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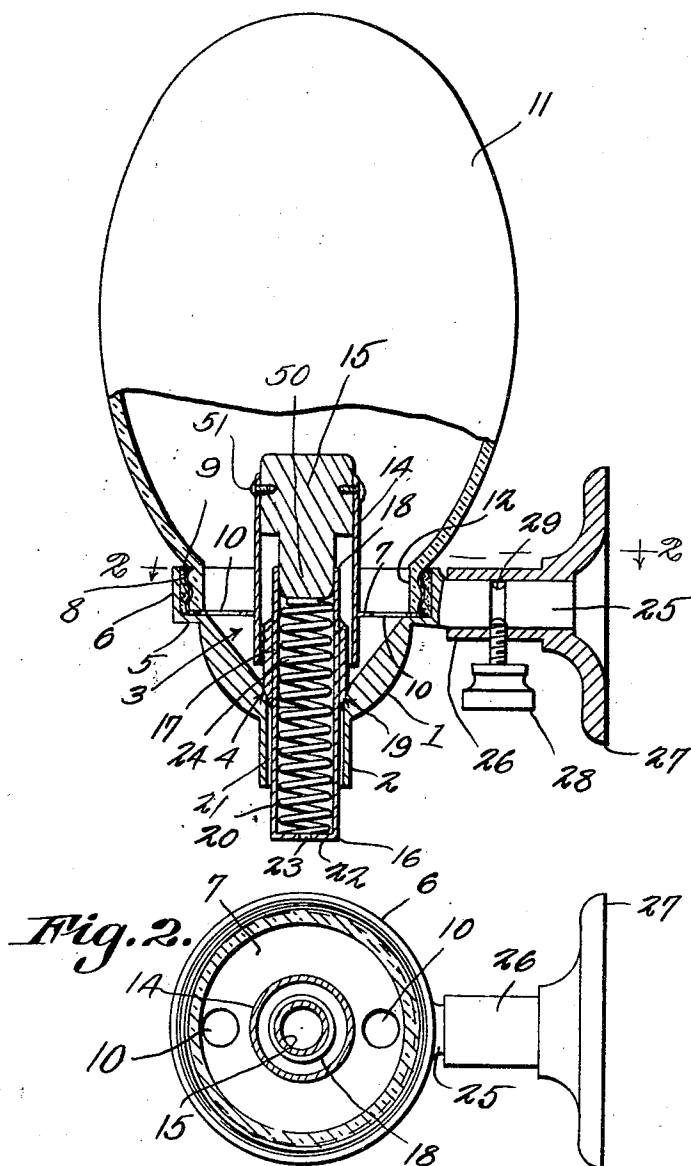
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GRAVITY FEED POWDERED SOAP DISPENSER

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*Fig. 1.*



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# UNITED STATES PATENT OFFICE

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## GRAVITY FEED POWDERED SOAP DISPENSER

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This invention aims to provide a simple gravity-operated means for dispensing powdered soap or the like, the construction being such that the machine will not clog, due to the fact that too much powdered soap is supplied at once. Another object of the invention is to provide novel means for housing the actuating spring for the valve, so that the spring will not be subjected to deteriorating contact with the powdered soap.

It is within the province of the disclosure to improve generally and to enhance the utility of devices of that type to which the present invention appertains.

With the above and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes may be made in the precise embodiment of the invention herein disclosed, within the scope of what is claimed, without departing from the spirit of the invention.

In the drawings:—

Figure 1 shows in vertical section a gravity feed powdered soap dispenser constructed in accordance with the invention, parts being in elevation;

Figure 2 is a section on the line 2—2 of Figure 1.

The gravity feed powdered soap dispenser forming the subject matter of this application comprises a cup-shaped base 1 having an outlet 2, in the form of a reduced neck, there being a compartment 3 in the base 1. There is a seat 4 in the base 1, at the lower end of the compartment 3. The base 1 has an outstanding shoulder 5 equipped with an annular upstanding rim 6.

A partition 7 rests on the shoulder 5 and has an upstanding flange 8 which is threaded both interiorly and externally. By means of a mass of cement 9, the partition 7 is held in place, the cement engaging with the rim 6 and with the external threads of the flange 8. The partition 7 has small, oppositely disposed openings 10 that communicate with the compartment 3.

The numeral 11 designates a container of

any desired shape, having a reduced mouth 12 which is threaded into the flange 8 of the partition 7. A tubular guide 14 is mounted intermediate its ends in the partition 7 and extends downwardly into the chamber 3. A stopper 15 is held adjustably in the upper extremity of the guide 14 by screws 51 or equivalent fastening means and has a reduced end 50.

The numeral 16 marks a tubular valve. The valve 16 has an annular body 17 which fits loosely in the guide 14. The body 17 of the valve has a tapered end 19 adapted to cooperate with the seat 4. The lower end 20 of the valve extends downwardly through the outlet 2 of the base 1, there being a space 21 between the end 20 of the valve and the inner surface of the outlet 2. The valve 16 has a lower end wall 22 in which there is a small hole 23. The function of the hole 23 is to enable the valve 16 to slide up and down on the end 50 of the stopper 15 without being impeded by suction. A compression spring 24 is located within the valve 16. The lower end of the spring 24 bears on the end wall 22 of the valve, and the upper end of the spring bears against the reduced end 50 of the stopper 15. The purpose of the spring 24 is to shove the valve 16 down and to hold the conical part 19 of the valve body 17 in engagement with the seat 4.

The rim 6 of the base 1 is provided with an outstanding arm 25 that is rotatably adjustable in a socket 26 forming part of a wall bracket 27. A set screw 28 is threaded into the socket 26 and is received in a circumferential groove 29 formed in the arm 25. A detachable connection between the dispensing mechanism and the bracket 27 thus is afforded, and it is possible to swing the dispensing mechanism sideways, should occasion require, the set screw 28 then being caused to bind in the groove 29.

In practical operation, the person wishing a quantity of soap powder pushes the valve 16 up, the spring 24 being compressed, and the part 19 of the valve being spaced from the seat 4. Then a small amount of soap will run out through the space 21 between the end 20 of the valve and the outlet 2. Be-

cause the holes 10 in the partition 7 are small, not much soap gets down at a time from the container 11 into the compartment 3. The flow of the soap, moreover, is impeded because the guide 14 extends downwardly near to the seat 4. An ample supply of soap powder is provided when the valve 16 is shoved up, but there will be no clogging arising out of the fact that a large amount of soap powder is let down at once; and, moreover, there will be no unnecessary waste of soap powder. The spring 24 is housed completely within the valve 16, and does not come into contact with the soap powder, the result being that the spring will not deteriorate and will last for a long time.

When the soap in the container 11 is used up, the container can be threaded out of place. The set screw 28 is loosened, and the device is turned upside down, from the position of Figure 1, a new container 11, or the old container, filled with a new supply of soap, being threaded upwardly into place. Then, the device is brought up into the position of Figure 1, and the set screw 28 is tightened. Because the mechanism can be turned upside down, as described, the soap powder will not run out of the container 11 whilst the container is being threaded into place.

The lower end 50 of the stopper 15 acts as a guide for the valve 16. The end 50 of the stopper 15 holds the valve 16 clear of the tubular guide 14 at all times, and promotes the sliding movement of the valve. The stopper 15 may be removed to give access to the spring 24, for repairs or replacement. The stopper 15 acts as a stop when the valve 16 is raised, and when the valve 16 is raised until it strikes the stopper, there is a slight jar which has a tendency to loosen the powder and cause it to move down properly through the holes 10. The stopper 15 may be employed to regulate the amount of powder that is dispensed. This can be done by raising the stopper, giving the valve 16 a longer throw, the stopper being held in adjusted positions by the screws 51. It will be observed that the device forming the subject matter of this application affords not only a gravity feed soap powder dispenser, but a variable feed dispenser, as well.

Having thus described the invention, what is claimed is:—

1. A gravity feed soap powder dispenser, comprising a base having a chamber provided with an outlet, a container connected to the base, a partition separating the container from the chamber and having a hole establishing communication between the container and the chamber, a valve seated on the base to close the outlet, a tubular guide mounted in the partition, and a removable stopper in the guide, the valve being slidable on the stopper.

2. A gravity feed soap powder dispenser comprising a base having a chamber provided with a seat, the chamber having an outlet below the seat, a container connected to the base, a partition separating the container from the chamber, the partition having an opening, a guide carried by the partition, and extended downwardly to a point closely adjacent to the seat, a removable stopper in the guide, and a valve slidable on the stopper and cooperating with the seat, the valve being extended downwardly into the outlet.

3. A gravity feed soap powder dispenser comprising a base having a chamber provided with an outlet, a container connected to the base, a partition separating the container from the base and having a hole establishing communication between the container and the chamber, a valve seated on the base to close the outlet, a tubular guide mounted in the partition, and a removable stopper in the guide, the valve being slidable on the stopper, and being adapted to engage the stopper, when the valve is raised, thereby to produce a jar, and to facilitate the downward movement of the soap powder through the hole in the partition.

4. A gravity feed soap powder dispenser comprising a base having a chamber provided with an outlet, a container connected to the base, a partition separating the container from the chamber and having a hole establishing communication between the container and the chamber, a valve seated on the base to close the outlet, a tubular guide mounted in the partition, a removable stopper in the guide, the valve being slidable on the stopper and constituting means for limiting the movement of the valve, and means for holding the stopper in adjusted positions longitudinally of the guide, thereby to afford a variable feed.

5. A gravity feed soap powder dispenser comprising a base having a chamber provided with an outlet, a container connected to the base, a partition separating the container from the chamber and having a hole establishing communication between the container and the chamber, a valve seated on the base to close the outlet, a tubular guide mounted in the partition, a removable stopper in the guide, the valve being slidable on the stopper, a spring within the valve and engaging the stopper to seat the valve, and the stopper being removable to give access to the spring.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

ARTHUR W. SMITH.

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