US012031307B2

(12) **United States Patent**
**Malpede**

(10) **Patent No.: US 12,031,307 B2**
(45) **Date of Patent: Jul. 9, 2024**

(54) **SOAP DISPENSER**

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( * ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 231 days.

(21) Appl. No.: **17/848,690**

(22) Filed: **Jun. 24, 2022**

(65) **Prior Publication Data**

US 2023/0077738 A1 Mar. 16, 2023

**Related U.S. Application Data**

(60) Provisional application No. 63/243,870, filed on Sep. 14, 2021.

(51) **Int. Cl.**
***E03C 1/046*** (2006.01)

(52) **U.S. Cl.**
CPC ..... ***E03C 1/0465*** (2013.01)

(58) **Field of Classification Search**
CPC ... E03C 1/0465; B65D 47/243; B65D 47/247; B65D 90/58; B65D 90/587
See application file for complete search history.

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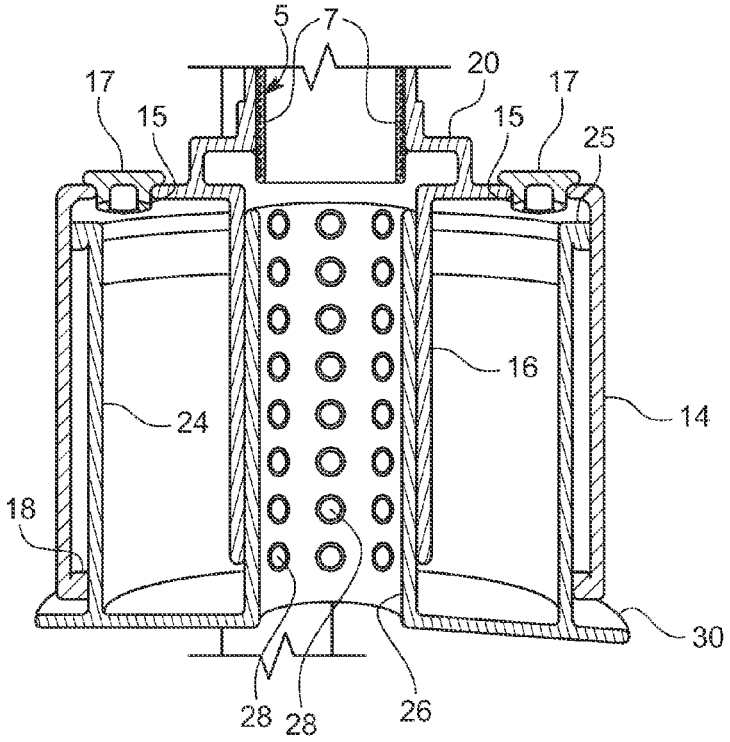
(57) **ABSTRACT**

A soap dispenser includes a housing including an outer sleeve and an inner sleeve, and a soap container having an exterior wall and an interior wall and configured to slide axially relative to the housing, with the interior wall having openings for soap. In a first position the soap container is housed within the housing and the interior wall is located within the inner sleeve, and in a second position the soap container is axially extended from the housing and the exterior wall is axially extended from the inner sleeve.

**20 Claims, 4 Drawing Sheets**



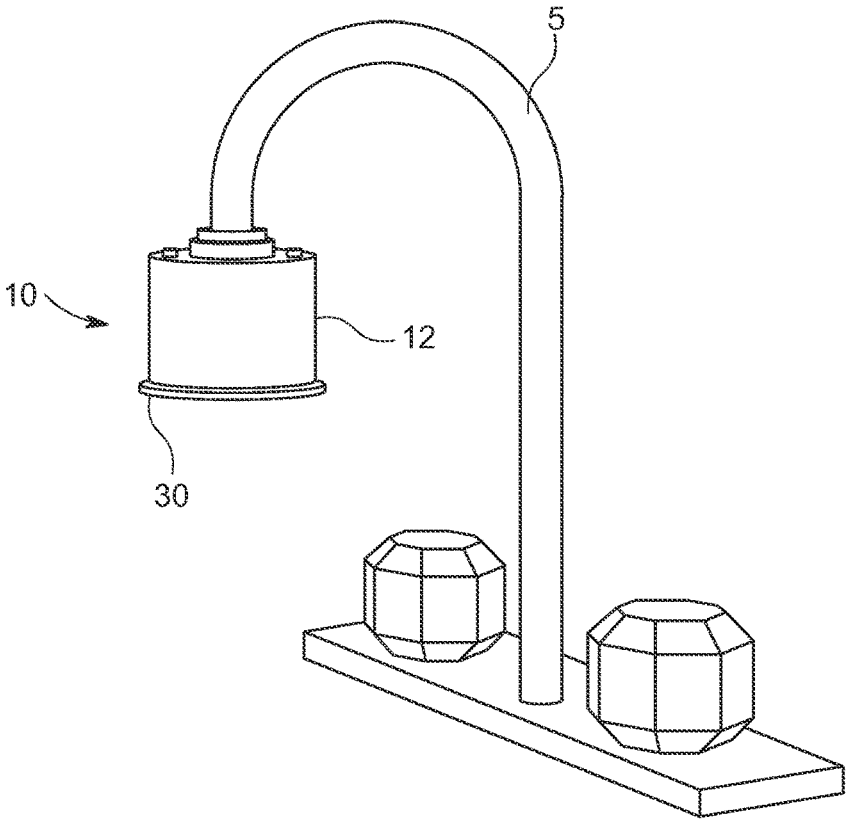



FIG. 1

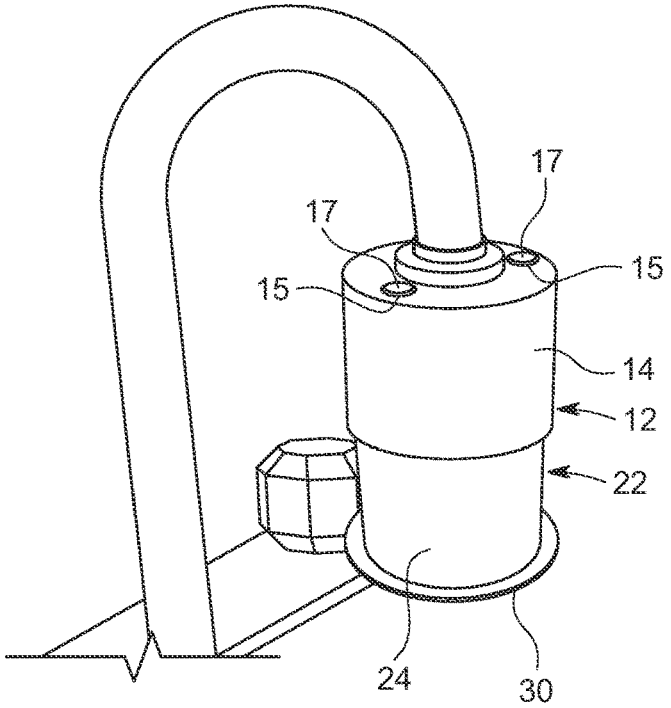



FIG. 2

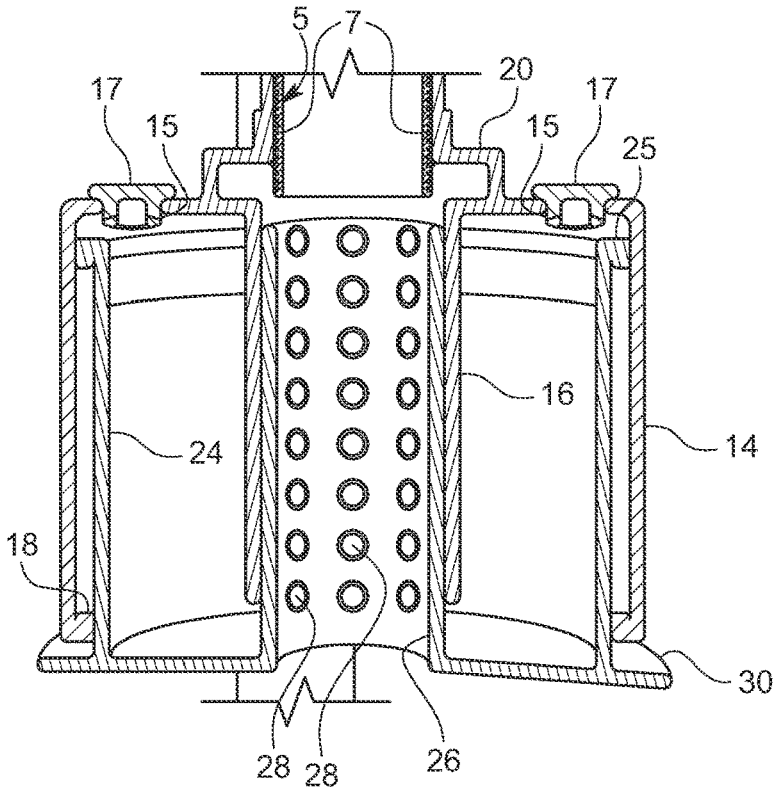



FIG. 3

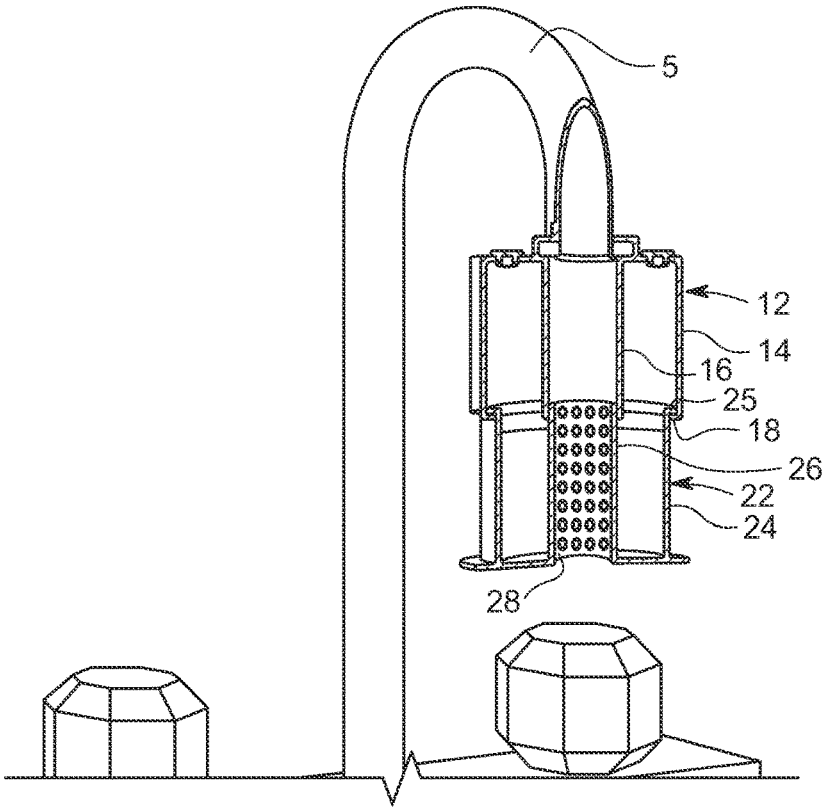



FIG. 4

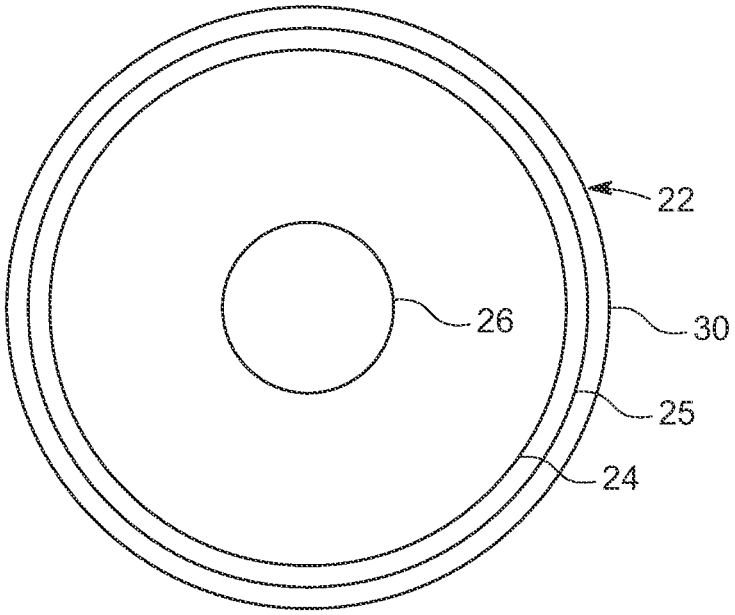



FIG. 5

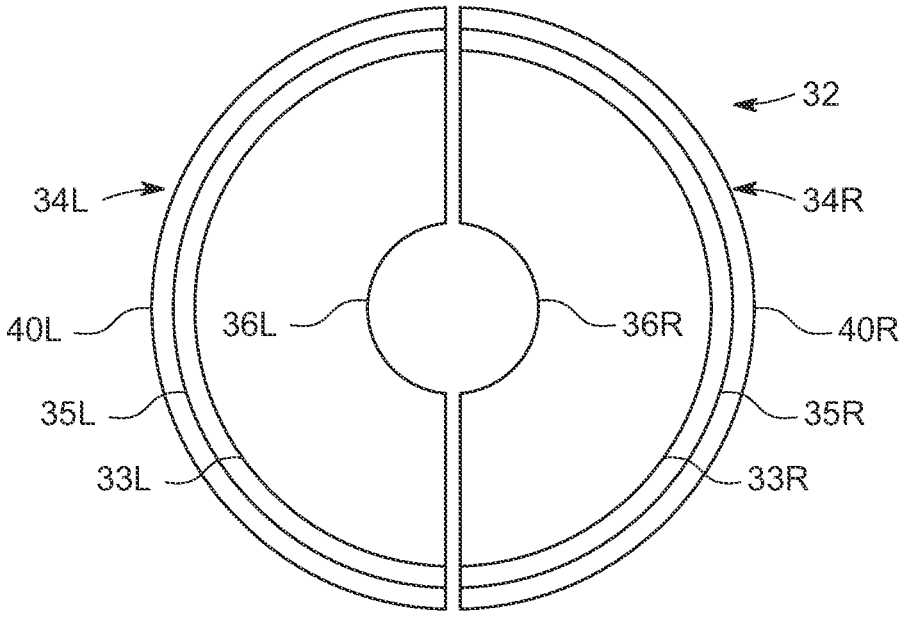



FIG. 6

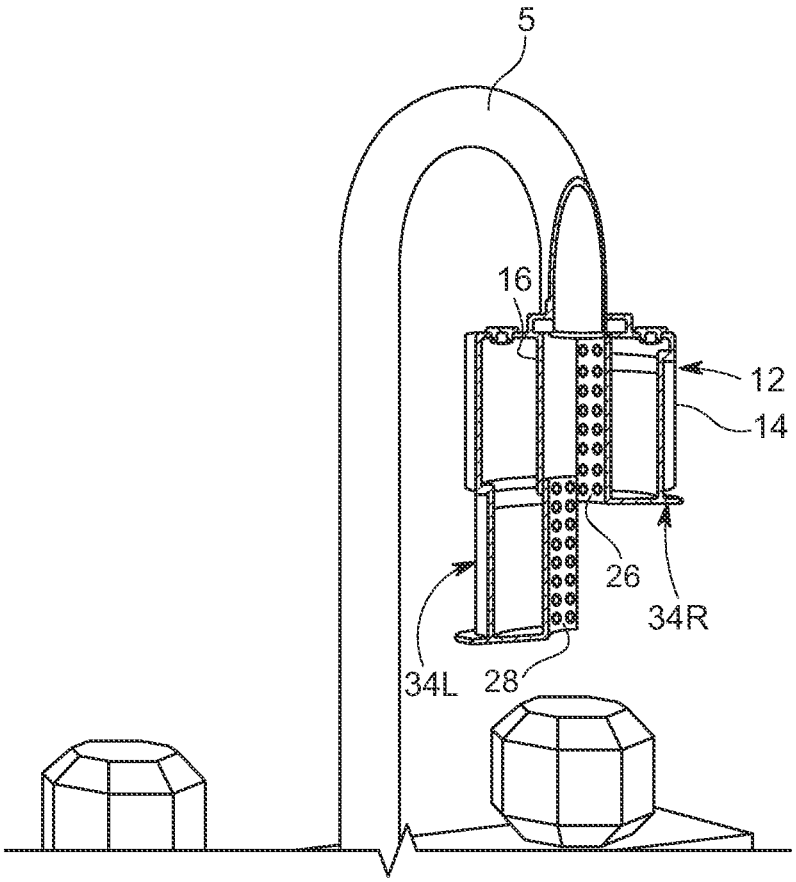



FIG. 7

# SOAP DISPENSER

## FIELD OF THE INVENTION

The present invention relates generally to a soap dispenser, and more particularly to a faucet mounted soap dispenser for dispensing soap with running water.

## BACKGROUND OF THE INVENTION

Soap dispensers for dispensing soap, such as for use in a kitchen or bathroom, are well known. In bathroom use, for example, a soap dispenser contains liquid soap for washing a user's hands. In a kitchen, both hand soap and dish washing soap are typically used.

Soap, in its liquid form, can be dispensed from its original store-bought container or, alternatively, provided in a dispenser specifically designed to dispense soap through a pump and relying on air suction. In both examples, it requires a first step of applying soap to the item (e.g., hands or dishes) to be cleaned and then a second step of applying water.

## SUMMARY OF THE INVENTION

It is an object of the invention to provide a soap dispenser designed to be mounted on a faucet for dispensing soap in combination with water in one operational mode or alternatively dispensing only water in a second operational mode.

In accordance with one aspect of the invention, a soap dispenser comprises a housing including an outer sleeve and an inner sleeve, and a soap container having an exterior wall and an interior wall and configured to slide axially relative to the housing, with the interior wall having openings for soap. In a first position the soap container is housed within the housing and the interior wall is located within the inner sleeve, and in a second position the soap container is axially extended from the housing and the interior wall is axially extended from the inner sleeve.

In accordance with another aspect of the invention, a soap dispenser comprises a housing including an outer sleeve and an inner sleeve, and a soap container having an exterior wall and an interior wall and configured to move relative to the housing, with the interior wall having openings for soap. In a first position the soap container is positioned to block soap from being released, and in a second position the soap container is positioned to allow soap to be released in a water stream.

In accordance with yet another aspect of the invention, a soap dispenser comprises a housing including an outer sleeve and an inner sleeve, with the housing being secured to an outlet for dispensing water, and a soap container having an exterior wall and an interior wall and configured to move relative to the housing, with the interior wall having openings for soap. In a first position the soap container is positioned to block soap from being released, and in a second position the soap container is positioned to allow soap to be released in a water stream.

These and other aspects of the invention will become apparent from the following disclosure.

## BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of a soap dispenser, in its closed position, attached to a water faucet, in accordance with a first embodiment of the invention.



FIG. **2** is a perspective view of the soap dispenser, in its open position, attached to the water faucet.

FIG. **3** is a cross-sectional view of the soap dispenser in the closed position.

FIG. **4** is a perspective view, partly in cross sectional, of the soap dispenser in the open position.

FIG. **5** is a top plan view of an isolated soap container in accordance with the first embodiment of the invention.

FIG. **6** is a top plan view of an isolated soap container in accordance with a second embodiment of the invention.

FIG. **7** is a perspective view, partly in cross-section, of the soap dispenser in its open position in accordance with the second embodiment.

## DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. **1** illustrates a first embodiment of the invention, showing a soap dispenser **10** attached to a spout **5** of a faucet. The soap dispenser, shown in its closed position, includes a housing **12**, and a lower, outer rim **30** of a soap container (discussed below), which in this view is recessed within the housing in a closed position. In this position, in a manner described in detail below, water flows through the soap dispenser but soap is not dispensed. The soap dispenser can be attached to a standard spout **5** of a faucet in a conventional manner such as by screw threads.

FIG. **2** shows the soap dispenser in an open position, which allows for soap to be dispensed along with the water. The housing **12** includes an outer sleeve **14** and holes (openings) **15** in its top surface for filling soap into a soap container **22**. Plugs **17** are provided for closing the holes. In this open position the soap container is axially extended from the housing, allowing for the soap to be dispensed in a manner described below.

The soap container **22** in this view shows an exterior wall **24** and the lower, outer rim **30**. Both the housing and the soap dispenser are cylindrical in shape in this embodiment, although alternative shapes can be employed without departed from the scope of the invention.

Integral parts of the soap dispenser are illustrated in FIGS. **3-5**. The entire soap dispenser **10** is stationarily mounted to the spout **5** by a collar **20** of the housing **12** and secured via a threaded attachment **7**. The plugs **17** are removable to allow soap to flow through the holes, or openings, **15**, to fill an interior compartment of the soap container **22**. The housing includes an outer sleeve **14** and a concentric inner sleeve **16**.

The soap container includes an outer cylindrical wall **24** having an upper outer rim **25** and a lower outer rim **30**. An inner cylindrical wall **26** includes a plurality of soap holes **28** through which the soap flows from the soap container. The soap container is designed to slide axially with respect to the housing **12**, which is stationary in this embodiment, to open and close access to the soap holes.

In the position shown in FIG. **3**, the soap dispenser is in the closed operational mode, with the inner sleeve **16** axially aligned and encasing the interior wall **26** of the soap container. In this position, which is maintained by frictional forces between the inner sleeve and the interior wall, and the respective rims and the outer wall and the outer sleeve, the soap holes **28** are closed off from the soap in the soap container by the inner sleeve. Consequently, when water is running through the faucet, only water, and not soap, will be dispensed.

In the open operation mode, shown in FIG. **4**, the soap container **22** is axially lowered until the upper outer rim **25**

of the soap container engages with the inner rim **18** of the housing. In this position, the interior wall **26** is free from the inner sleeve **16**, allowing soap to flow through the soap holes **28** with the help of aspiration created by flowing water. As will also be appreciated, the soap container can be lowered fully as shown in FIG. **3** or can be less than fully extended to leave some holes **28** covered by the inner sleeve in order to regulate soap flow.

As illustrated, the inner cylindrical wall **26** slides in and out of contact with an interior surface of the inner sleeve **16**. An alternative design with the cylindrical wall **26** sliding along the outside of the inner sleeve to open and close access to the holes **28** is also within the scope of this invention. In a further alternative, the soap container **12** can be attached to the faucet spout, and the housing can be configured to slide.

An alternative embodiment is illustrated in FIGS. **6** and **7**. In this design, a soap container is divided into two separate halves to allow for different soaps to be used. As described below, each separate soap container can independently slide axially with respect to the housing to expose openings to the soap. The housing in this modification is the same housing shown and disclosed above.

The soap container **32** in FIG. **6** is comprised of a right-side soap container **34**R and a left-side soap container **34**L. Each soap container includes a lower rim **40**R and **40**L, an outer wall **33**R and **33**L, and an upper outer rim **35**R and **35**L. Each soap container is generally semi-circular in shape to match the profile of the housing and includes an inner cylindrical half wall **36**R and **36**L.

In use, as illustrated in FIG. **7**, the left side soap container **34** L is axially lowered from the housing. This frees the openings **28** in the left side soap container from contact with the inner sleeve **16** and allows soap contained in the left side soap container to be dispensed through the openings and mix with the running water. On the right side, the soap container **34**R is in its closed position, with the openings sealed by the inner sleeve. In this position, soap from the right-side soap container will not be dispensed. At the user's discretion, the soap container can operate to lower either side depending on what soap is preferred to be dispensed.

Although this invention has been described with respect to certain specific exemplary embodiments, many additional modifications and variations will be apparent to those skilled in the art in light of this disclosure. It is, therefore, to be understood that this invention may be practiced otherwise than as specifically described. Thus, the exemplary embodiments of the invention should be considered in all respects to be illustrative and not restrictive, and the scope of the invention to be determined by any claims supportable by this application and the equivalents thereof, rather than by the foregoing description.

What is claimed is:

**1**. A soap dispenser, comprising:
- a housing including an outer sleeve and an inner sleeve; and
- a soap container (**22**) having an exterior wall (**24**) and an interior wall (**26**) and configured to slide axially relative to said housing, with the interior wall having openings for soap, wherein
- in a first position said soap container is housed within said housing and said interior wall is located within said inner sleeve, and
- in a second position said soap container is axially extended from said housing and said interior wall is axially extended from said inner sleeve.

**2**. A soap dispenser according to claim **1**, wherein said housing includes a concentric collar for attaching to a faucet.

**3**. A soap dispenser according to claim **1**, wherein said housing and said soap container are concentrically aligned.

**4**. A soap dispenser according to claim **1**, wherein said housing includes a rim at its lower end for engaging said soap container.

**5**. A soap dispenser according to claim **4**, wherein said soap container includes a rim at its upper end for engaging said housing rim.

**6**. A soap dispenser according to claim **1**, wherein said soap container includes more than one compartment for containing soap.

**7**. A soap dispenser according to claim **1**, wherein said housing includes an opening in a top surface for receiving soap.

**8**. A soap dispenser, comprising:
- a housing including an outer sleeve and an inner sleeve; and
- a soap container having an exterior wall and an interior wall and configured to move relative to said housing, with the interior wall having openings for soap, wherein
- in a first position said soap container is positioned to block soap from being released, and
- in a second position said soap container is positioned to allow soap to be released in a water stream.

**9**. A soap dispenser according to claim **8**, wherein in the second position said soap container is axially extended from said housing.

**10**. A soap dispenser according to claim **8**, wherein said housing includes a concentric collar for attaching to a faucet.

**11**. A soap dispenser according to claim **8**, wherein said housing includes a rim at its lower end for engaging said soap container.

**12**. A soap dispenser according to claim **11**, wherein said soap container includes a rim at its upper end for engaging said housing rim.

**13**. A soap dispenser according to claim **8**, wherein said soap container includes more than one compartment for containing soap.

**14**. A soap dispenser according to claim **8**, wherein said housing includes an opening in a top surface for receiving soap.

**15**. A soap dispenser, comprising:
- a housing including an outer sleeve and an inner sleeve, with said housing being secured to an outlet for dispensing water; and
- a soap container having an exterior wall and an interior wall and configured to move relative to said housing, with the interior wall having openings for soap, wherein
- in a first position said soap container is positioned to block soap from being released, and
- in a second position said soap container is positioned to allow soap to be released in a water stream.

**16**. A soap dispenser according to claim **15**, said soap container moves axially with respect to said housing.

**17**. A soap dispenser according to claim **15**, wherein said soap container includes a plurality of compartments for containing soap.

**18**. A soap dispenser according to claim **15**, wherein said soap container comprises individually moving compartments each capable of containing soap.

**19**. A soap dispenser according to claim **15**, wherein said housing includes a rim at its lower end for engaging said soap container.

**20**. A soap dispenser according to claim **19**, wherein said soap container includes a rim at tis upper end for engaging said housing rim.

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