

Aug. 13, 1929.

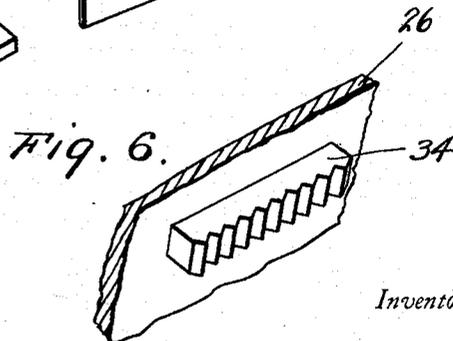
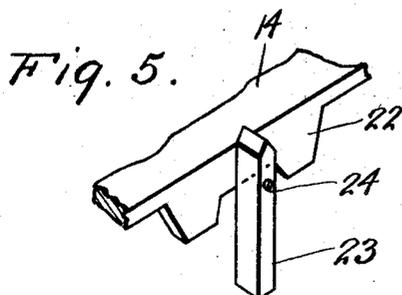
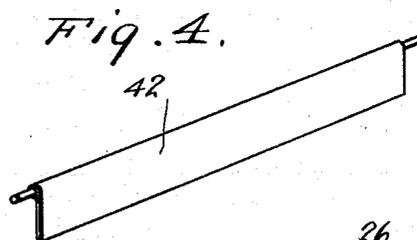
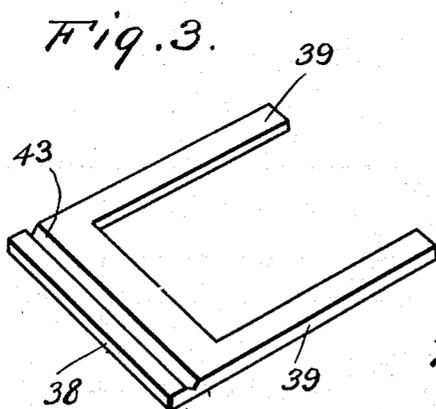
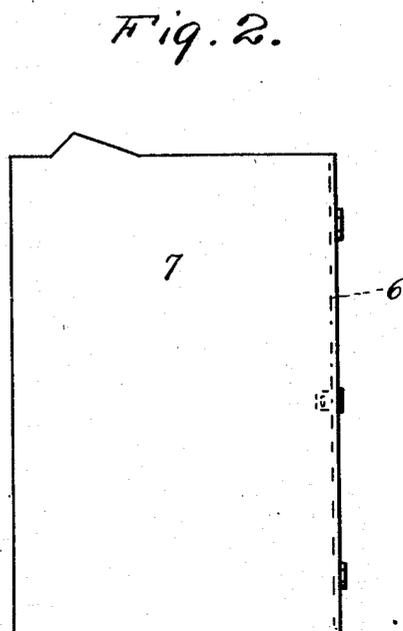
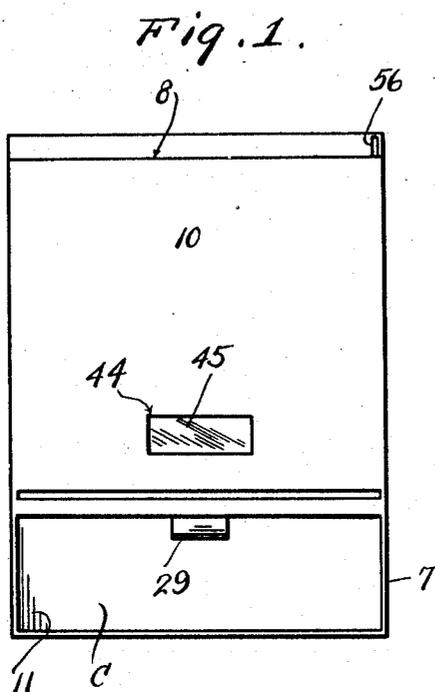
D. R. MacGREGOR

1,724,297

VENDING MACHINE

Filed May 8, 1928

5 Sheets-Sheet 1



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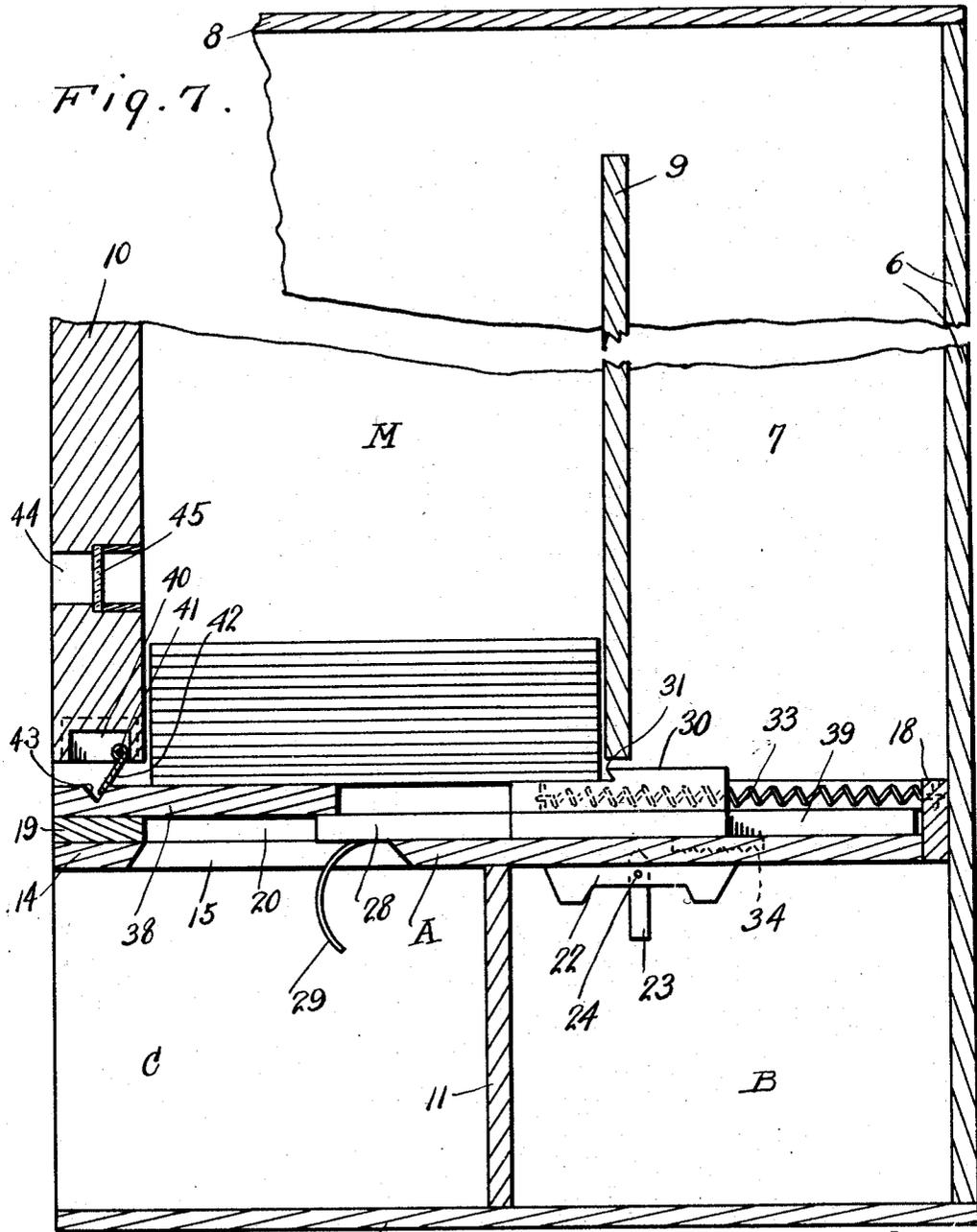
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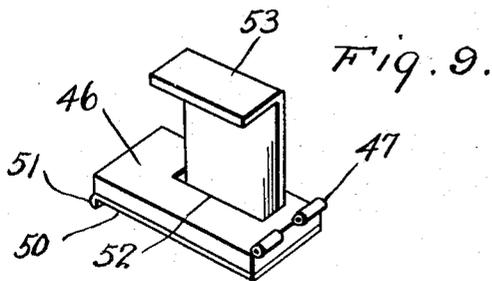
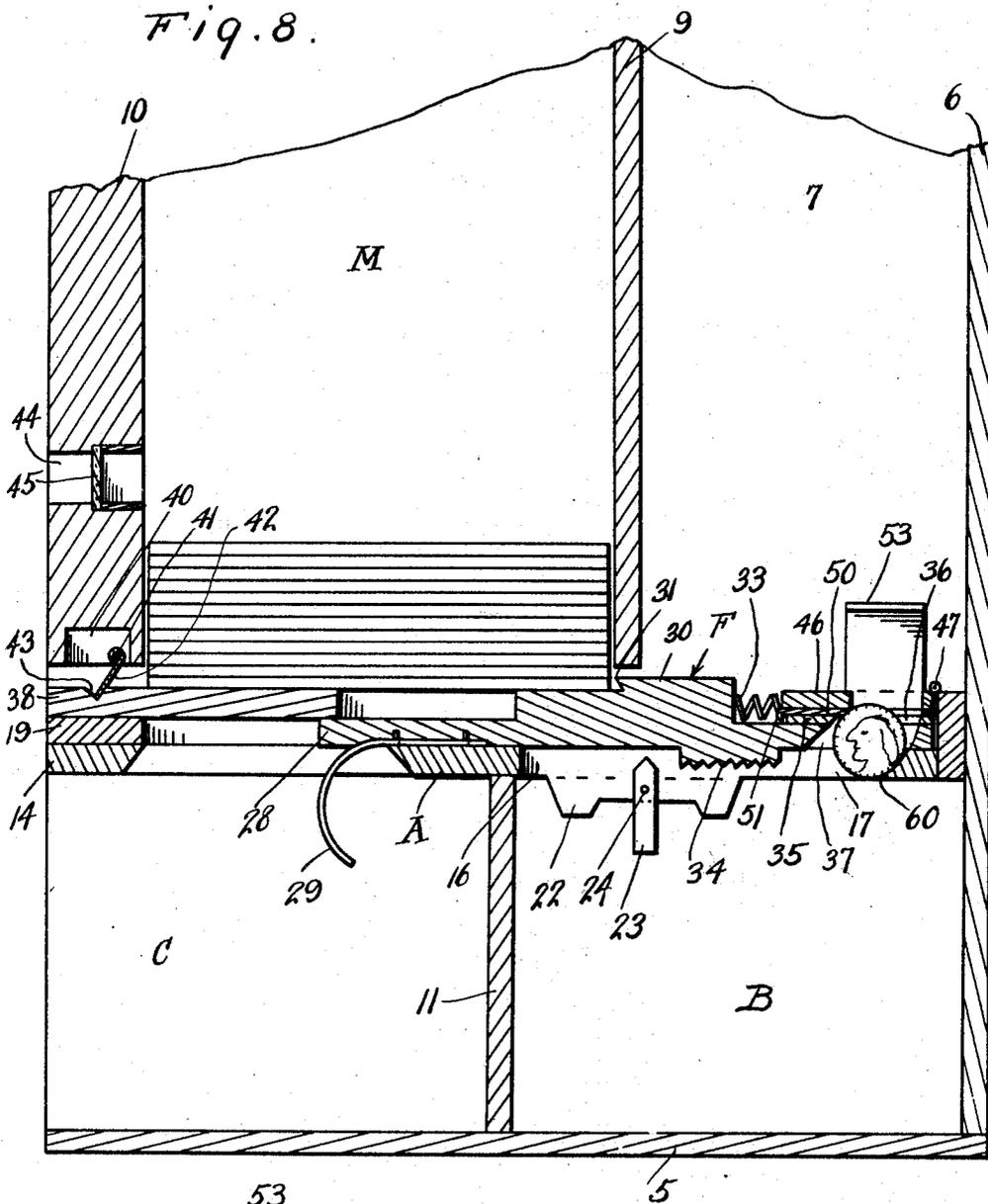
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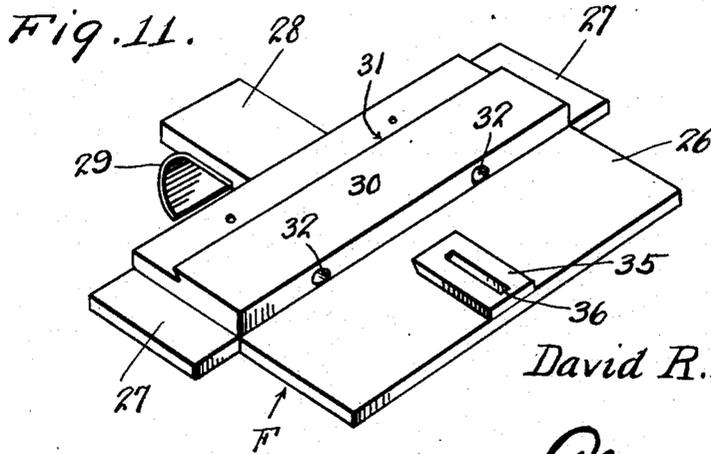
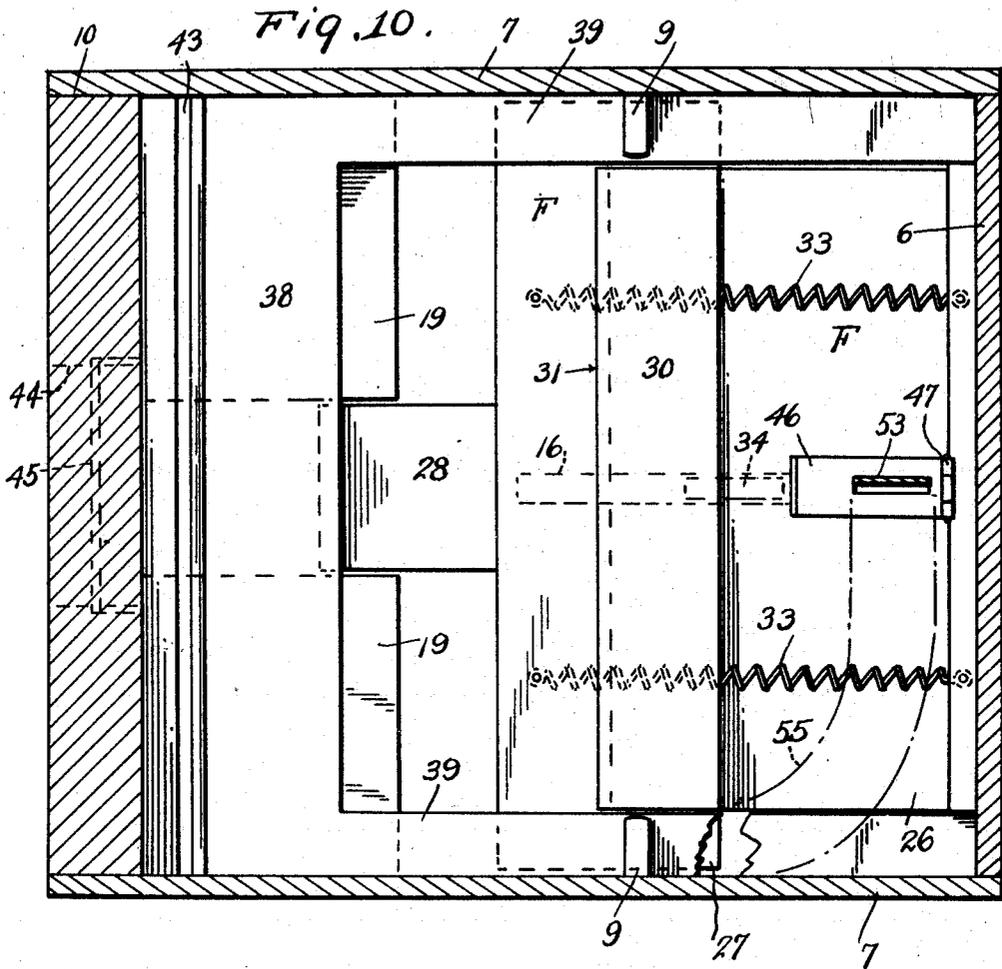
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Filed May 8, 1928

5 Sheets-Sheet 4



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1,724,297

VENDING MACHINE

Filed May 8, 1928

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Fig. 12.

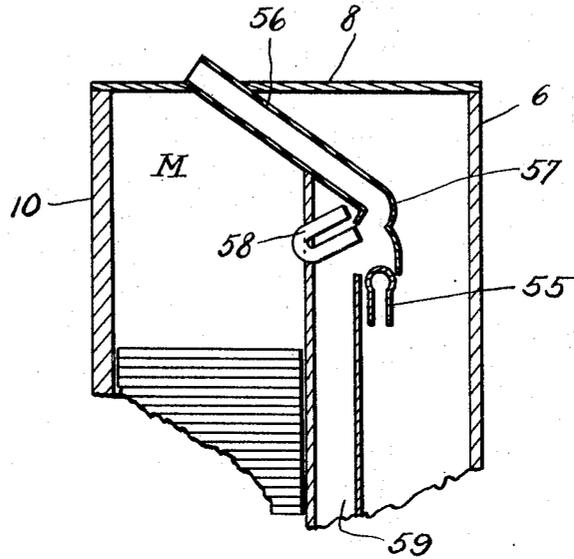


Fig. 13.

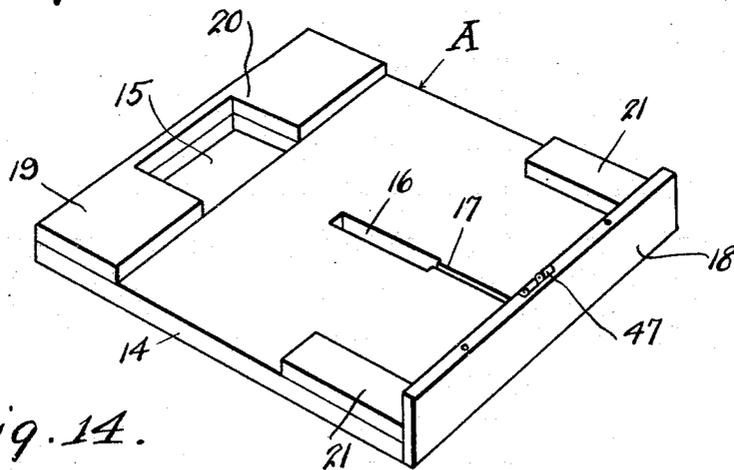
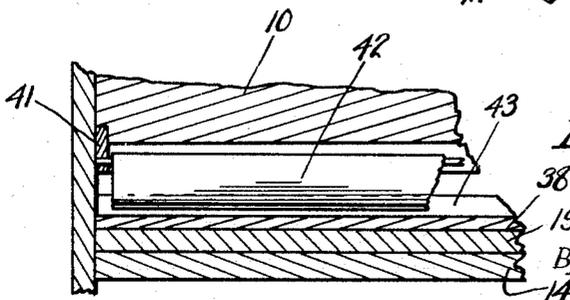


Fig. 14.



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UNITED STATES PATENT OFFICE.

DAVID ROUSSELL MacGREGOR, OF MARENGO, IOWA.

VENDING MACHINE.

Application filed May 8, 1928. Serial No. 276,064.

The present invention relates to a vending machine and has for its prime object to provide a machine of this nature which is especially adapted for vending newspapers, time tables, magazines, and other like articles.

Another very important object of the invention resides in the provision of a machine of this nature having a novel ejector means for the commodity.

Another very important object of the invention resides in the provision of an ejector having means associated therewith whereby the ejector must be operated to the full length of its stroke before it can be successfully operated again.

Another very important feature of the invention resides in the provision of means whereby access is prevented into the commodity in an unauthorized manner.

Another very important object of the invention resides in the provision of an improved vending machine of this nature including an injector and coin control means for locking the ejector against movement, except when the proper coin is placed therein.

A still further very important object of the invention resides in the provision of a machine of this nature, which is simple in its construction, inexpensive to manufacture, strong and durable, thoroughly efficient and reliable in operation, not likely to easily become out of order, and otherwise well adapted to the purpose for which it is designed.

With the above and numerous other objects in view; as will appear as the description proceeds, the invention resides in certain novel feature of construction and in the combination and arrangement of parts as will be hereinafter described more fully, and claimed.

In the drawings:

Figure 1 is a front elevation of the machine embodying the features of my invention.

Figure 2 is a side elevation thereof.

Figure 3 is a perspective view of the plat-

form on which the commodity is pushed out of the machine.

Figure 4 is a perspective view of the pivoted guard.

Figure 5 is a perspective view showing the pivoted pawl.

Figure 6 is a perspective view showing the rack which is engaged by the pivoted pawl.

Figure 7 is a vertical section taken through the machine.

Figure 8 is another vertical section taken therethrough.

Figure 9 is a perspective view of the catch.

Figure 10 is a horizontal section through the machine.

Figure 11 is a perspective view of the ejector.

Figure 12 is a vertical sectional view through the upper portion of the machine showing the coin slot.

Figure 13 is a perspective view of the plate supporting the ejector.

Figure 14 is an enlarged detail sectional view, showing the guard mounted in place.

Referring to the drawing in detail, it will be seen that the numeral 5 denotes the bottom of a casing, from which rises the rear wall 6 and side walls 7, the top 8 being mounted on said walls 6 and 7. A partition 9 extends transversely between the side walls 6, in parallel spaced relation with the rear wall 6, and terminates a distance below the top 8 and a distance above the bottom 5. A front wall 10 extends between the walls 7, depending downwardly from the top 8 and terminating a distance above the bottom 5. A platform A is mounted between the side walls 7 above the bottom 5 and a slight distance below the lower edges of the partitions 9 and the front walls 10. A partition 11 extends between walls 7 and the platform A and the bottom 5 so as to form a coin compartment B and a front compartment C, which is open at the front for operation of ejector.

The platform A is disclosed to advantage in Figure 13 and includes a rectangular

body plate 14, having an opening 15 adjacent its forward end, a longitudinal-slot 16 intermediate its ends and merging into a relatively thin rearwardly extending slot 17. A plate 18 is fixed to the rear edge of the body plate 14 and rises above the upper surface thereof. A plate 19 extends across the front portion of the plate 14 and is cut away as at 20, to register with the openings 15. The plates 21 are disposed on the plate 14 along the sides thereof adjacent the rear edge thereof. A pair of flanges 22 depend from the body plate 14, to each side of the slot 16 and have pivoted thereto a pawl 23. This pawl is pivoted, as at 24, adjacent its upper ends, so as to normally extend vertically.

An ejector F includes a plate 26, to slide on the plate 14 and has side extensions 27 movable between the front edges of the plate 21 and the rear edges of the plate 19, and is provided with a front extension 28, slidable in the cut away portion 20 of the plate 19, and from this extension 28 there depends a curved finger grip 29, extending down through the opening 15 and accessible by reaching into the compartment C. A plate 30 is disposed transversely across the plate 26 and is formed with a shoulder 31 to engage the commodity to be projected and is provided with openings 32, in which ends of the springs 33 are anchored, said springs 33 being anchored at their other ends to the plate 18. On the bottom of the plate 26, there is provided a rack 34, which extends into the slot 16 and engageable with the pawl 23. A plate 35 is mounted on the rear portion of the plate 26 and is formed with a slot 36, registering with a similar slot in the plate 26, as is disclosed at 37, in Figure 8. A plate 39 is disposed on the plate 19 and has side wing extensions 39 extending rearwardly as disclosed in Figure 10. The wings or extensions 27 slide between the wings 39 and the plate 14, being limited by the rear edges of the plate 19 and the front edges of the plate 21. It is to be understood, at this point, that the platform A and the ejector F may be formed of an integral manner, if desired, rather than being built up of different parts, as is indicated in this description, for the purpose of clearness. The bottom edge of the wall 10 is provided with an elongated pocket 40, in which is pivotally mounted as at 41, a shield 42, which inclines downwardly and forwardly from its pivot and terminates in a notch 43, formed in the upper surface of the plate 38. An opening 44 is provided in the walls 10, and has a transparent panel 45 mounted therein.

A catch 46 is hingedly connected as at 47, with the upper edge of the plate 18 and has a plate 50 on the lower surface thereof provided with a downturned end 51 for engaging over the forward edge of the plate 35

for locking the ejector F against forward movement.

A slot 52 is provided in the catch and a guide 53 rises in the catch alongside the slot to guide a coin into the slot from a coin chute 55, leading from entrance chute 56, the upper end of which extends through the top 8. The entrance chute has a bend 57 at its inner end adjacent which is a magnet 58, for attaching spurious coins into a chute 59, leading downwardly into the coin receptacle B.

The springs 33 normally hold the parts in the position shown in Figures 7 and 8 and the catch prevents forward movement of the ejector as is quite apparent from an inspection of Figure 9.

Now, supposing that the magazine M is filled with the commodities to be vended and a proper coin has been inserted in the entrance chute 56, it will be seen that said coin will pass down through the chute 55, and rest in the slots 17 and 37, a shoulder 60 being formed in the rear edge of the slot 17 for this purpose, said coin being sufficiently large to extend up into the slot 52, of the catch through the slot 36 of the ejector. Therefore, when the ejector is moved slightly forwardly, the coin will pry up the catch and release the downturned end 51, from the forward edge of the plate 35, and the ejector may then be moved forwardly so that the shoulder 31 engages the bottommost commodity in the magazine and forces the same over the plate 43, under the bottom edge of the wall 10, swinging the shield 42 upwardly in the pocket 40.

This causes the commodity to project out of the machine so that it will be pulled the rest of the way by being grasped by the hand as will be apparent. It is to be noted that the ejector must be pulled all of the way out, as far as it will go, that is, until the wings or extensions 27 abut the rear edges of the plate 19, because the rack moving forwardly and engaging the pawl, inclines the pawl upwardly and forwardly and thereby preventing the rear movement of the ejector until the rack has passed by the pawl. Then, when the ejector is released, the springs 33 will move the same inwardly and the ejector cannot be pulled outwardly after it has started inwardly because the pawl 23 cooperates with the rack in an opposite manner as will be quite apparent. As soon as the commodity is pulled out from the machine, the shield 42 falls back in place, thus preventing access being had to any of the other commodities in the machine, except by the insertion of a coin going through the usual and proper routine as just explained. The opening 44 with the transparent panel 45 therein, enables the customer to ascertain whether the magazine end is properly equipped with the commodity desired. It

will be known that the coins dropped by gravity through the entrance chute, the magnet will attract spurious coins of a magnetic nature into the chute 59. However, if the coin is of the proper denomination and proper metal, etc., the same will pass over the magnet and then turn to drop by gravity into the chute 55, which is attached to the right side wall and guides the coin into the coin chamber or slot in the catch as explained. The coin slides flatwise through the chute 55, and is turned edge upward by the guard 53. If the coin is of the proper size, it will stop as explained to release the catch, when the ejector is moved forwardly, but if it is not of the proper size, it will not affect the catch and therefore the ejector can only move forward the slightest bit, until the forward edge of the plate 35 engages the end 51. There must be some little slight play as will be apparent.

It is thought that the construction, operation, utility and advantages of this machine will now be quite apparent to those skilled in this art, without a more detailed description thereof. The present embodiment of the machine has been disclosed by considerable detail, merely for the purpose of exemplification, since in actual practice it attains the features of advantage enumerated as desirable in the statement of the invention and the above description.

It will be apparent that changes in the details of construction, and in the combination and arrangement of parts may be resorted to, without departing from the spirit or scope of the invention as hereinafter claimed or sacrificing any of its advantages.

Having thus described my invention, what I claim as new is:

1. A vending machine of the class described comprising a magazine, said magazine having an exit, a plate forming the bottom of said exit along which the commodities in the magazine are adapted to be slid, said plate having an opening, an ejector having a shoulder movable in the opening to engage the lowermost commodity to slide the same along the plate, a platform under the ejector on which said ejector is slidable, spring means for normally holding said ejector in a retracted position, said platform having an opening, a finger piece extending downwardly from the ejector through the opening, in order that the ejector may be moved for ejecting one of the commodities.

2. A vending machine of the class described comprising a magazine, said magazine having an exit, a plate forming the bottom of said exit along which the commodities in the magazine are adapted to be slid, said plate having an opening, an ejector having a shoulder movable in the opening to engage the lowermost commodity to slide the same along the plate, a platform under

the ejector on which said ejector is slidable, spring means for normally holding said ejector in a retracted position, said platform having an opening, a finger piece extending downwardly from the ejector through the opening, in order that the ejector may be moved for ejecting one of the commodities, said platform being provided with a slot, a rack on the ejector movable in the slot, a pair of flanges depending from the platform, one to each side of the slot, a pawl pivoted between the flanges and engageable with the rack to prevent movement of the ejector in an opposite direction to which it is being moved until it has moved its full stroke.

3. A vending machine of the class described comprising a magazine, said magazine having an exit, a plate forming the bottom of said exit along which the commodities in the magazine are adapted to be slid, said plate having an opening, an ejector having a shoulder movable in the opening to engage the lowermost commodity to slide the same along the plate, a platform under the ejector on which said ejector is slidable, spring means for normally holding said ejector in a retracted position, said platform having an opening, a finger piece extending downwardly from the ejector through the opening, in order that the ejector may be moved for ejecting one of the commodities, said platform being provided with a slot, a rack on the ejector movable in the slot, a pair of flanges depending from the platform, one to each side of the slot, a pawl pivoted between the flanges and engageable with the rack to prevent movement of the ejector in an opposite direction to which it is being moved until it has moved its full stroke, a guard pivotally mounted in the exit to be swung upwardly by the commodity as it is ejected and to gravitate downwardly after the ejection of the commodity to prevent access into the magazine.

4. A vending machine of the class described comprising a magazine, said magazine having an exit, a plate forming the bottom of said exit along which the commodities in the magazine are adapted to be slid, said plate having an opening, an ejector having a shoulder movable in the opening to engage the lowermost commodity to slide the same along the plate, a platform under the ejector on which said ejector is slidable, spring means for normally holding said ejector in a retracted position, said platform having an opening, a finger piece extending downwardly from the ejector through the opening, in order that the ejector may be moved for ejecting one of the commodities, said platform being provided with a slot, a rack on the ejector movable in the slot, a pair of flanges depending from the platform, one to each side of the slot, a

pawl pivoted between the flanges and engageable with the rack to prevent movement of the ejector in an opposite direction to which it is being moved until it has moved 5 its full stroke, a guard pivotally mounted in the exit to be swung upwardly by the commodity as it is ejected and to gravitate downwardly after the ejection of the com-

modity to prevent access into the magazine, a shoulder across the front of the platform 10 on which the plate rests, said shoulder acting as a stop to limit the forward movement of the ejector.

In testimony whereof I affix my signature.

DAVID ROUSSELL MACGREGOR.