DE WITT E. NEIBEL.

DISCHARGE CLOSURE FOR VENDING MACHINES.

APPLICATION FILED MAR. 27, 1920.

1,358,388. **Patented Nov. 9, 1920.**

Fig. 1

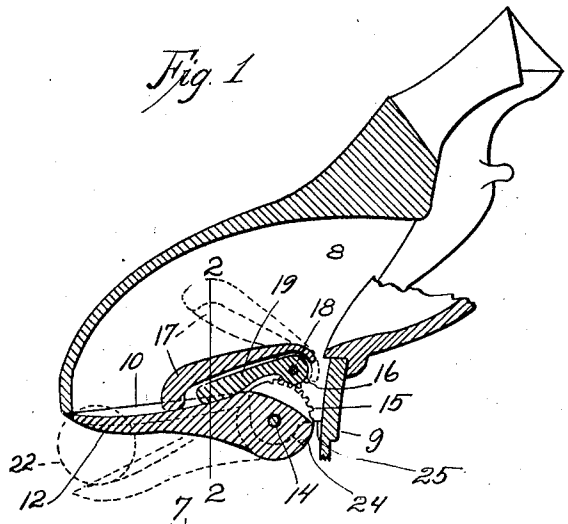
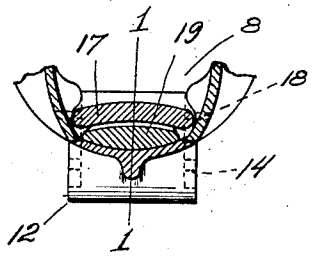


Fig. 2



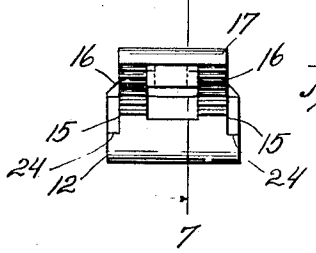
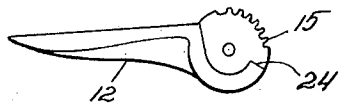


Fig. 3

Fig. 4



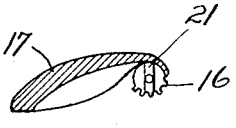
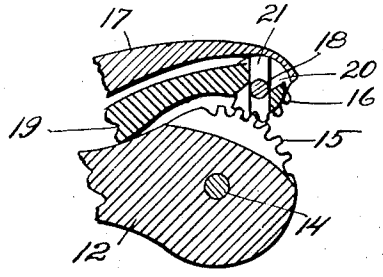


Fig. 5



Fig. 6

Fig. 7



Witness:

H. S. Hamilton

Inventor,
Dewitt E. Neibel,
By
Thorpe & Gerard,
his attorneys.

UNITED STATES PATENT OFFICE.

DE WITT E. NEIBEL, OF KANSAS CITY, MISSOURI, ASSIGNOR TO CLARENCE S. SMITH AND ALFRED LORRAINE, BOTH OF KANSAS CITY, MISSOURI.

DISCHARGE-CLOSURE FOR VENDING-MACHINES.

1,358,388. Specification of Letters Patent. Patented Nov. 9, 1920.

Application filed March 27, 1920. Serial No. 369,343.

To all whom it may concern:

Be it known that I, DE WITT E. NEIBEL, a citizen of the United States, and resident of Kansas City, in the county of Jackson, State of Missouri, have invented a certain new and useful Improvement in Discharge-Closures for Vending-Machines, of which the following is a complete specification.

This invention relates to vending machines, and aims to provide an improved discharge outlet structure for machines of this character, with a view to maintaining the articles, as they are vended, temporarily in a position within the view of the purchaser, at the mouth of the discharge passage from the machine, thereafter allowing the purchaser to release the article from the mouth of the discharge passage.

To this end I have devised an improved closure structure comprising a closure element movably positioned across the mouth of the discharge passage, together with means which are adapted to permit a limited opening movement of said closure element under the weight of the vended article as it falls upon said closure element, the said means further operating to permit of the forcible opening of the closure element by the purchaser to obtain the complete release of the vended article.

In carrying out the invention in practice, I have provided a closure structure of the general type designated, in which the means controlling the movement of the closure element comprises a counterweight member which is actuated by the initial opening movement of the closure element under the weight of the article engaged thereby, and a second counterweight member so arranged as to restrict the opening movement of the closure element for preventing the complete discharge of the article until a further forcible opening movement is applied to said closure element for the purpose of overcoming the added weight of the second counterweight member.

It is also sought to devise an extremely simple, compact and inexpensive construction of the character described, and which will in no way mar or detract from the external appearance of the vending machine.

With these general objects in view, the invention will now be described by reference to the accompanying drawing showing one form of construction which I have devised for embodying the proposed improvements, after which the novel features therein will be particularly set forth and claimed.

In the drawing:

Figure 1 is a vertical sectional view illustrating the discharge passage portion of a vending machine, having embodied therein a closure structure arranged and constructed in accordance with the present invention, the section shown being that indicated by the line 1—1 of Fig. 2;

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1;

Fig. 3 is a rear elevation showing the parts comprising the movable closure structure;

Fig. 4 is a side elevation of removable closure element;

Fig. 5 is a central longitudinal sectional view of the primary counterweight member;

Fig. 6 is a side view of the secondary counterweight member; and

Fig. 7 is an enlarged detail sectional view taken on the line 7—7 of Fig. 3.

Referring now to the said drawing in detail, the same illustrates clearly the discharge passage of a vending machine, the frame work of which is indicated at 9, the present improved closure structure being adapted for controlling the outlet through the mouth 10 of said discharge passage 8. This closure structure comprises a closure element 12 movably mounted upon a pivot pin 14 toward the rear of said mouth 10 of the discharge passage, the pin 14 being carried at its opposite ends in the side walls of said passage 8. The rear portion of the closure element 12 is formed with segment portions 15 at the opposite sides of the mouth 10 of the discharge passage, for providing teeth for engagement with similar segment portions 16 formed on the rear portion of a primary counterweight member 17 which is pivoted upon a pivot pin 18, also carried in the side walls of the discharge passage 8. The said counterweight member 17 projects forward from its pivot pin 18 in position overlying the closure element 12, the arrangement being such that the weight of said member 17 is sufficient for maintaining the closure element 12 normally in position across the mouth 10 of the passage 8.

Intermediate the closure element 12 and the primary counterweight member 17 is positioned a second counterweight member 19, also pivoted at its rear end to the pin 18 intermediate the segment portions 16 of

the counterweight member 17. At its pivoted end, however, the secondary counterweight member 19 is provided at opposite sides thereof with a pair of radial recesses 20 adapted for accommodating a diametrical lug or projection 21 formed upon the inner face of each of the segment portions 16 of the counterweight member 17. The width of the radial recesses 20 is sufficient to permit a certain amount of free movement to the member 17 while said lugs or projections 21 merely rotate idly within said recesses 20 without affecting the secondary counterweight member 19; further lifting movement, however, of the member 17 will cause the lugs or projections 21 to become engaged with the side of the recesses 20 and thereafter effect a lifting movement of the member 19.

In the operation of the machine, an article which has been paid for and delivered by the vending mechanism of the machine in the usual manner will be discharged into the passage 8 and become lodged upon the closure element 12. The parts are so arranged and the relative weight thereof so proportioned as to permit the weight of the article (indicated by the broken line 22 in Fig. 1) to depress the element 12 into the position represented by the broken line in Fig. 1. In this operation the weight of the article is assumed to be such as to depress not only the element 12 but to overcome the weight of the primary counterweight member 17, which is lifted into the position shown by the broken line in Fig. 1 through the medium of its geared connection with the rear end of the closure element 12. The relative weights of the articles and closure part however, are so chosen that the weight of the secondary counterweight member 19 will be sufficient to prevent the complete opening of the closure member beyond the position represented in Fig. 1, where the article is shown as retained by the element 12 and the margin of the mouth 10 of the discharge passage within the view of the purchaser but not allowed to drop completely from engagement with the machine. This restriction of the element 12's movement is caused by engagement of the lugs or projections 21 with the sides of the recesses 20 of the secondary counterweight member 19, as will be readily understood. Now in order to obtain the article purchased, the only thing necessary for the purchaser to do is to further depress forcibly the closure element 12 by grasping the article 22 and pressing downward thereon, which at once serves to lift the counterweight member 19 and allowing complete opening of the element 12 and the release of the article purchased.

During this operation, it will be apparent that the elevated position of the counterweight member 17 is such as to prevent any further passage of article or articles through the discharge outlet 8 to the mouth 10 which might interfere with the operation of the closure construction. As soon, however, as the complete release of the article 22 from the mouth 10 of the passage 8 is effected, it will be understood that the weight of the counterweight members will at once return all the parts to their initial position, with the closure element 12 sealing the mouth 10 of the discharge passage.

It will thus be seen that I have provided a simple and efficient as well as neat and compact construction for carrying out the desired objects of the invention, and while I have shown the preferred form thereof I desire to make such changes as may fairly fall within the scope of the appended claims.

In addition to the function performed by the member 17 as a counterweight, it also forms a closure across the discharge passage 8 against not only the passage of articles out through said passage during the delivery of the article being vended at any particular time but also against the insertion of any article or instrument that might be used for the purpose of tampering with the vending mechanism.

It should also be pointed out that the closure element 12 is formed with stop shoulders 24 adapted, on the maximum opening movement permitted said element 12, to engage with similar fixed stop shoulders 25 formed at the margin of the mouth 10 of the discharge passage, for the purpose of preventing any further movement such as might result in damage to the teeth of the segments 15 and 16.

What I claim is:

1. A closure for the discharge passage of vending machines, comprising a movable closure element normally positioned across the mouth of said passage, means permitting a limited opening movement of said element under the weight of the vended article to present said article to the view of the purchaser, said means permitting further forcible opening of said closure element to release said article.

2. A closure for the discharge passage of vending machines, comprising a movable closure element normally positioned across the mouth of said passage, a counterweight member actuated by the opening movement of said element under the weight of the vended article to present said article to the view of the purchaser, and means restricting said opening movement to prevent the complete discharge of the article under its own weight, said means permitting further forcible opening of said closure element to release said article.

3. A closure for the discharge passage of

vending machines, comprising a movable closure element normally positioned across the mouth of said passage, a counterweight member actuated by the opening movement of said element under the weight of the vended article to present said article to the view of the purchaser, and a second counterweight member coöperating with said first member to limit said opening movement to prevent the complete discharge of the article under its own weight, said second member permitting further forcible opening of said closure element to release said article.

4. A closure for the discharge passage of vending machines, comprising a movable closure element normally positioned across the mouth of said passage, a counterweight member actuated by the opening movement of said element under the weight of the vended article to present said article to the view of the purchaser, and a second counterweight member acting to restrict said opening movement to prevent the complete discharge of the article under its own weight, said second member being lifted by the further forcible opening of said closure element to release said article.

5. A closure for the discharge passage of vending machines, comprising a movable closure element normally positioned across the mouth of said passage, a counterweight member geared to said closure element and actuated by the opening movement thereof under the weight of the vended article to present said article to the view of the purchaser, and a second counterweight member engaged by said first member and restricting the movement thereof to prevent the complete discharge of the article, said second member being adapted to be lifted by said first member through the further forcible element to release said article.

In witness whereof I hereto affix my signature.

DE WITT E. NEIBEL.