Sept. 22, 1942. P. C. P. BOOTY 2,296,595

TOOTH POWDER DISPENSER AND REFILL

Filed Dec. 2, 1940

Fig. 1

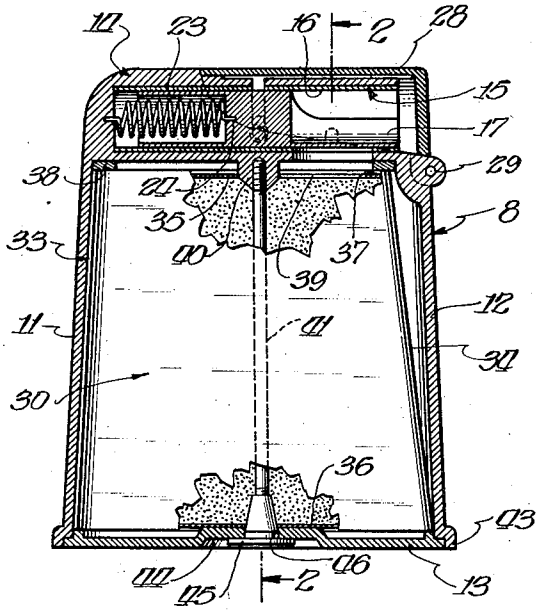


Fig. 2

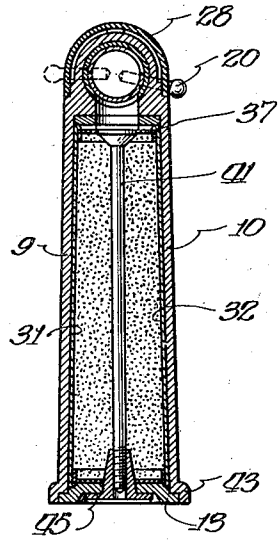


Fig. 3

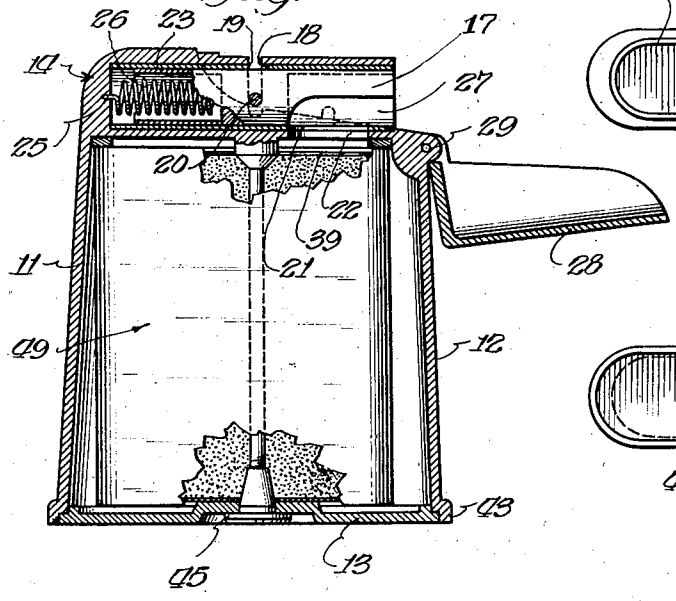


Fig. 4

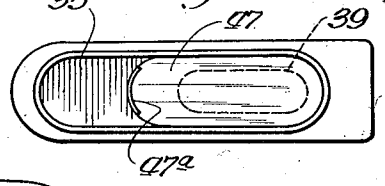
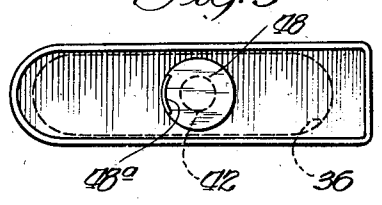


Fig. 5



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2,296,595

TOOTH POWDER DISPENSER AND REFILL

Philip C. P. Booty, Chicago, Ill.

Application December 2, 1940, Serial No. 368,205

7 Claims. (Cl. 221—65)

My invention relates to certain improvements in devices for dispensing tooth powder and the like, and more particularly it relates to casings for containing a supply of powder and adapted to be used in connection with dispensers of the type described and claimed in my copending application Serial No. 352,510, filed August 14, 1940.

The dispensing means comprises an outer casing provided with a valved opening and adapted to contain a supply of powder to be dispensed as required. One of the objects of my invention is to provide a container for the powder, separate from the outer casing, having a powder discharge outlet and which may be filled at the powder-producing factory and the outlet sealed by suitable displaceable closure means, the filled container constituting a refill for the dispenser which may be supplied through the regular trade channels, like any ordinary can of powder, and sold to the user or owner of a dispenser who may readily displace the closure means over the powder outlet and insert the filled container into the dispenser with the outlet in register with the valved opening of the dispenser so that powder may flow from the container and the dispenser in controlled quantities as required for use.

I prefer to make the outer casing or body of the dispenser in the form of a sleeve with an open end into which the powder filled inner casing or container may be inserted; and it is another object of my invention to provide conveniently operated means carried by the outer casing for securing within it the powder filled inner casing in such manner that leakage of powder from the bottom of the device will be prevented.

It is a further object of my invention to provide means for insuring a powder-tight connection around the outlet of the powder container and the associated valved opening of the dispenser.

The body or outer casing of the dispenser is preferably thin and formed so that, in one direction at least it is narrower at its top than at its bottom or base to give it stability, when resting on its base, and also a pleasing appearance. In order to minimize the amount of material used in the outer casing, its shape inside should follow quite closely its exterior shape. It is desirable to make the containers for the powder as inexpensively as possible because ordinarily they will be discarded once the powder contained therein is used. The powder container may be made of paper and I have found that it is more practical and less expensive to make the container with straight side and end walls, and when that is done and a dispenser as described is used substantial spaces will be present at the bottom of the powder container between its straight sided ends and the flaring end walls of the dispenser casing. It is another object of my invention to provide a closure plate adapted to fit the open end of the dispenser casing and to be held against lateral movement with respect thereto in combination with anchoring means extending through the closure plate and the powder container all so arranged that the powder container will be secured rigidly with respect to the dispenser and the seal between the powder container and the dispenser around the powder discharge openings will be maintained.

The invention consists in the novel constructions, arrangements and devices to be hereinafter described and claimed for carrying out the above stated objects and such other objects as will appear from the following description of certain preferred embodiments illustrated in the accompanying drawing, wherein—

Fig. 1 is a side view of a powder dispensing device and powder supply container partly in section and partly in elevation embodying the principles of my invention;

Fig. 2 is a sectional view of the device taken on the line 2—2 of Fig. 1;

Fig. 3 is a view similar to Fig. 1 of the dispenser equipped with a modified form of powder container, certain of the dispenser parts being in different relative positions;

Fig. 4 is a top view of the powder container shown in Figs. 1 and 2; and

Fig. 5 is a bottom view of the last mentioned container.

Like characters of reference designate like parts in the several views.

The dispenser illustrated comprises a body or outer casing 8 having side walls 9 and 10, end walls 11 and 12, and a bottom closure plate 13. The container is so shaped that the distance between the end walls 11 and 12 is much greater than the distance between the side walls 9 and 10; and the distance between the end walls 11 and 12 at their upper ends is substantially less than that between their lower ends, all of which tends to make the body of the dispenser of pleasing proportions and design. The dispenser is provided on its top with a portion 14 which has a cylindrical cavity 15 formed therein. The cavity is open at one end as shown and extends across the dispenser substantially in the same direction as the side walls 9 and 10. The parts described are preferably molded of a suitable plastic material.

A metal sleeve 16 is provided in the cavity 15. A valve member 17, also preferably of metal, is rotatably disposed in the sleeve 16. The top portion 14 of the dispenser is provided with a transverse slot 18 and the sleeve 16 with a slot 19 registering with the slot 18. A pin 20 carried by the valve member 17 extends through the slots 18 and 19 and is of such length that it extends beyond the side walls 9 or 10 of the dispenser for convenient operation of the valve member. The sleeve 16 has an opening 21 in register with an opening 22 in the adjacent wall of the dispenser, the openings 21 and 22 constituting a powder discharge outlet from the interior of the dispenser into the sleeve 16. In one position, the valve member 17 closes the sleeve opening 21 and in another position affords a passage from the opening 21 to the open end of the cavity 15 and the sleeve 16. The valve member 17 on its end adjacent the end wall 11 of the dispenser is formed with a recess 23 and a transverse slot 24 at the bottom of the recess. At the closed end of the cavity 15, the portion 14 of the dispenser is formed with a transverse slot 25. A torsion spring 26 is disposed in the recess 23, and the opposite ends of the spring fit into the slots 24 and 25. On its end adjacent the end wall 12, the valve member 17 is cut away at one side and when in the position shown in Fig. 3 forms with the inner side of the sleeve 16 a channel or passage 27 which extends between the dispenser outlet 22 and the open end of the sleeve 16. When the valve member 17 is in the position shown in Fig. 1, which is 180° from that shown in Fig. 3, it closes the dispenser outlet 22. The spring 26 is under torsional stress when the valve member 17 is in both of its aforesaid rotative positions, and the spring acts to keep the valve member normally in its closing position, as in Fig. 1. The pin 20 makes contact in both of the aforesaid rotative positions of the valve member with the respective ends of the slots 18 and 19 and the valve member is thus prevented from rotating beyond those positions.

The dispenser on its end wall 12 is provided with a scoop 28, preferably of molded plastic material which is hinged to the dispenser by a pin 29, the parts fitting tightly so that the scoop will remain in any position desired with respect to the dispenser. The scoop in its position over the body of the dispenser, as shown in Fig. 1, acts as a cover for the body and valve construction. The scoop is swung out from the body and is held by friction in the position desired to receive powder discharged through the passage 27.

An inner casing, package, or powder container 30 is provided for the dispenser. In the form shown in Figs. 1, 2, 4 and 5 the powder container is shaped to fit closely within the body of the dispenser, the container having side walls 31 and 32 and end walls 33 and 34 which slant to conform to the dispenser body. The container is provided with a top wall 35 and a bottom wall 36. The powder container may be molded or otherwise formed from any suitable material such as paper, metal or an inexpensive plastic material. The top wall 35 and the bottom wall 36 may be flanged at their edges, as best shown in Fig. 2, and secured to the inner surfaces of the end and side walls by an adhesive or other suitable material. Preferably the top wall 35 is set somewhat below the top edges of the side and end walls so as to provide a rim or flange 37 around the top wall adapted to bear tightly against a gasket 38 of felt or other suitable material interposed between said flange and the adjacent wall of the dispenser. The top wall 35 is provided with an elongated opening 39, the main portion of which registers with the openings 21 and 22 of the dispenser, the other portion of said opening being adapted to receive a boss 40 formed on the dispenser into which is threaded or otherwise secured the top end of an anchoring stud 41. The lower end of the stud 41 terminates adjacent a removable portion 42 provided in or on the bottom wall 36.

As shown in Figs. 1 and 2, the margins of the dispenser closure plate 13 fit snugly inside a flanged rim 43 formed on the bottom of the dispenser. Preferably the central portion of the plate 13 is depressed or offset inwardly or upwardly at 44 to provide space for the flanged head of a fastening nut 45, the body of the nut passing upwardly through an opening 46 in the plate 13 and the opening 42 in the bottom wall 36 of the powder container and having threaded connection with the lower end of the stud 41. Preferably the major portion of the body of the nut passing through the plate 13 is straight-sided and the remaining portion thereof is tapered so that upon turning the nut home on the stud 41 the tapered body of the nut fits tightly within the opening 42 thereby preventing escape of powder through that opening around the nut. It will be obvious that turning of the nut tightly on the stud will result in some compression of the gasket 38 and prevent any leakage of powder between the upper end of the container and the opposed wall of the dispenser, particularly around the openings 22 and 39.

The powder container ordinarily will be filled through the opening 39, and that opening may then be sealed by any convenient displaceable means. As shown in Fig. 4, I have provided over the opening 39 a strip 47 of cloth, paper or other suitable material having its under side secured to the top wall 35 by a suitable adhesive. The strip 47 may be provided with a tab portion 47*a* unsecured to the wall 35 to facilitate removal of the strip. The opening 42 in the bottom wall 36 of the body container also may be closed by a disc 48 of any suitable material secured by an adhesive to the wall 36, and the disc 48 also may be provided with an unsecured tab 48*a* to facilitate its removal. If the disc 48 is made of paper or other puncturable material it need not be removed because the stud 41, if long enough, will force its way through the disc 48 when the powder container is inserted into the dispenser or the end of the fastening nut may be forced through the disc, and upon turning the fastening nut tightly on the stud a powder-tight engagement between the punctured disc 48, the bottom wall of the container and the nut may be readily obtained.

Paper is probably the least expensive material that can be used for making the powder containers. To reduce the cost of manufacturing the containers to the lowest point it is desirable that the side and end walls of the container be straight. Such a modified form of container is shown at 49 in Fig. 3. When such a container is used in a dispenser shaped as described there are substantial spaces between the outer walls of the container at its lower end and the inner adjacent walls of the dispenser body. While the powder capacity of the container is somewhat less, the arrangement is satisfactory. The snug fit between the margins of the bottom closure plate 13 with the body of the dispenser prevents any lateral movement of the closure plate with re-

spect to the dispenser body; and when the fastening nut 46 is passed through the closure plate 13 and the bottom of the powder container into operative holding engagement with the stud 41, the bottom of the powder container is also effectively held against any lateral movement. It follows, therefore, that the powder-tight seal between the upper end of the powder container and the adjacent opposed dispenser wall is maintained and leakage of powder between said parts, as it is sifted through the discharge passage, is prevented.

The combined powder container and dispenser described herein readily lend themselves to volume production at a cost well within permissible limits. The body of the dispenser and its associated parts may be made in a factory best suited for the production of such articles, decorated as desired and sold direct to users in trade channels ordinarily handling such articles; or the dispensers may be sold, or supplied as premiums, by the manufacturer of the powder together with one or more of the powder filled containers. The latter may be made in a paper box plant or other factory best suited for the production of such articles and they may be supplied direct to the powder manufacturer, filled and sealed by him for sale as refills through drugstores and other ordinary outlets. Obviously, the powder containers may carry any desired label or other advertising matter of the powder manufacturer.

The contents of the refill are fully protected against moisture and all foreign matter until the refills reach the ultimate user. The arrangement is such that a user may conveniently remove an empty container and insert a powder charged container.

Once a powder charged container is inserted into its body, the dispenser may be operated or used and the scoop washed just as though the powder were placed directly within the body of the dispenser, and in the same manner as is described in my said copending application.

I do not desire to limit my invention to the specific arrangements and constructions shown and described except only insofar as certain of the claims may be so limited as it will be apparent to those skilled in the art that changes may be made without departing from the principles of my invention.

I claim:

1. A dispenser for tooth powder and the like comprising in combination an outer casing in the form of a sleeve open at one end and having in its other end a valved opening, an inner casing for containing a supply of powder and having in one end a powder discharge opening in register with said valved opening, closure means for the open end of said outer casing, and anchoring means carried by the outer casing and passing through the inner casing and said closure means for securing the inner casing and the closure means in operative relation with respect to the outer casing, said anchoring means comprising readily connected and disconnected parts.

2. A dispenser for tooth powder and the like comprising in combination an outer casing in the form of a sleeve open at one end and having in its other end a valved opening, an inner casing for containing a supply of powder and having in one end a second or powder discharge opening in register with said valved opening and having in its opposite end another or third opening, closure means for the open end of said outer casing, an anchoring stud carried by said outer casing and terminating adjacent said third opening and a fourth opening provided in said closure means, and a flanged element the body of which projects through said fourth and third openings and has threaded connection with said stud, that part of the body of said element passing through said third opening being tapered and tightly seated therein to prevent escape of powder through the third opening.

3. A dispenser for tooth powder and the like comprising in combination an outer casing in the form of a sleeve open at one end and having in its other end a valved opening, an inner casing for containing a supply of powder and having in one end a second or powder discharge opening in register with said valved opening and having in its opposite end another or third opening, a closure plate fitting the open end of said outer casing and held by the casing from lateral movement, an anchoring stud carried by said outer casing and terminating adjacent said third opening and a fourth opening provided in said closure plate, and a flanged element the body of which projects through said fourth and third openings and has threaded connection with said stud, that part of said element passing through said third opening being tapered and tightly seated therein to prevent escape of powder through the third opening.

4. A dispenser for tooth powder and the like comprising an outer casing having a wall provided with a valved opening, a casing within the outer casing for containing a supply of powder and having at one end a wall provided with a second or powder discharge opening in register with said valved opening and having in its opposite wall another or third opening, a gasket between said first and second walls and around said valved and second openings, a closure plate fitting the open end of said outer casing and held by the casing from lateral movement, an anchoring stud carried by said outer casing and terminating adjacent said third opening and a fourth opening provided in said closure plate, and a flanged element the body of which projects through said fourth opening and is tightly seated in said third opening and has threaded connection with said stud, the arrangement being such that said inner casing is rigidly secured with respect to the outer casing and powder can only escape through said second and first openings.

5. A dispenser for tooth powder and the like comprising in combination an outer casing having a valved opening, an inner casing for containing a supply of powder and having a powder discharge opening in register with said valved opening, said outer casing having an aperture for entrance of said inner casing, a closure for said aperture, and anchoring means carried by said outer casing and passing through the inner casing and engageable with said closure for securing the inner casing in operative relation with respect to the outer casing, said anchoring means comprising readily connectible and disconnectible parts.

6. A dispenser for tooth powder and the like comprising in combination an outer casing having a valved opening, an inner casing for containing a supply of powder and having in one end a powder discharge opening in register with said valved opening and when in place within said outer casing having another opening in its opposite end, said outer casing having an aper-

ture for receiving said inner casing, a closure member for said aperture, an anchoring stud carried by said outer casing and terminating adjacent the last mentioned opening in said inner casing, and means including a tapered member having threaded connection with said stud and extending through said closure member and tightly seated in the last mentioned opening of said inner casing to seal it.

7. In combination, a dispenser for powder and a refill powder package, said dispenser having a valved powder discharge opening and an aperture to admit the refill package, a closure for said aperture, said package having an opening to register with said valved opening, a displaceable closure for said package opening removable when said package is inserted in said dispenser, a stud fixed in said dispenser and adapted to penetrate said package when the same is inserted in said dispenser, and an anchoring nut extending through said aperture closure and engageable with said stud to hold said closure in place, said anchoring nut adapted to seal the hole in the package made in the adjacent portion thereof by penetration of said stud when said package is inserted in said dispenser.

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