Sept. 9, 1969 J. MICHAELS 3,465,924

SOAP DISPENSER

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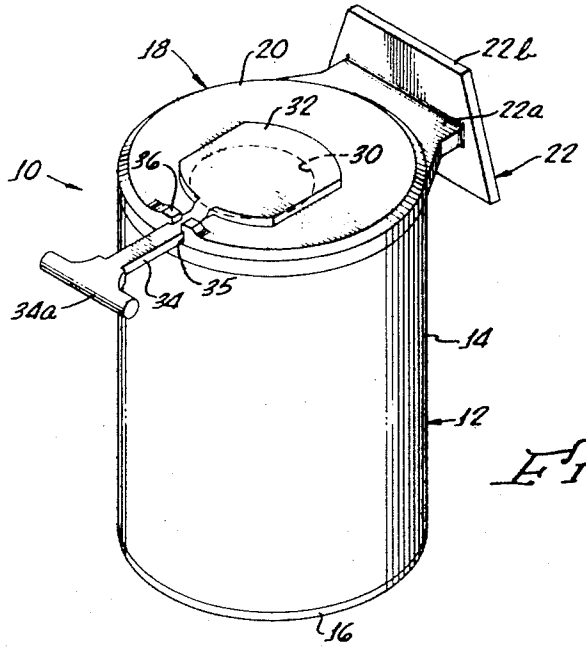


FIG. 1.

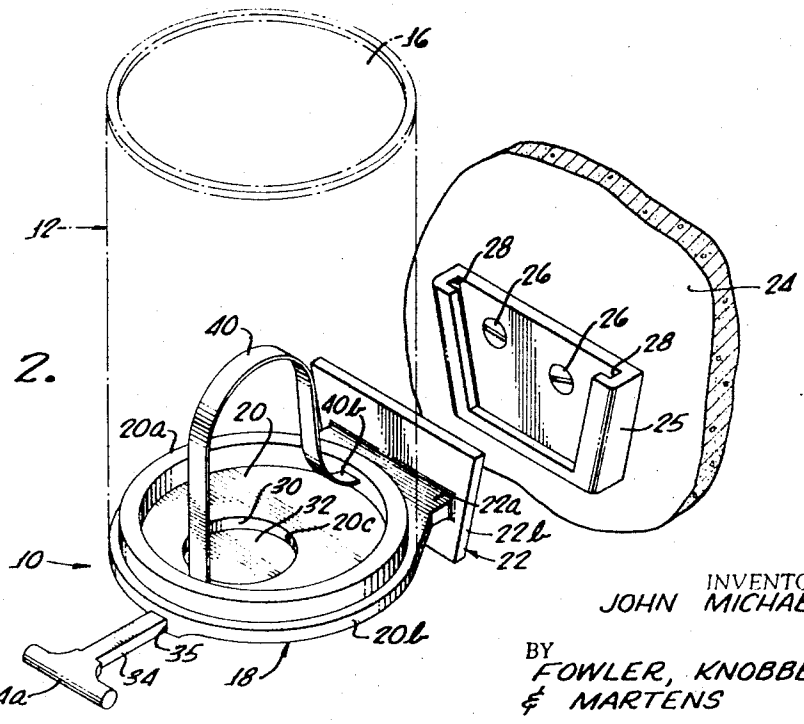


FIG. 2.

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FIG. 3.

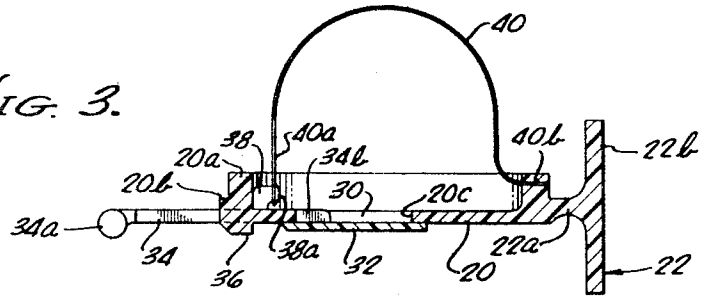
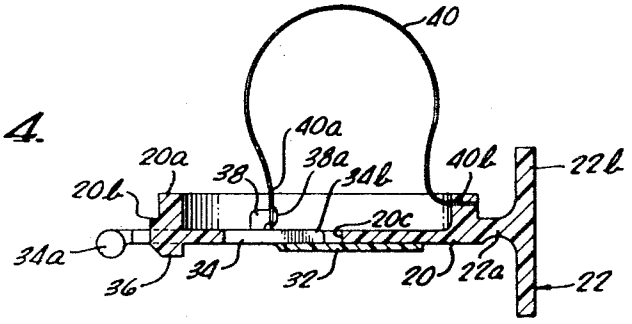


FIG. 4.



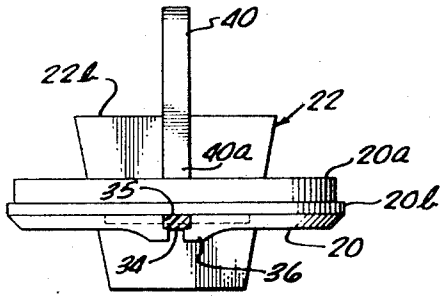


FIG. 5.

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SOAP DISPENSER

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U.S. Cl. 222—511 3 Claims

ABSTRACT OF THE DISCLOSURE

A disposable soap dispenser is supported by a wall mounted lid on its lower end. A flexible flat spring loop extends across a dispensing opening in the lid and urges a sildeable closure to block the opening. When the closure is slid away from the opening, the spring is flexed across the lower portion of the container to agitate the contents.

Background of the invention

This invention relates to an improved dispensing apparatus and, particularly, to a low-cost disposable device suitable for dispensing finely divided material such as soap powder.

Wall mounted powdered soap dispensers, while common in public restrooms, are seldom used in private homes. It is believed that one reason for this is that the cost of a satisfactory dispenser is somewhat prohibitive in relation to the need felt by most people for such a device, even though a dispenser is handy and sanitary. Since most dispensers of this nature are usually permanently mounted, it is necessary to remove periodically a cover on the dispenser and replenish the soap supply from a larger storage container. This is not only a bothersome chore, but can be messy due to spillage, etc.

It is felt that a need exists for a simply constructed, low-cost dispenser wherein the powdered soap may be purchased in a completely disposable container which may be mounted on a wall adjacent a wash basin. Alternatively, the soap may be purchased in a disposable container which may be easily attached to a dispenser lid so that the inconvenient soap pouring operation required with a conventional dispenser is eliminated.

Summary of the invention

In accordance with the invention, there is provided a disposable dispenser including a cylindrical container and a lid covering one end of the container. The lid is formed unitary with a bracket or other means for mounting the lid on a vertical wall while the container extends upwardly from the lid. The lid is preferably formed of low-cost material such as plastic so that it may be discarded with the container if desired. A fairly large opening is formed in the lid to permit powdered material to fall from the container. A closure slideably mounted on the bottom side of the lid is provided to cover and uncover the opening. A handle attached to the closure extends outwardly from the container for convenient movement by the operator. An elongated flat spring extends upwardly in a loop in the container, over the opening, with one end of the spring fixed adjacent one edge of the lid and the other end of the spring fixed to the handle adjacent the opposite edge of the lid. The attachment to the handle is such that the cover is normally urged to close the opening and it is necessary to push the handle inwardly against the urging of the spring to uncover the opening. This action flexes the entire spring above the opening to thereby agitate the contents and prevent caking.

Detailed description of the invention

For a better understanding of the invention, reference may be had to the following drawings, in which:

FIG. 1 is a perspective view of the low-cost disposable soap dispenser of the invention with the dispensing lid on top;

FIG. 2 is a perspective view of the dispenser shown inverted from the position of FIG. 1, and illustrating the means by which the lid is mounted on a supporting wall surface;

FIG. 3 is a side cross-sectional view of the lid with the closure covering the dispenser opening;

FIG. 4 is a cross-sectional view of the lid with the closure only partially covering the dispenser opening; and,

FIG. 5 is a front elevational view of the dispenser lid.

Referring first to FIGS. 1 and 2, the dispenser **10** of the invention includes a cylindrical container **12** for confining a quantity of finely divided material such as soap powder. So that it may be economically discarded when empty, the container is preferably constructed of inexpensive material, such as the cylindrical side walls **14** being of cardboard or low-cost plastic, and one end **16** being a thin metal or plastic plate. The other end is closed by a lid assembly **18**, which is preferably made of rigid, inexpensive plastic.

The dispenser **10** is illustrated in FIG. 1 with the lid assembly **18** being on top, which is the position the dispenser normally occupies before being used, such as when on a store shelf or when in storage. When the dispenser is placed into operation, it is inverted from the position of FIG. 1 to that shown in FIG. 2 where the lid assembly **18** is at the lower end of the container.

As can be seen from FIG. 2, the lid assembly **18** includes a circular lid **20** having an axially extending annular flange **20***a* which fits within the end of the side wall **14** of the container **12**. The outer edge **20***b* of the lid **20** mates with the axial end surface of the container side walls **14**.

Formed unitary with the rear of the lid **20** is a mounting bracket **22** including an outwardly extending horizontal supporting flange **22***a* and a vertical plate **22***b*. The bracket **22** is to be attached to a vertical wall surface **24** by suitable means, which permits easy removal of the lid. For this purpose, the side edges of the vertical plate **22***b* are tapered to converge downwardly as viewed in FIG. 2. This permits the vertical plate to cooperate with a wall bracket **25** mounted on the wall by suitable fasteners **26** and formed with edge slots **28** tapered to receive the vertical plate **22**.

Formed in the lid **20** is a relatively large circular opening **30** which is eccentrically positioned towards the front of the lid or away from the wall. The diameter of the opening **30** should be sized to take into consideration the flowability of the soap powder or other material being kept in the container and the quantity of material desired from a typical single use of the dispenser. A diameter of approximately one inch is a practical size, particularly with a container from two to two and one-half inches in diameter.

The opening **30** is covered by a thin plate-like closure **32** slightly larger in area than the opening to adequately cover the opening. Attached to one edge of the closure **32** is an elongated handle **34** which extends outwardly beyond the edge of the lid, with the outer end of the handle being formed with a transversely extending portion **34***a* to facilitate manipulation of the handle.

As can be seen, the closure **32** is positioned on the bottomside of the lid **20** as viewed in FIG. 2, with the

handle 34 being guided within the side walls of a slot 35 formed in the lid 20, and extending from the forward edge of the opening 30 to the forward edge of the lid. For partially supporting the closure 32 and handle 34 in this fashion, there is provided a pair of depending lugs 36 adjacent the front edge of the lid 20 which engage the lower surface of the handle.

Referring to FIG. 3, it may be seen that a projection 38 is formed on the upper side of the handle near its inner end 34*b*, but spaced forwardly or outwardly from the inner end. A multipurpose, flexible, flat spring 40 is formed in a loop that extends upwardly into the container 12. The forward end 40*a* of the spring 40 is formed with an opening that fits over the inner end 38*a* of the projection 38 on the handle 34, while the rear or other end 40*b* of the spring 40 is confined within a recess in the upwardly extending lid flange 20*a*.

The spring end 40*b* is permanently bent to the shape indicated in FIG. 3, while the remainder of the spring is nearly flat when unstressed. Hence, it must be stressed into the shape of the loop to be positioned in the lid as shown. This causes an outwardly directed force applied to the flange 20*a* near the spring end 40*b*, and an outwardly and upwardly directed force applied to the handle 34 through the projection 38 on its upper surface by the other end 40*a* of the spring 40. Thus, the projection 38 on the handle 34 positions the spring 40, but at the same time the spring 40 provides a second support point for the handle and the closure, spaced inwardly from the depending lugs 36. Actually, the spring by itself provides adequate support since it is between the ends of the combined handle and closure.

The spring 40 also serves two additional functions. Its outwardly directed force on the handle 34 causes the closure 32 to normally cover the opening 30 to prevent soap powder from escaping from the container 12. Note that the upward force component of the spring 40 on the closure 32 seals the closure against the lid 20 to prevent leakage. To operate the dispenser 10, it is only necessary to push the handle 34 inwardly against the outward urging of the spring 40 so that the closure 32 is moved away from the opening 30 to permit a quantity of soap powder to drop from the container 12 through the opening 30. In FIG. 4, the closure has been moved to partially uncover the opening 32. When the user has received the quantity of soap powder desired, it is only necessary to release the handle and the spring 40 will automatically snap the handle outwardly so that the closure 32 once more covers the opening 30, as viewed in FIG. 3.

The inward movement of the closure 32 is limited by the engagement of the forward end 34*b* of the handle 34 with the edge 20*c* of the lid 20 defining the rear edge of the opening 30, as seen in FIG. 4. If more complete uncovering is desired, the handle 34 may be formed to not interfere with the edge 20*c* of the opening 30 until the closure 32 has completely uncovered the opening 30.

The third major function of the spring 40 is to agitate the contents of the container 12 each time the dispenser handle 34 and the closure 32 are operated. From a comparison of the position of the spring 40 in FIGS. 3 and 4, it can be seen that virtually the entire spring 40 changes its position somewhat when the handle 34 is operated. The forward end 40*a* of the spring 40, which is the portion more directly over the opening 30, moves the greatest amount during operation. This insures that the soap will flow freely through the opening 30 when uncovered. It is important to note that by having the spring 40 attached as shown, extending across substantially more than half the lid and almost across the entire diameter of the lid, which is also the diameter of the container, most of the soap powder across the entire width of the container 12 is affected by operation of the handle. Thus, the likelihood of a cavity or pocket developing in the soap powder directly over the opening 30 is substantially reduced or eliminated.

Due to the simple and low-cost construction of the dispenser, it is contemplated that the entire dispenser may be discarded after the soap has been used. Thus, the user need only remove the entire dispenser and insert a new one by simply sliding it within the supporting wall bracket 25. Alternatively, the lid assembly 18 may be reused and only the remainder of the container 12 discarded. Replacement containers of soap may be provided with a thin covering of plastic or paper on one end which may be removed, and replaced by the lid assembly 18 while the container is in the position shown in FIG. 1. The dispenser may then be inverted and mounted on the wall in the manner described.

While only a single embodiment of the invention has been disclosed, it will be understood that various changes and modifications may now be apparent. For example, instead of using a supporting wall bracket 25, the dispenser mounting bracket 22 may be directly attached on a wall by an adhesive or other suitable means. Also, in addition to the cylindrical shape illustrated, the soap container may be formed in various shapes and of various materials. For example, the container might be made in the shape of a toy attractive to a child or usable by a child after the soap is gone.

What is claimed is:

1. A dispenser for finely divided material such as soap powder, comprising:
- a container for storing a quantity of the soap powder;
- a lid covering one end of the container;
- means formed unitary with the lid for mounting the lid on a vertical wall while the container extends upwardly from the lid;
- means defining an enlarged opening in the lid spaced inwardly from the lid edge for permitting the material to flow from the container;
- a generally flat closure covering the opening being movably mounted on the lid;
- a handle attached to the closure and extending outwardly from the container for moving the closure away from the opening;
- a pair of lugs depending from the front edge of the lid slideably supporting the handle and closure; and
- an elongated flat spring bent upwardly in a loop into the container over the opening with one end of the spring being fixed to the lid on one side of the opening near the rear edge of the lid and the other end fixed to the handle on the opposite side of the opening near the front edge of the lid so that the spring provides a force urging the closure to cover the opening, the closure being movable to expose the opening by moving the handle against the urging of the spring and thereby causing the spring to flex within the bottom of the container agitating the material in the container.

2. A dispenser for finely divided material such as soap powder, comprising:
- a lightweight disposable cylindrical container for receiving a quantity of the finely divided material;
- a lid covering one end of the container;
- bracket means formed unitary with the rear of the lid for mounting the lid on a vertical wall while the container is supported by the lid with the container extending upwardly;
- means defining a relatively large opening in the lid for permitting material to flow from the container, the opening being eccentrically positioned towards the front of the lid away from the bracket means;
- means defining a groove in the lid extending from the opening to the front edge of the lid;
- a plate-like closure slideably mounted on the bottom side of the lid for covering the opening;
- a handle attached to the closure including a portion positioned in the groove and a portion extending outwardly from the lid to be manually operable for sliding the cover to expose the opening; and

an elongated flat spring flexed as a loop and extending upwardly into the container over the opening with one end of the spring fixed to the rear edge of the lid and the other end fixed to a projection on the handle adjacent the front side of the opening adjacent the front edge of the lid, the spring being oriented to urge the closure to close the opening and the closure being slideable to expose the opening by pressing the handle against the urging of the spring and thereby causing the spring to flex across the bottom of the container to agitate the material in the container.

3. The dispenser of claim **2**, wherein said bracket means includes a supporting flange extending outwardly from the side of the lid opposite the handle, and a vertical mounting plate attached to the outer edge of the flange for attachment to the wall.

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