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(54) Title: MOBILE HANDWASHING SYSTEM

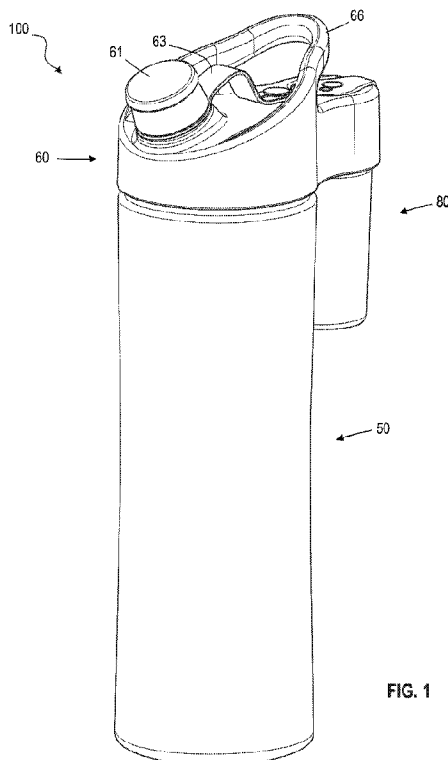


FIG. 1

(57) **Abrégé/Abstract:**

A mobile handwashing system (100) includes a soap dispenser (80) and a lid (60) structured to fit both the soap dispenser (80) and a water bottle (50). In a first embodiment, the water bottle (50) is a rigid water bottle that screws onto the lid (60). The soap dispenser (80) includes external threading (87) on the reservoir (83) that also screws onto the lid (60). In a second embodiment, the mobile hand washing system attaches to a plastic disposable water bottle and also includes a soap dispenser. In either embodiment, the system (200) can be used to drink water and also separately to provide soap and water for hand washing or the like.

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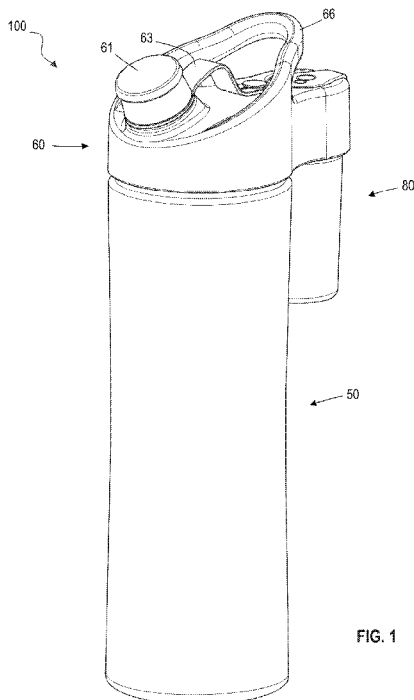


FIG. 1

(57) Abstract: A mobile handwashing system (100) includes a soap dispenser (80) and a lid (60) structured to fit both the soap dispenser (80) and a water bottle (50). In a first embodiment, the water bottle (50) is a rigid water bottle that screws onto the lid (60). The soap dispenser (80) includes external threading (87) on the reservoir (83) that also screws onto the lid (60). In a second embodiment, the mobile hand washing system attaches to a plastic disposable water bottle and also includes a soap dispenser. In either embodiment, the system (200) can be used to drink water and also separately to provide soap and water for hand washing or the like.



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## MOBILE HANDWASHING SYSTEM

### CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of U.S. Provisional Application  
5 Nos. 62/762,553, filed on May 8, 2018; and 62/765,424, filed on August 24,  
2018; the subject matter of which is incorporated herein by reference.

### TECHNICAL FIELD

[0002] The present disclosure relates generally to devices to assist in  
10 personal hygiene, and more particularly, to a mobile handwashing system.

### BACKGROUND

[0003] Active individuals or active families when in public areas such as a  
zoo or a park often have limited resources and opportunities to wash their  
15 hands correctly with soap and water as needed. If soap and water are not  
readily available, hand washing may be avoided or delayed. Although hand  
sanitizer, wipes or water alone may be used as a substitute if available,  
public health authorities such as the CDC advise using soap and water to  
wash one's hands as the best way to reduce the number of harmful microbes  
20 in most cases. Sanitizer is considered a "supplement" to hand washing by  
the CDC, and is not always effective for killing certain types of microbes.  
Moreover, these alternative methods for hand washing are less effective  
than soap and water when one's hands are dirty and greasy which can  
happen particularly with kids and in outdoor settings.

### 25 SUMMARY

[0004] A mobile handwashing system includes a soap dispenser and a lid

structured to fit both the soap dispenser and a water bottle. In a first embodiment, the water bottle is a rigid water bottle that screws onto the lid. The soap dispenser includes external threading on the reservoir that also screws onto the lid. In a second embodiment, the mobile hand washing system attaches to a plastic disposable water bottle and also includes a soap dispenser. In either embodiment, the system can be used to drink water and also separately to provide soap and water for hand washing or the like.

### **BRIEF DESCRIPTION OF THE DRAWINGS**

10 [0005] FIG. 1 shows a perspective view of a mobile handwashing system, according to a first embodiment of the disclosure.

[0006] FIG. 2A shows a bottom perspective view of a lid usable in conjunction with the mobile handwashing system, according to the first embodiment of the disclosure.

[0007] FIG. 2B shows top perspective view of a lid usable in conjunction with the mobile handwashing system, according to the first embodiment of the disclosure.

20 [0008] FIG. 3 shows an exploded view of the mobile handwashing system, according to the first embodiment of the disclosure.

[0009] FIG. 4 shows an exploded view of the soap dispenser of the mobile handwashing system, according to the first embodiment of the disclosure.

[0010] FIG. 5 shows a perspective view of a mobile handwashing system, according to a second embodiment of the disclosure.

30 [0011] FIG. 6 shows another perspective view of the mobile handwashing system, according to the second embodiment of the disclosure.

[0012] FIG. 7 shows a cutaway view of the mobile handwashing system, according to the second embodiment of the disclosure.

5 [0013] FIG. 8 shows a perspective view of the soap dispenser of the mobile handwashing system, according to the second embodiment of the disclosure.

### **DETAILED DESCRIPTION OF EXAMPLE EMBODIMENTS**

10 [0014] Example embodiments of the disclosure now will be described more fully hereinafter with reference to the accompanying drawings, in which example embodiments are shown. The concepts discussed herein may, however, be embodied in many different forms and should not be construed as limited to the example embodiments set forth herein; rather,  
15 these embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope to those of ordinary skill in the art. Like numbers refer to like elements but not necessarily the same or identical elements throughout.

20 [0015] Referring to FIG. 1, a perspective view of a mobile handwashing system 100, according a first embodiment of the disclosure, is illustrated. The mobile handwashing system 100 includes a water bottle 50, a soap dispenser 80, and a lid 60. The water bottle 50 is preferably made of a rigid material such as metal (e.g., stainless steel) or hard plastic, and preferably  
25 capable of holding at least 16 ounces of water though other volume capacities may suffice. The lid 60 can be made of a molded hard plastic, metal, or another suitable durable material. The lid 60 includes a cap 61 covering a rinse spout 62 (FIG. 3) where water can be poured to rinse one's hands after lathering. The water poured from the rinse spout 62 passes  
30 through a conduit 65 and exits. The user can also pour water for drinking by unscrewing the rinse spout 62 from the lid exposing a drinking spout 64.

Because the drinking spout 64 has a larger diameter than the rinse spout 62, water pours at a faster rate from the drinking spout 64. Furthermore, since the drinking spout 64 and the rinsing spout 62 are separated, the user does not have to worry about contamination from the hand washing process.

5 Also shown are a handle 66 for easy carrying and a tether 63 to connect the cap 61 to the lid 60. An important aspect of the disclosure is that the lid 60 is structured to be able to fit both the water bottle 50 and the soap dispenser 80. This arrangement allows the user to drink water when thirsty and also separately to provide soap and water for hand washing or the like.

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[0016] FIG. 2A shows a top perspective view of the lid 60. From this view, the pump head 82 and the attachment of the tether 63 to the lid 60 are more clearly seen. It is to be understood, however, that the inclusion of the tether 63 and the cap 63 are not required; furthermore, it is to be understood

15 that the particular ornamental aspects of the design illustrated in each of the drawings are not meant to be limiting.

[0017] FIG. 2B shows a bottom perspective view of the lid 60. As can be seen in FIG. 2B, the lid bottom 69 includes a first lid opening 67A having a first lid threading 67B and a second lid opening 68A having a second lid

20 threading 68B.

[0018] FIG. 3 shows an exploded view of the mobile handwashing system 100. The water bottle 50 can be attached to (screwed into) the lid 60 such that the first lid opening 67A aligns with the water bottle top opening 55

25 inasmuch as the first water bottle threading 54 is complementary with the first lid threading 67A.

[0019] FIG. 4 shows an exploded view of the soap dispenser 80. The soap dispenser 80 includes a hand pump 89. As is known in the art, when the user presses a pump such as the one illustrated, liquid can be drawn out. In

30 the illustrated embodiment, when the pump head 86 is pressed, a quantity of

soap is drawn from the soap reservoir 83 through a soap dispenser dip tube 88 and out an pump top opening 84 in the pump head 86. Preferably, the soap in the reservoir 83 is foaming soap although other types of liquid soap may suffice. It is to be understood that the volume capacity of the water  
5 bottle 50 is several times greater than the volume capacity of the reservoir 83. Furthermore, preferably, the reservoir 83 can be removed so that it can be re-filled by unscrewing the reservoir 83. The reservoir threading 87 is complementary with the second lid threading 68B allowing the reservoir 83 to be screwed onto (and off from) the lid 60. The hand pump 89 can be  
10 inserted into the reservoir 83 such that a majority of the hand pump 89 will sit within the reservoir 83. In a preferred embodiment, the reservoir 83 can be refilled with soap by the user. In other embodiments, the reservoir 83 is not re-fillable.

15 [0020] Referring to FIG. 5, a perspective view of a mobile handwashing system 200, according to a second embodiment of the disclosure, is illustrated. The mobile handwashing system 200 is conceptually similar to the mobile handwashing system 100, the main difference being that the mobile handwashing system 200 fits a disposable water bottle (generally  
20 made from plastic and meant for one-time use). As shown, the mobile handwashing system 200 includes a body 90 that can hold a soap dispenser 70 at an acute angle (e.g., about 45 degrees) relative to a bottle top connector 94 that fits a disposable plastic water bottle. Such a plastic water bottle typically contains about 12 – 24 ounces of water, and has a top  
25 opening with an outer diameter of no more than about 35mm. Examples of such plastic water bottles include bottled water from Arrowhead, Aquafina, Evian, Dasani, and Poland Springs. It is to be understood that other sizes of bottles may be used so long as the bottle top used fits snugly into the top connector 94. It is further to be understood therefore that the inner diameter  
30 of the top connector 94 will be sized accordingly.

[0021] FIG. 6 shows another perspective view of the mobile handwashing

system 200. In this view, a body opening 92 is shown. The body opening 92 extends to an attached water bottle when the mobile handwashing system 200 is used, and is in liquid communication with the water contained in the water bottle such water can flow from the attached water bottle through the opening.

[0022] FIG. 7 shows a cutaway view of the mobile handwashing system 200. As can be seen, the body 90 includes a body cavity 96 that is sized to snugly fit the soap dispenser 70. In a preferred embodiment, the soap dispenser 70 can be pulled out from the body cavity 96 so as to be refilled or replaced. In other embodiments, the soap dispenser 70 is not re-fillable.

[0023] FIG. 8 shows a perspective view of the soap dispenser 70. The soap dispenser 70 includes a reservoir 78 attached thereto. The reservoir 78 can be filled with liquid soap, preferably a foaming soap although other types of liquid soap or the like may suffice. The soap dispenser 70 can be a hand pump such that the soap can be drawn from the reservoir 78 by pressing pump head 76.

[0024] In operation, a method for handwashing includes providing a mobile handwashing system (i.e., the mobile handwashing system 100 or the mobile handwashing system 200), dispensing soap from the soap dispenser onto at least one hand of a person; rubbing hands of the person together; and pouring water from the water bottle through an opening onto hands of the person for rinsing purposes.

[0025] Although the features, functions, components, and parts have been described herein in accordance with the teachings of the present disclosure, the scope of coverage of this patent is not limited thereto. On the contrary, this patent covers all embodiments of the teachings of the disclosure that fairly fall within the scope of permissible equivalents.



[0026] Many modifications and other implementations of the disclosure set forth herein will be apparent having the benefit of the teachings presented in the foregoing descriptions and the associated drawings. Therefore, it is to be understood that the disclosure is not to be limited to the specific implementations disclosed and that modifications and other implementations are intended to be included within the scope of the appended claims. Although specific terms are employed herein, they are used in a generic and descriptive sense only and not for purposes of limitation.

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**WHAT IS CLAIMED IS:**

1. A mobile handwashing system, comprising:  
  
a soap dispenser; and  
  
a lid structured to fit both the soap dispenser and  
  
5 a water bottle.
  
2. The mobile handwashing system of claim 1, wherein the lid includes  
an  
  
opening in liquid communication with the water bottle.  
  
10
  
3. The mobile handwashing system of claim 2, wherein the soap  
dispenser  
  
dispenses soap using a pump.
  
- 15 4. The mobile handwashing system of claim 3, wherein the soap is  
foaming  
  
soap.
  
- 20 5. The mobile handwashing system of claim 2, wherein the soap  
dispenser  
  
includes a pump in liquid communication with a reservoir.

6. The mobile handwashing system of claim 5, wherein the reservoir is detachable from the pump to allow the reservoir to be refilled.

5 7. The mobile handwashing system of claim 6, wherein the lid includes a first threading and a second threading, the first threading complementary with a threading of the water bottle and the second threading complementary with the reservoir.

10

8. The mobile handwashing system of claim 7, wherein the reservoir is detachable from the pump by unscrewing the reservoir from the lid.

15

9. The mobile handwashing system of claim 1, wherein the volume capacity of the water bottle is several times greater than the volume capacity of the reservoir.

20 10. The mobile handwashing system of claim 1, wherein the water bottle is a disposable plastic water bottle.

11. The mobile handwashing system of claim 1, wherein the water bottle is  
a rigid water bottle.

5

12. The mobile handwashing system of claim 11, wherein the water bottle  
is constructed of metal.

10 13. The mobile handwashing system of claim 1, wherein the water bottle  
has a top opening having an inner diameter no greater than about 35mm.

14. The mobile handwashing system of claim 1, wherein the water bottle  
has a top opening having an inner diameter greater than about 100mm.

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15. A method for handwashing using a mobile handwashing system  
comprising a soap dispenser, a water bottle, and a lid structured to fit both  
the soap dispenser and the water container, comprising:

20 dispensing soap from the soap dispenser onto at least one  
hand of a person;

rubbing two hands of the person together; and

pouring water from the water bottle through an opening in the  
lid

onto the hands of the person for rinsing purposes.

16. The method for handwashing of claim 15, wherein the dispensed  
5 soap

is foaming soap.

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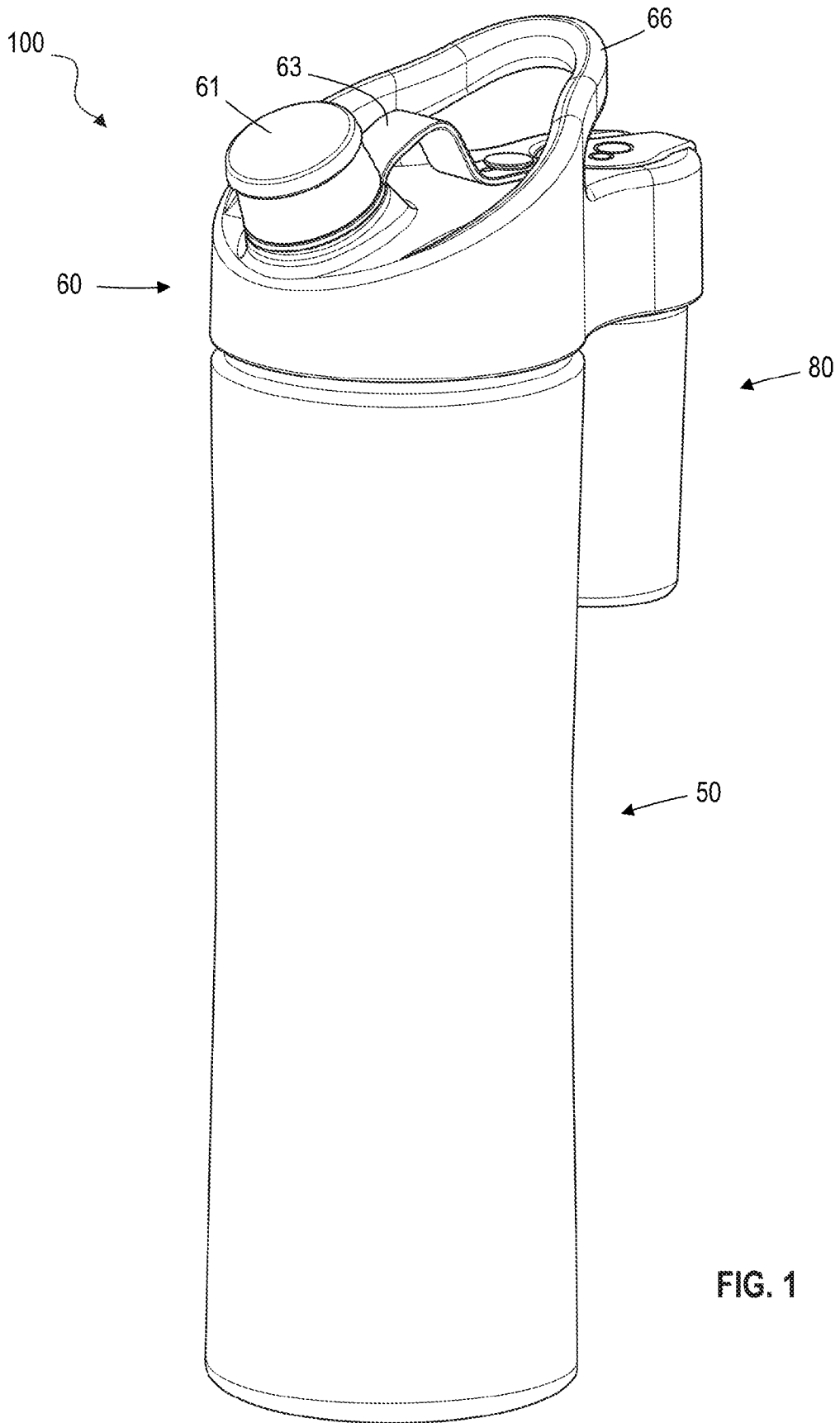


FIG. 1

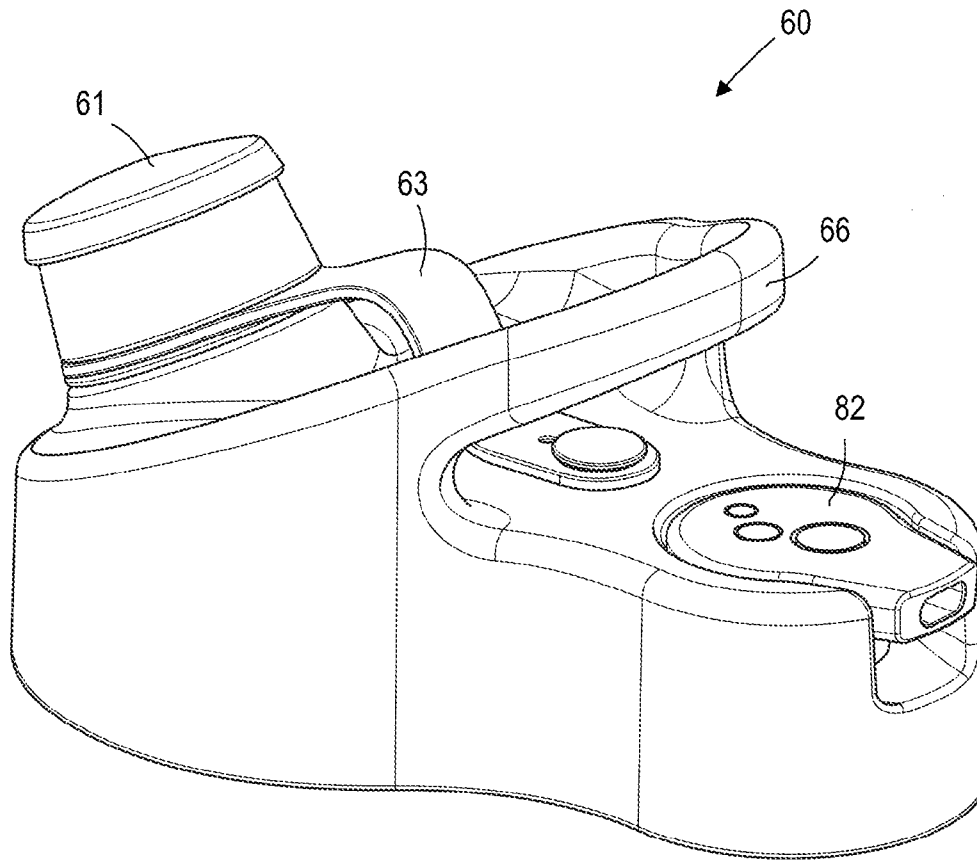


FIG. 2A

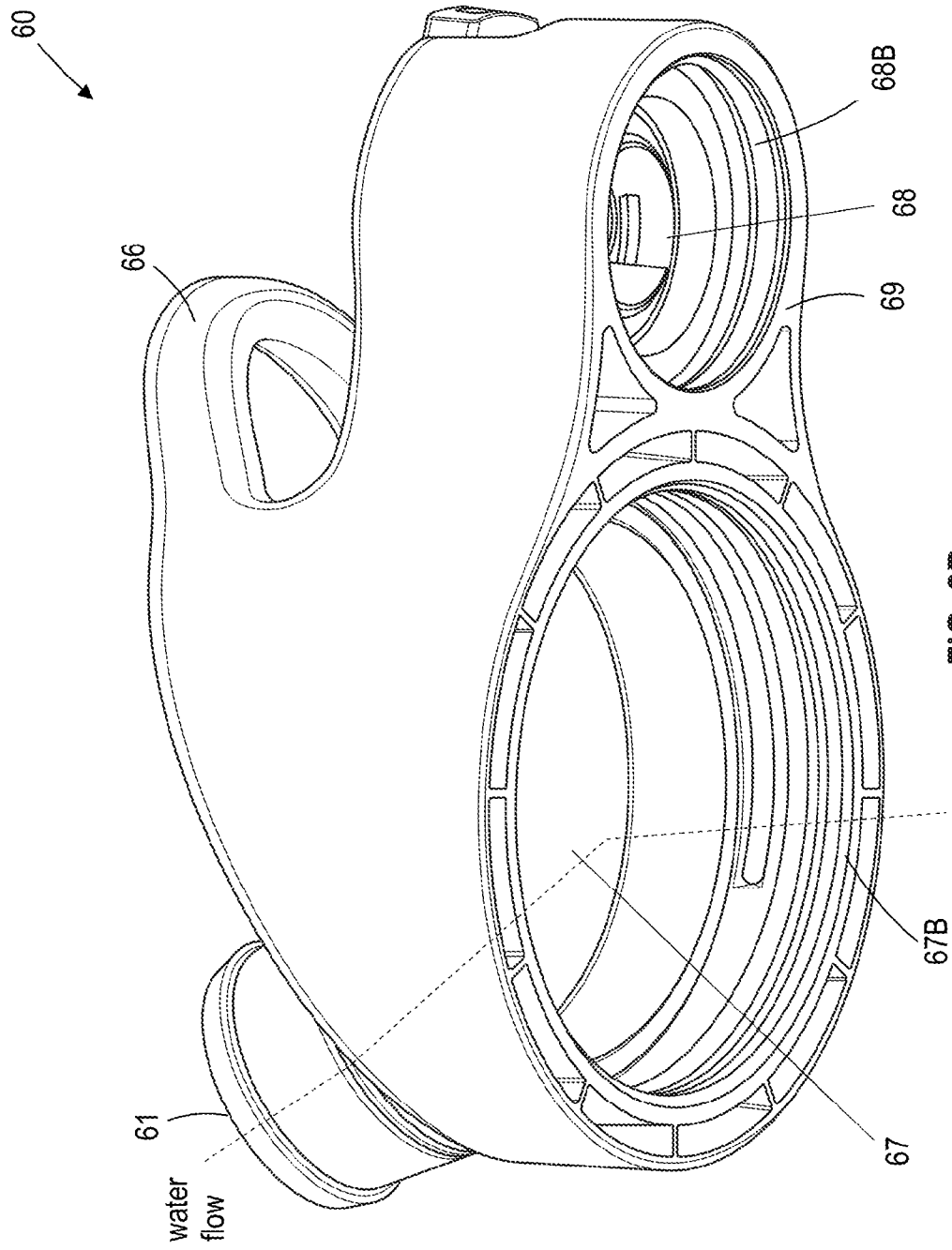


FIG. 2B



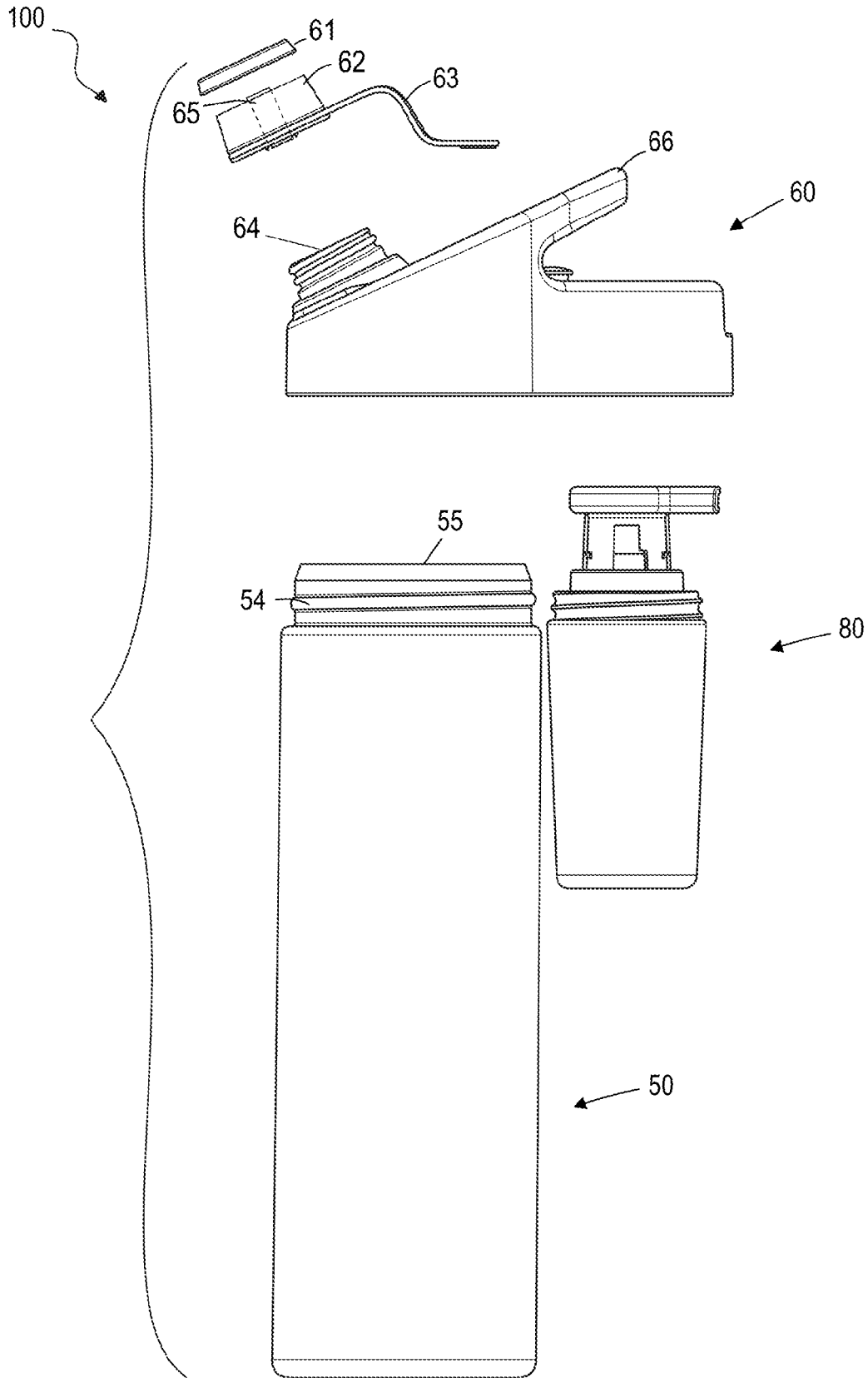


FIG. 3

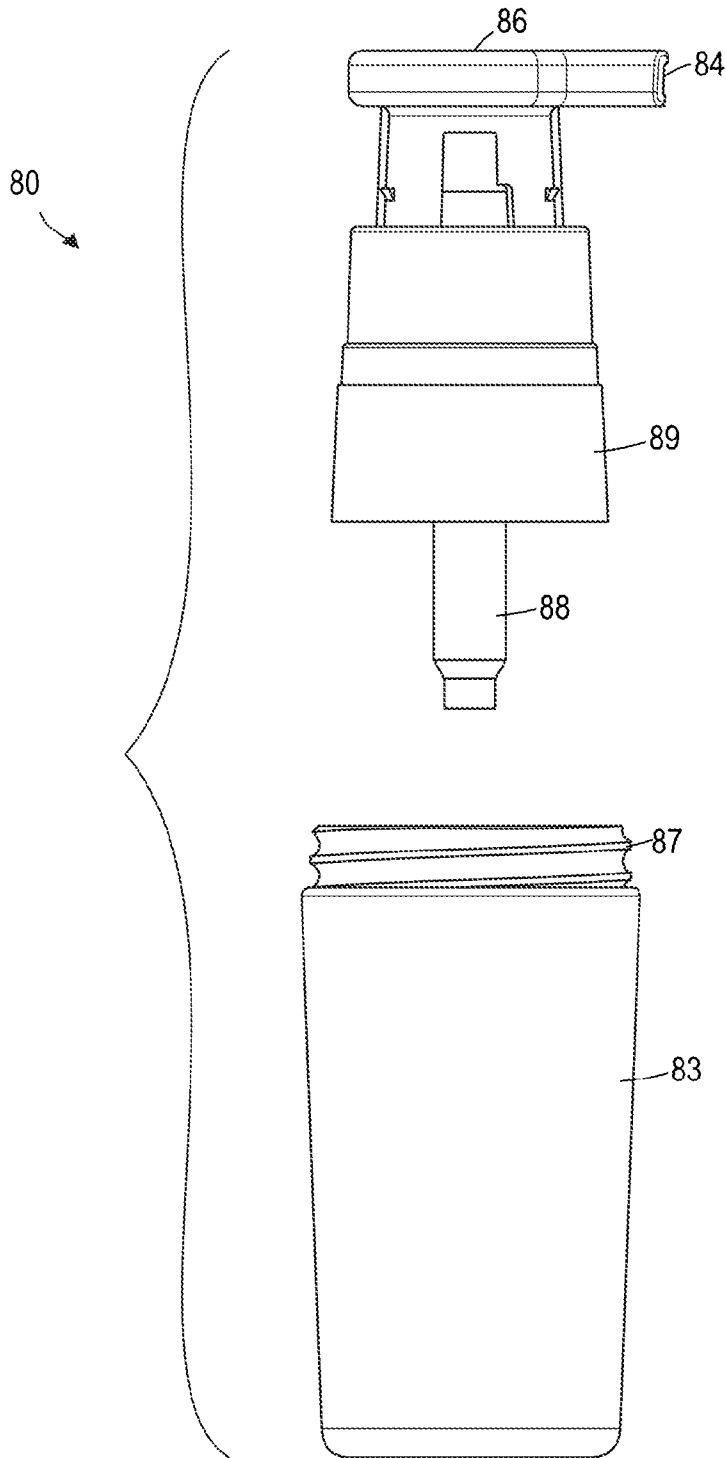


FIG. 4

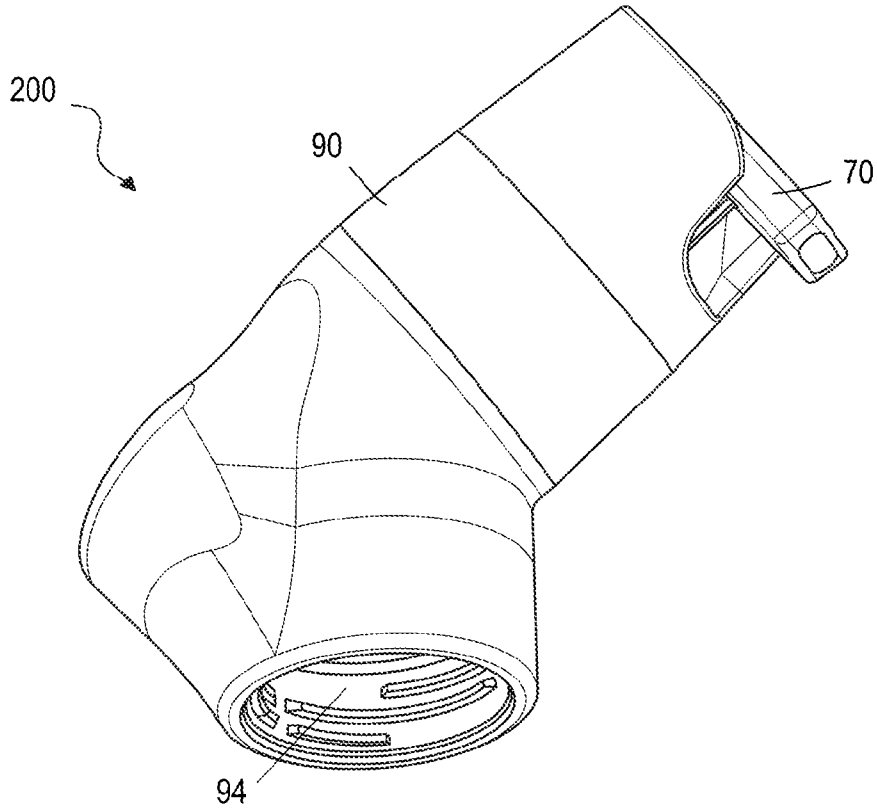


FIG. 5

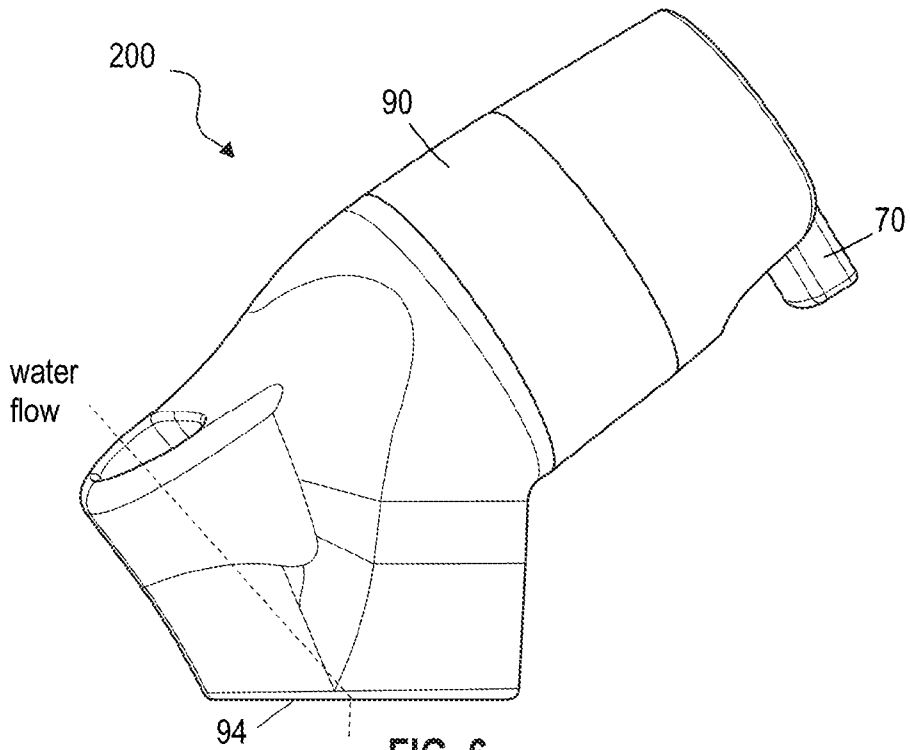


FIG. 6

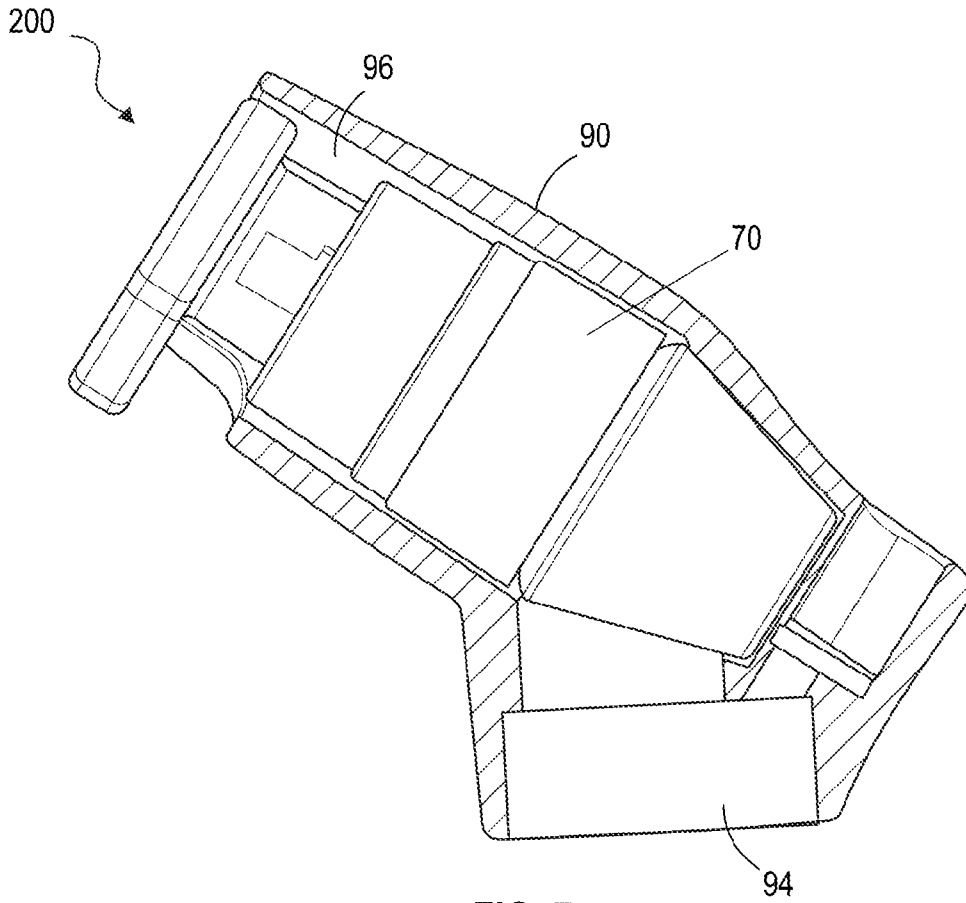


FIG. 7

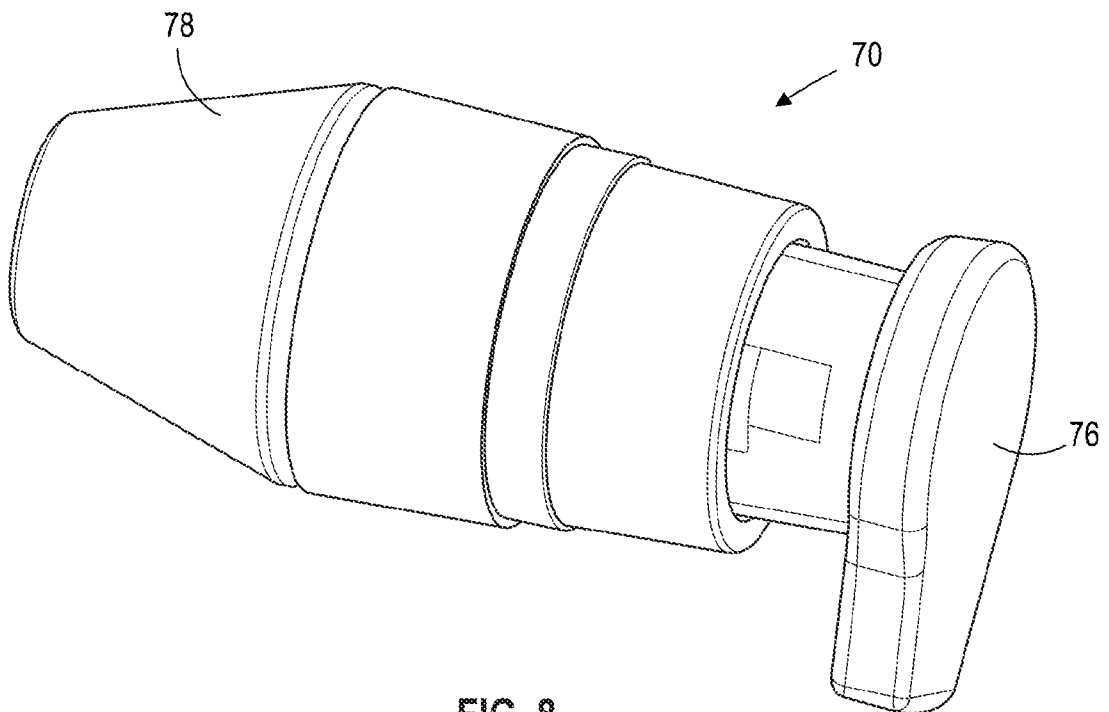


FIG. 8

