C. H. DAVIS.

VENDING MACHINE.

APPLICATION FILED APR. 26, 1916.

1,218,242.

Patented Mar. 6, 1917.

3 SHEETS—SHEET 1.

Fig. 1.

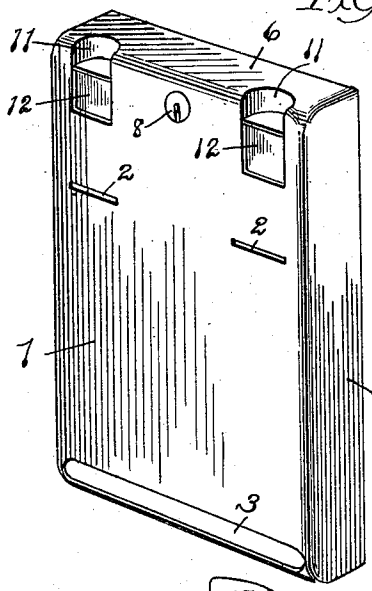


Fig. 2.

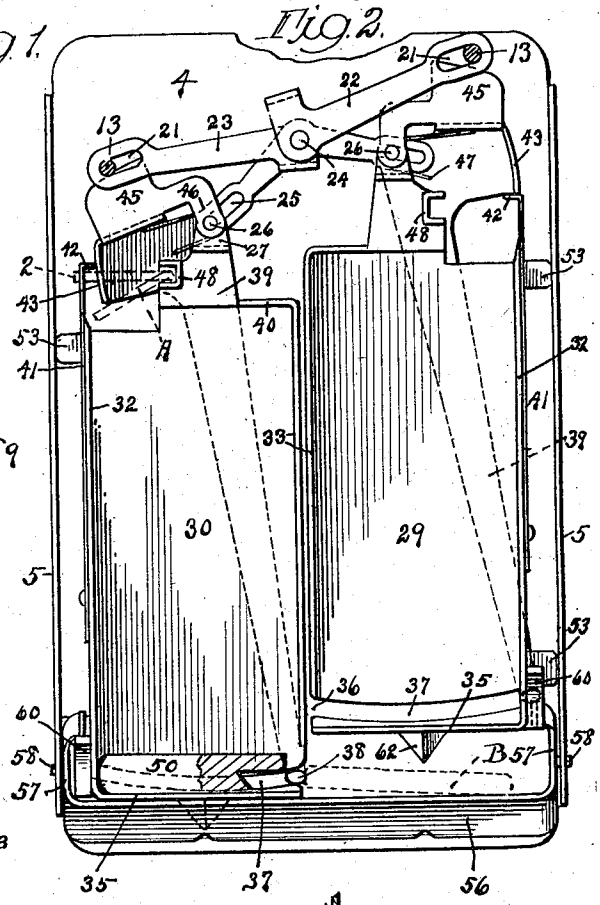


Fig. 3.

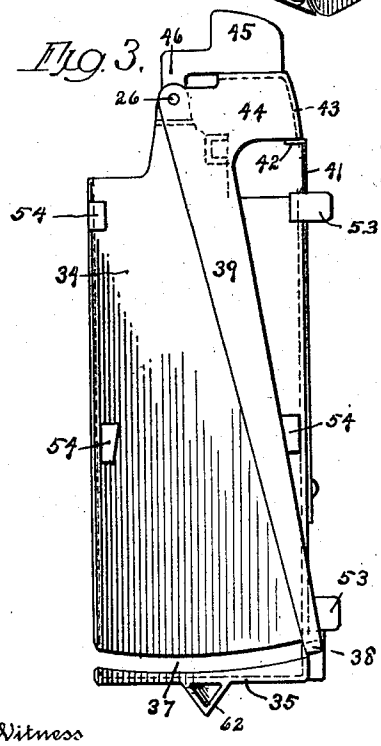


Fig. 4.

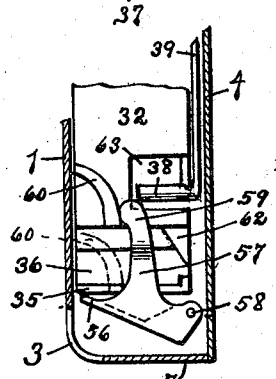
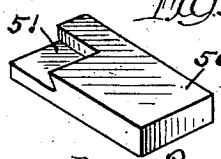


Fig. 5.



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3 SHEETS—SHEET 2.

Fig. 6

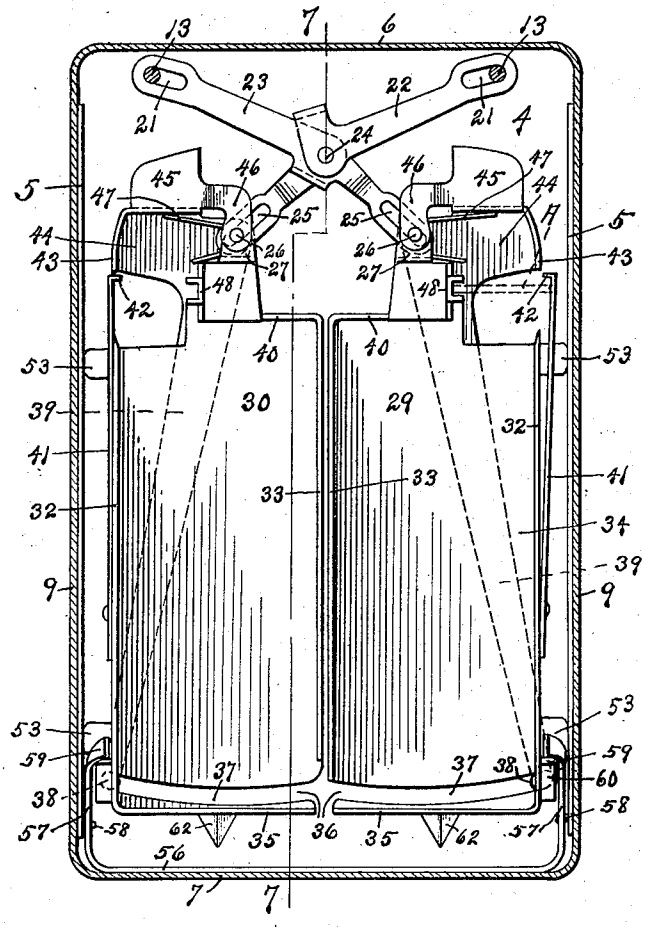


Fig. 7

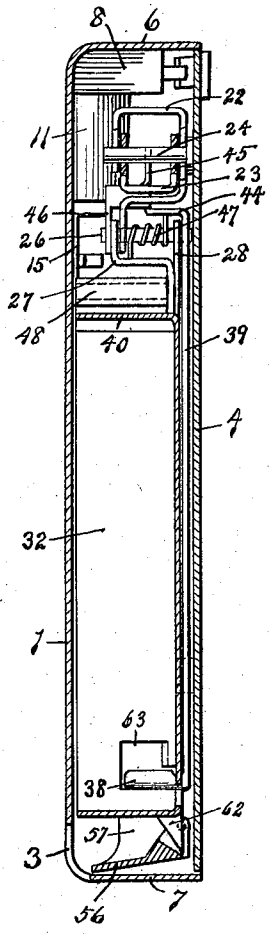


Fig. 8

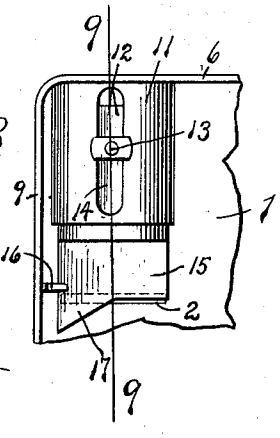
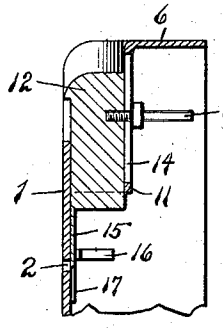


Fig. 9



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3 SHEETS—SHEET 3.

Fig. 10

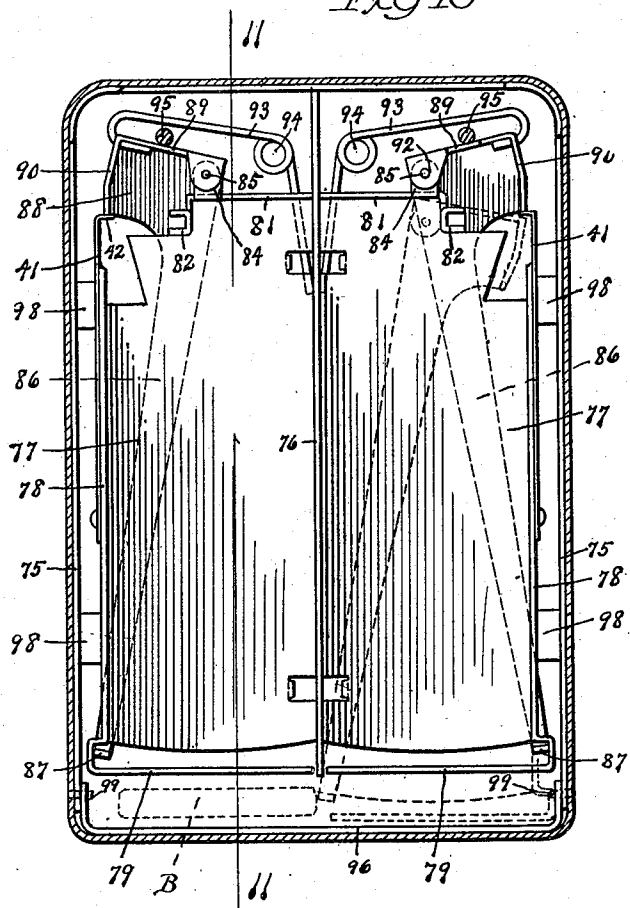


Fig. 11.

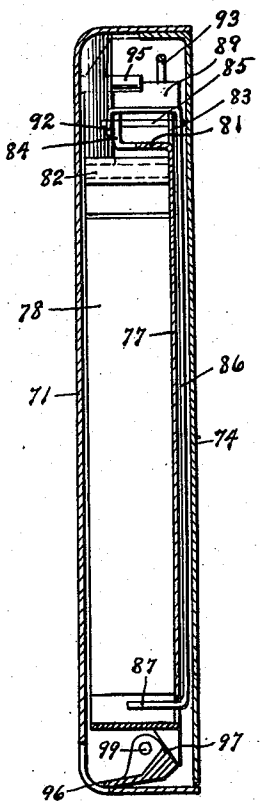
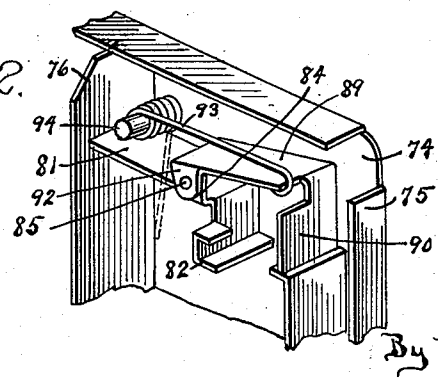


Fig. 12.



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VENDING-MACHINE.

1,218,242. Specification of Letters Patent. Patented Mar. 6, 1917.

Application filed April 26, 1916. Serial No. 93,573.

To all whom it may concern:

Be it known that I, CY H. DAVIS, a citizen of the Dominion of Canada, and residing at Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Vending-Machine, of which the following is a specification.

This invention relates to means for delivering pieces of chewing gum and confectionery or other small articles from a proper receptacle or case upon the insertion of a proper check or coin, and its object is to provide a device of this character which shall be compact, strong and not liable to get out of order.

This invention consists of a case, of a plurality of vertically movable receptacles therein for the articles to be vended, of coin-released manually-operable devices for moving the receptacles relative to each other, and an article ejecting mechanism mounted on each receptacle for moving the articles to be vended out of the receptacle into the space below the other receptacle. It further consists of means for guarding the bottoms of the receptacles to prevent access to the delivery openings. It further consists of novel safety devices for preventing the insertion of coins after the receptacles are empty and during the operation of the ejector.

In the accompanying drawings, Figure 1 is a perspective of this improved vending machine. Fig. 2 is a front elevation of the same with the cover removed. Fig. 3 is a rear elevation of a receptacle and its ejector. Fig. 4 is an end elevation of the guard for the discharge openings of the receptacles and of the lower end of a receptacle. Fig. 5 is a perspective of one of the weights placed upon the articles to be vended. Fig. 6 is an elevation similar to Fig. 2 with the parts in slightly different position. Fig. 7 is a section on the line 7—7 of Fig. 6. Fig. 8 is a rear elevation of an operating slide. Fig. 9 is a section on the line 9—9 of Fig. 8. Fig. 10 is a front elevation of the receptacles and operating mechanism of a modified form of structure. Fig. 11 is a section on the line 11—11 of Fig. 10. Fig. 12 is a perspective of part of the operating mechanism.

Similar reference characters refer to like parts throughout the several views.

The case that incloses the operating mechanism and the receptacle embodying the present invention is preferably rectangular with rounded corners and the front 1 (Fig. 1) of the cover is formed with two slots 2 through which the coins or checks A may be introduced, and with an opening 3 through which the articles may be removed. The back 4 has sides 5 that extend in between the sides 9 of the cover and which guide the receptacles. The top 6 and bottom 7 of the cover extend to the back 4, while a lock 8 of any desired construction (Fig. 7) may be used to secure the cover to the back 4.

The front 1 is formed with recesses 11 in each of which a slide 12 is vertically movable and provided with a rearwardly projecting operating pin 13, extending through the slot 14. Secured to each slide 12 is a plate 15 which may be guided by the bracket 16 as shown in Figs. 8 and 9. This plate has an inclined portion 17 which is adapted to engage the front edge of a coin that has not been entirely inserted, and force it inwardly its entire width. The coin that is inserted merely unlocks the discharging mechanism but forms no part thereof, all of the work being performed by the pins 13.

In the machine illustrated in Figs. 1 to 9 inclusive, the receptacle which is to discharge an article remains stationary while the other receptacle is lifted out of the path of the article B being projected, as illustrated in Fig. 2. In the machine illustrated in Figs. 10 to 12, the receptacle from which the article is to be delivered is lowered so that the article will again move below the other receptacle. In both machines a guard plate may swing up to prevent access to the discharge opening in the receptacle, but this may be omitted if desired.

Referring now to Figs. 6 and 7, the pins 13 extend through slots 21 in the ends of the levers 22 and 23 mounted on the pin 24 carried by the back 4. The opposite ends of these levers have slots 25 to receive the pins 26 mounted in plates or ears 27 and 28 on each receptacle 29 and 30. The front of each receptacle is constituted by the front plate 1 of the cover while the tops 40, sides 32 and 33, the backs 34 and the bottoms 35 are preferably integral. The lower ends of the sides 33 do not connect to the bottoms, a space 36 being left to permit the passage of an article being vended. The back does not connect to the bottom, a slot 37 being

left to permit the passage of the ejecting finger 38 which is on the lower end of the ejecting arm 39 mounted on the pivot pin 26.

A spring 41 is secured to the side 32 of each receptacle and has a lip 42, normally in the path of the stop flange 43 on the extension 44 at the upper end of the ejector arm. Extending upward from this extension 44 is a cam 45 from which an arm 46 extends to the pivot 26 in order to stiffen the upper portion of the ejector, by giving it a longer bearing. Springs 47 on the pivots 26 engage the stop flanges 43 and the ears 27 and normally hold the ejectors in the positions shown in Fig. 6. If, however, a pin 13 is depressed, as shown at the left in Fig. 2, it will engage the cam 45, depress the extension 44, swing the ejector arm 39 and finger 38 inwardly, carrying before the finger any article on the bottom 35 that is sufficiently small to pass through the slot 36.

Before the pin 13 can be depressed it is necessary to move the lip 42 on the spring 41 laterally out from under the flange 43, which is done by inserting a proper coin of sufficient size between the guide 48 at the upper end of the receptacle and the spring 41, as indicated at the left in Fig. 6, swinging the lip 42 from under the stop flange 43. When the stop flange 43 is swung down it will engage the coin and cause it to fall into the receptacle. The stop flange 43 will prevent another coin being inserted while in the position shown at the left of Fig. 2 as it extends across the coin slot 2. When the receptacle is empty, a weight 50 having a notch 51 will reach on the bottom as indicated at the left in Fig. 2, after the finger 38 has been swung to full discharging position, and the finger will enter this notch and be prevented from swinging back to original position, thus holding the stop flange across the coin slot 2 in the cover.

As indicated in Fig. 6, the discharge openings of the receptacles are normally in line with each other. The receptacles are supported by the levers 22 and 23, and when one pin 13 is depressed, as indicated in Fig. 2, its lever will be swung on the pivot 24 and lift the other receptacle out of the path of the article being ejected. Lugs 53 project beyond the side plates 32 and hold the receptacles in proper position laterally, while they and the lugs 54 on the back space the backs 34 of the receptacles a sufficient distance from the back 4 of the case to prevent the ejector from binding.

In order to prevent the receptacle being held down by means of a wire inserted through the openings 3, after once having been depressed by the pin 13, a guard plate 56 is mounted in the case below the receptacles. It has end arms 57 mounted on the pivots 58 at the lower end of the sides 5, and cam arms 59 in the paths of the cams 60 (Fig. 4) on the side plates 32 of the receptacles. When the receptacles are in normal position, the guard will be in the position shown in Fig. 7. But when either receptacle is elevated, the cam 60 thereon will move from the position indicated in dotted lines in Fig. 4 to that shown in solid lines, swinging back the cam arms 59 and swinging up the guard plate 56 so as to prevent the introduction of any instrument. The ejected article will fall onto this guard plate as indicated in Fig. 2. When the elevated receptacle descends the wedge 62 projecting from the bottom forces the article out forwardly through the opening 3. It will thus be seen that with the exception of the ejectors, all parts are returned to normal position by the weight of the receptacles. In order that the fingers 38 may not prevent the descent of the articles in the receptacles, slots 63 are cut in the sides 32 to permit the fingers to swing out of the receptacles, the outward movement being limited by one of the small lugs 54 on the back 34.

In the structure shown in Figs. 10, 11 and 12, means are provided for depressing the receptacle from which an article is to be discharged. The front 71 of the case is about the same as that before described and has rearwardly extending sides, top and bottom, and fits against the back 74 having sides 75. Instead of the sides 33 on each receptacle, a central partition 76, secured to the back 74, is employed. Each receptacle has a back 77, a side 78 and a bottom 79 that is connected to the side. A plate 81 at the top of the back of the receptacle connects to the coin guide 82 and supports the ears 83 and 84 that carry the pivot 85. The ejector arm 86 is mounted on this pivot and has a finger 87 that moves between the back 77 and the bottom 79 of the receptacle. An extension 88 on the ejector carries a plate 89, and a stop flange 90. The ejector arm 86 is mounted on the pivot 85 and an ear 92 on the plate 89 is also mounted on this pivot.

A spring 93 for each receptacle is mounted on a stud 94 and a hooked end engages the plate 89 and serves to return the ejector and raise the receptacle. A pin 95 similar to the pin 13 previously described engages the plate 89 and when depressed, not only causes the receptacle to descend, but after the receptacle has reached its lower limit, causes the ejector to swing inwardly and carry an article out laterally onto the guard plate 96. This guard plate has a lug 97 at each end that is engaged by the receptacle above it as it descends, thus causing the guard plate to swing up to operatively close the opening 3. The guard plate is mounted on pivots 99.

The spring 41 and lip 42 are of similar construction and operation to the same parts in the other form of construction, as are also

the lugs 98 which guide the receptacles in the case. The receptacles and springs 93 can be slipped forwardly, when the cover is removed, to permit cleaning and replacing when necessary.

The slides 12 are in the recesses 11 and are flush with the outer surface of the cover so that when these vending machines are secured to the backs of theater seats there is little danger of catching the clothing of persons passing along between the seats. When the cover is removed, the receptacle is fully accessible and every element within the case, excepting the guard plate, can be slipped out of the case or replaced immediately. As the stop flanges 43 move across the coin openings 2 at the very beginning of the movement of the ejector, the insertion of another coin after the ejector has been moved and until it has returned to normal position, is prevented.

Many changes may be made in the details and proportions of the parts without departing from the spirit of my invention as set forth in the accompanying claims.

I claim:—

1. In a vending machine, the combination of a case, a plurality of receptacles mounted therein, means to move said receptacles simultaneously vertically relative to each other, and means to eject articles from said receptacles.

2. In a vending machine, the combination of a case, a plurality of receptacles mounted therein, means to move said receptacles simultaneously, one being moved up and the other down, and an ejector mounted on each receptacle to carry out of the receptacle the articles to be vended.

3. In a vending machine, the combination of a case, a plurality of receptacles slidably mounted therein, means to lift each receptacle independently of the other, and means mounted on each receptacle to eject the articles therein.

4. In a vending machine, the combination of a case, two receptacles slidable therein, manually operated means to move each receptacle independently of the other, and means mounted on each receptacle and actuated by said manually operated means to eject the articles therein.

5. In a vending machine, the combination of a case, two receptacles slidable therein and having discharge openings in the lower ends of adjacent sides, an ejector mounted on each receptacle, and manually operated means to actuate the ejector on the selected receptacle and to simultaneously lift the other receptacle to free the discharge opening of the selected receptacle.

6. In a vending machine, the combination of a case, two receptacles slidable therein, an ejector pivotally mounted on each receptacle, and a manually operable slide to swing the ejector and to move one of the receptacles relative to the other.

7. In a vending machine, the combination of a case having a discharge opening at its lower end, two receptacles slidable therein and provided with discharge openings, an ejector mounted on each receptacle, two manually operable slides, one for each receptacle, to actuate the ejector and to move one of the receptacles relative to the other, and a guard plate operatively positioned by the receptacle thus moved.

8. In a vending machine, the combination of a case having a discharge opening, a pair of levers pivotally mounted in the case, a manually operable actuating slide adapted to swing each lever, a receptacle connected to each lever and adapted to be moved thereby when the slide connected to such lever is depressed, and an ejector pivoted on each receptacle and adapted to be actuated by one of said slides.

9. In a vending machine, the combination of a case having a discharge opening, a pair of levers pivotally mounted in the case, a manually operable actuating slide adapted to swing each lever, a receptacle connected to each lever and adapted to be moved thereby when the slide connected to such lever is depressed, an ejector pivoted on each receptacle and adapted to be actuated by one of said slides, and a guard plate pivotally mounted in the case and adapted to be swung across the discharge opening therein when either of the receptacles is moved.

10. In a vending machine, the combination of a case having a discharge opening at its lower end, two receptacles slidable therein, a lever connected to each receptacle whereby it may be elevated, each receptacle having a discharge opening in the side adjacent the other receptacle which is opened by elevating said other receptacle, an ejector pivoted to each receptacle, manually actuated means for operating said levers and ejectors, and means for closing the discharge opening in the case when either receptacle is elevated.

11. In a vending machine, the combination of a case having a discharge opening at its lower end, two receptacles slidable therein, a lever connected to each receptacle whereby it may be elevated, each receptacle having a discharge opening in the side adjacent the other receptacle which is opened by elevating said other receptacle, an ejector pivoted to each receptacle, manually actuated means for operating said levers and ejectors, and a plate pivoted in said case and adapted to be swung up to close the discharge opening in the case when either receptacle has been elevated.

12. In a vending machine, the combination of a case having a discharge opening,

a plate pivotally mounted adjacent said discharge opening and adapted to be swung to close the opening, two receptacles slidable in the case and each provided with a discharge opening, means for lifting each receptacle to free the discharge opening, an ejector pivoted on each receptacle to move the articles therein through the discharge opening and onto said plate, manually operable means to slide the receptacles and actuate the ejectors, and means mounted on the receptacles to force the articles discharged from the receptacles out of the opening in the case.

13. In a vending machine, the combination of a case, a plurality of receptacles mounted therein, means to move said receptacles vertically relative to each other, means to eject articles from said receptacles, and means for normally preventing the movement of said ejecting means.

14. In a vending machine, the combination of a case, a plurality of receptacles mounted therein, means to move said receptacles simultaneously, one being moved up and the other down, an ejector mounted on each receptacle to carry out of the receptacle the articles to be vended, and means mounted on each receptacle to normally prevent the operation of the ejector.

15. In a vending machine, the combination of a case, a plurality of receptacles slidably mounted therein, means to lift each receptacle independently of the other, means mounted on each receptacle to eject the articles therein, and means within the receptacle to prevent the return movement of said ejector when all the articles to be vended have been discharged.

16. In a vending machine, the combination of a case, two receptacles slidable therein, manually operated means to move each receptacle independently of the other, means mounted on each receptacle and actuated by said manually operated means to eject the articles therein, and resilient means mounted on each receptacle to normally prevent the movement of the manually operated means.

17. In a vending machine, the combination of a case, two receptacles slidable therein and having discharge openings in the lower ends of adjacent sides, an ejector mounted on each receptacle, manually operated means to actuate the ejector on the selected receptacle and to simultaneously lift the other receptacle to free the discharge opening of the selected receptacle, and a resilient plate mounted on each receptacle to normally prevent the operation of the ejector.

18. In a vending machine, the combination of a case, two receptacles slidable therein, an ejector pivotally mounted on each receptacle, a manually operable slide to swing the ejector and to move one of the receptacles relative to the other, and a spring mounted on each receptacle and normally extending into the path of a portion of the ejector to restrain its movement.

19. In a vending machine, the combination of a case having a discharge opening at its lower end, two receptacles slidable therein and provided with discharge openings, an ejector mounted on each receptacle, two manually operable slides, one for each receptacle, to actuate the ejector and to move one of the receptacles relative to the other, a guard plate operatively positioned by the receptacle thus moved, and a spring mounted on each receptacle and extending into the path of a portion of the ejector to restrain its movement until moved out of said path by a proper coin.

20. In a vending machine, the combination of a case having a discharge opening at its lower end, two receptacles slidable therein, a lever connected to each receptacle whereby it may be elevated, each receptacle having a discharge opening in the side adjacent the other receptacle which is opened by elevating said other receptacle, an ejector pivoted to each receptacle, manually actuated means for operating said levers and ejectors, means for closing the discharge opening in the case when either receptacle is elevated, and a spring mounted on each receptacle and extending into the path of a portion of the ejector to strain its movement until moved out of said path by a proper coin.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."