

July 12, 1932.

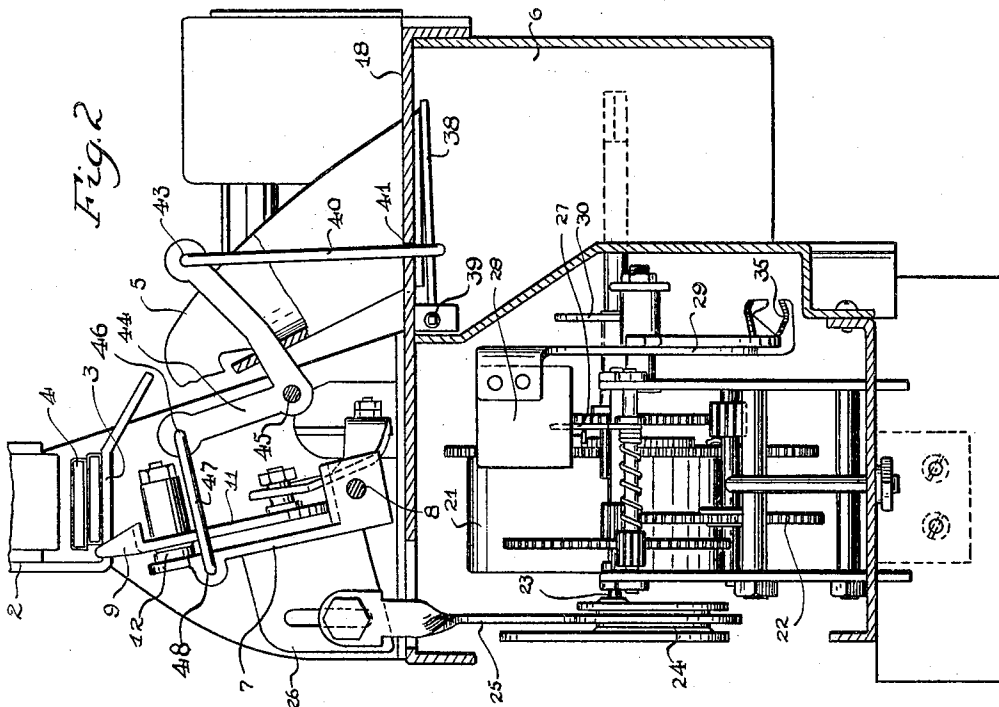
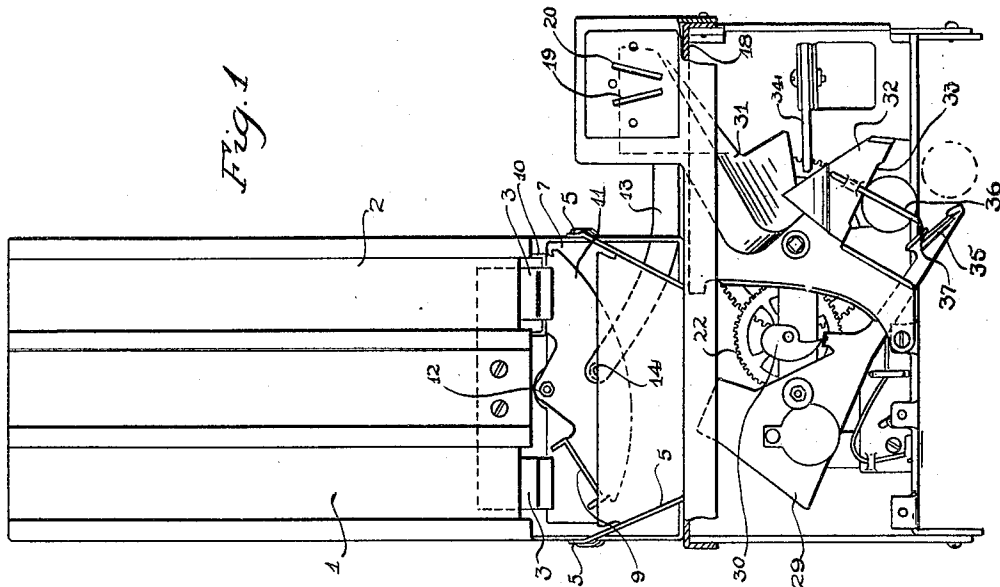
S. B. BURNE

1,867,495

VENDING MACHINE

Filed April 12, 1928

3 Sheets-Sheet 1



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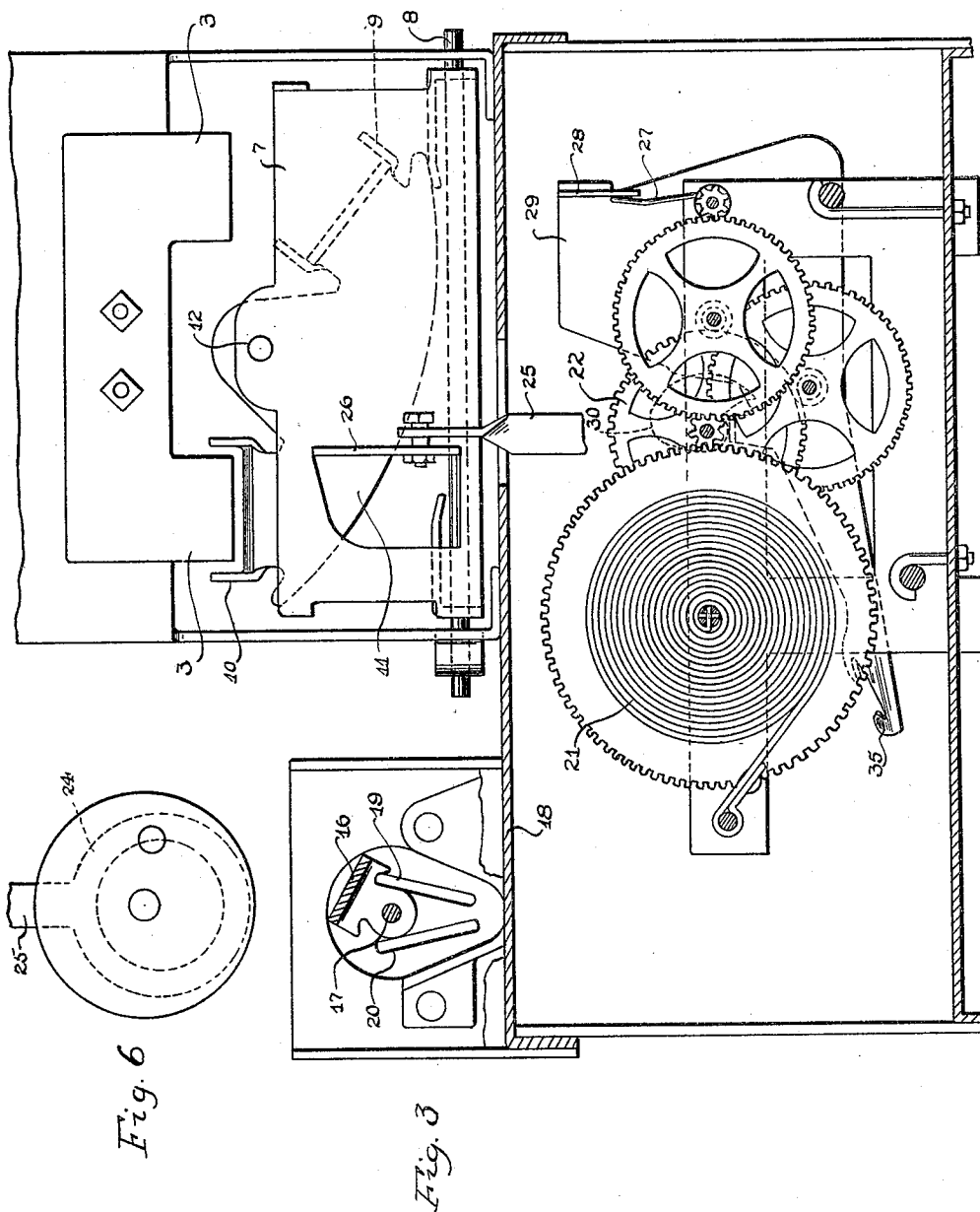
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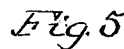
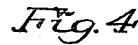
3 Sheets-Sheet 2



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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

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VENDING MACHINE

Application filed April 12, 1928. Serial No. 269,404.

The present invention relates to vending machines and more particularly to the type in which the article to be vended is discharged through a chute to the exterior of the machine. An object of this invention is to provide a closure for the chute which will prevent surreptitious removal of articles from the machine by way of the delivery chute. Another object of the invention is to provide a delivery chute closure controlled by the ejecting mechanism to open up the chute for the discharge of an article ejected by the ejecting mechanism and to close the chute after such article has been discharged. To these and other ends, the invention consists of certain parts and combinations of parts all of which will be hereinafter described: the novel features being pointed out in the appended claims.

In the drawings:

Fig. 1 is an elevation of a machine, the outside casing being removed;

Fig. 2 is a vertical section through the machine with the casing removed;

Fig. 3 is an enlarged view partially in section looking from the rear of the machine with the casing removed;

Fig. 4 is an enlarged view partially in horizontal section looking from the top of the machine, with the casing removed;

Fig. 5 is a fragmentary view with parts in section as viewed from the front of the machine; and

Fig. 6 is a detail view.

The enclosing casing of the machine is not illustrated and may be of any suitable form. Within this casing is arranged the article holding means comprising, in this instance, two stacks 1 and 2 in which the articles 4 to be vended are positioned, such articles being sustained in the stack by supports or retainers 3 projecting forwardly from the rear walls of the stacks in spaced relation from the lower ends of the stacks and also from opposite sides of the stack so

that the articles 4 may be engaged at their sides and moved forwardly on the retainers to be discharged in the upper portion 5 of the delivery chute to be conducted by the latter by way of the lower portion 6 of said chute to the outside of the machine.

For ejecting the articles from the stacks 1 and 2 or article holding means into the chute, there is employed an ejecting mechanism comprising, in this instance, a swinging member 7 mounted to swing on the shaft 8 below the stacks 1 and 2 and having mounted thereon two ejectors 9 and 10. These ejectors, in this instance, are mounted on a single plate or carrier 11 pivoted at 12 to the swinging member 7 and adapted to be moved on the swinging member about the pivot so as to bring either one of them into cooperative relation with one of the stacks, so that when the swinging member 7 is swung on its axis 8 one of the ejectors 9 or 10 will displace the lowermost article 4 in one of the stacks from said stack into the delivery chute.

With the end in view of determining which ejector 9 or 10 is to operate there is provided a coin control selecting mechanism comprising, in this instance, a link 13 pivoted eccentrically at 14 to the plate 11 and also pivotally connected at 15 to a swinging coin shifted member 16 which turns on a shaft 17 to one side of the stacks on a platform 18 which also supports the stacks and the ejector mechanism. This coin shifted member has one end operating adjacent two slots 19 and 20 which are positioned to correspond to the stacks 1 and 2 so that a coin passed through this slot 19 and engaging the member 16, if the latter be over the slot, shifts the member 11 so that the ejector 9 will operate, whereas, a coin introduced through the opening 20, if the member 16 be over the slot, shifts the member 16 and through the latter the member 11 to cause the injector 10 to operate.

The mechanism for moving the ejecting

mechanism comprises, in this instance, a spring motor 21 which through a train of gearing 22 connects with the shaft 23 on which an eccentric 24 is arranged. This eccentric has a pitman 25 extending therefrom and connected with a lug 26 extending rearwardly from the movable member 7. Also geared to and moved by the motor spring 21 is a rotary stop 27 which is adapted to co-operate with the portion 28 on a detent 29, the latter also being controlled by a rotary cam 30 driven by the motor. If the detent is depressed, it frees the stop 27 and thereafter the motor through the cam 30 moves and holds the detent 29 out of detaining position until the motor has operated sufficiently to effect a movement of the swinging member 7 forwardly and then rearwardly first to eject the article and then to return the member 20 to its normal position of the next operation of the machine, the detent when released by the cam returning its portion 28 into the path of the rotary stop 27 and stopping the motor.

The control of the detent 29 may be effected through the coins passed through the slots 19 and 20 and, to this end, each of these slots communicate with the upper end of a chute 31 which is so formed that it directs the coin to a vertical position and drops it behind a plate 32 which has a slot 33 in the lower end thereof through which the coin may pass, this slot being provided in the inclined bottom wall 33. If the thing deposited be a slug then the magnet 34 which is positioned adjacent the lower end of the chute 31 will deflect the slug and cause it to travel down the inclined wall 34 without passing through the slot 33, but if the thing deposited be the proper coin then the coin will pass through the slot 33 and engage the end 35 of the detent 29, the weight of the coin being sufficient to press the detent a sufficient amount to release the stop 27 after which the cam 30 continues the movement of the detent 29 and holds the detent against return movement until the motor has moved the ejecting mechanism to its normal or initial position. When the coin comes to rest on the detent end 35 it lies between the arms of a loop 36 and, as the detent 29 descends under the action of the coin and the cam, the coin descends also until the end 37 of the loop is reached when the loop ejects the coin from the detent end 29 and permits the coin to fall by gravity into the receptacle not shown.

The chute which normally delivers the ejected articles from a vending machine to the exterior of the machine is open from the discharge end of the chute to the stack of articles and the surreptitious removal of these articles may be effected by introducing a wire through the discharge opening of the chute to reach the article holding means. This is overcome, in this instance, by providing a closure or shutter 38 in the chute.

This closure or shutter, in this instance, is pivoted at 39 to swing downwardly within the chute section 6 and cooperates with the lower end of the chute section 5. The operation of this shutter, in this instance, is effected through a controller 40 guided at 41 in the platform 18 and having a hook or arm 42 at its lower end for sliding engagement with the underside of the closure or shutter 38. The upper end of this controller 40 is pivoted at 43 to one end of a bell crank lever 44, which is pivoted at 45 and has its other arm pivoted at 46 to a link 47. The latter in turn is pivoted at 48 to the swinging member 7. When the swinging member 7 is in its rear or normal position, the controller 40 holds the closure 38 in closed position, as illustrated in Fig. 2, so that it is impossible to pass anything through the delivery chute from the outlet end thereof in order to reach the articles 4 in the article holding means and displace them from the retainers 3. When the swinging member 7 moves forwardly the controller 4 descends permitting the closure 38 to drop by gravity to the dotted line position illustrated in Fig. 2, so that the articles displaced by the ejectors 9 and 10 may drop through the chute.

It is apparent that with this arrangement the closure 38 and ejectors 9 and 10 are both operated from the motor, and the control of the closure for the discharge chute is effected through the ejector mechanism.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a vending machine, the combination of an article holder having a receiving portion for holding a stack of articles to be vended, a chute disposed forwardly of said article holder and comprising an upper portion arranged to receive an article ejected from the article holder into the chute and a lower portion from which the article is delivered, a pivoted member adapted to be swung transversely beneath the holder and having an ejector mounted thereupon for delivering an article from the holder into the chute, a shutter normally extending across the chute for preventing surreptitious removal of articles from the machine by way of the delivery chute, a bell crank lever having one arm connected to the pivoted member whereby movement is imparted from the pivoted member when moved to the bell crank lever, the other arm of the lever being connected to the shutter for operating the same, and mechanism for actuating the pivoted member.

2. In a coin controlled vending machine, the combination of an article holder having a plurality of receiving portions each for holding a stack of articles to be vended, a chute arranged in association with the article holder to receive an article delivered from the lower portion of the holder, a pivoted

shutter normally closing said chute, a piv-
oted member arranged to swing relative to
the article holder, an ejector movably mount-
ed on the pivoted member, selecting means
5 for positioning the ejector in operative posi-
tion with respect to any desired receiving
portion containing a particular stack of arti-
cles, a bell crank lever having one arm con-
nected with said pivoted member and hav-
10 ing its other arm connected with the pivoted
shutter, and mechanism for actuating the
pivoted member.

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