Jan. 18, 1938. R. E. PERRY 2,105,892

DISPENSING DEVICE

Filed Jan. 27, 1937

Fig. 1.

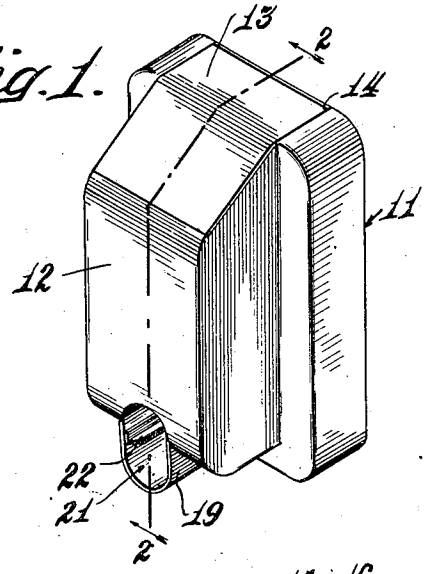


Fig. 2.

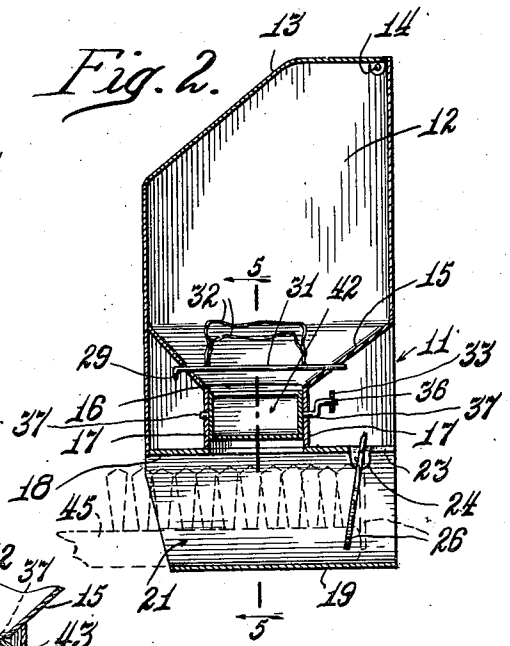


Fig. 5

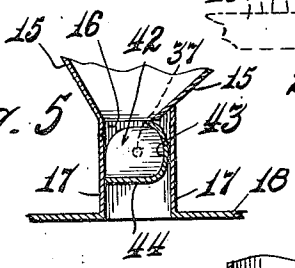


Fig. 3.

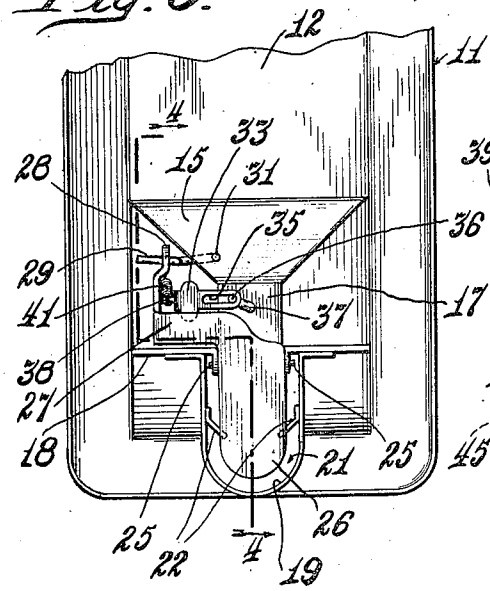
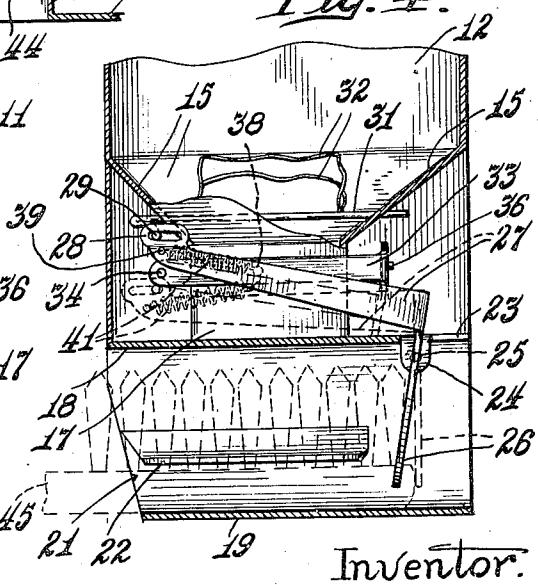


Fig. 4.



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UNITED STATES PATENT OFFICE

2,105,892

DISPENSING DEVICE

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Application January 27, 1937, Serial No. 122,492

14 Claims. (Cl. 221—65)

This invention relates to improvements in dispensing devices and more particularly to a device embodying novel means to effect the discharge of a measured quantity of the contents therefrom.

An object of the invention is to provide a novelly constructed automatically actuated device for depositing a measured quantity of powder or the like upon a tooth brush.

Another object is to provide novel positively actuated mechanism to snap the measuring valve in a dispensing device into open or closed position.

Another object is to provide a device of the character referred to which is inexpensive to construct, easy to assemble, positive in operation and readily actuated.

The foregoing and such other objects of the invention as will appear hereinafter as the description proceeds, will be more readily understood from a perusal of the following specification, reference being had to the accompanying drawing, in which:

Fig. 1 is a perspective view of the improved dispensing device.

Fig. 2 is a vertical sectional view taken on line 2—2 of Fig. 1 showing in dotted lines a portion of a tooth brush inserted therein.

Fig. 3 is a fragmentary rear elevational view of the device.

Fig. 4 is a vertical sectional view taken substantially on line 4—4 of Fig. 3.

Fig. 5 is a fragmentary vertical sectional view of the valve, taken substantially on line 5—5 of Fig. 2.

The dispensing device illustrated includes a body or casing 11 having a hopper 12 at its upper end, both of which preferably are formed from sheet material, such as steel, bent substantially to the shape illustrated. A cover 13, preferably hinged along its rear edge at 14, is adapted to close the open upper end of the hopper 12 and the lower or bottom wall 15 of said hopper is inclined downwardly toward a substantially centrally located elongated discharge opening 16. The opening 16 preferably has downwardly extending flanges 17 therearound, the lower edges of which preferably are securely joined to an apertured substantially horizontal bottom plate 18 rigidly mounted within the casing 11.

Depending from and secured to the bottom face of the plate 18 in axial alignment vertically with the flanged opening 16 is a substantially U-shaped member 19 which defines a brush receiving chamber 21. The chamber 21 opens at both the front and the rear of the casing 11 and preferably has suitable downwardly inclined flanges 22 on its side walls for a purpose to be more fully described hereinafter. As best shown in Figs. 2 and 4, the opposed flanges 22 preferably terminate short of the rear face of the chamber 21.

The bottom wall or plate 18 preferably is cut out adjacent its rear edge, as at 23, and has downwardly extending opposed ears 24 which are apertured to receive a pintle 25. The pintle 25 is rigidly secured to and adjacent the upper end of a trigger 26 which depends downwardly into the chamber 21, as shown. The upper extremity of the trigger 26 terminates in an arm 27 which extends transversely of the casing 11 and then rearwardly substantially parallel with the elongated flanged discharge opening 16. The free end 28 of the arm 27 is suitably offset and slotted to receive the end portion 29 of a rocker shaft 31 which is journalled in the inclined bottom of the hopper 12, preferably on one side of the elongated discharge opening 16 and has thereon agitating members 32.

A lever 33 is fixedly pivoted at 34, adjacent the forward end of the hopper 12, and extends rearwardly along one of the side flanges 17 parallel to arm 27. The free end of said lever is bent transversely and slotted at 35 to receive the offset end 36 of one of the valve bearing trunnions 37. A pin 38 is secured to the lever 33, substantially midway between its ends, and is connected at 39 to the free end of the trigger arm 27 by a tension spring 41. The valve bearing trunnions 37 are journaled in the end flanges 17 of the discharge opening 16 and are secured one to each end of a reciprocably rotatable valve 42 which is mounted in the opening 16.

As best shown in Fig. 5, the valve 42 preferably consists of a substantially semi-cylindrical body having a curved wall 43 and a substantially straight wall 44 extending at right angles thereto. When the valve is in its normally closed position the straight wall 44 extends substantially horizontally across the bottom of the discharge opening 16. Upon being rotated substantially 45 degrees the straight wall 44 is moved into a substantially vertical position and the curved wall 43 is moved into a position horizontally across the opening 16. Obviously only a predetermined amount of the contents of the hopper, as determined by the size of the valve, is discharged upon its being moved from closed to open position.

Movement of the valve 42 is accomplished by

inserting a tooth brush 45, or other device, into the chamber 21 and urging it rearwardly into positive engagement with the trigger 26. Continued rearward movement of said brush urges said trigger into the position substantially as shown in dotted lines in Figs. 2 and 4. This movement of the trigger carries the free end of the arm 27 downwardly below the fixed pivotal center 34 of the lever 33. Due to the toggle action of the tension spring 41 connecting said arm with the lever 33, said lever is thrown quickly into its lower or dotted line position (Fig. 4) to rock the valve 42 into position to discharge the contents thereof onto the brush.

During movement of the arm 27 downwardly, the bent end 29 of the rocker shaft 31 also is moved into its lowermost position, turning said shaft a part of a revolution to move the agitating members 32 from one to the other side of the hopper. Upon withdrawal of the brush the spring 41 quickly returns the parts to their normal position. The opposed flanges 22 in chamber 21 embrace opposed sides of the bristles to guide the brush and powder discharged onto said bristles to minimize the amount of powder which might possibly gather upon the bottom of the chamber 21.

Accordingly the construction herein described provides a very useful article which is positively actuated rapidly to discharge a measured quantity of the contents of the hopper onto a tooth brush or other article inserted into the chamber 21 and although an exemplary form of construction has been shown and described herein in detail it is obvious that the device may embrace certain variations in the detail construction and specific arrangement of the individual parts without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. A powder dispensing device comprising, in combination, a hopper having an outlet, a measuring valve in said outlet, a chamber below said outlet adapted to receive an article upon which powder is adapted to be deposited, a trigger in said chamber operable upon insertion of said article, and toggle mechanism operable by said trigger to snap said valve into open and closed position.

2. A powder dispensing device comprising, in combination, a hopper having a restricted outlet, a measuring valve in said outlet, a lever operatively connected to said valve, a brush receiving chamber below said outlet, a trigger depending into said receptacle, toggle means connecting said trigger and said lever, said means being operable upon engagement of the trigger by a brush inserted into said receptacle to open said valve and discharge a measured quantity of powder on the brush.

3. A powder dispensing device comprising, in combination, a hopper having a restricted outlet, a measuring valve in said outlet, a lever operatively connected to said valve, a brush receiving chamber below said outlet, a trigger depending into said receptacle for actuation upon insertion of a brush therein, toggle means connecting said trigger and said lever, said means being operable upon engagement of the trigger to open said valve and discharge a measured quantity of powder on said brush.

4. A powder dispensing device comprising, in combination, a hopper having an outlet, a measuring valve in said outlet, a chamber below said outlet adapted to receive an article upon which powder is adapted to be deposited, a trigger in said chamber, an arm on said trigger, and toggle means connecting said arm with said valve, the trigger being operable to open the valve when engaged by an article inserted and held in said chamber and to close said valve upon withdrawal of said article.

5. A powder dispensing device comprising, in combination, a hopper having an outlet, a measuring valve in said outlet, a chamber below said outlet adapted to receive an article upon which powder is adapted to be deposited, a trigger in said chamber, an arm on said trigger, and a toggle spring connecting said arm with said valve, the trigger being operable to open the valve when engaged by an article inserted in said chamber and to close said valve upon withdrawal of said article.

6. A powder dispensing device comprising, in combination, a hopper having an outlet, a measuring valve in said outlet, a chamber below said outlet adapted to receive an article upon which powder is adapted to be deposited, a trigger in said chamber, and toggle means connecting said trigger with said valve, said trigger being operable to open the valve when engaged by an article inserted in said chamber and to close said valve upon withdrawal of said article.

7. A dispensing device comprising, in combination, a hopper having an outlet in its bottom, a measuring valve normally closing said outlet, an eccentric on said valve, a chamber below said outlet adapted to receive an article, a trigger in said chamber, an arm on said trigger, a lever connected at one end with said eccentric, and a toggle spring connecting the free end of said arm with said lever, said trigger being operable to snap said valve into and hold it in open position when engaged by an article inserted in said chamber and to return said valve to closed position upon withdrawal of said article.

8. A powder dispensing device comprising, in combination, a hopper having an outlet in its bottom, a measuring valve normally closing said outlet, an eccentric on said valve, a chamber below said outlet adapted to receive an article upon which powder is adapted to be discharged, a trigger in said chamber, an arm on said trigger, a lever connected at one end with said eccentric, and a toggle spring connecting said arm and said lever, said trigger being operable to snap said valve into and hold it in open position when engaged by an article inserted in said chamber and to return said valve to closed position upon withdrawal of said article.

9. A dispensing device comprising, in combination, a hopper having an outlet, an oscillatably rotatable valve in said outlet, a lever pivoted at one end having its free end operatively connected to said valve, a trigger, an arm on said trigger and movable therewith, a pin on said lever substantially midway its ends, and a spring connecting the free end of said arm and said pin, whereby said lever is snapped from one position to the other upon actuation of said trigger to open and close said valve.

10. A dispensing device comprising, in combination, a hopper having an outlet, an oscillatably rotatable valve in said outlet, a lever pivoted at one end having its free end operatively connected to said valve, a brush receiving chamber below said outlet, a trigger depending into said chamber adapted to be actuated upon insertion of a brush in said chamber, an arm on said trigger movable therewith, and a spring con-

necting the free end of said arm with said lever substantially between its ends whereby said lever arm is snapped from one position to the other upon actuation of said trigger to open and close said valve.

11. A dispensing device comprising, in combination, a hopper having an outlet, an oscillatably rotatable valve in said outlet, a lever pivoted at one end having its free end operatively connected to said valve, a brush receiving chamber below said outlet, a pivotally mounted trigger depending into said chamber adapted to be actuated upon insertion of a brush in said chamber, an arm on said trigger movable therewith, a pin on said lever substantially midway its ends, and a spring connecting the free end of said arm and said pin whereby said lever is snapped from one position to another upon actuation of said trigger to open and close said valve.

12. A powder dispensing device comprising, in combination, a hopper having an outlet, a measuring valve in said outlet, a chamber below said outlet adapted to receive an article upon which powder is adapted to be deposited, a trigger in said chamber operable upon insertion of said article, toggle mechanism operable by said trigger to open and close said valve, and agitating means in said hopper, said means being actuated by said trigger.

13. A powder dispensing device comprising, in combination, a hopper having an outlet, an agitator in said hopper, a valve in said outlet, a chamber below said outlet adapted to receive an article upon which powder is adapted to be deposited, a trigger in said chamber, said trigger being operatively connected to said agitator, and toggle means connecting said trigger with said valve, said trigger being operable to open the valve when engaged by an article inserted in said chamber and to close said valve upon withdrawal of said article.

14. A dispensing device comprising, in combination, a hopper having an outlet, an oscillatably rotatable measuring valve in said outlet, a lever pivoted at one end having its free end operatively connected to said valve, a trigger, an arm integral with said trigger, a pin on said lever substantially midway its ends, a spring connecting the free end of said arm and said pin, whereby said lever is snapped from one position to another upon actuation of said trigger to open and close said valve, and agitation means in said hopper operable by said trigger.

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