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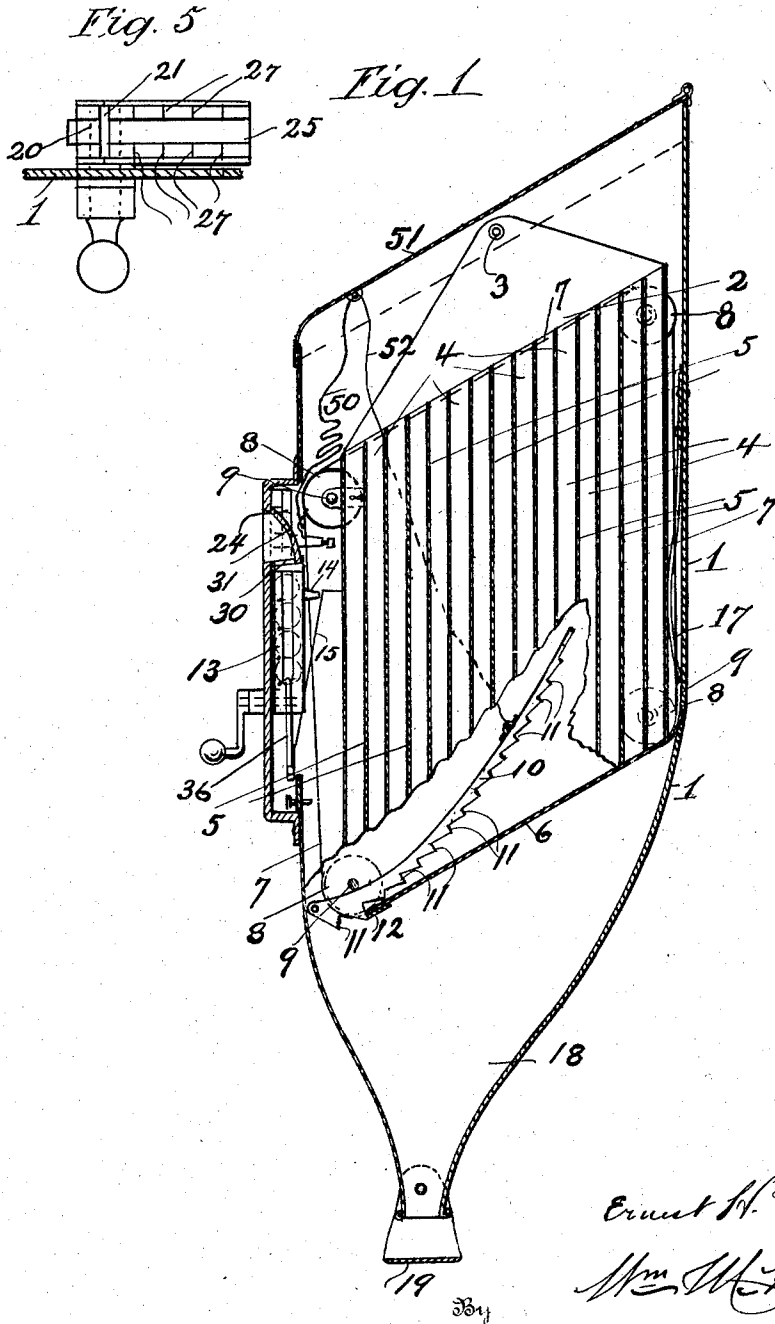
E. H. FREY

1,744,112

VENDING MACHINE

Filed May 8, 1923

3 Sheets-Sheet 1



Inventor
Ernest H. Frey

Wm. W. Moore

Attorney

Jan. 21, 1930.

E. H. FREY

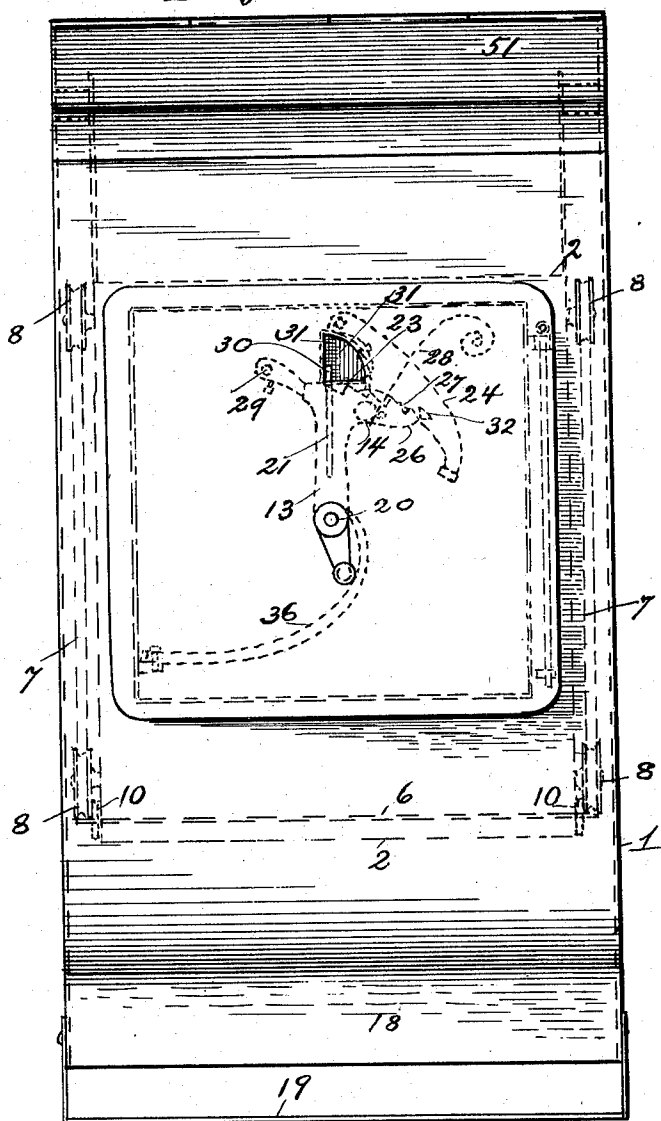
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Fig. 2



Inventor
Ernest H. Frey
by Wm. M. Monroe
Attorney

Jan. 21, 1930.

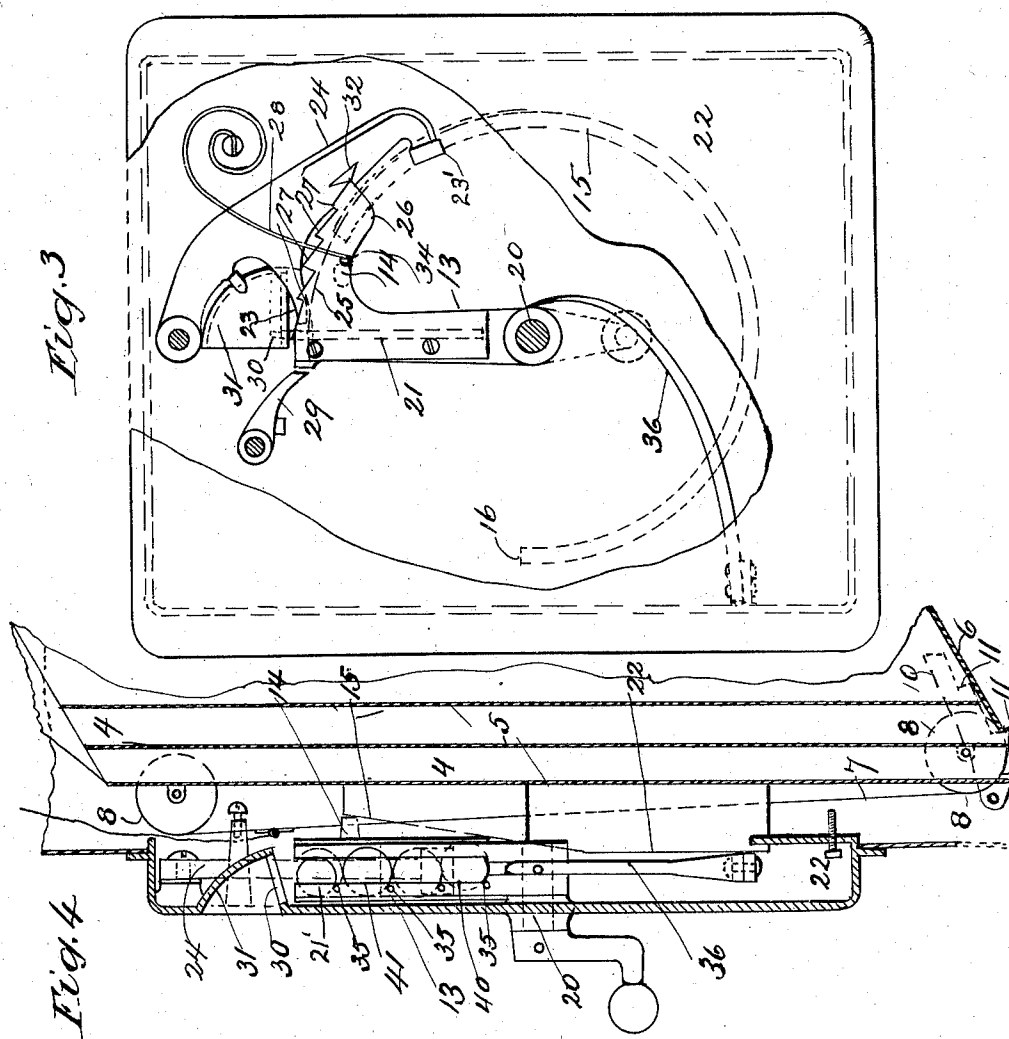
E. H. FREY

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VENDING MACHINE

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Inventor

Ernest H. Frey

Wm. M. Macroe

Attorney

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UNITED STATES PATENT OFFICE

ERNEST H. FREY, OF WILLOUGHBY, OHIO

VENDING MACHINE

Application filed May 8, 1923. Serial No. 637,524.

The objects of this invention are to provide an improved form of coin controlled vending machine for vending periodicals, magazines, newspapers, and analogous articles or packages, and having increased facilities and capabilities for such use.

The invention includes a swinging magazine having substantially vertical spaced compartments therein adapted to retain the articles to be sold, the aforesaid compartments being open at the bottom to permit the discharge of said articles therefrom. It also includes retaining mechanism for said articles operated by the movements of the magazine, to successively release the articles from said compartments one after another until all the compartments are empty.

It includes an outer casing, a magazine pivoted and having a limited swinging movement therein, said magazine being provided with a multiple number of substantially vertical compartments in which the aforesaid articles are held in spaced relation to each other. The bottoms of the said compartments are open to permit the discharge of the said articles therefrom, and the casing is provided with a discharge opening or chute at its lower end, common to all said compartments and a guard means is provided for the chute, to prevent the articles passed into the chute from falling out, until they are released by the purchaser. This guard also acts as a means for preventing the insertion of a probe or other disturbing tool into the magazine.

The invention further includes, movable mechanism for retaining the said articles in the compartments. Said retaining mechanism being supported upon said magazine, and moving therewith and passing underneath said opening in said compartments. Stop means are also adopted to limit the movements of said retaining means and to give a step by step movement thereto in order to open said compartments in succession and release the articles for sale one after another therefrom.

The invention also includes a flexible apron passing underneath the open ends of said compartments and endless belts to which the

sides of said apron are attached, said belts passing over guide pulleys secured to said magazine.

It also includes a stop member provided with spaced shoulders which are engaged in turn by the edge of the aforesaid apron when the magazine is swung forward, thus forcing back the apron with a step by step movement, the effect being to open a fresh compartment each time the magazine is swung forward. It includes a pivoted, gravity operated stop member for the purpose.

It includes coin controlled mechanism for forcing the magazine to swing in one direction and automatically acting means such as a spring or pump for reversing its movement thereof.

It includes means for causing the sudden release of the magazine when operated by the coin controlled mechanism, this action serving not only to withdraw the apron quickly from the mouths of the compartments but also to cause the spring presser magazine to strike forcibly against the side of the casing or stop means thereon and thus jar and loosen the articles in the compartment to make them fall by gravity therefrom.

It includes means operated by the cover of the casing when said cover is lifted to fill the magazine, for restoring the apron and stop means to their starting positions.

It includes a rotatable coin chute provided with means for operating said magazine. It also includes means for preventing the movements of the chute until a coin of the right denomination has been deposited therein, and also includes means for removing coins of all denominations therefrom.

It includes a coin chute adapted for use with coins of several denominations and for a multiple number of coins of small denomination.

It includes means for limiting the swinging movement of said magazine to produce the desired amount of opening required for the discharge of the articles therefrom.

The invention is hereinafter more fully described, illustrated in the accompanying drawings and specifically pointed out in the claims.

In the accompanying drawings Fig. 1 is a vertical section of the device. Fig. 2 is a front elevation thereof. Fig. 3 is a front elevation enlarged thereof with a portion of the casing broken away to show the coin chute. Fig. 4 is a vertical transverse section thereof. Fig. 5 is a plan of the coin chute lever.

In these views 1 is a casing in which a magazine 2 is pivoted at 3 to swing backwards and forwards therein, thus giving a horizontal reciprocating movement to the lower end.

This magazine is provided with substantially vertical compartments, 4, 4 separated by means of the partitions 5, 5 and open at top and bottom.

An apron or other movable retaining means 6, normally closes all these compartments and prevents the vendable articles which are introduced from above from falling out.

The retaining device is preferably mounted upon the belts 7, 7, mounted upon the pulleys 8, 8 which are pivoted upon the sides of the magazine at 9, 9.

It will be seen that any movement of the apron to the rear will open the compartments.

To give a step by step movement to this apron, in order to permit the contents to drop out of them one at a time, as the magazine is swung, stop members or arms 10, 10 are pivoted to the front wall of the casing, and are provided with spaced shoulders or engaging means 11, 11, which engage in turn with the front edge 12 of the apron and move it back the width of one opening at a time when the magazine is swung forward.

This is accomplished by gravity acting upon the stop members as follows:

The magazine is first swung backward by means of a coin controlled lever 13, rotatable in the front of the casing, which is provided with a lug 14, that engages a cam shaped rib 15 upon the front wall of the magazine.

The magazine is then released suddenly to give a quick return movement thereto by giving an abrupt ending to the rib at 16, thus permitting the spring 17 or automatically acting return means to force the magazine forwards.

When the magazine is swung forward the front edge of the apron 6 will engage one of the shoulders 11 upon the stop member, and the apron will be moved back thereby far enough to increase and open one of the compartments 4, and permit the contents to drop into the chute 18 which is common to all the compartments.

A guard member 19 spaced beneath the discharge opening of the chute supports the article deposited thereon until it is removed by the purchaser.

This guard also prevents the introduction of a probe or disturbing tool into the magazine.

When the magazine is again forced back

in the casing by the coin controlled lever the stop arms 10, 10 will fall by gravity and will place a second shoulder 11 in the path of the apron which when the magazine is again forced forward will engage and move the apron back from another compartment and release the contents thereof.

This oscillating or reciprocating movement of the magazine is repeated by means of the coin controlled lever 13 until all the compartments are emptied of their contents.

The construction and operation of the coin controlled lever is as follows:

Upon the front of the casing, the lever 13 is pivoted at 20, and is longitudinally slotted at 21 to provide a coin chute or holder in which a coin 21' or number of coins may be inserted and held vertically until the lever is revolved, when the coin or coins will be deposited in a coin receiver 22 in the lower part of the casing.

When no coin is in the chute the arm depending extremity 23' of a gravity operated pawl 24 will prevent the lever from revolving. But when a coin or coins are introduced therein the side of the coin held in the chute, or the side of the upper coin, if several are inserted, will be placed transversely of a rearwardly extending slot 25 in the upper end of the chute and will engage the arm 23 of the spring pressed pawl 24 and will lift the pawl and its extremity 23' to permit the lever 13 to revolve.

The rearwardly extending portion 26 of the coin lever is arc shaped and the slot 25 extends circumferentially in its upper surface.

A spring 28 normally holds the lever 13 firmly against a pawl 29 pivoted on the case, in which position the slots 30 and 31 are out of alignment and the extension 23 will extend over the coin chute so as to prevent the insertion of a coin.

In order to permit a coin to be inserted it is necessary to turn the lever 13 slightly until the slots are aligned and the extension 23 is removed therefrom by the action of the lug 32 and the rearward extension 26 of the coin lever 13 and rear shoulder 27.

The slot 30 governs the size of the coins than can be deposited in the coin chute and they pass through the slot 30 in the cup 31 upon the casing.

To prevent a coin from being deposited in the chute, unless the aforesaid coin slot and chute are in alignment, upon the first movement of the lever, the extremity 23 of the pawl 24 will normally extend over the coin chute, but will be removed therefrom by a lug 32 upon the pawl 24 which will engage in turn with the shoulders 27 raised above the slot 25 and the shoulders will lift the pawl when the coin slot and chute are accurately aligned and permit a coin to enter.

The spring 28 upon the case will normally

force the lever into position against the pawl 29.

The lug 32 serves to engage in turn with the raised shoulders 27 on the lever 13 and to raise the pawl 24 and arm 23 so as to permit the coin 21' to fall into the slot.

The lug 32 is duplicated preferably on the opposite side of the pawl.

The lower extremity 23' of the pawl 24 normally falls by gravity into the path of the lever 13, but when the lever containing the coin is wound back clockwise the pawl will be raised so that it will pass the extremity 23'.

This lower extremity is T shaped so it will not enter the slot 25.

The lever 13 is completely revolved and the lug 34 is so positioned that the end of the spring will engage with it until the lever has been partially turned, after which the spring will snap away from the lug and the lug will pass by it. When the lever has made a complete revolution the spring will engage with it again.

Applicant's lever will move only a slight distance to align the openings and permit the coin to drop in. Afterwards the lever propels the coin past the lifted end 23' and revolves entirely around its center.

When the lever is advanced sufficiently the spring, 28, will snap out of engagement with a lug, 34, upon the lever, and release the same.

Pins, 35, 35, may be inserted across the coin chute to position coins of different denominations accurately therein.

A curved finger, 36, preferably elliptical in shape, mounted on the casing, passes through the lower end, 40, of the coin chute and beneath the coin or coins therein, and as the lever revolves, it operates in a slot, 41, and pushes out the coin or coins therein, which fall by gravity into the coin receptacle beneath the lever and coin chute.

Means for restoring the apron and stop members to their starting positions are shown in Fig. 1, where 50, 50 are loose cords connecting the cover, 51, and belts, 7, 7, and 52, 52, are shorter cords connecting the cover and stop members, 10, 10, so that when the cover is lifted to renew the supply of articles in the compartment, the stop members will first be released from the apron, and finally the apron will be moved forward to its original position.

Having described the invention what I claim as new and desire to secure by Letters Patent is:

1. In a device for the purpose set forth a support, a magazine movable therein, a revolving lever mounted in said casing, said lever being engageable with said magazine to move said magazine backward, an automatically acting pawl normally positioned in the path of said lever to prevent its engaging said magazine, a coin chute in said lever normally adapted to retain a coin deposited

therein, said pawl being engageable with said coin and removable by means of the same out of the path of said lever when said lever is revolved.

2. In a device for the purpose set forth, a support, a magazine movable therein, a revolving lever mounted in said casing, said lever being engageable with said magazine to move said magazine backward, an automatically acting pawl normally positioned in the path of said lever to prevent its engagement with said magazine, a coin chute in said lever normally adapted to retain a coin deposited therein, said pawl being engageable with said coin and removable by means of the same out of the path of said lever when said lever is revolved, and stop means for preventing said pawl from closing said coin chute when said coin chute is in a position to receive a coin.

3. In a device of the character described, a support, a magazine movable therein, a revolvable lever mounted on said support, a cam on said magazine, engageable by said lever to move said magazine rearwardly in said support, a coin chute in said lever, a pawl normally positioned in the path of said lever but removable therefrom by the agency of a coin introduced into said chute, and means for positioning coins of different denominations in said chute to operate upon said pawl.

4. In a device of the character described, a support, a magazine movable therein, a revolvable lever mounted on said support, a cam on said magazine, engageable by said lever to move said magazine rearwardly in said casing, a coin chute in said lever, a pawl normally positioned in the path of said lever but removable therefrom by the agency of a coin introduced into said chute, and means for positioning coins of different denominations in said chute to operate upon said pawl and a device upon the support adapted to pass into said chute as said lever revolves and removes said coin therefrom.

5. In a vending machine, a support, a revolvable lever mounted thereon and provided with a longitudinal slotted coin chute therein open upon its sides and having an arcuate arm upon its outer extremity, said arm being circumferentially slotted, means in said chute for positioning a coin therein, a pawl having a guard arm positioned to traverse said circumferential slot as said lever is rotated, said pawl being also provided with a stop member normally in the path of said arcuate arm on said coin chute, said support being provided with a slot for the introduction of said coin, means for positioning said lever to bring said slot and chute nearly in alinement with each other, means on said pawl engageable with said arcuate arm on said lever for removing said guard arm from over said chute when said slot and chute are in alinement with each other, and positioned to release the same to enable it to cover said

slot where said lever is moved past said slot.

6. In a device of the character described, a support, a coin controlled operating lever, provided with a vertical slotted coin chute, and revolvable on said support, said support
5 provided with a slot for the introduction of a coin, stop means for limiting the backward movement of said lever to place said slot and chute nearly in alinement with each other, movable retaining means for limiting the forward
10 movement of said lever, a guard member movable with said retaining means, for normally closing said slot, and means for removing said guard from said slot when said
15 slot and chute are in alinement with each other.

7. In a device of the character described, a support, a coin controlled operating lever, provided with a vertical slotted coin chute, and revolvable on said support, said support
20 provided with a slot for the introduction of a coin, stop means for limiting the backward movement of said lever to place said slot and chute nearly in alinement with each other, movable retaining means for limiting the forward
25 movement of said lever, a guard member movable with said retaining means, for normally closing said slot, and means for removing said guard from said slot when said slot and chute are in alinement with each other,
30 and a device for removing the coin from said chute during the revolution of said lever.

8. In a device of the character described, a support, a coin controlled operating lever, provided with a vertical slotted coin chute, and revolvable on said support, said support
35 provided with a slot for the introduction of a coin, stop means for limiting the backward movement of said lever to place said slot and chute nearly in alinement with each other, movable retaining means for limiting the forward
40 movement of said lever, a guard member movable with said retaining means, for normally closing said slot, and means for removing said guard from said slot when said
45 slot and chute are in alinement with each other, and a device for removing the coin from said chute during the revolution of said lever, and means for positioning a coin in said
50 chute in the path of said guard member.

In testimony whereof, I hereunto set my hand this 17 day of April, 1923.

ERNEST H. FREY.

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