Jan. 7, 1941. M. G. CONNER 2,227,706

SOAP POWDER DISPENSER

Filed Oct. 26, 1939 2 Sheets-Sheet 1

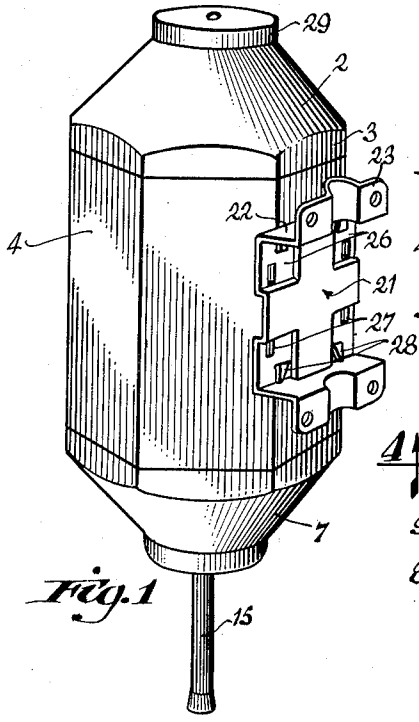


Fig. 1

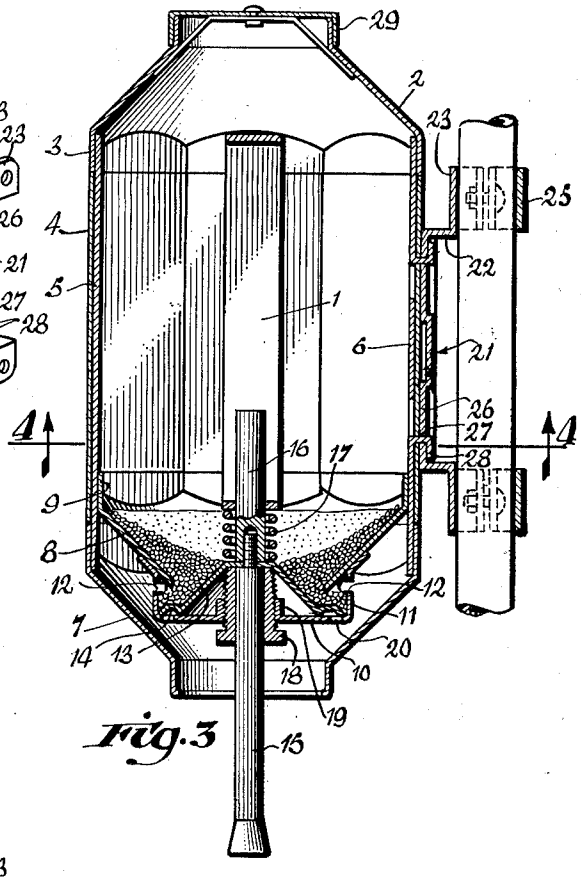


Fig. 3

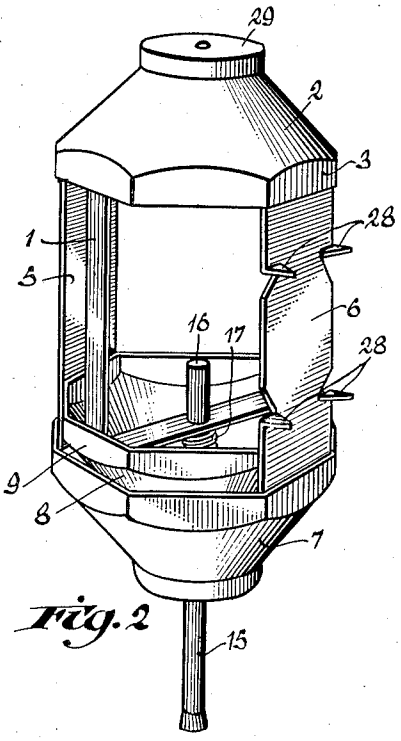


Fig. 2

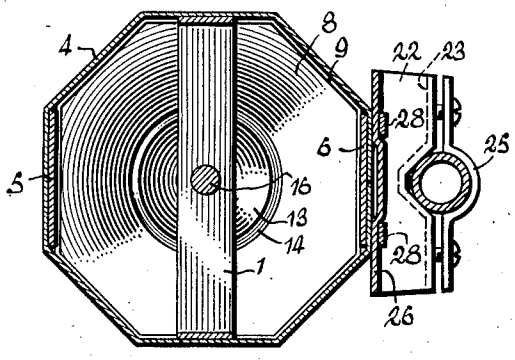


Fig. 4

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SOAP POWDER DISPENSER

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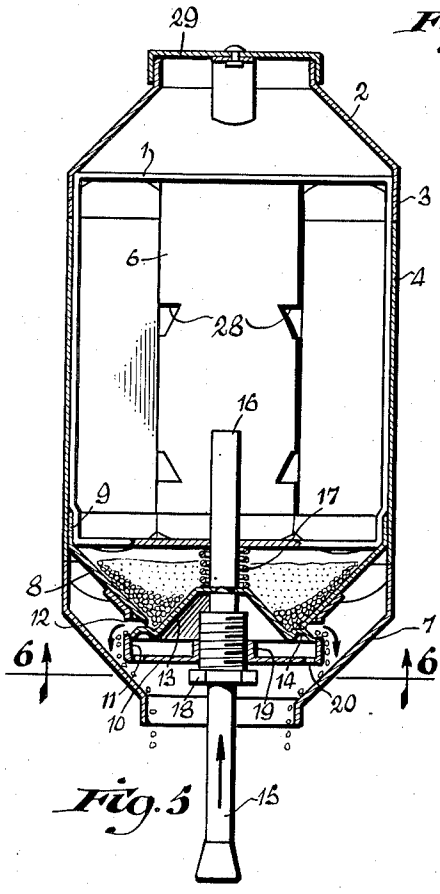


Fig. 5

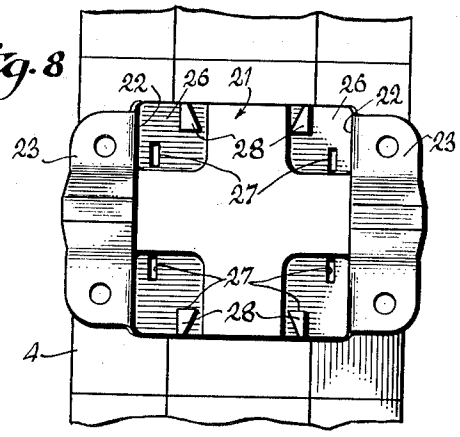


Fig. 8

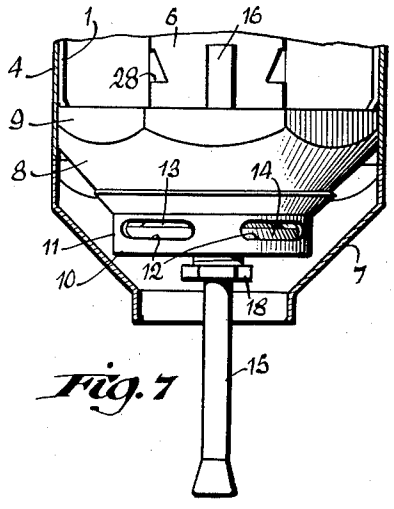


Fig. 7

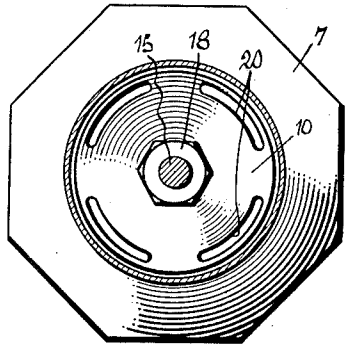


Fig. 6

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UNITED STATES PATENT OFFICE

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SOAP POWDER DISPENSER

Michael G. Conner, Cincinnati, Ohio, assignor to Albert N. Wolfstein, Sr., Cincinnati, Ohio, as trustee

Application October 26, 1939, Serial No. 301,464

7 Claims. (Cl. 221—114)

This invention relates to improvements in dispensers, particularly for dispensing a granular or powdered soap.

An object of the invention is to provide a dispenser for distributing a servicing quantity of soap into the palm of the hand while in the act of raising a plunger rod depending from the bottom of the dispenser engaged by the palm of the hand.

Another object of the invention is to provide a dispenser which is non-clogging in dispensing a soap powder, the powder, gravity fed, from a hopper upon a piston, from which a definite individual servicing quantity is expelled annularly upon piston reciprocation.

Another object of the invention is to provide a dispenser having an interframing for sustaining the working parts, and a mounting fixture enclosed by a casing of thin non-corrosive sheet material shaped to give stability, an ornate symmetrical configuration, of utility to the functioning of the device and to cheapen and simplify its construction.

Various other features and advantages of the invention will be more fully set forth in a description of the accompanying drawings, in which:

Figure 1 is a perspective view rearward exposure of the improved dispenser.

Figure 2 is a perspective view similar to Figure 1, with the shell for the container body removed.

Figure 3 is an enlarged central vertical section through the dispenser.

Figure 4 is a section on line 4—4, Figure 3.

Figure 5 is a central vertical section taken at right angles to that of Figure 3.

Figure 6 is a section on line 6—6, Figure 5.

Figure 7 is a central vertical section through the lower end of the container with the interior parts thereof in elevation.

Figure 8 is a plan view of the rear side of the dispenser attaching bracket.

The dispenser may generally be referred to as a dispensing container as the content is dispensed directly from the bottom of a container. In the preferred embodiment, it is principally contemplated for dispensing a powdered or granular soap, in individual service quantities for use in connection with wash basins. In this capacity, essentially as a plumbing fixture, it possesses certain design and structural characteristics. The design of the container exteriorly is of a symmetry, aesthetically harmonious with all of the various styles of wash basins, industrial and domestic; and the design for portions of the container is of utility to the operation of the device.

It is desirable that the exterior surface of the container be non-corrosive and possess a long lasting high lustre finish, and the finish easily so maintained. For this purpose, the shell is of a sheet stainless steel. The use of sheet stainless steel has been made feasible economically, by employing an extremely thin sheet gauge and mounting the same to and about an interior framing which sustains the working and supporting parts.

Referring to the drawings, 1 indicates a rectangular strip metal frame to one end of which a conical or funnel shaped top 2 is fixed. The top 2 is formed of a thin gauge stainless sheet steel with its lower or inner margin 3 preferably of octagonal or polygonal form to give stability thereto, and permit a thin gauge sheet metal shell 4 for the body of the container to be abuttingly engaged therewith for making a sufficiently effective sealing joint without overlap or seaming, and homogenizing the surfaces, materially simplifying and cheapening the cost of construction and assembly.

The top 2 is engaged over and fixed to an end of the interior frame 1, preferably by spot welding. The top is also fixed to an end of a pair of opposingly disposed vertical sheet metal cleats 5, 6, as framing disposed at an angle to the rectanguar frame 1. The cleats, in width, are slightly scant to the width of a side of the octagonally formed lower end of the top, and against which relative corresponding sides of the body shell 4, likewise octagonal in contour, engage to stabilize the shell and maintain its wall registry with the sides of the top.

The cleats at their opposite or lower end are attached to and support a funnel 7 forming the lower exterior end of the container, which in structure corresponds to and duplicates the top 2. Its inner octagonally formed end abuttingly engages with the opposite or lower end of the body shell 4 is substantially the same manner as the top. The top for one end of the container, the funnel for the opposite end, and the shell intermediate thereof for the body of the container carrying no working or attaching parts, and attached and permanently fixed to the interior framing and can thus be made of an exceedingly light gauge material, thereby permitting the use of a stainless steel sheet or other non-corrosive material more economically than could be otherwise produced in the employment

of heavier material which would require its outer surface to be plated or otherwise treated to give it the desired and necessary finish, but which would not offer the durability. The construction also permits the exterior of the container to be made from a plastic material, as it is free from any strains.

A conical centrally apertured bottom or hopper 8 for the container is fixed to the lower end of the frame 1 and to the cleats 5 and 6, preferably by spot welding. The bottom or hopper has a flange 9 of octagonal form, in bearing contact with the inner side of the container shell 4. The joint made by the bearing contact furnishes a sufficient seal against leakage of a commodity as powdered soap.

The hopper 8 and the funnel 7 form a spaced doubled wall centrally apertured base for the container, the inner wall thereof, primarily partially supports and deflects the contents to the aperture, while the outer wall directs and centralizes the dispensed soap for discharge upon the palm of the user's hand.

An annular dish-shaped plate or feed rack 10 is disposed between the hopper 8 and the funnel 7, or walls of the base of the container, trapping the contents against gravity discharge, and sustains an annular dispensing charge of soap laterally beyond the lower edge of the hopper about its aperture. The annular flange 11 of the feed rack 10, preferably in line with or above the plane of the central aperture of the hopper, circumferentially, has series of elongated ports or apertures 12 therethrough, through which an annular charge of soap upon the feed rack is discharged or ejected by a piston or ejector disc 13, within and normally resting upon the feed rack.

The piston 13 has a corrugated margin or rim 14 and a conical body extending upwardly through the aperture of and into the hopper to deflect the contents outwardly, divergent to the incline of the hopper. The annular corrugation 14 of the piston strikes against the lower edge of the hopper limiting the upper or dispensing stroke of the piston, and while in contact with the edge of the hopper effects a seal against the discharge of soap powder from the hopper. This prevents any displacement of soap powder from the hopper while an annular charge upon and between the rim of the piston and flange 11 of the feed rack is being dispensed or ejected. During the normal position of the piston, while at rest upon and within the feed rack, the soap powder within the hopper is free to descend for distributing a successive charge or dispensing quantity of the soap powder from the hopper to replenish or re-load the feed rack for a subsequent dispensing discharge.

The piston is provided with a stem or plunger rod 15, of two-part form, with the parts thereof engaging opposite sides of the piston and screw-threaded together securing the same to the piston. One part provides a projecting shank 16 slidably engaged through an aperture in the lower cross bar of the frame 1. A spring 17, about the shank of the plunger rod, is interposed between the cross bar of the frame 1 and the upper side of the piston for yieldingly urging the piston to its detracted or open position upon the feed rack. The piston rod at the underside of the piston slidably engages through a ferrule or bushing 18 screw-threaded through a hub 19 of the feed rack 10. The ferrule provides a means for limiting the retracting stroke of the piston and for soap dispensing regulation.

The lower or free end of the plunger rod projects centrally through the funnel and a sufficient distance therebeyond to be conveniently accessible by the palm of a hand for pushing the same upwardly and dispensing a wash servicing quantity of soap powder thereon. This provides an exceedingly convenient and commodious method of operation and service for the operator receiving a supply of soap upon the palm of the hand used to actuate the plunger.

The feed rack extends across the opening of the funnel, amply shielding and protecting, against entry of any moisture into the feed rack that may be expelled from a wet hand in operating the plunger rod. The feed rack at the base of its plunger has a circular row of apertures 20 therethrough to dispel any powder that may leak by the rim of the piston. The dispenser is non-clogging and capable of dispensing the full contents thereof.

The dispenser in many instances, particularly in connection with industrial wash basins, is installed upon the water service pipes for the basin. These pipes are installed either vertically or horizontally. Therefore, a bracket 21 is employed capable of being mounted or clamped to a pipe, whether horizontal or vertical, by merely alternating the position of the bracket upon the dispenser. The bracket likewise serves for attaching the dispenser to a plane surface.

The bracket 21 comprises a sheet metal stamping with its body of U or channel form, and its limbs 22 each have a lateral flange 23 extending outwardly at an angle therefrom. The intermediate portion of the flange is embossed to partially clasp over a pipe, as shown in Figure 4, for clamping the bracket thereto. The bracket is clamped to the pipe by a U clip 25 fixed to the opposite ends of the flange of the bracket by bolts passing through apertures in the clip and flange. The body or web of the bracket is embossed centrally crosswise, providing raised corner portions 26 for each corner of its rectangular outline. The raised corner portions each are provided with a pair of oblong apertures 27, 27, relatively at an angle to one another to be interchangeably employed for engaging the tang 28 therethrough projecting laterally from the cleat 6 of the dispenser framing.

The tangs normally extend and are punched outwardly from the framing cleat 6 of the dispenser, and clinched over onto the bracket. The apertures in the bracket provide for alternately or interchangeably disposing upon the dispenser for securing the dispenser either to a horizontal or vertically extending water service pipe. The tangs 28 are also employed for securing the container shell 4 to the cleat by engaging through apertures in the opposite ends of the shell, the ends of the shell overlying the cleat and therefore disposed between the cleat and the bracket.

The central aperture in the conical or inverted funnel shaped top 2 provides an inlet or refill opening for the container of the dispenser which is normally sealed by a removable closure cap 29 having a spring or flexible clip fixed to its inner side which prongs outwardly to engage with the inner side of the top to hold the clamp securely in place.

Having described my invention, I claim:

1. A dispenser for a powdered soap or the like material, comprising: a container having a double wall inverted conical-shaped bottom centrally apertured, the inner wall providing a base for the contents of the container and the outer wall

a funnel for directing the contents discharged, a reciprocable piston disposed between the walls of the bottom for covering the aperture of the inner wall, means for operating the piston, and a stationary annulus disposed between said walls providing a support and cylinder for the piston, the piston normally uncovering the aperture of the inner wall for marginally receiving a self-feeding limited supply of the container contents and with the annulus trapping the same for discharge from the piston upon movement thereof to seal the aperture.

2. A dispenser for a powdered soap or the like material, comprising: a container having a double wall inverted conical-shaped bottom centrally apertured, the inner wall providing a base for the contents of the container and the outer wall, a funnel for directing the contents discharged, a reciprocable piston disposed between the walls of the bottom for covering the aperture of the inner wall, means for operating the piston, and an annulus disposed between the walls of the bottom providing a support and cylinder for the piston, the piston normally uncovering the aperture of the inner wall, and with the annulus trapping the contents from gravity discharge for administering a dispensing supply thereof about the rim of the piston for discharge therefrom upon movement of the piston toward the inner bottom to cover its aperture.

3. A dispenser for a powdered soap or the like material, comprising: a container having a double wall centrally apertured bottom, the inner wall providing a base for the contents of the container and the outer wall, a funnel for directing the contents discharged, an annularly flanged support between the said inner and outer walls, providing a piston cylinder, a conical reciprocable piston slidable within said flanged support for covering the aperture of the inner wall, and normally unseated therefrom and sustained upon said support to receive a self-feed supply of soap from the container and marginally confined thereon by the annular flange of said support for discharge therefrom upon movement of the piston to cover the aperture in said inner wall, and means for operating said piston.

4. A dispenser for powdered soap and the like material, comprising: a container of thin sheet material of sectional construction constituting a shell for the body of the container and correspondingly shaped sections for the opposite ends of the body, a frame of strip material within the container fixed to and connecting the opposite ends of the container providing a support for the operative parts of the dispenser, a supplemental bottom for the container fixed to the frame and spaced from one end of the container, a piston disposed beneath the supplemental bottom to cover an aperture therein and normally unseated therefrom for receiving a self-administering dispensing supply dischargeable therefrom upon movement of the plunger to close the aperture, and means for operating said piston.

5. A dispenser for a powdered soap or the like material, comprising: a container having a double wall inverted conical-shaped bottom centrally apertured, the inner wall providing a base for the contents of the container and the outer wall, a funnel for directing the contents discharged, a reciprocable piston disposed between the walls of the bottom for covering the aperture of the inner wall, a flanged disc providing a support and cylinder for the piston, the piston normally uncovering the aperture of the inner wall for receiving a self-administering dispensing supply of the container contents and about the rim thereof trapped by the disc and discharged upon movement of the piston to seal the aperture, a stem fixed to and depending from the piston through and beyond the outer bottom wall of the container for actuating the piston, and adapting the dispensed quantity of soap to be delivered into the palm of the hand while in the act of actuating the piston, and a bushing engaged through said disc concentrically about the piston stem and providing an adjustable abutment for the piston for regulating the powder dispensing volume.

6. A dispenser for a powder soap or the like material, comprising: a container having a double wall inverted conical shaped bottom centrally apertured, the inner wall providing a base for the contents of the container and the outer wall a funnel for directing the contents discharged, a stationary pan-shaped receptacle interposed between said bottom walls, spaced therefrom and intervening the discharge apertures thereof, a conically shaped piston reciprocable within said receptacle having its cone emerging into the container through the aperture in said inner wall normally seated in the receptacle to uncover said aperture and marginally cooperate with the rim of the receptacle to provide an annular channel for the reception of a dispensing quantity of the contents of the container feeding therein by gravity and the inclination of the cone of the piston, and adapted to be discharged therefrom upon elevating the piston, the piston in its elevated position closing said aperture, and means for operating said piston.

7. A dispenser for a powder soap or the like material, comprising: a container having a double wall inverted conical shaped bottom centrally apertured, the inner wall providing a base for the contents of the container and the outer wall a funnel for directing the contents discharged, a stationary annulus interposed between said bottom walls, spaced therefrom and intervening the discharge apertures thereof, a conically shaped piston reciprocable within said annulus having its cone emerging into the container through the aperture in said inner wall normally within the annulus to uncover said aperture and marginally cooperate therewith to provide an annular channel for the reception of a dispensing quantity of the contents of the container feeding therein by gravity and the inclination of the cone of the piston, and adapted to be discharged therefrom upon elevating the piston, the piston in its elevated position closing said aperture, and means for operating said piston.

MICHAEL G. CONNER.