Feb. 15, 1927. 1,617,689

H. W. RAMSEY

COIN CONTROLLED VENDING MACHINE

Filed Feb. 25, 1924

Fig. 1.

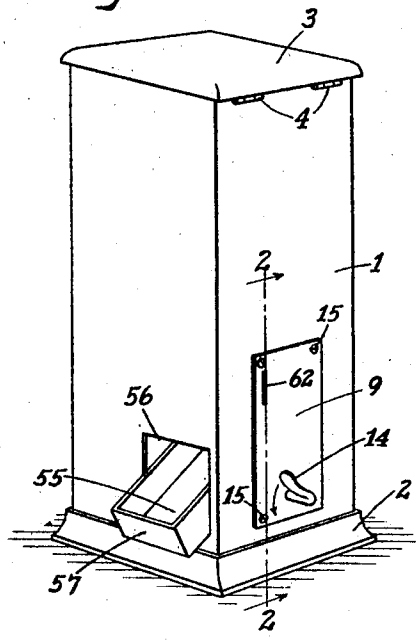


Fig. 2.

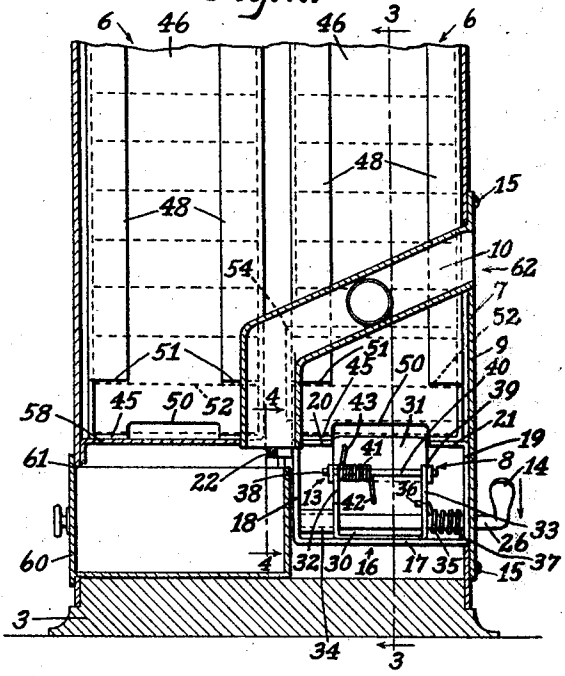


Fig. 3.

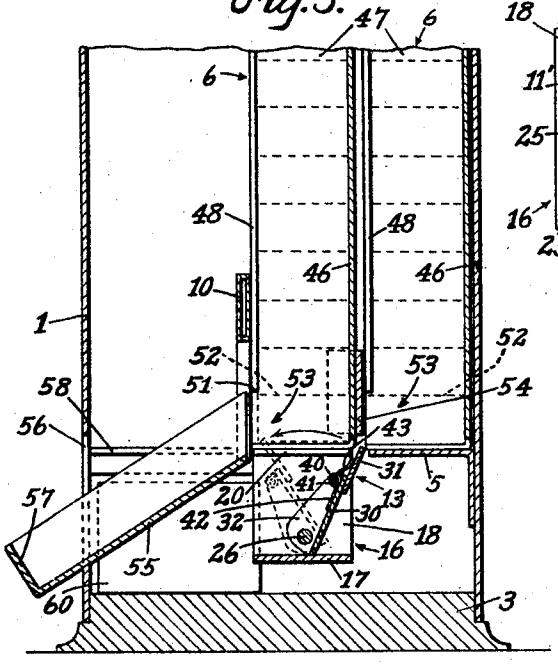


Fig. 4

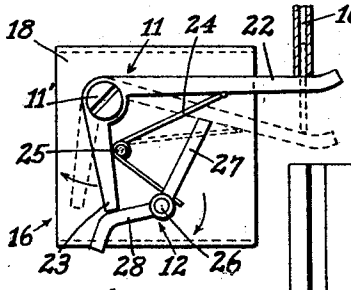
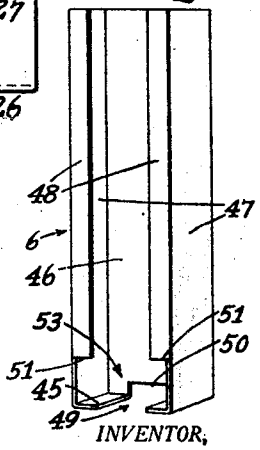


Fig. 5.



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UNITED STATES PATENT OFFICE.

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COIN-CONTROLLED VENDING MACHINE.

Application filed February 25, 1924. Serial No. 694,923.

My invention relates to vending machines and more particularly to coin-controlled vending machines for vending commercial packages, such as boxes of matches.

One of the objects of my invention is to provide a vending machine in which a plurality of magazines may be detachably mounted with one magazine mounted in vending position so that when the packages have been vended from said latter magazine, it may be removed from vending position and a charged magazine substituted in its place.

Another object of my invention is to provide a coin-controlled vending machine which will be simple in construction, positive in its action and highly efficient in operation.

Other objects and advantages will appear hereinafter, and while I show herewith and will describe a preferred form of construction, I desire to be understood that I do not limit my invention to such preferred form, but that various changes and adaptations may be made therein without departing from the spirit of my invention as hereinafter claimed.

Referring to the drawing:

Fig. 1 is a perspective view of my vending machine.

Fig. 2 is a vertical section of the lower portion of my vending machine taken on line 2—2 of Fig. 1.

Fig. 3 is a vertical section of the lower portion of my vending machine taken on line 3—3 of Fig. 2.

Fig. 4 is an inside elevational view of the operating mechanism indicated by line 4—4 in Fig. 2, the coin drawer being removed.

Fig. 5 is a perspective view of one of the magazines.

In the drawing 1 indicates a casing mounted on a base 2 and closed at the top by a cover 3 hinged to the upper edge of the front wall of the casing by hinges 4, said casing being approximately square in plan and extending lengthwise vertically.

An angle iron shelf 5 is secured to the right side wall of the casing 1 in the lower part of the casing on which shelf two magazines 6 may be placed side by side. The front wall of the casing 1 is provided with a rectangular opening 7 through which extends a coin controlled ejector mechanism 8, which mechanism includes a rectangular plate 9, a coin chute 10, a coin operated locking lever 11, an ejector locking lever 12, an ejector 13, and an ejector actuating handle 14.

The plate 9 covers the opening 7, and is secured to the front wall of the casing 1 by screws 15. The upper end of the coin chute 10 extends through the upper part of plate 9 near the left side thereof and is secured at its upper end to the inside of said plate, said chute extending downwardly to a point immediately above the locking lever 11.

A U-shaped frame 16 comprises a lower horizontal member 17, upright members 18 and 19, and end members 20 and 21, bent inwardly horizontally from the upper ends of said upright members. The upright member 19 is secured to the inside of the plate 9 near the lower end thereof. The lever 11 comprises an arm 22 and an arm 23 and is pivoted by a screw 11′ which is seated in the upright frame member 18. The outer end portion of lever arm 22 normally rests under and against the lower end of the chute 10, being held in such position by a spring 24, which is coiled around a pin at 25 with one arm thereof bearing against the under side of said arm 22 and with its other arm bearing against the shaft 26 on which the lever 12 is secured adjacent the member 18 of frame 16.

The lever 12 comprises an upstanding arm 27 and a lateral arm 28 over which the arm 23 of lever 11 normally depends, whereby the lever 12 and shaft 26 to which it is fixed, are prevented from being turned, thus also preventing the ejector 13 from being actuated to eject a package. The shaft 26 extends through the lower part of frame 16, the frame members 18 and 19 and the plate 9, and is journaled in said members and plate. The ejector actuating handle 14 is secured on the outer end of the shaft 26. The ejector 13 is mounted on the shaft 26 within the frame 16 and comprises plates 30 and 31. The side edges of the plate 30 are bent at right angles forming side members 32 and 33 through which members extend the shaft 26, to which said members are secured, whereby the ejector is secured on said shaft. A sleeve 34 surrounds the shaft 26 between the frame member 18 and the ejector side member 32 and a spring 35 surrounds said shaft between the frame member 19 and ejector side member 33, which spring holds the ejector with its side member 32 against

the end of sleeve 34, whereby the ejector is properly positioned within the frame 16, so that the upper edge of plate 31 swings between the frame members 20 and 21.

One end 36 of spring 35 is connected to the ejector side member 33 while the other end 37 of the spring bears against the lower frame member 17 whereby the ejector is normally held retracted as shown in full lines in Fig. 3.

Knuckles 38 and 39 are formed on the side edges of the plate 31 at the lower edge thereof, which knuckles rest against the outside of the side members 32 and 33 respectively at the upper end of said members and a rod 40 extends through said side members and said knuckles, whereby the plate 31 is hinged at its lower edge to the upper edge of the plate 30 with the lower edge of the plate 31 overlapping the upper edge of the plate 30 at the rear of said latter plate.

A spring 41 surrounds the rod 40 with one end 42 thereof bearing against the forward face of plate 30 and the other end 43 thereof bearing against the forward face of plate 31, whereby the latter plate is held in alignment with the plate 30, in which position the plate 31 is arrested by the engagement of the lower portion of its forward side with the upper portion of the rear side of plate 30.

Each magazine 6 comprises a bottom wall 45, a rear wall 46, side walls 47 and front flanges 48 extending inwardly from the forward edges of the side walls.

A slot 49 is cut in the bottom wall 45 from the front to the back of the magazine and a notch 50 is cut in the lower end of the rear wall 46 from the slot 49 coincident therewith. The lower ends 51 of the flanges 48 are located above the bottom of the magazine at a height slightly greater than the height of the packages 52, leaving an opening 53 at the front and lower end of the magazine through which the packages may be successively ejected.

A plate 54 is disposed vertically in the casing 1 and extends from the front wall to approximately the middle of the casing slightly above the plate 5 at a distance from the right side wall of the casing sufficient to allow the lower part of a magazine 6 to rest between said side wall and the plate, the plate being secured at its outer end to the front wall of the casing and having its inner free end bent at a right angle to engage the side of a magazine.

A delivery chute 55 extends downwardly through an opening 56 in the left side of the casing 1 from a position at the left side of the upper members 20 and 21 of frame 16, the lower end of the chute being closed by a wall 57 to hold the ejected package in the lower end of the chute until removed by the operator.

A third magazine 6 is placed in vending between the plate 54 and chute 10 with its bottom wall 45 resting upon the upper frame members 20 and 21 and its delivery opening 53 facing the upper end of chute 55.

A shelf 58 is secured within the casing to the rear wall thereof, upon which a fourth and fifth magazine 6 may be placed at the left of one of the magazines on the shelf 5.

A coin drawer 60 is placed in the bottom of the casing 1 through an opening 61 in the rear wall of the casing under the lower end of the coin chute 10.

Upon inserting the proper coin into a slot 62 in the plate 9 the coin drops down the chute 10 which leads from said slot onto the arm 22, whereby the lever 11 is swung on its pivot against the tension of spring 24 until the arm 23 is swung from over the arm 28 of lever 12, and the arm 22 engages the upper end of arm 27, as shown in dotted lines in Fig. 4. The ejector mechanism is now released and upon turning the handle 14 to the left the ejector 13 is correspondingly swung and the upper edge of the ejector plate 31 engages the right side of the lowermost package in the magazine 6 resting upon frame 16 and swings through the notch 50 and slot 49 in said magazine, ejecting said package from the magazine through its opening 53 into the upper end of the chute 55, down which chute the package slides to the bottom thereof against the lower end wall 57, where the package may be picked out by the operator.

As the ejector is operated the lever 12 is turned with shaft 26 to which it is fixed until the arm 27 swings down away from arm 22, whereupon the coin forces the arm 22 downward until said coin drops out of the lower end of the chute 10 into the coin drawer 60. The spring 24 returns the lever 11 to its normal position.

Upon releasing the handle 14 the spring 35 returns the ejector mechanism to its initial position, the plate 31 engaging the bottom of the lowermost package, which has dropped to the bottom of the vending magazine, and swinging forwardly on its pivot against the tension of spring 41 until said plate escapes the package and is returned by said spring 41 to its normal extended position.

When a magazine has been emptied by the vending of the packages therefrom, said magazine may be removed from the vending position and a filled magazine substituted in its place. The empty magazine may be placed in the casing formerly occupied by the filled magazine now in vending position.

I claim as my invention:

1. In a vending machine, the combination, with an upright magazine having a feeding opening at its lower end; of a U-shaped

frame, the open end of which is adjacent to said feeding opening and is provided at each side with an inwardly directed flange, an ejector shaft extending through the arms of said U-shaped frame near the base thereof, an ejector fixed to said shaft between said arms and said flanges thereof, said ejector comprising a main plate fixed to said shaft and extending therefrom toward said feeding opening and an end plate pivoted to said main plate in position to engage and eject the lowest article in the magazine when said shaft is rocked in one direction and to swing to a deflected position with relation to said main plate during the return movement of said shaft, and a spring operating between said plates to restore said end plate from deflected to normal position, there being a spacing sleeve around said ejector shaft in the space provided at one side of said U-shaped frame by its inwardly directed flange at that side, and, in the corresponding space at the other side of said U-shaped frame end, a coil spring to restore said ejector shaft to normal position.

2. In a vending machine, the combination, with an upright magazine having a feeding opening at its lower end; of a U-shaped frame, the open end of which is directed upwardly and is adjacent to said feeding opening, an ejector shaft extending through the arms of said U-shaped frame, an ejector fixed to said shaft between said arms, said ejector comprising a main plate fixed to said shaft and an end plate pivoted to said main plate in position to engage and eject the lowest article in the magazine when said shaft is rocked in one direction and to swing to a deflected position with relation to said main plate during return movement of said shaft.

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