March 22, 1927. 1,621,619

M. T. ASHE

DELIVERY MECHANISM

Filed Oct. 21, 1925

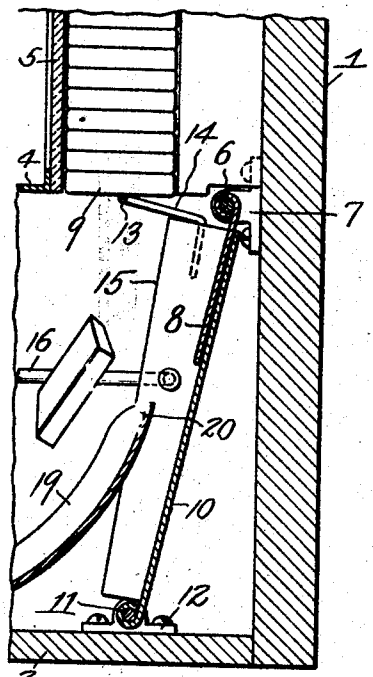


Fig. 2.

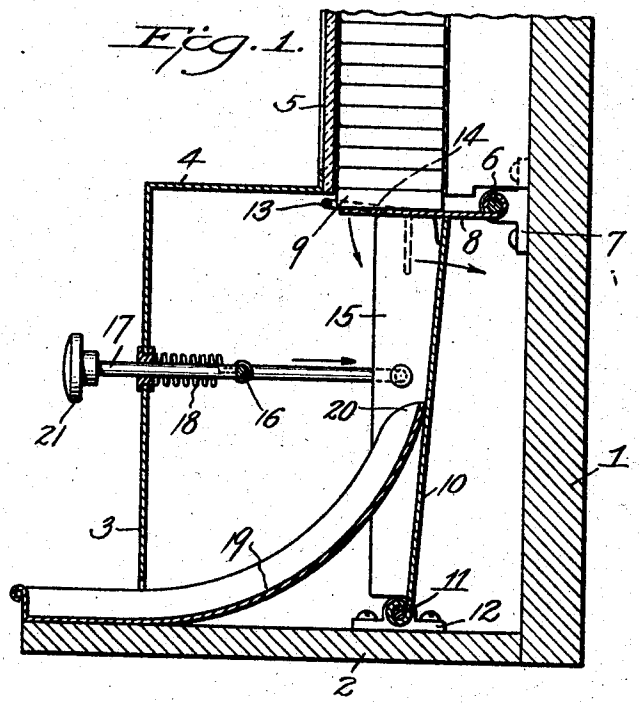


Fig. 1.

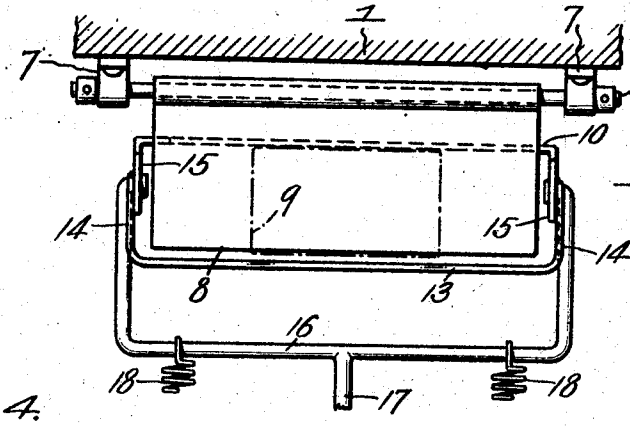


Fig. 3.

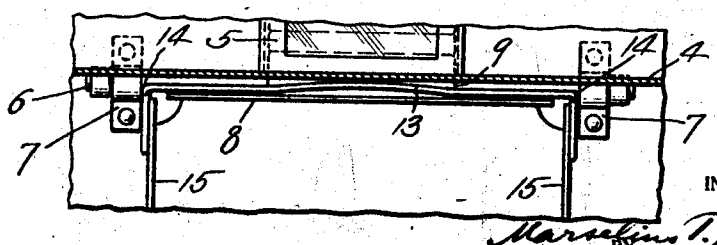


Fig. 4.

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Patented Mar. 22, 1927. 1,621,619

UNITED STATES PATENT OFFICE.

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DELIVERY MECHANISM.

Application filed October 21, 1925. Serial No. 63,819.

This invention relates to delivery mechanism for use with vending machines, and my improvements are particularly directed to movable, base supporting means for a stack of vendible articles contained in a magazine, wherein the movement of the base support releases the bottom article in the stack, while support is continued for the remainder of said articles.

According to my invention a pivotal flap is employed as the stack supporting element, and itself is held horizontally operative upon the top edge of a vertically disposed member that is displaceable to release the flap, so that said flap may fall away from its stack supporting position, thereby leaving the bottom article free to drop from the magazine.

Also my invention includes a follower device, carried by the vertically disposed member, to engage the lowermost article in the stack and shift it while said follower device takes the place of the flap as the stack support, until through retraction of the vertically disposed member the flap is returned to its normal position.

Other features and advantages of my invention will hereinafter appear.

In the drawings:

Figure 1 is a side sectional view of a delivery device embodying my invention.

Fig. 2 is a similar view showing the stack support removed from its operative or stack supporting position, and the follower taking its place in the shifting of a bottom article for delivery.

Fig. 3 is a top plan view of Fig. 1, and

Fig. 4 is a partial front view thereof.

In the representation of my invention illustrated in the drawings I have confined myself to a showing of only such parts of a vending machine as will serve to convey complete information regarding the nature of my improved means for the delivery of articles singly from the bottom of a magazine, it being understood that the elements of the delivery mechanism constitute an organism which is capable of employment with vending machines of different kinds without the exercise of more than ordinary skill by those familiar with this art.

Thus, let 1 indicate the rear wall of a frame or casing, 2 is base, 3 a front wall at the lower portion of the casing, 4 the top of said lower casing portion, and 5 a vertically disposed magazine which extends upwardly from said top 4.

A shaft 6, journalled in bearings 7, 7 fixed to the rear wall 1, carries a flap 8 that is adapted to be extended and held horizontally under said magazine, in spaced relation therewith, to thereby constitute a base or support upon which the bottom article 9 of a stack of such articles may rest, so that in this manner the weight of the entire stack of articles is supported by said flap. Since the shaft 6 lies to the rearward of the magazine exit, and the normal tendency of the flap 8 is to hang pendent, therefore, in order that said flap may support the stack, suitable flap holding means must be provided. The holding means here represented consists of a vertically disposed plate 10, carried by a horizontal shaft 11 that is journalled in bearings 12, 12 fixed to the base 2, the top edge of plate 10 normally engaging the under surface of flap 8, and the height of said plate being sufficient to thereby hold the flap extended horizontally in the performance of its stack supporting function.

The plate or member 10 is shiftable to and from its position of flap support, rocking about the axis of its shaft 11 for that purpose. Thus, upon rocking member 10 rearwardly to its dotted line position shown in Fig. 1, or so that its top edge is carried to a point behind the shaft 6, thereby support for flap 8 is removed, and said flap must fall (see Fig. 2). It is my purpose to in this manner permit the delivery, by gravitation, of a single article from the magazine, but it is also necessary to provide means for holding up the remaining articles in the magazine. Therefore I provide a follower, in the form of a bail 13, having arms 14, 14, by which it is attached to flanges 15, 15 of the plate 10; said bail, which lies normally just in advance of the lowermost article 9, serving to press said article rearwardly, away from the stack, while the member 10 is moving rearwardly; whereby said bail rides into a position beneath the stack, to become a temporary support therefor, when the member 10, having completed its rearward movement, thus releases the flap 8 so that the latter falls and permits the shifted or ejected article to drop.

It will be appreciated that in the return movement of member 10 the top edge thereof again raises the flap 8 to its horizontal, stack supporting position, and at the same time the bail 13 moves forwardly to its normal position in readiness for a succeeding delivery operation.

As actuating means for the member 10 I have shown a yoke 16 engaging the flanges 15, and a push rod 17 extended from said yoke through the casing wall 3, spring means as indicated at 18 connecting the yoke and wall 3 to provide the tension under which the member 10 is retractable to and held against suitable stop means, in its normal, stack supporting position.

A curved delivery chute 19, extended outwardly through an opening in wall 3, may have its inner end 20 located in a position beneath the magazine where it will serve as a stop to limit the forward movement of member 10. Also, as here shown the stroke of the push rod or plunger 17 is limited by its head 21 coming in contact with wall 3, thereby constituting a stop that determines the extent of the rearward movement permitted member 10 in the article releasing and delivering operation.

It must be understood that the actuating means herein described, as well as the respective stop means for the flap control member are given by way of example only, and that all variations within the scope and spirit of my invention are equally comprehended by the foregoing disclosure.

I claim:

1. The combination with a magazine to contain a stack of articles, of a movable base support for the stack, shiftable means for releasably holding said base support in its operative position, and other means carried by said shiftable means, for supporting the stack when the base support is released to permit delivery of the bottom article.

2. The combination with a vertically disposed magazine adapted to contain a stack of articles, of a movable, stack supporting base for said magazine, shiftable means to releasably hold said base in its stack supporting position, and means carried by said shiftable means to displace the bottom article and support the remaining stack while said shiftable means releases the base and thereby permits delivery by gravitation of said displaced article.

3. The combination with a vertically disposed magazine adapted to contain a stack of articles, of a pivotal flap, shiftable means to releasably hold said flap extended beneath said magazine as a stack support, and means, carried by said shiftable means, to displace the bottom article and move into a stack supporting position beneath the next succeeding article.

4. The combination with a magazine to contain a stack of articles, of a flap having pivotal engagement at a point outside the gravitational path from the magazine, whereby said flap is movable to and from the magazine exit as a releasable support for the stack, a vertically disposed pivotal member engaging said flap and movable through a limited arc to hold said flap in its stack supporting position and release it therefrom, and a bail carried by said member, in rearwardly spaced relation thereto to shift the bottom article from the stack in the flap releasing movement of said member, whereby said bail passes into a position beneath the stack, to support it upon the release of the flap and the consequent delivery of the shifted article.

Executed this 19th day of October, 1925.

MARSELIUS T. ASHE.