April 3, 1956 P. D. BELLO 2,740,562

MATERIAL CONTAINER WITH SELF-VALVING DISPENSER

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Fig. 1

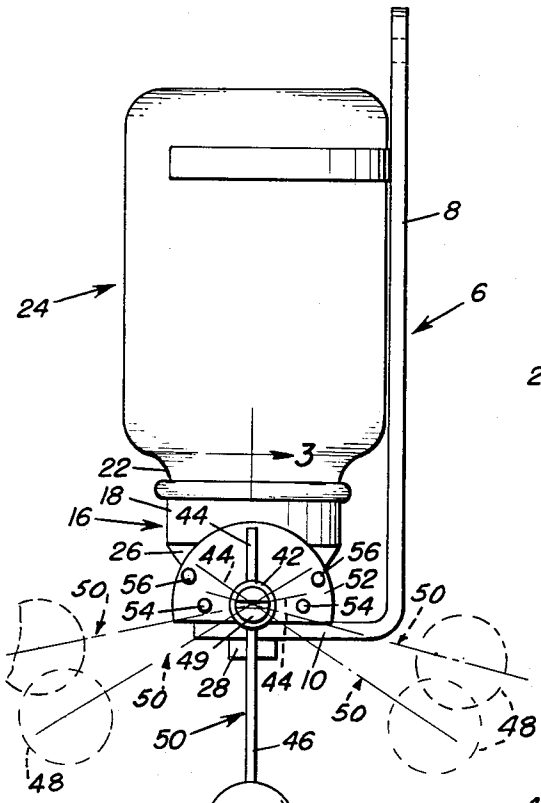


Fig. 2

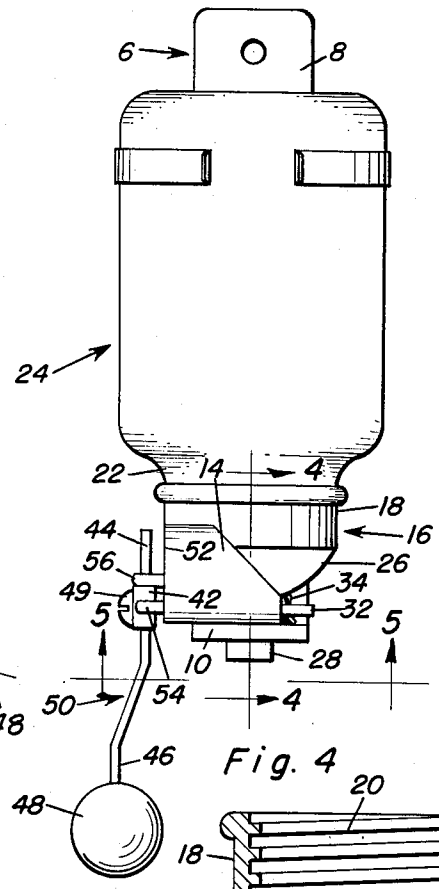


Fig. 3

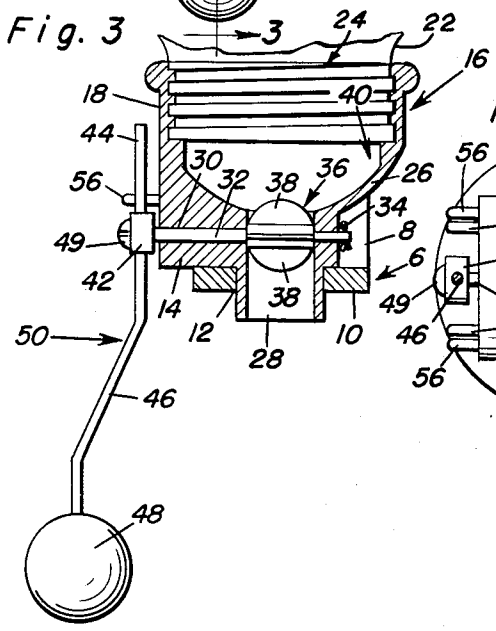


Fig. 4

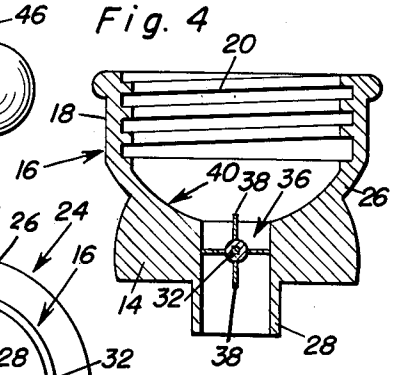
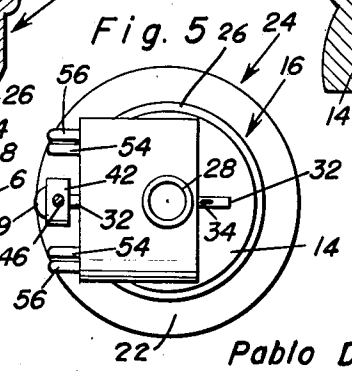


Fig. 5



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MATERIAL CONTAINER WITH SELF-VALVING DISPENSER

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6 Claims. (Cl. 222—410)

The present invention relates to certain new and useful improvements in a novel container and dispenser which is principally, but not necessarily, adapted to hold and dispense synthetic detergents which are manufactured in granulated or flaked form, the same being adapted for use in kitchens and for other household uses. It is, in addition, suitable for practical usefulness in restrooms of restaurants, hotels, clubs and the like, and is intended to contain and dispense any dry granular material.

A further object of the invention is to structurally, functionally and otherwise improve upon similarly constructed and performing dispensers and, in doing so, to provide an effective structural adaptation in which manufacturers, retailers and users will find their respective requirements and needs aptly met.

In carrying out the principles of the invention, the structural means utilized is of the utmost in simplicity of construction, the features provided being such that reliability of functioning of the cooperating parts is assured.

A further object of the invention is to provide a construction wherein the container takes the form of a readily available transparent glass jar having a screw-threaded neck, said jar being inverted in use so that the material contained therein flows by gravity into the novelly constructed hopper and dispensing means.

Briefly summarized, the invention is characterized by a gravity-type container for dry granular material, a receiving and dispensing hopper into which the material is delivered for handy usage, said hopper having a vertical discharge spout, a valve mounted for operation in said spout, and an accessible manually actuatable swingable lever operatively connected with and for opening and closing said valve.

The valve employed in the above-mentioned structure is mounted for oscillation on a rocker shaft and said valve is of bladed construction wherein the blades are circumferentially spaced and serve as agitators which, obviously, hasten the flow of material from the container through the passage in the pouring or discharge neck.

A further feature of the invention has to do with a manually actuatable controller lever which is suspended from the rocker shaft and is free to swing to and fro, said lever being weighted and therefore constituting a pendulum consisting of rod and bob and serving by oscillation, under the forces of gravity plus momentum, to regulate the valve opening and closing steps.

Then, too, novelty is predicated on the adoption and use of a plurality of properly paired and arranged stop pins which, cooperating with the upper end of the lever, serve to limit the to and fro strokes of the lever.

These together with other objects and advantages which will become subsequently apparaent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is an elevational view of a material container with the self-valving dispenser means and hanger bracket,

whereby the complete device may be attached to and suspended from an appropriate fixed support.

Figure 2 is also an elevational view at right angles to Figure 1 observing the structure in a direction from left to right.

Figure 3 is a fragmentary view in section and elevation taken approximately on the vertical line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a similar view but taken on the vertical line 4—4 of Figure 2, the container and bracket being omitted.

Figure 5 is a bottom view which may be said to be cut on the line 5—5 of Figure 2, looking in the direction of the arrows.

Taking up the hanger bracket this is L-shaped and is denoted by the numeral 6. It comprises a vertical long attaching limb 8 and a shorter horizontal support limb 10 which, as shown in Figure 3, has an opening or hole 12 therein.

The apertured arm 10 serves to accommodate a block-like base 14 on the lower portion of the receiver or hopper means. This means is denoted as a unit by the numeral 16 and it is preferably constructed of commercial plastic and includes what may be called a screw cap 18. The neck portion of the cap is internally screw-threaded as at 20 to accommodate threads (not shown) on the neck 22 of the inverted transparent jar or container 24. The domical portion of the cap denoted at 26 provides a hopper and it is centrally apertured and communicates with the passage in a depending pouring or dispensing neck 28, which latter extends through and beyond the opening in the arm 10, with the flat-faced base 14 resting on the upper surface of the arm. The base has a horizontal bearing 30 formed therein to accommodate the oscillatable or rocker shaft 32. A portion of the shaft spans the passage in the neck and the end of the shaft is held in place by a cotter pin 34 in the manner shown. The portion spanning the passage is provided with a combined agitating and passage opening and closing valve 36. This has circumferentially spaced wings or paddles 38 which have their major portions confined for operation in the neck but have their upper ends protruding into the receiver or hopper 40. Thus, the valve serves to open and close the passage and also to agitate the granular material (not shown). There is a collar or head 42 on the left hand end (Figs. 2, 3 and 5) of the shaft with which the upper end portion 44 of a rigid rod 46 is slidably connected. The rod is held in place by a setscrew 49. There is a ball weight or bob 48 on the lower end of the rod. This unit may be described either as a weighted lever or as a pendulum and it is denoted by the numeral 50. It swings to and fro and its strokes may be regulated. This is accomplished by providing the flat segmental-shaped vertical face 52 of the base with a pair of lower pins 54—54 and a pair of upper stop pins 56—56. The pins are to the left and right of the pivot points of the rod and are distanced apart in the manner shown in Figure 1. The dotted lines here show the manner in which the pins serve to check the left and right swinging movements of the pendulum. By adjusting the upper end of the rod to the position shown in Figure 1, it cooperates with and stops against the upper pins 56. By loosening the setscrew and lowering and setting the upper end of the rod so that it will strike only the pins 54—54, the stroke of the pendulum is increased.

It is to be kept in mind in connection with the construction and operation of the invention disclosed that the pendulum referred to is suspended from the fixed point of connection with the shaft and is free to swing to and fro and, consisting of a rod and weighted bob, serves by oscillation, under the forces of gravity plus momentum, to regulate the rate of movement of the agitating and closing valve and, of course, the impetus imparted thereto may

be achieved in many ways. That is to say, one desiring to set the dispenser into operation may simply flip the palm of the hand against the ball or bob and set the pendulum into motion, holding the two hands cupped underneath the discharge spout to thus gather the soap powder or whatever is being dispensed. Under another procedure, one may simply catch hold of the ball as a sort of a handle and lift it up, say to the position to the right shown in dotted lines in Figure 1, and then, let go and allow it to drop to bring the pendulum into play. In any event, the pendulum swings back and forth until the momentum is expended and then, comes to a stop, whereupon the valve is closed. The fact that the upper and lower sets of stop pins may be selectively used to regulate the stroke of the pendulum according to whether the material dispensed is heavy or light provides a unique assemblage of features.

It will be clear that the pendulum is hand operated and may be moved either to the left or to the right and allowed to swing until it comes to a stop and when it comes to a stop the material stops flowing and the valve is closed.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction shown and described, and accordingly all suitable modifications and equivalents may be resorted, to falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A dispenser of the class described comprising, in combination, a gravity-type container for dry granular material, a receiving and dispensing hopper operatively connected with and into which the material is delivered for handy usage, said hopper having a vertical discharge spout, an oscillatory shaft mounted for angular rotation on said hopper and having a portion spanning the passage of said spout, a multiple bladed agitating valve fixed on said shaft and essentially confined for operation in said passage, and an accessibly located pendulum freely swingable under the forces of gravity plus momentum and having a rigid normally perpendicular rod whose upper end portion is mounted on said shaft, and a weighted ball-shaped bob fixed on the lower end of said rod, said pendulum being adapted to be given an impetus by the hand of the user whereby it swings freely to and fro until the momentum ceases and it comes to rest and closes the valve.

2. The structure defined in claim 1, and the combination therewith of at least two stop pins fixed on said hopper in the path of movement of said rod, there being one pin to the left and the other pin to the right of the pivot point of said rod to check the to and fro strokes of said rod in both directions.

3. The structure defined in claim 2, in conjunction with two additional stop pins likewise fixed on said hopper at places spaced farther apart than said first named stop pins, the upper end of said rod being slidably and adjustably joined with said shaft and manually regulatable so

that said upper end may be caused to strikingly engage such pins as may be desired, whereby the to and fro strokes of the pendulum may be regulated and utilized according to the discretion of the user.

4. For use in conjunction with a container having a screw-threaded neck, a hopper comprising a screw cap having a concavo-convex domical portion defining the hopper proper, said domical portion being centrally apertured and having a registering pouring neck, and also having a flat bottomed base provided with a bearing and further provided with a flat vertical segmental face and stop pins fixed to and projecting laterally from said face, a horizontal shaft mounted for oscillation in said bearing, a portion of said shaft spanning the passage in said neck, an agitating valve in said neck fixed to said shaft, a pendulum freely swingable under forces of gravity plus induced momentum and having a rigid rod and a weighty bob on the lower end of said rod, and means detachably and slidably mounting the upper end portion of said rod on said shaft in a position for selective cooperation with said stop pins.

5. A dispenser of the class described comprising, in combination, a material receiving and dispensing hopper, a gravity-type container for dry granular material having its discharge end connected to and emptying into said hopper, said hopper having a vertical discharge spout depending therefrom, a normally closed valve mounted for operation in said spout, said valve being oscillatable upon a horizontal axis and including radial equidistant circumferentially spaced blades having free end portions projecting into the hopper and constituting material agitators, a freely swingable pendulum actuatable under the forces of gravity plus momentum and adapted to be set into motion by the hand of the user and allowed to swing to and fro until the momentum brings the same to a perpendicular stopping position, said pendulum comprising a rod operatively connected with the valve and a weighted bob secured to and carried by the lower end of the rod.

6. The structure defined in claim 5 wherein the upper end of the rod is in a plane at right angles to the axis of rotation of the valve and is adjustably connected to the valve, a plurality of relatively fixed stop pins mounted on said hopper in the path of swing of the cooperating portion of the rod, whereby the adjustable connection between the rod and valve may be varied and so that the cooperating stop pins may be selectively employed to control the stroke of the pendulum to meet the requirements of the user.

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