the ejector mechanism. The return of the locking mechanism to its locked position is effected in similar manner to that described for the first form.

What is claimed as new is:

1. In a machine of the character described, a base the top of which is adapted to support periodicals, a housing telescoping with said base and supported by the periodicals, and means for ejecting the topmost periodical horizontally, said means comprising a U-bar including a cross piece contacting the rear edge of the topmost periodical and means for forwardly shifting said bar to eject the topmost periodical.

2. In a machine of the character described, a base having a top adapted to support periodicals, a housing telescoping with said base and supported by the periodicals, means for ejecting the topmost periodical horizontally, said means comprising a U-bar and including a cross piece adapted to contact the rear edge of the topmost periodical, and means for shifting said bar forwardly to eject the topmost periodical, said U-bar being pivotally mounted at its ends to said shifting means.

3. In a machine of the character described, a base having a top adapted to support periodicals, a housing telescoping with said base and supported by the periodicals, means for ejecting the topmost periodical horizontally, said means comprising a U-bar including a cross piece adapted to contact the rear edge of the topmost periodical, means for shifting said bar forwardly to eject the topmost periodical, said U-bar being pivotally mounted at its ends to said shifting means, said housing having an opening thru which the periodicals are ejected, and an outwardly opening spring pressed closure normally closing said opening and adapted to be moved to open position by movement of a periodical.

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