Jan. 3, 1928.

1,654,877

M. W. HILL

VENDING MACHINE

Filed Sept. 22, 1925

3 Sheets-Sheet 1

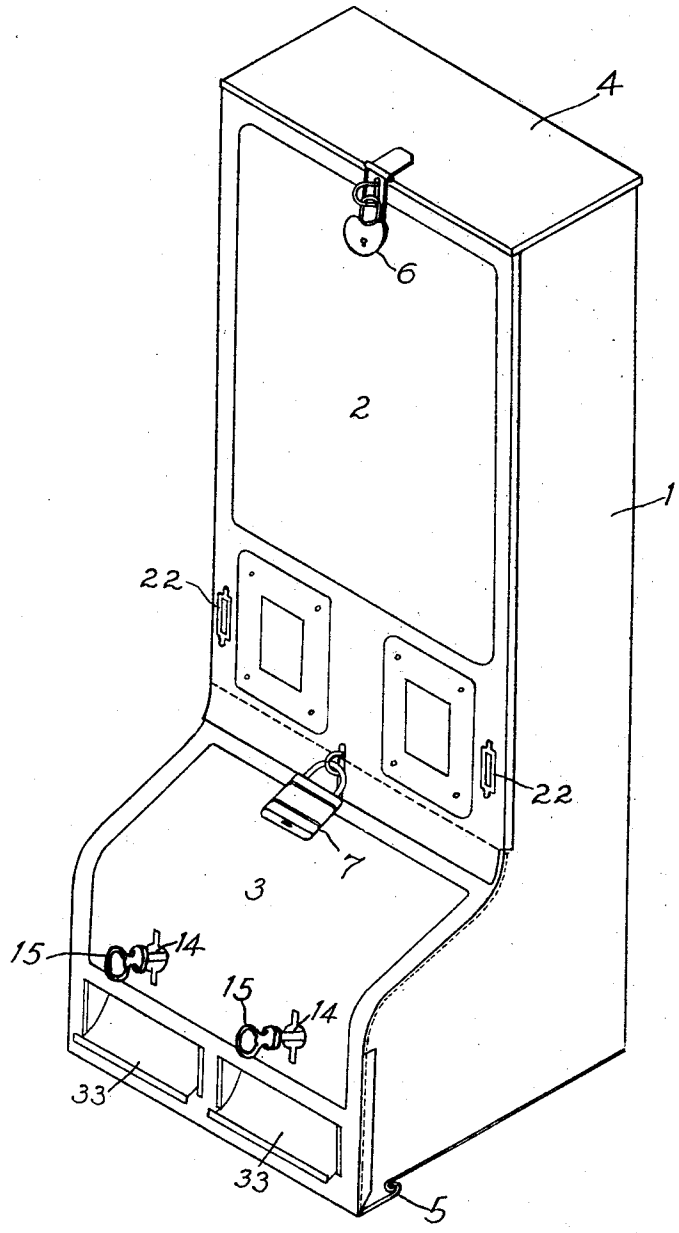


Fig. 1

INVENTOR

Malcolm W. Hill

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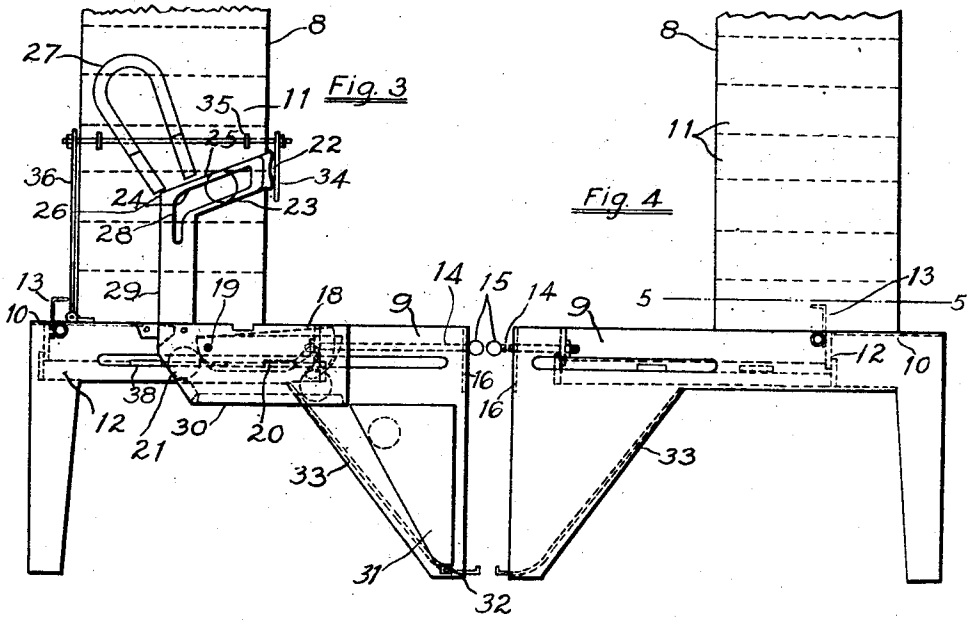
ATTORNEY

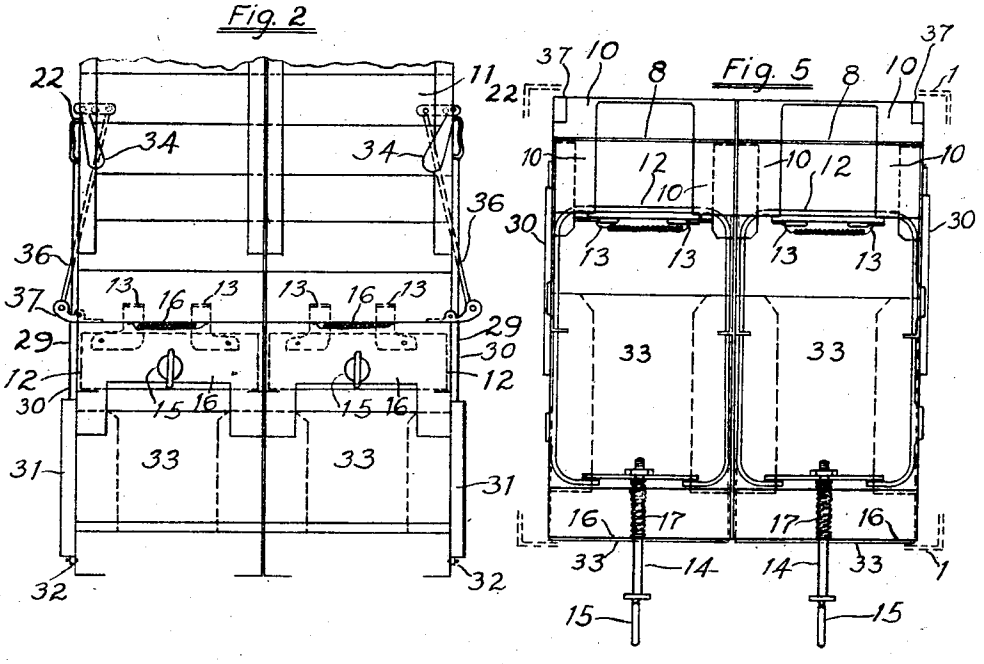
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VENDING MACHINE

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Fig. 6

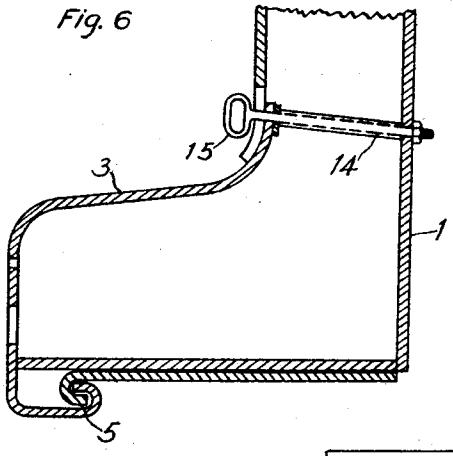


Fig. 8

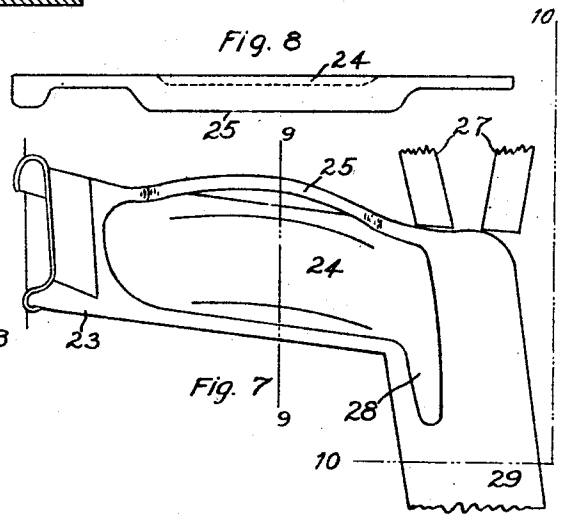


Fig. 7

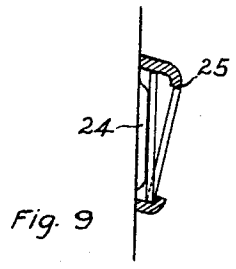


Fig. 9

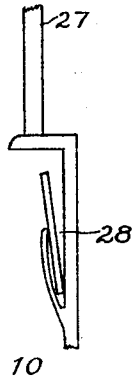


Fig. 10

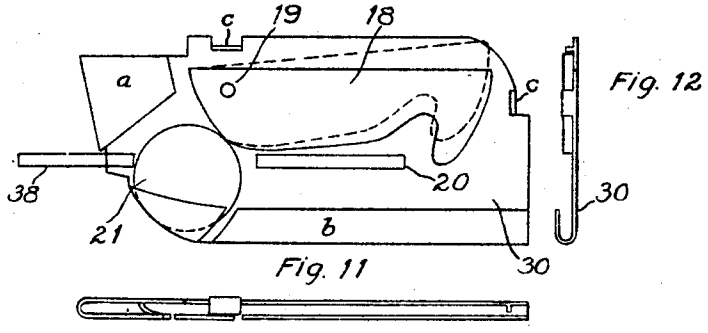


Fig. 11

Fig. 12

Fig. 13

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Patented Jan. 3, 1928.

1,654,877

UNITED STATES PATENT OFFICE.

MALCOLM W. HILL, OF BALTIMORE, MARYLAND.

VENDING MACHINE.

Application filed September 22, 1925. Serial No. 57,865.

The object of my invention is the providing for the construction of a vending machine having as few parts as possible consistent with the proper operation thereof, and the parts that are used being of such design as may be easily stamped from metal.

A further object of my invention is the providing in a vending machine independent access to the control and filling mechanism and the coin collecting means whereby independent operators may be used for the two different functions.

A further object of my invention is the constructing of a vending machine of simplicity whereby the same may be constructed out of stamped parts machine formed whereby assembly costs and adjustments are reduced to a minimum.

A further object of my invention is an improved means for coin-operated release mechanism in a vending machine.

A further object of my invention is an improved means for gaining access to the filling appliances in a vending machine.

A further object of my invention is an improved means for collecting the coin and obtaining access to the coin collecting means.

A further object of my invention is an improved slug detector and eliminator.

A further object of my invention is the providing in connection with the visibility as to contents means for protection from surreptitiously removing the contents.

With the foregoing and other objects in view, my invention consists of the novel construction, combination and arrangement of parts as hereinafter specifically described and illustrated in the accompanying drawing, wherein is shown the preferred embodiment of my invention, but it is understood that changes, variations and modifications can be resorted to which come within the scope of the claim hereunto appended.

While my invention relates primarily to a food vending machine, especially adapted for containing pies and sandwiches and other perishables of that character, I do not wish to be limited to those articles.

I am aware that there are a great many vending machines similar in appearance to the one herein-described, many much more complicated and more expensive to construct, but few, if any, that have so few parts and none of such simplicity of construction with the protection afforded by my design.

In the drawings of the herein-described embodiment of my invention, Fig. 1 is a perspective view of the machine assembled as in use. Fig. 2 is a face view in elevation of the interior parts of the machine broken off and removed from the case. Figs. 3 and 4 are the two side views in elevation respectively of the interior of the machine removed from the case broken off, as shown in Fig. 2; Fig. 5 is a sectional view taken through 5—5 of Fig. 4; Fig. 6 is an enlarged sectional view in elevation of the bottom of the casing and lower front; Fig. 7 is an enlarged perspective view of the undersize coin-detector; Fig. 8 is a plan view of the undersize coin-detector shown in Fig. 7; Fig. 9 is a sectional view of the undersize coin-detector taken through 9—9 of Fig. 7; Fig. 10 is a view taken through 10—10 of Fig. 7, and shows the third coin-detecting means; Fig. 11 is an enlarged view of the coin shield taken in elevation; Fig. 12 is an end view in elevation of the coin shield shown in Fig. 11, and Fig. 13 is a plan view of the coin shield shown in Fig. 11.

Similar numerals refer to similar parts throughout the several views.

1 is the main outside casing; it is provided with upper front 2 and lower front 3. 4 is the top cover which is hinged on the back of the casing 1 and is provided with means for folding down on the top of casing 1, being locked to upper front 2 when in position by lock 6, the lower end of upper front 2 being locked in front of lower front 3 by lock 7 at its upper end, the lower part of lower front 3 being caught under outside casing 1 in a hinged fold at 5.

The arrangement of the upper and lower fronts are such that the operator in filling the machine need not unlock lock 7, thus maintaining the mechanism and coin box out of his reach.

Within casing 1 is placed the operating part of the vending machine which consists of magazine 8 and table 9 provided with supporting flanges 10 upon which rests the goods 11, to be sold. Under supporting flanges 10 operates slide 12 provided with hook projections 13, the object of the hook being to form a finish on the top of the projection of such a character as to permit of its retrieving movement under the weight of the goods above the same, without injury to the package.

Slide 12 is provided with draw-bar 14, at the end of which is a ring 15, or other suitable or convenient means to grasp with the fingers. This draw-bar 14 operates through lower front 3, the front being slotted as shown to permit ring 15 to go through the same, said draw-bar being steadied at the front end of the table by guide 16. Slide 12 is provided with retrieving means, shown as a spring 17, in the drawings.

18 is a hook, or coin-operated locking means, for slide 12, and is fulcrumed to the coin shield at 19 and engages over projection 20 under the slide 12, thus preventing the slide from operating when in retrieved position. To raise hook 18 in order to release projection 20 a coin, 21, of the correct dimension is necessary. A coin is introduced through the upper front 2 at coin slot 22, which slot is substantially the size of the proper coin, thus acting as a first check on the coin for over-size. The coin in its progress goes down chute 23, in which chute on the upper edge is an under-sized coin eliminator consisting of a means 24 for tilting the coin out of the vertical to a limited extent, causing the same to bear against top chute guide 25, if of proper size; if under-size, however, it will miss top chute guide 25 and fall over into the outside casing and not follow the chute to the releasing mechanism, thus forming the second protective device.

The coin of the proper size in its progress comes to elbow 26 in the chute, at which point is magnet 27, the chute at about this point being cut away to permit a slug of magnetic metal to be attracted from its line of progress in the chute to opening 28 where it is eliminated from the chute and dropped into the outer casing, this forming the third protective device.

The coin, dropping through the lower or vertical section of 29 of the chute, enters the coin shield 30. Hook 18 is fulcrumed to this shield, said shield being secured to the table 9. The coin engages hook 18 at or near its fulcrum.

In coin shield 30 operates coin push projection 38, which projection is secured to slide 12 operating through slot in the table and behind the coin, so that upon pulling slide 12 by means of ring 15, push projection 38 carries the coin with the slide and in so doing the coin lifts the hook around its fulcrum to such an extent that it disengages hook projection 20 under the slide, there being sufficient back-lash to permit of this movement. The slide being free may be pulled to the limit of its action, and in doing so it pulls the bottom package of goods 11 with it by means of hook projection 13. The coin, near the limit of the slide withdrawal, drops from coin shield 30 into the coin receptacle 31.

Coin receptacle 31 consists of a funnel box hinged at its lower end at 32 so that it may be easily tilted to discharge its contents and be replaced in position again and is formed out of a single piece, as shown.

Specially referring to the coin shield, 30, I have found that a unit construction stamped out of sheet metal very cheap and satisfactory to make, and yet performing varying functions, particularly having the hook 18 fulcrumed thereto and being provided with coin guide "*a*", lower runway of the chute "*b*", definitely spaced with reference to the fulcrum end of the hook so that it requires an exact size coin to lift the hook sufficient to disengage the slide; it is also provided with spacing and aligning members "*c*". In fact, by one operation it is formed ready for assembly.

The slide being pulled out with the lower package of goods, upon reaching the ends of supporting flanges 10 the goods fall off into delivery chute 33, where they can be reached by the purchaser.

Hook projections 13 are fulcrumed to the slide so that they are normally held in position, as shown in Fig. 2; that is, in engaging position, a spring or other desirable means being used for this purpose. In operation they operate when in this position until the delivery of the lower package of goods; when the package over the same drops on top of these projections they yield to the same and slide under the lower package during the retrieving movement of the slide until they are behind the lower package and free to regain their normal position.

34 is a slot closer to automatically prevent the introduction of a coin when the machine is empty, and is fulcrumed at 35, forming a bell-crank the other end of which is secured by means of a link 36 to bell-crank 37, the other end of bell-crank 37 being a pedal, or projection, under the goods in the magazine and held down by the same; when I say bell-crank 37, I mean a shaft provided with a pedal on one end and at the other end a crank so that the pedal may be in the rear of the machine when the lever is at the front of the machine, thus forming in substance a bell-crank operation; the shutter operates directly behind coin-slot 22 in upper front 2 in front of chute 23, the weight of link 36 being sufficient to close the slot closer when there are no goods on the pedals.

The operation of my invention is as follows:

The machine being assembled as shown in Fig. 1, the magazines are filled by opening top cover 4 and introducing the packages in bands, then drawing out the bands. This, however, is not necessary, but is a simple way of filling. The coin removed by taking off both fronts and tipping the money

box, as previously suggested. The slugs are scraped out of the bottom of the casing and are not found in the money box.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

In an organized vending machine provided with a coin controlling apparatus, a coin shield consisting of stamped sheet metal provided with a lower runway, a guide at the upper end thereof and a plurality of aligning members to space the same to the parts to which it is attached, an article ejecting slide and a stamped hook-locking member fulcrumed to said shield, the position of said fulcrum being such that a proper sized coin entering said guide operates said hook to lift the same when pushed along said runway by said slide.

MALCOLM W. HILL.