April 29, 1941. A. L. BOBRICK ET AL 2,240,030

DISPENSER FOR POWDERED SOAP AND THE LIKE

Filed Dec. 27, 1938

FIG. 1.

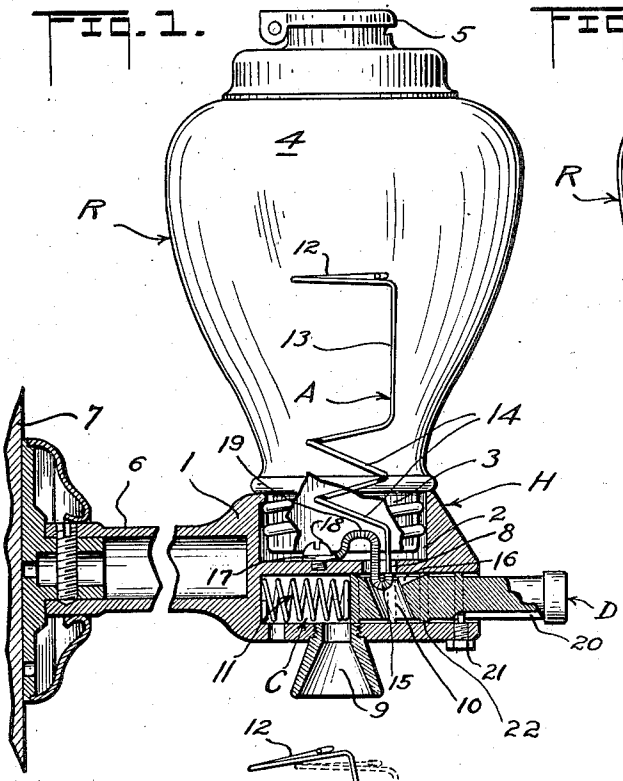


FIG. 2.

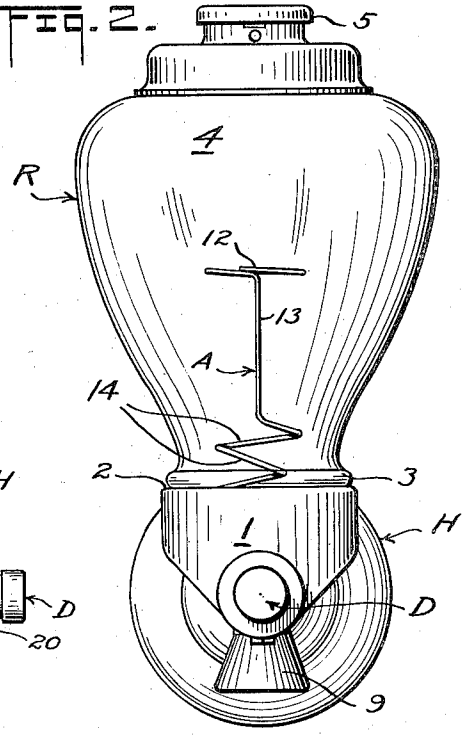


FIG. 3.

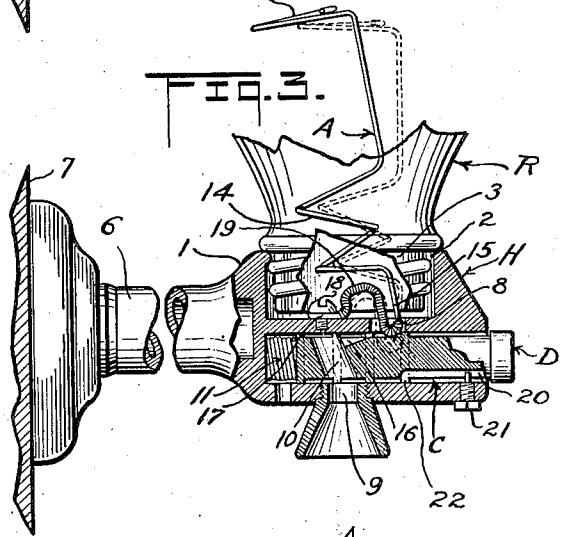


FIG. 5.

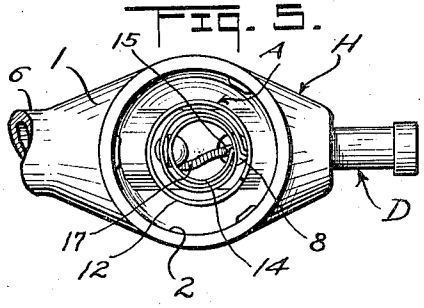
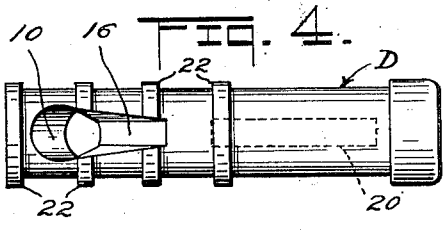


FIG. 4.



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DISPENSER FOR POWDERED SOAP AND THE LIKE

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Application December 27, 1938, Serial No. 247,806

5 Claims. (Cl. 221—102)

This invention relates to and has for an object the provision of a dispenser for powdered soap or other dry materials which includes a receptacle for the materials to be dispensed, a holder for the receptacle adapted to be supported on a wall or other member and provided with a cylinder in which a dispensing member, as for instance, a plunger is slidable backwardly and forwardly at each dispensing operation, for dispensing quantities of the material from said receptacle thru or around said plunger and outwardly for use, together with means for agitating the material in the receptacle at each operation of the dispensing member.

A dispenser for certain material such as powdered soap requires provision for the prevention of the caking of the soap and the resultant clogging of the dispenser and sticking of the plunger.

To this end we have provided a dispenser particularly adapted for dispensing powdered soap or the like and the hereinafter following description of our dispenser will be based on the assumption that such materials will be used. Thus, the invention comprehends the provision of a reciprocable operating or dispensing plunger provided with peripheral means in the form of annular rib or ring members spaced apart longitudinally of said plunger and so formed that the peripheries thereof will engage the wall of a cylinder formed in the holder while the other portions of the plunger will be slightly spaced from said wall. Thus, as the plunger member moves in the cylinder, the shoulders formed at opposite sides of said rib members will scrape any accumulation of soap particles from the cylinder wall and serve to scavenge the cylinder at each operation of the dispenser. We have discovered that the annular members on the dispensing plunger operate with a maximum of efficiency when the edges thereof are sharp and at right angles to the axis of the plunger.

A further object of invention is to provide a simple and efficient agitator within the soap receptacle but having operative association with the dispensing plunger so that at each operation of the dispenser said agitator will be moved a predetermined extent in one or more directions for loosening the materials held in said receptacle and thereby permitting a free flow of the material from the receptacle thru a suitable outlet.

This invention may embody the usual or varied forms of holder, receptacle and means for attaching the same in position for use, none of which are pertinent to this invention. Other objects, however, may appear as the description of our invention progresses.

We have shown in the accompanying drawing a preferred form of dispenser embodying our invention, in which:

Fig. 1 is an elevation, partly in section, of the assembled dispenser in normally inoperative position;

Fig. 2 is an elevation of the same viewed at right angles to the illustration of Fig. 1;

Fig. 3 is a fragmentary elevation corresponding to Fig. 1 but showing the dispenser in dispensing position;

Fig. 4 is a top plan view of the dispensing plunger; and

Fig. 5 is a fragmentary top plan view of the holder with the receptacle removed.

Briefly described, our improved dispenser includes: a receptacle R of glass or other material, a holder H for supporting said receptacle, a dispensing plunger D and an agitator A. Holder H is formed with cast or molded body 1 having an upwardly opening internally threaded socket 2 for detachably supporting the receptacle R, said receptacle having a reduced neck 3 at its bottom, an enlarged body 4 and suitable filling cap 5 at its top, as in other types of receptacles for similar use.

Holder H is also provided with an extension 6 which has means such as shown or otherwise but not important to this invention, applied to its end for attaching the dispenser to a suitable supporting wall or member as at 7.

Holder H has a horizontally disposed cylinder C formed therein below socket 2 and in constant communication with said socket by means of an inlet 8. An outlet 9 is formed at the bottom of cylinder C out of vertical alinement with inlet 8. It will be noted that the inner end of cylinder C is closed while the outer end thereof is open, so that the dispensing plunger may slidably fit cylinder C and said plunger has an aperture or passage 10 which is preferably inclined so that when the plunger is in the position shown in Fig. 1 the upper end of said passage will register with inlet 8 for receiving a quantity of material from receptacle R and when the plunger is operated inwardly of cylinder C to the position shown in Fig. 3, passage 10 will be out of registration with said inlet and the bottom of the passage will then register with outlet 9. Thus, as the passage 10 is charged with a quantity of material from receptacle R the movement of the plunger inwardly

also moves the charge of material into position for discharge thru the outlet 9.

A spring 11 is provided in the rear end of cylinder C and is compressible between the rear end of said cylinder and the inner end of plunger D for urging the plunger constantly outwardly to normally inoperative position whereby outlet 9 will be closed.

The agitator A is a resilient spring-like member having one or more loops or other formations at its top which is substantially upwardly in receptacle R, a portion or portions as at 13 intermediate the top and bottom, one or more coils 14 within the neck 3 of the receptacle, a bottom portion 15 which is bent into suitable form and extends thru inlet 8 into engagement with a beveled groove in the top of plunger D, and a lower end portion 17 fixedly held on a portion of holder H as by means of a screw 18. It will be observed that the portion 15 of the agitator is reinforced as by means of a wire armor 19 between screw 18 and to a point just above the plunger D so that the constant flexing of the agitator will not tend to break the same.

In operation, when the receptacle R is supplied with soap or other material the passage 10 of plunger D will be filled with a quantity of the material from inlet 8 and as said plunger is moved inwardly against the tension of spring 11 the charge of material is moved into registration with outlet 9 thru which it is discharged for use. Of course upon release of the operating plunger D the tension of spring 11 restores the plunger to normally inoperative position and in readiness for a succeeding operation. During its movement and at all times the plunger is prevented from rotating in its cylinder C by means of a keyway 20 at its bottom which is engaged by the inner end of a screw 21 attached to the bottom of the holder H, as shown in Fig. 1.

The movement of the plunger backwardly and forwardly in the cylinder C serves to raise and lower the portion 15 of the agitator A, due to the cam like groove 16 on the top of the plunger with which the agitator is engaged, and such movement of the portion 15 occasions a greater movement of the upper portions 12, 13 and 14 not only in the direction of movement of the plunger but also in other directions, due to the vibrations set up in the upper portions of the agitator, thus effecting a breaking up of any lumps of material in the vicinity of the agitator and loosening the material so that quantities thereof will readily flow downwardly thru inlet 8 and into passage 10 of the plunger.

The plunger D is provided with peripheral means for scraping the wall of and scavenging the cylinder C upon each dispensing operation, so as to prevent clogging of the cylinder and the sticking of the plunger. This peripheral means may take the form of annular members 22 such as ribs or rings spaced apart longitudinally of the plunger and having sharp edges for frictional contact with the wall of the cylinder. These members are so constructed as to space the plunger proper from contact with the wall of the cylinder, so as to reduce friction and prevent sticking of the plunger. However, any peripheral means may be used in connection with the plunger, provided it will space at least a part of the plunger from contact with the cylinder and have the function of scraping or scavenging the cylinder as aforesaid. While as here shown this peripheral means constitutes ribs formed integral with the plunger, it is obvious that rings similar to piston rings could be used if desired. Preferably, the aperture of passage 10 is disposed between certain of said annular members 22 so that that portion of the plunger also between said certain members 22 is circumferentially spaced from the cylinder wall.

It will be understood that the dispenser herein shown and described is simple, efficient and may be readily assembled and disassembled at will, for the purpose of cleaning the parts or for substitution and replacement of worn or damaged parts.

We claim:

1. A dispenser comprising: a receptacle for a material, a holder for said receptacle provided with a cylinder having an inlet from said receptacle and an outlet, a dispensing member reciprocable in said cylinder and having an opening therein for registration with the inlet and outlet, and an agitator mounted on said holder and having a portion extending substantially upwardly in said receptacle and a portion extending through said inlet into said cylinder and normally disposed in said opening in position to be engaged by said dispensing member, said dispensing member having on its upper side and extending longitudinally from the opening therein, an inclined groove, the bottom of which is engageable with the last named portion of the agitator whereby the movement of the dispensing member will effect a movement of said agitator.

2. A dispenser comprising: a receptacle for a material, a holder for said receptacle provided with a cylinder having an inlet from said receptacle and an outlet, a dispensing member reciprocable in said cylinder, and an agitator mounted on said holder and having a portion extending substantially upwardly in said receptacle and a portion extending into said cylinder for engagement with said dispensing member, whereby the movement of the dispensing member will effect a vibration of said agitator, said portion of said agitator which engages said dispensing member being reinforced for preventing damage to said agitator.

3. A dispenser comprising: a receptacle, a holder therefor, a dispenser member slidable longitudinally in said holder and provided with a cam groove extending longitudinally thereof, and an agitator anchored on said holder and having a portion engaging said cam groove on said dispensing member, whereby the movement of the dispensing member will effect a movement of the agitator when the dispensing member is operated, said movable dispenser having an opening therein through which material passes in being dispensed, the cam engaging portion of said agitator being normally disposed in said opening.

4. A dispenser comprising: a receptacle, a holder therefor, a movable dispenser member arranged in said holder and provided with peripheral cam means, and an agitator anchored on said holder and having a portion engaging said cam means on said dispensing member, whereby the movement of the dispensing member will effect a vibration of the agitator when the dispensing member is operated, said cam engaging portion of said agitator having a reinforcing armor thereabout for preventing the breaking of the agitator at its point of greatest strain.

5. A dispenser for powdered soap and the like including a cylinder having soap inlet and outlet openings at longitudinally spaced points therein, an apertured plunger reciprocable in said cylinder for selectively registering the aperture

thereof with said openings of the cylinder and annular members carried by said plunger and slidably engaging said cylinder and circumferentially spacing from contact with the cylinder the portions of the plunger which lie between said annular members, the aperture of said plunger being located between certain of said annular members, said annular members having sharp edges for scraping and scavenging said cylinder.

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