Feb. 12, 1952 M. E. COOK 2,585,299

TOOTH POWDER DISPENSER HAVING SLIDING VALVES FOR DISPENSING MEASURED QUANTITIES OF POWDER

Filed Oct. 7, 1947 2 SHEETS—SHEET 1

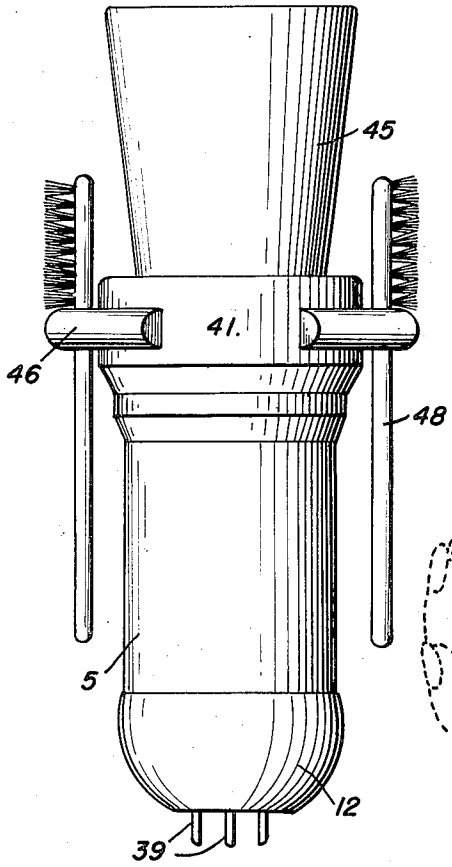


Fig. 1.

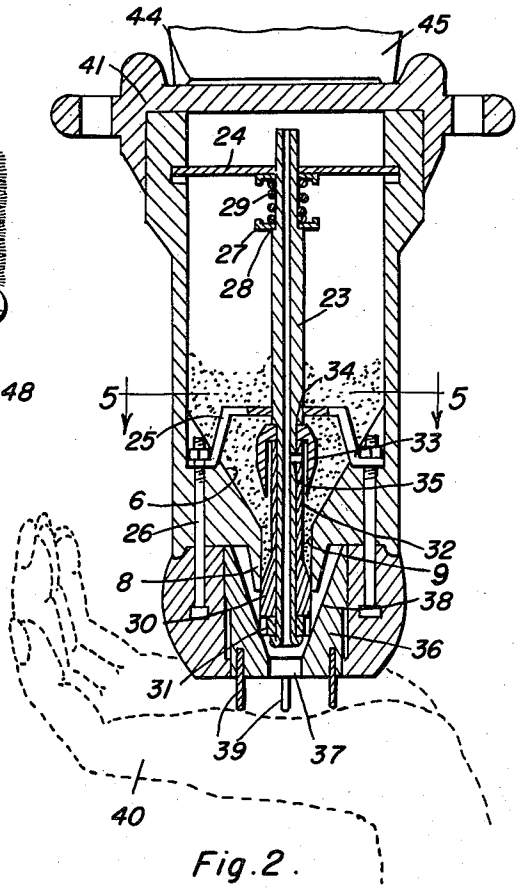


Fig. 2.

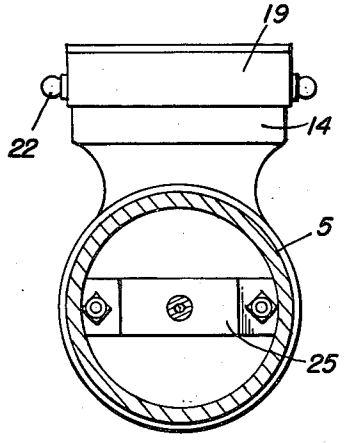


Fig. 5.

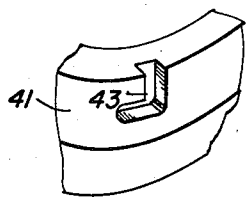


Fig. 8.

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TOOTH POWDER DISPENSER HAVING SLIDING VALVES FOR DISPENSING MEASURED QUANTITIES OF POWDER

Filed Oct. 7, 1947 2 SHEETS—SHEET 2

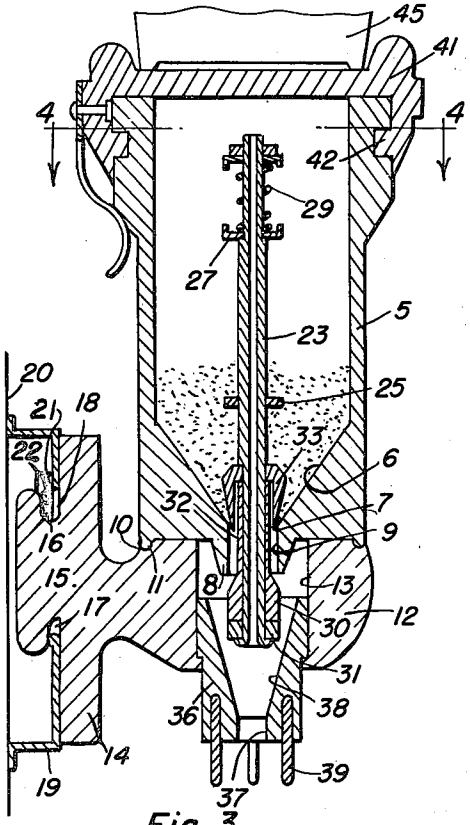


Fig. 3.

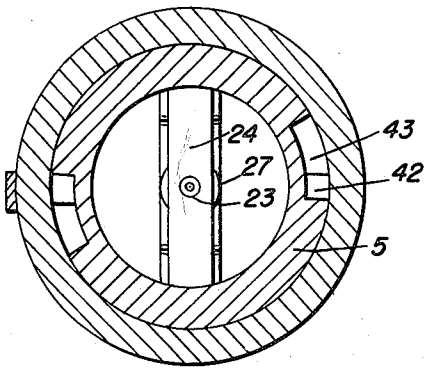


Fig. 4.

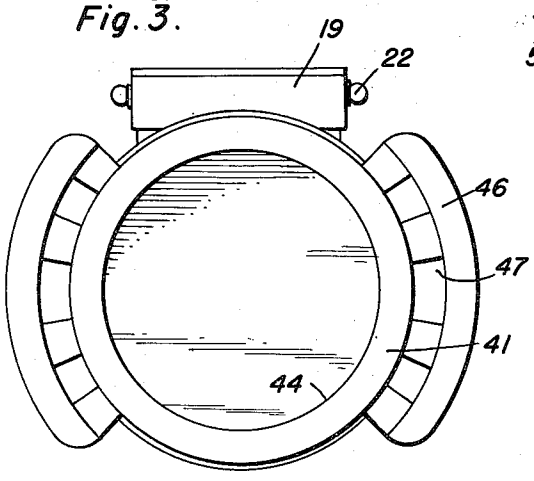


Fig. 6.

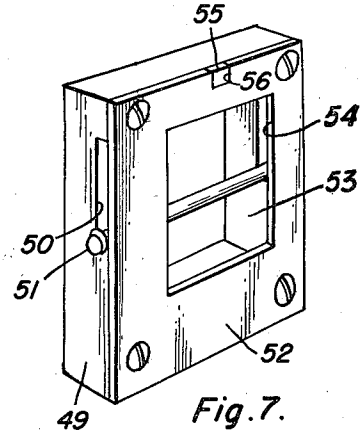


Fig. 7.

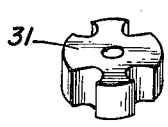


Fig. 9.

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UNITED STATES PATENT OFFICE

2,585,299

TOOTH POWDER DISPENSER HAVING SLIDING VALVES FOR DISPENSING MEASURED QUANTITIES OF POWDER

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Application October 7, 1947, Serial No. 778,321

2 Claims. (Cl. 222—181)

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The present invention relates to new and useful improvements in dispensing devices for tooth powder and similar material and more particularly to a device of this character for dispensing measured quantities of the powder.

An important object of the invention is to provide a dispenser for powder including a powder container having a measuring chamber therein controlled by a plunger operating oppositely opening and closing proportionating valves to dispense measured quantities of powder from the container together with means for venting the container as well as the measuring chamber to prevent creation of vacuum therein which might interfere with the efficient dispensing of the powder.

A further object of the invention is to provide a powder dispenser of this character and in which the powder container is constructed to provide a glass holder, tooth brush holder and a wall bracket as a unitary part of the dispenser.

A still further object is to provide a device of this character of simple and practical construction, which is neat and attractive in appearance, efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view.

Figure 2 is a vertical sectional view showing the plunger moved inwardly to fill the measuring chamber.

Figure 3 is a similar view showing the valves and plunger in dispensing position.

Figure 4 is a transverse sectional view taken on a line 4—4 of Figure 3.

Figure 5 is a transverse sectional view taken on a line 5—5 of Figure 2.

Figure 6 is a top plan view.

Figure 7 is a perspective view of a modified wall bracket.

Figure 8 is an enlarged fragmentary perspective view showing the bayonet slot for attaching the combined cover, glass holder and tooth brush holder.

Figure 9 is an enlarged perspective view of the notched washer at the lower end of the valve stem.

Referring now to the drawings in detail wherein for the purpose of illustration, I have disclosed a preferred embodiment of the invention, the numeral 5 designates a substantially hollow cylindrical powder container having a sloping bottom 6 toward a central discharge opening 7 provided with a downwardly extending annular flange 8 to form a measuring chamber 9 at the bottom of the container.

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The outer edge at the bottom of the container is formed with an annular rib 10 which is seated in a groove 11 of a supporting wall bracket 12, the bracket having a vertical opening 13 in the upper end of which the flange 8 projects. The bracket 12 includes a plate 14 formed on its rear face with a lug 15 having upper and lower tapering horizontal grooves 16 and 17 therein.

The lug 15 is received in an opening 18 in the outer surface of a box-like attaching plate 19 secured to a wall or other suitable supporting structure 20. The sides of the plate 19 are formed with vertical slots 21 in which the ends of a transverse pin 22 are slidably positioned to enter the upper groove 16 of the lug while the lower groove 17 receives the lower edge of the opening 18 to thus lock the plate 14 of the bracket 12 to the attaching plate 19.

A hollow valve stem 23 is slidably mounted in upper and lower guides 24 and 25 extending transversely of the container 5, the ends of the lower guide 25 being secured in position by vertical bolts 26 which have their lower ends anchored in the bracket 12 and extend upwardly through the bottom 6 of the container.

A washer 27 is held against a shoulder 28 adjacent the upper end of the valve stem 23 by a coil spring 29 placed under compression between the washer and the upper guide 24 to normally urge the valve stem downwardly.

A lower conical valve 30 is held on the lower end of valve stem 23 with its tapered end positioned upwardly by a notched disk 31 suitably carried by the valve stem below the valve 30, the tapered end of the valve terminating in an upwardly extending sleeve 32 which holds an upper downwardly tapering valve 33 on the valve stem against a shoulder 34. The lower portion of the valve 33 surrounds the upper portion of sleeve 32 in spaced relation therefrom and the valve stem 23 and sleeve 32 are formed with aligned openings 35 to vent the measuring chamber 9.

The valves 30 and 33 are spaced vertically one above the other and the valve 30 seats against the lower edge of the flange 8 at the bottom of the measuring chamber 9 while the valve 33 seats against the opening 7 in the bottom 6 of the con-

tainer to close the top of the measuring chamber 9. The valve is actuated by means of a plunger 36 slidably carried in the opening 13, the plunger having a vertical passage 37 therein which is flared at the upper end of the plunger as shown at 38, the lower end of the passage forming a discharge opening. The lower end of the valve stem 23 is positioned in the flared portion 38 of the plunger whereby an upward movement of the plunger will engage the lower end of the valve stem to raise the valve 30 to close the lower end of the measuring chamber 9 and to raise the upper valve 33 to open the upper end of the chamber whereby to admit powder from the container 5 into the measuring chamber. A plurality of pins 39 project downwardly from the lower end of plunger 36 for engagement by the hand 40 of a person for raising the plunger, the pins preventing moisture from the hand contacting the plunger which might clog the discharge passage 37. When the pins 39 are released by the hand, the spring 29 lowers the valve stem 23 to open the lower valve 30 and close the upper valve 33 whereby the contents contained in measuring chamber 9 is discharged through the discharge opening 37 of the plunger into the hand of the person.

The hollow valve stem 23 vents the container to prevent creation of vacuum therein and the vent openings 35 exhaust air from the measuring chamber 9 when the lower valve 30 is moved upwardly into its closed position.

The top of the container 5 is closed by a cap 41 provided with inwardly projecting locking pins 42 engaging bayonet slots 43 in the upper outer walls of the container to lock the cap in position thereon.

The top of the cap is recessed as shown at 44 to provide a holder for a glass 45 and the opposite sides of the cap are formed with outwardly projecting shoulders 46 having openings 47 therein for receiving toothbrushes 48 to support the brushes therein.

In the operation of the device, the plunger 36 normally gravitates downwardly in the bracket 12 as shown in Figures 3 of the drawings free of the lower end of the valve stem and the valve is held downwardly by the spring 29 to maintain the lower valve 30 open and to close the upper valve 33. An upward movement of the plunger 36 by the hand 40 of a person will simultaneously close valve 30 and open valve 33 whereby powder placed in the container will enter the measuring chamber 9.

Upon releasing the plunger 36, the valve 33 will be closed and the valve 30 simultaneously opened and the powder contained in the measuring chamber 9 will be discharged into the plunger 36 and out through the discharge opening 37 into the hand of a person held beneath the container.

Figure 7 illustrates a modified construction of the attaching plate and comprises a block 49 of suitable material and adhesively or otherwise suitably attached to a wall. Vertical slots 50 are formed in the sides of the block for receiving the locking pin 51 held in the slots by a face plate 52 suitably secured to the block. Registering openings 53 and 54 are formed in the block and face plate respectively for receiving the lug 15 of bracket 12. A lug 55 is formed on the block 49 for engaging a notch 56 in the face plate to center the plate thereon.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention what is claimed as new is:

1. A dispenser of the class described comprising a powder container having a discharge opening in its bottom, an annular flange extending downwardly from the opening to form a measuring chamber, a valve stem slidably mounted in the opening and extending downwardly through the chamber, an attaching bracket supporting the container and having a vertical opening into which the lower end of the valve stem projects upper and lower valves carried by the stem closing respectively the top and bottom of the chamber to trap powder therein, said valves being arranged for opposite opening and closing movement, and means for vertically actuating the valve stem, said means comprising a funnel-shaped plunger slidably mounted in the opening of the bracket and positioned beneath the chamber and engaging the lower end of the valve stem to open the upper valve and close the lower valve upon an upward movement of the plunger, spring means lowering the valve stem, and manually engageable actuating pins projecting from the lower end of the plunger to protect the plunger from contact with the hand of a person actuating the plunger.

2. An attaching bracket for articles of the class described and comprising a hollow wall attaching member having an opening in its front surface and vertical slots in each side, a pin having its ends slidable in said slots, a horizontally positioned bracket member having a lug at its inner end and formed at its top and bottom with upper and lower horizontally tapered grooves, said lug being received in said opening with the lower groove receiving the lower edge of the opening and the pin received in the upper groove to lock the bracket member to the wall attaching member, and means securing a powder container to said bracket member.

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