J. W. P. BURDINE.

VENDING MACHINE.

APPLICATION FILED APR. 3, 1917.

1,314,852.

Patented Sept. 2, 1919.

2 SHEETS—SHEET 1.

Fig. 1.

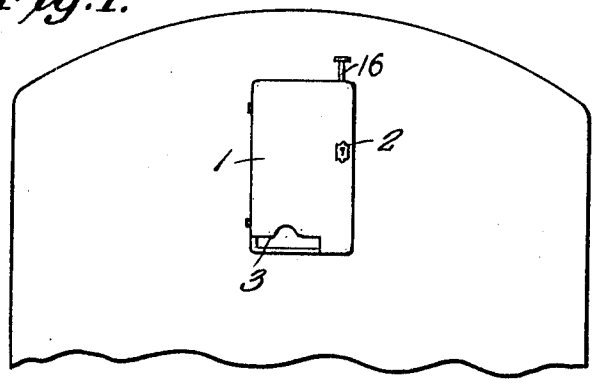


Fig. 5.

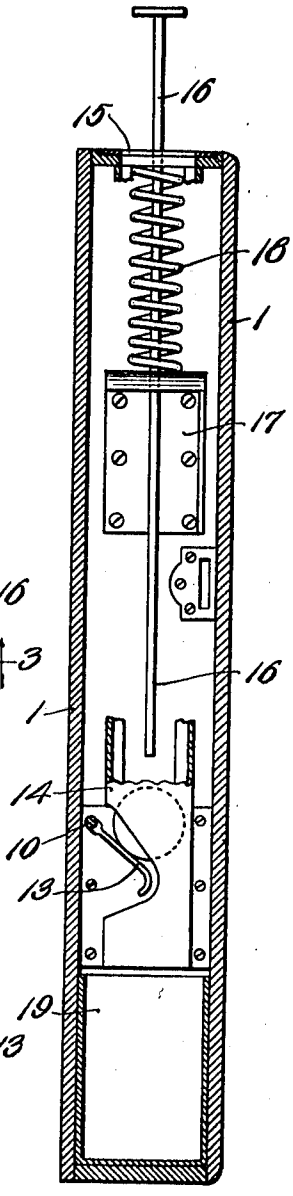


Fig. 2.

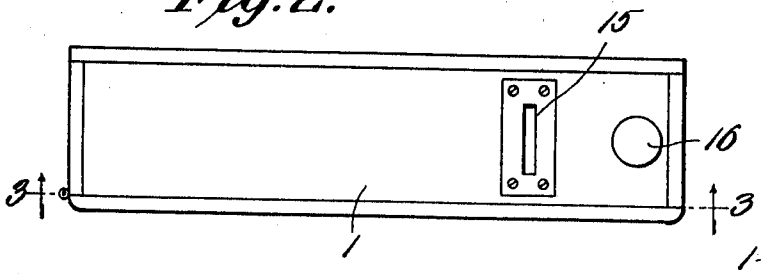
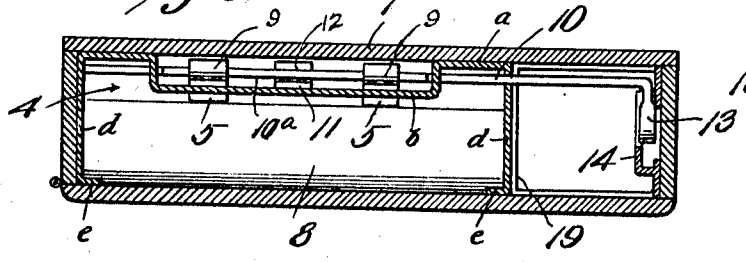


Fig. 6.



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2 SHEETS—SHEET 2.

Fig. 3.

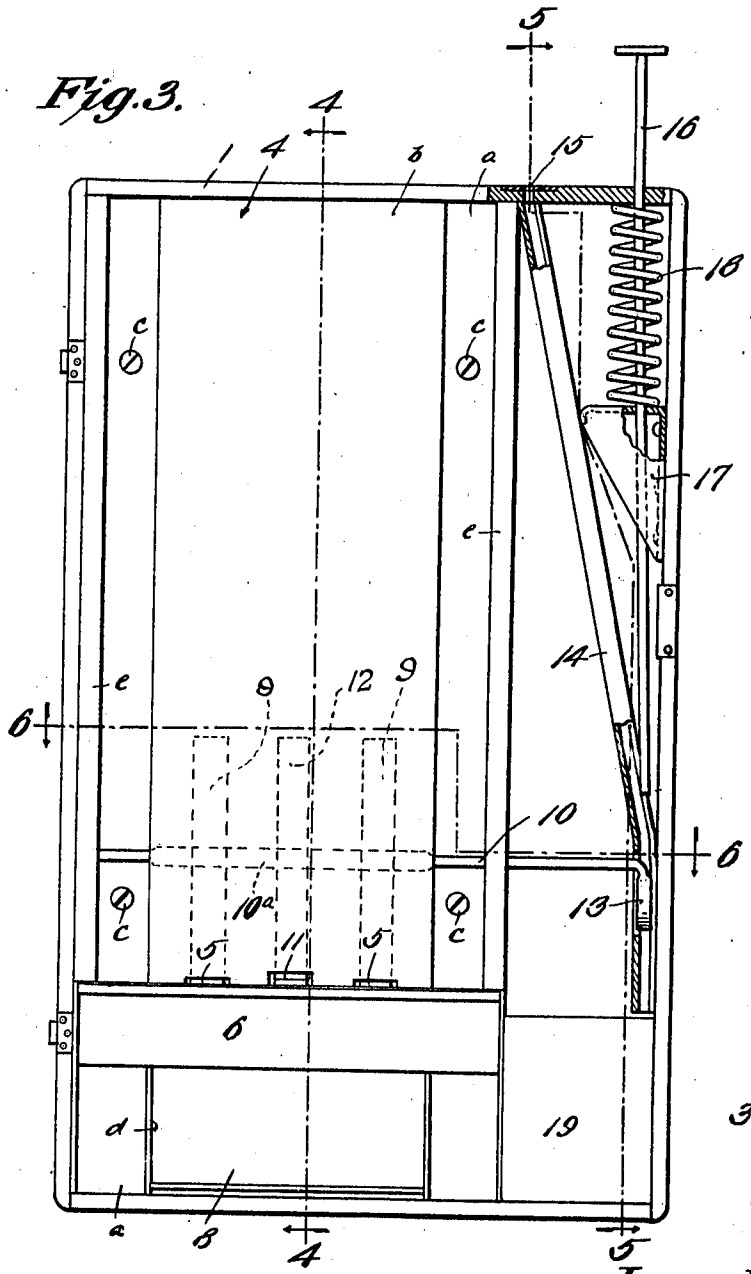
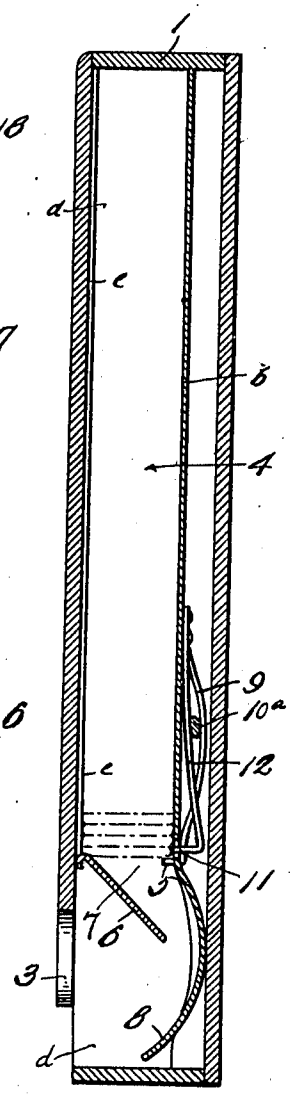


Fig. 4.



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UNITED STATES PATENT OFFICE.

JAMES W. P. BURDINE, OF LAKE ARTHUR, LOUISIANA.

VENDING-MACHINE.

1,314,852. Specification of Letters Patent. Patented Sept. 2, 1919.

Application filed April 3, 1917. Serial No. 159,490.

To all whom it may concern:

Be it known that I, JAMES W. P. BURDINE, a citizen of the United States, residing at Lake Arthur, in the county of Jefferson Davis and State of Louisiana, have invented certain new and useful Improvements in Vending-Machines, of which the following is a specification.

The present invention relates to vending machines and is particularly concerned with devices of this character designed for vending articles or packages such as gum, chocolate, or the like, which are put up in packages.

The object of the invention is the production of an effective and efficient mechanism to accomplish the purposes of the invention which is simple, durable, and cheap to manufacture.

Broadly, the invention resides in the provision of a suitable container for packages or articles having a discharge opening which is controlled by spring fingers so arranged as to permit only one article or package to be delivered at one operation of the machine; and in the provision of a suitable lever arranged to operate the fingers and to be actuated upon the operation of a manually operated member whose motion is transmitted to the lever through the medium of a coin placed in the machine. However, more specifically stated, the invention consists of a receptacle for containing a stack of articles or packages having a discharge opening at its lower end controlled by a spring finger normally extending into the opening to retain the articles in the receptacle and a spring separating finger arranged to be projected into the opening for separating the lowermost article from the remaining articles of the stack, when said retaining spring finger is withdrawn from the opening, in order that only one article may be discharged upon one operation of the machine; and, in the provision of a rod having a flattened surface arranged between the fingers so as to retract the retaining finger and project the separating finger into the discharge opening, when operated, said rod being rotated about its axis to accomplish this operation of the fingers by a coin which is passed through a chute by a manually operated member, and said rod also being arranged to have its flat surface acted upon by the pressure of the spring retaining finger to normally hold the rod in the path of the coin and to retract the separating finger from the discharge opening.

Another feature of the invention resides in the provision of a hand operated member such as a push rod which is normally held in position to be operated and, when moved to the extent of its operating movement, lies spaced from the actuating lever of the vending mechanism proper, and also resides in the provision of a coin chute which is arranged to direct a coin to the actuating lever of the vending mechanism and which coin is engageable by the manually operated rod, when at the extent of its operating movement, to be actuated thereby and to transmit the movement of the push rod to the lever whereby the lever is actuated and the coin permitted to drop in a coin receptacle.

Other features of the invention will be apparent from the specific construction, combination and arrangement of parts which will be hereinafter more fully described and finally pointed out in the appended claims.

In the drawings which illustrate the preferred embodiment of the invention:—

Figure 1 shows the vending machine constructed in accordance with the invention applied to the back of a theater chair,

Fig. 2 is a top plan view of the vending machine,

Fig. 3 is a vertical sectional view taken substantially on line 3—3 of Fig. 2,

Fig. 4 is a vertical sectional view taken substantially on line 4—4 of Fig 3 to illustrate the vending or delivering mechanism of the machine,

Fig. 5 is a vertical sectional view taken substantially on line 5—5 of Fig. 3, and

Fig. 6 is a horizontal sectional view taken substantially on line 6—6 of Fig. 3.

Like characters denote similar and like parts throughout the specification and drawings.

According to the invention the actuating mechanism and the articles to be vended are contained and housed in the casing 1 having one of its sides hingedly mounted so that the casing may be opened for the purpose of adjusting the parts or for refilling the machine, it being understood that suitable means as indicated at 2 are provided for locking the closure whereby the device is protected from tampering. In the present instance, a portion of the hinged closure of the casing is cut away as indicated at 3 to provide a delivery opening for the machine.

Preferably, the casing 1 is substantially flat and rectangular, the hinged side 1 providing the front wall of the casing and the opposite wall being the rear wall of the casing which may be secured to a suitable support when in use.

The casing 1 has the actuating mechanism and other parts of the device compactly arranged therein, as shown in Fig. 3 and in such a manner that an efficient operation of the device may be had. As shown, the articles or packages are contained in the machine in a stack, preferably above the delivery opening 3 in the casing. The stack of articles may be contained between suitable flanges or other means that will guide and direct them during the operation of the machine; but, in the present instance it is preferred to show a container 4 which is vertically arranged in the casing as shown in Fig. 3, and comprises a back member *a* which has a central longitudinal portion *b* thereof depressed inwardly of the container so that said portion will lie spaced from the back wall of the casing 1, the back wall *a* being removably secured to the rear wall of the casing by the screws or other suitable fastening means *c*. The container 4 further comprises side walls *d* having inturned edges forming the guide flanges *e*. As shown in the drawings the walls *a* and *d* extend from the top to the bottom of the casing 1, however, the guide flanges *e* terminate at a point above the delivery opening 3 in the casing. The articles are contained in the container 4 between the walls *a* and *d* and the flanges *e* as shown in Fig. 4 and are prevented from being discharged from the container by suitable retaining means 5 which are actuated to release an article when a proper operation of the machine is effected.

The lowermost article of the stack has one of its edges resting upon the upper edge of the inclined guard plate 6, while the opposite edge of the article rests upon the lugs 5 of the retaining means. The guard plate 6 is transversely extended across the container 4 and also assumes an inclined position extending downwardly from the lower ends of the flanges *e* inwardly toward the wall *a* of the container, thereby obstructing the discharge opening 7 of the container 4 in order that the stack of articles may be protected from tampering which would effect a discharge of the same from the opening. The depressed portion *b* of the wall *a* of the container has the portion thereof below the retaining lugs 5 severed from the main portion of the wall *a* and curved to provide a delivery chute 8 which will receive the packages or articles from the discharge opening 7 and direct their discharge to the delivery opening 3 of the casing. It will thus be seen that the container provided will retain a stack of articles in the machine ready to be vended and that the casing may be readily modified to retain a plurality of stacks of articles if desired. The purpose of inwardly pressing the portion *b* of the container will be presently set forth.

The retaining lugs 5 project through the raised portion *b* of the wall *a* of the container and are carried on the spring arms 9 which have one end rigidly secured to the outer surface of the portion *b*. It will be readily seen that by depressing the wall *a* of the container as at *b*, a space is provided between the latter and the rear wall of the casing 1 in which are disposed the spring members 9 and through which a portion of an actuating rod 10 extends. This, however, is a matter of construction and may be modified if desirable. The lugs 5 may be of any number and each is carried by a spring arm 9. When the machine is operated to withdraw the lugs from the discharge opening and permit the discharge of the article, a lug 11 which has been provided and is carried on a spring arm 12, is projected into the discharge opening at a point above the lug 5 so as to separate the lowermost article of the stack from the remaining articles and prevent the latter from being discharged. This operation is effected in the following manner. An actuating rod 10 is transversely disposed across the container 4 and is journaled in the side walls *d* thereof and has a portion thereof extended through the depressed portion *b* of the container so that said portion will lie externally of the container. This portion of the rod has two flattened surfaces as indicated at 10^a in Fig. 4, and is interwoven between the spring arms 9 and 12, extending substantially in parallelism with each other, so that rotation of the rod will operate upon the spring arms to cause an alternative projection of the lugs 5 and 11 into the discharge opening 7. In the present instance it is shown, that the arms 9 lie over the rod 10 on the outer side thereof while the spring arm 12 lies between the rod 10 and the portion *b* of the container. The spring arms, as before stated, lie substantially parallel and in the same plane and by inserting the rod 10 therebetween in a manner just described, a peculiar action is obtained by this arrangement which will be presently set forth.

As clearly shown in Figs. 3 and 6, the container *a* is disposed at one side of the casing 1 in order to give room for the actuating mechanism arranged on the other side of the casing. This mechanism comprises an actuating lever 13 carried on an extended end of the rod 10 and projecting laterally therefrom. A coin chute 14 is arranged in the casing to receive a coin from the coin slot 15 in the upper wall of the casing and to direct the coin into engage-

ment with the lever. The coin chute may be of any approved construction which will provide for a definite passage of the coin. The lower end of the chute has an opening or recess 14ª into which extends the lever 13 to lie in the path of the coin and obstruct its passage through the chute. Thus, after the coin has been deposited in the slot 15 it will gravitate through the chute until it strikes the lever 13 where it will be temporarily lodged.

At this point, it is to be understood that the springs 9 exert greater pressure upon the flattened surfaces of the rod 10 than the spring 12 so as to hold them in a vertical position (Figs. 3 and 4). This may be accomplished by providing a greater number of the springs 9 or, by having them of greater strength than the spring 12. With the flattened surface 10ª in a vertical position, the lever 13 is held substantially transversely across the chute to obstruct the passage of the coin (Figs. 5 and 6), and the retaining lugs 5 are projected into the discharge opening 7, by the springs 9. The spring arm 12 tends to hold the separating lug 11 normally out of the discharge opening.

Now that the coin has been deposited in the machine and lodges in the chute 14, a vending operation of the machine may be effected by applying pressure on the coin which will move the lever 13 about its pivot out of the path of the coin. To accomplish this, a press rod 16 is positioned in the casing so as to have its lower end lie in vertical alinement with the coin and is slidably mounted in a bracket 17 secured to one of the walls of the casing. The upper end of the press rod is extended through the upper wall of the casing to be operated by the purchaser. A spring 18 having one end fast to the press rod and the other end bearing against the bracket 17 normally holds the press rod in an elevated position in order that the lower end of the rod will not obstruct the passage of the coin through the chute when the parts are in normal position. However, the distance between the lever 13 and the normal position of the lower end of the rod 16 is so calculated that when the rod is depressed its lower end will engage with the coin and press it through the chute. As the coin is passed along by the press rod, the lever 13 will be swung about its pivot and impart a partial rotary movement to the rod 10. Upon this rotary movement of the rod the flat surfaces 10ª thereof will be moved out of their normal vertical position shown in Fig. 4 to cause a spreading of the spring arms 9 and 12. This spreading, as will be understood, will move the spring arms 9 outwardly and the spring arm 12 inwardly so as to cause a withdrawal of the retaining lugs 5 from the discharge opening 7 and a simultaneous insertion of the separating lug 11 in between the lowermost article of the stack and the adjacent one. The lug 11 extends into the discharge opening at a point above the lugs 5 equal to the thickness of each article. As soon as the lugs 5 are entirely withdrawn, the lowermost article will be dropped by gravity through the discharge opening 7 and will be passed along by the guide plates 6 and 8 to the delivery opening 3 of the machine.

After the coin has been moved sufficiently through the chute to pass the lever 13, it will drop into the coin receiver 19 and as soon as pressure is relieved from the rod 16 it will return to its normal position. Also, as soon as the coin has passed the lever 13 the springs 9 exert a tension upon the flattened surface 10ª of the rod 10 to return it to its normal position, thus automatically returning the lever 13 to its normal position to obstruct the path of the coin through the chute 14 and permitting the arms 9 to again project the retaining lugs 5 into the discharge opening of the container 4, and also permitting the spring arm 12 to withdraw the separating lug from the discharge opening, whereupon the stack of articles will settle down in the container for another vending operation of the machine.

To obtain the best results of the actuating mechanism above described, the chute 14 has the upper portion thereof above the lever 13 inclined so as to give space to the vertical press rod 16. The remaining portion of the chute 14 is preferably in vertical alinement with the rod 16. The advantages of this arrangement will be obvious to those skilled in the art.

The above clearly describes the invention but many changes may be made in the specific construction thereof and in the arrangement of the different parts, since the above description and the disclosure in the accompanying drawings are merely illustrative of the principles of the invention. Therefore, various constructions and arrangements may be resorted to that include the principles of the invention as set forth in the appended claims.

What is claimed is:—

1. In a coin-controlled vending machine, the combination with an article receptacle, and two spring arms secured at one end to said receptacle with their bodies crossing each other and their free ends carrying lugs standing respectively above and below the lowermost article in the receptacle; of a rock shaft having a flattened portion standing normally upright between said arms, and coin controlled means for rocking said shaft, as described.

2. In a vending machine, the combination with an article receptacle, and two spring arms secured at one end to said receptacle

with their bodies crossing each other and their free ends carrying lugs standing respectively above and below the lowermost article in the receptacle; of a rock shaft having a flattened portion standing between said spring arms and in normally upright position, a lever projecting rigidly from said rock shaft, and manually operable means for moving the lever and rocking the shaft, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES W. P. BURDINE.

Witnesses:
PHILEBERT RANEY,
G. E. BAILLY.

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