



(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
05.01.2022 Bulletin 2022/01

(51) Int Cl.:
A24F 1/30 (2006.01)

(21) Application number: **21176627.4**

(22) Date of filing: **28.05.2021**

(84) Designated Contracting States:
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR
 Designated Extension States:
BA ME
 Designated Validation States:
KH MA MD TN

(71) Applicant: **R.Y.L. Inc.**
Commerce, California 90040 (US)

(72) Inventor: **OU, Suk Hwan**
COMMERCE, 90040 (US)

(74) Representative: **Regimbeau**
20, rue de Chazelles
75847 Paris Cedex 17 (FR)

(30) Priority: **30.06.2020 US 202016917629**

(54) **APPARATUS COMBINING A GLASS CONTAINER WITH A GLASS WATER PIPE**

(57) An apparatus comprising a glass container (5) with a hollow interior, an open top (25) for receiving a cover (28) and a middle portion (24) disposed between

the open top and a closed bottom portion (23), the bottom portion arranged to be removably coupled to an open top portion (8) of a glass water pipe (2).

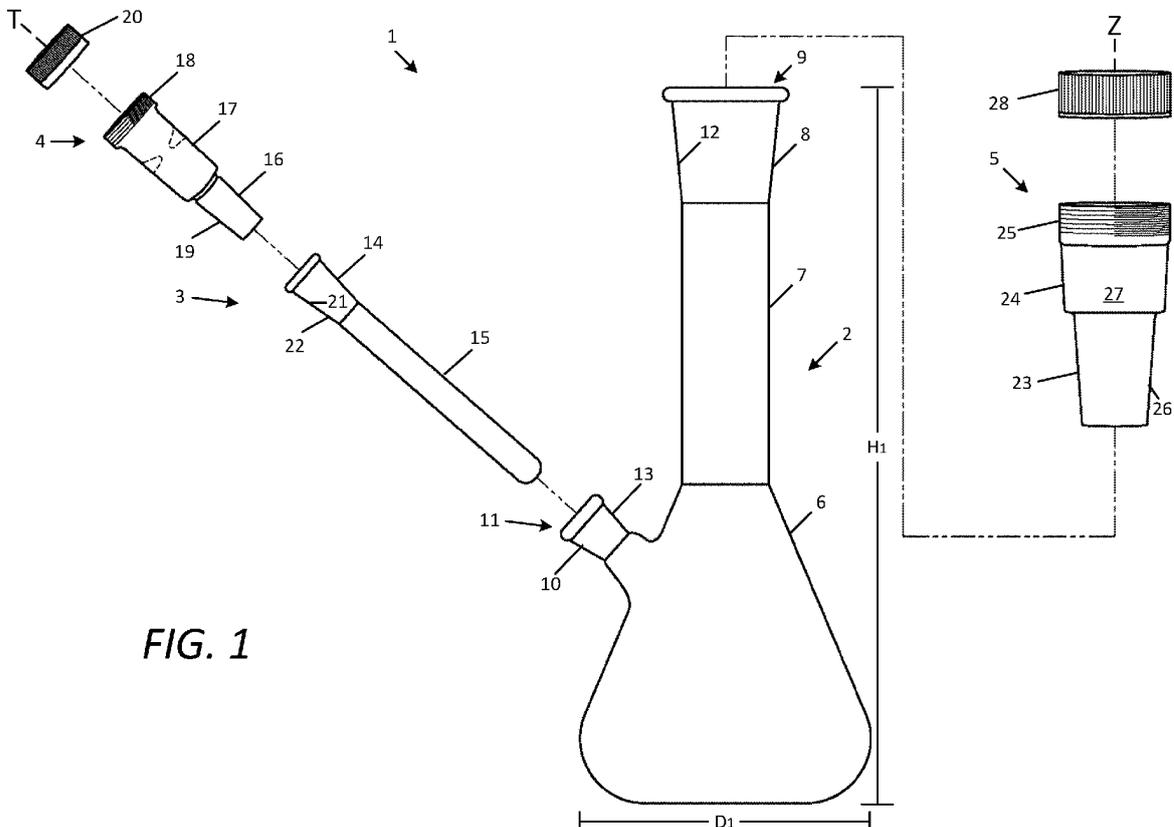


FIG. 1

Description

FIELD

[0001] An aspect of the disclosure relates to a glass pipe with a glass container. Other aspects are also described.

BACKGROUND

[0002] A water pipe is a filtration device that is used to smoke smokable substances (e.g., tobacco, etc.). Generally, a water pipe may be composed of three components: a chamber that includes a mouthpiece (or opening) on top, a downstem that is a small tube that has an opening into a bottom portion of the chamber, and a bowl that holds the smokable substance. During use, the bowl (or a tube of the bowl) is inserted into the downstem and the bottom portion of the chamber is filled with water until at least a portion of the downstem is submerged. A user's mouth is placed over the mouthpiece to form a seal and the smokable substance is ignited by a flame. The user inhales, causing smoke produced by the ignited smokable substance to travel through the downstem from the bowl and pass through the water, thereby filtering and/or cooling the smoke, which then collects in the chamber. Once the smokable substance is spent, the user removes the bowl from the downstem and inhales the smoke that has collected in the chamber.

SUMMARY

[0003] Water pipes may include several elements, such as a water chamber and a bowl that may be stored as a single integrated unit. After use, a user may clean out the water pipe by evacuating the water chamber of water and removing any unspent smokable substance from the bowl, and placing the clean bowl inside an opening in the chamber for storage. Storing the water pipe as a single unit helps avoid misplacement of its elements, such as the bowl. To use the water pipe, however, involves many more components that may be separate from the water pipe, such as the smokable substance and a flame source (e.g., a lighter). Each of these components (along with the water pipe) may be stored separate from one another. The smokable substance may be stored in an airtight plastic bag, while the lighter may be stored on its own. Since each of these components are necessary to use the water pipe, it is essential that a user keeps them organized and in a known location. In some instances, however, since they are separate, some of the components may get misplaced, and therefore may render the water pipe inoperable. Therefore, there is a need for organizing the components such that at least some of them are stored with the water pipe in one location so that they are easily accessible to a user who wishes to use the water pipe to smoke the smokable substance.

[0004] According to the invention there is provided an apparatus as defined in claim 1 and in the corresponding depending claims.

[0005] The instant disclosure is directed to a glass container that is combined with a glass water pipe. The container includes a hollow interior for holding (storing or securing) one or more components (or objects), such as the smokable substance. The container includes an open top that allows the user to place objects within the container's hollow interior. The open top is also for receiving a cover. For example, when the cover is a plug (e.g., cork), the plug may be inserted (and press fitted) into the open top in order seal the hollow interior. As another example, the cover may be a threaded cap. In this case, the open top may include a threaded portion (e.g., an external thread) and the threaded cap may have an internal thread, such that the threaded cap may be screwed onto the glass container. The glass container also includes a middle portion disposed between the open top and a (closed) bottom portion. The bottom portion is arranged to be removeably coupled to a top, open portion of the glass water pipe. In this case, the open top portion of the pipe may include an outer joint, while the bottom portion of the glass container includes an inner joint, where the outer joint is for receiving the inner joint. Thus, while the water pipe is not in use, the glass container may contain the smokable substance and may be placed onto the glass water pipe (e.g., by inserting the closed bottom portion into the open top portion of the glass water pipe), thereby allowing the user to store the smokable substance with the water pipe.

[0006] In general, most users that purchase smokable substances want to prevent others (e.g., minors) from gaining unauthorized access to such substances for consumption. To accomplish this, users may hide the smokable substance from the minors or may place it in a location (e.g., a cupboard) that is inaccessible to the minors. This, however, may not be sufficient to prevent a person from gaining access to the substance (e.g., a minor may inadvertently find the hidden substance). Therefore, there is a need to secure the smokable substance (and/or elements of the water pipe) when it is stored away. The present disclosure describes providing a safety (e.g., child-resistant) cap with the glass container. Specifically, the safety cap may be screwed onto the threaded portion of the glass container. Such a safety cap may reduce the risk of others from gaining access to the contents of the glass container by preventing them from opening the container.

[0007] One aspect of the present disclosure relates to a glass container comprising:

a hollow interior;
an open top for receiving a cover; and
a middle portion disposed between the open top and a bottom portion, the bottom portion arranged to be removeably coupled to an open top portion of a glass water pipe.

[0008] Preferable but not limited aspects of such a glass container, taken alone or in combination, are the following:

- the cover is a threaded cap, wherein the open top comprises a threaded portion that is arranged to threadedly couple to the threaded cap.
- the threaded cap is a safety cap.
- the cover is a plug that is arranged to be press fitted into the open top of the glass container.
- the bottom portion has a side surface that is a ground surface.
- the middle portion has a first diameter and the bottom portion has a second diameter, wherein the first diameter that is larger than the second diameter.
- the bottom portion has a tapered side surface with a diameter that decreases along a center longitudinal axis away from the middle portion.

[0009] Another aspect of the present disclosure relates to an apparatus comprising:

a glass water pipe that has a side outer joint that is arranged to receive a glass bowl and a first open top portion; and

a glass container that has 1) a hollow interior, 2) a second open top portion arranged to receive a cover, and 3) a closed bottom portion, the closed bottom portion arranged to be removeably coupled to the first open top portion of the glass water pipe.

[0010] Preferable but not limited aspects of such an apparatus, taken alone or in combination, are the following:

- the cover is a threaded cap, wherein the second open top portion comprises a threaded portion that is arranged to threadedly couple to the threaded cap.
- the threaded cap is a safety cap.
- the cover is a plug that is arranged to be press fitted into the first open top portion of the glass container.
- the first open top portion comprises an outer joint and the closed bottom portion comprises an inner joint, wherein the outer joint is for receiving the inner joint.
- the inner joint has a ground glass outer-side surface.
- the outer joint has a ground glass inner-side surface.
- the hollow interior is a first hollow interior and the closed bottom portion is a first closed bottom portion, wherein the apparatus further comprises a coupling that has 1) a second hollow interior, 2) a third open top portion that is arranged to be removeably coupled with the first closed bottom portion of the glass container, and 3) a second closed bottom portion, the first open top portion of the glass water pipe is for receiving the second closed bottom portion of the coupling.
- the coupling comprises an inner threaded portion,

wherein the first open top portion comprises an outer threaded portion that is arranged to threadedly couple to the inner threaded portion of the coupling.

- the glass bowl comprises 1) an inner joint at a first end that is arranged to removeably couple to the side outer joint of the glass water pipe and 2) a threaded portion at a second, opposite end of the first end that is arranged to threadedly couple to a threaded cap.

[0011] Another aspect of the present disclosure relates to an apparatus comprising:

a cylindrical water pipe that has a side outer joint for receiving a bowl and a first open top portion; and a container including a hollow interior, a second open top portion arranged to receive a cover, and a cylindrical portion disposed between the second open top portion and a closed bottom portion, the first open top portion of the water pipe is for receiving the closed bottom portion of the container, wherein the cylindrical portion of the container and the first open top portion of the cylindrical water pipe have a same outer diameter.

[0012] Preferable but not limited aspects of such an apparatus, taken alone or in combination, are the following:

- at least one of the water pipe, the bowl, and the container are composed of glass.
- the cover is a threaded cap, wherein the first open top portion comprises a threaded portion that is arranged to threadedly couple to the threaded cap.
- the cover is a plug that is arranged to be press fitted into the second open top portion of the container.
- the first open top portion comprises an outer joint and the closed bottom portion comprises an inner joint, wherein the outer joint is for receiving the inner joint.
- the inner joint has a ground glass outer-side surface, the outer joint has a ground glass inner-side surface, or a combination thereof.
- the bowl comprises 1) an inner joint at a first end that is arranged to removeably couple to the side outer joint of the cylindrical water pipe and 2) a threaded portion at a second, opposite end that is arranged to threadedly couple to a threaded cap.

[0013] The above summary does not include an exhaustive list of all aspects of the present disclosure. It is contemplated that the disclosure includes all systems and methods that can be practiced from all suitable combinations of the various aspects summarized above, as well as those disclosed in the Detailed Description below and particularly pointed out in the claims filed with the application. Such combinations have particular advantages not specifically recited in the above summary.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The aspects of the disclosure are illustrated by way of example and not by way of limitation in the figures of the accompanying drawings in which like references indicate similar elements. It should be noted that references to "an" or "one" aspect in this disclosure are not necessarily to the same aspect, and they mean at least one. Also, in the interest of conciseness and reducing the total number of figures, a given figure may be used to illustrate the features of more than one aspect of the disclosure, and not all elements in the figure may be required for a given aspect.

Fig. 1 shows an exploded view of a glass water pipe system according to an aspect of the present disclosure.

Fig. 2 shows a glass container with a threaded cap according to an aspect of the present disclosure.

Fig. 3 shows a glass container with a cover according to another aspect of the present disclosure.

Fig. 4 shows a bowl with a cover according to an aspect of the present disclosure.

Fig. 5 shows a glass water pipe system according to an aspect of the present disclosure.

Fig. 6 shows a glass water pipe system during use according to an aspect of the present disclosure.

Fig. 7 shows another example of a glass water pipe system according to another aspect of the present disclosure.

Fig. 8 shows an exploded view of a coupling that couples a glass container to a glass water pipe according to an aspect of the present disclosure.

Fig. 9 shows a glass water pipe system with the coupling shown in **Fig. 8**, according to an aspect of the present disclosure.

DETAILED DESCRIPTION

[0015] Several aspects of the disclosure with reference to the appended drawings are now explained. Whenever the shapes, relative positions and other aspects of the parts described in the aspects are not explicitly defined, the scope of the disclosure is not limited only to the parts shown, which are meant merely for the purpose of illustration. Also, while numerous details are set forth, it is understood that some aspects of the disclosure may be practiced without these details. In other instances, structures and techniques have not been shown in detail so as not to obscure the understanding of this description.

Furthermore, unless the meaning is clearly to the contrary, all ranges set forth herein are deemed to be inclusive of the endpoints. In addition, the terms "over", "to", and "on" as used herein may refer to a relative position of one feature with respect to other features. One feature "over" or "on" another feature or bonded "to" another feature may be directly in contact with the other feature or may have one or more intervening layers. In addition, the use of relative terms throughout the description, such as "top", "above" or "upper" and "bottom", "under" or "lower" may denote a relative position or direction. For example, a "top edge", "top end" or "top side" may be directed in a first axial direction and a "bottom edge", "bottom end" or "bottom side" may be directed in a second direction opposite to the first axial direction.

[0016] According to one aspect, a glass container includes a hollow interior; an open top for receiving a cover; and a middle portion disposed between the open top and a bottom portion, the bottom portion arranged to be removeably coupled to an open top portion of a glass water pipe. In one aspect, the cover is a threaded cap, where the open top comprises a threaded portion that is arranged to threadedly couple to the threaded cap. In another aspect, the threaded cap is a safety cap. In some aspects, the cover is a plug that is arranged to be press fitted into the open top of the glass container. In one aspect, the bottom portion has a side surface that is a ground surface. In one aspect, the middle portion has a first diameter and the bottom portion has a second diameter, where the first diameter that is larger than the second diameter. In some aspects, the bottom portion has a tapered side surface with a diameter that decreases along a center longitudinal axis away from the middle portion.

[0017] According to another aspect, an apparatus (or glass water pipe system) includes a glass water pipe that has a side outer joint that is arranged to receive a glass bowl and a first open top portion; and a glass container that has 1) a hollow interior, 2) a second open top portion arranged to receive a cover, and 3) a closed bottom portion, the closed bottom portion arranged to be removeably coupled to the first open top portion of the glass water pipe. In one aspect, the cover is a threaded cap, wherein the second open top portion comprises a threaded portion that is arranged to threadedly couple to the threaded cap. In another aspect, the threaded cap is a safety cap. In some aspects, the cover is a plug that is arranged to be press fitted into the first open top portion of the glass container. In one aspect, the first open top portion comprises an outer joint and the closed bottom portion comprises an inner joint, where the outer joint is for receiving the inner joint. In one aspect, the inner joint has a ground glass outer-side surface. In another aspect, the outer joint has a ground glass inner-side surface. In one aspect, the hollow interior is a first hollow interior and the closed bottom portion is a first closed bottom portion, the apparatus further includes a coupling that has 1) a second hollow

interior, 2) a third open top portion that is arranged to be removeably coupled with the first closed bottom portion of the glass container, and 3) a second closed bottom portion, the first open top portion of the glass water pipe is for receiving the second closed bottom portion of the coupling. In another aspect, the coupling comprises an inner threaded portion, wherein the first open top portion comprises an outer threaded portion that is arranged to threadedly couple to the inner threaded portion of the coupling. In some aspects, the glass bowl includes 1) an inner joint at a first end that is arranged to removeably couple to the side outer joint of the glass water pipe and 2) a threaded portion at a second, opposite end of the first end that is arranged to threadedly couple to a threaded cap.

[0018] According to another aspect, an apparatus includes a cylindrical water pipe that has a side outer joint for receiving a bowl and a first open top portion; and a container including a hollow interior, a second open top portion arranged to receive a cover, and a cylindrical portion disposed between the second open top portion and a closed bottom portion, the first open top portion of the water pipe is for receiving the closed bottom portion of the container, where the cylindrical portion of the container and the first open top portion of the cylindrical water pipe have a same outer diameter. In one aspect, at least one of the water pipe, the bowl, and the container are composed of glass. In another aspect, the cylindrical water pipe, the container, and/or the bowl may be similar to those that were previously described.

[0019] As described herein, to "couple" one component to another component may refer to fluidly coupling both components together thereby allowing a fluid, such as smoke produced by ignited smokable substance, to flow between the two components. For example, to fluidly couple a tube to another tube (or chamber) refers to coupling (or connecting) both tubes together such that smoke may flow from one tube into the other tube.

[0020] Fig. 1 shows an exploded view of a glass water pipe system (or apparatus) 1 according to an aspect of the present disclosure. Specifically, this figure illustrates the glass water pipe system 1 that includes a glass water pipe 2, a downstem 3, a bowl 4, a cover 20, a glass container 5, and a cover 28. As shown, each of the elements are separate (separable or removable) from one another. Also shown, a Z-axis is a central longitudinal axis that is running through the glass water pipe 2, the glass container 5, and the cover 28; and a T-axis is a central longitudinal axis that is running through the cover 20, the bowl 4, and the downstem 3 (and an open side portion 10 of the glass water pipe). In one aspect, at least some of the elements may be integrated with (or a part of) another element. For example, as shown the downstem may be a part of the bowl and/or the glass water pipe. In another aspect, the system may include less or more elements. For example, the system may not include a downstem nor at least one of the covers.

[0021] The glass water pipe 2 includes a water cham-

ber (e.g., bottom portion) 6 that is arranged to hold water, a neck (e.g., middle portion) 7, and an open top portion (first open top portion) 8. As shown, the glass water pipe is a beaker-shaped water pipe. Specifically, the water chamber is bottom-closed and conically shaped, which tapers inward (e.g., along the central longitudinal axis, Z-axis) away from a bottom of the chamber and towards the neck (with a rounded bottom corner). The neck 7 is cylindrically shaped and fluidly couples the water chamber with the open top portion. The open top portion is conically shaped that tapers outward along the Z-axis away from the neck. The open top portion has an opening 9 at an end that is opposite to the neck. In one aspect, each of the three components are fluidly coupled together such that the components form a hollow interior within the water pipe.

[0022] In one aspect, the components of the glass water pipe 2 may be shaped differently. For example, the open top portion 8 may be cylindrically shaped. In this case, the portion 8 and the neck 7 may have a same (or similar) outer (and/or inner) diameter (e.g., being one tube). As another example, the water chamber 6 and/or the open top portion 8 may be at least partially cylindrically shaped. In this case, the glass water pipe may be a tube-shaped water pipe. Thus, each of the components may have a same outer (and/or inner) diameter, such that the water pipe (as a whole) is (at least partially) cylindrically shaped (e.g., a glass tube with a closed bottom and an open top). In another aspect, the glass water pipe (and/or any of the pipe's components) may be any shape.

[0023] The glass water pipe 2 has a height (H_1) that extends from a bottom of the water chamber to a top end of the open top portion (e.g., to the opening 9). In one aspect, H_1 may range from 10 cm to 300 cm. In another aspect, H_1 may be a height that ranges from 60 cm to 200 cm. In some aspects, H_1 may be a height that ranges from 30 cm to 60 cm. The water chamber 6 has an outermost diameter (D_1), which may range from 1 cm to 40 cm. In another aspect, D_1 may range from 2 cm to 20 cm. As shown, the neck 7 has a smaller diameter than D_1 . In one aspect, the neck 7 and/or the open top portion 8 (e.g., the mouthpiece) may have a same diameter (e.g., D_1) as the water chamber. In another aspect, the water pipe may have other dimensions.

[0024] As shown, the glass water pipe 2 also includes an open side portion 10. The open side portion includes an opening 11 on one side and is fluidly coupled to the water chamber at an opposite side. In one aspect, the open side portion may be coupled to a side wall of the water chamber, or may be formed as a part of the (side wall of the) water chamber. In another aspect, the open side portion may be composed of the same material(s) as the water chamber, such as glass. In some aspects, however, the open side portion may be a different material (e.g., plastic).

[0025] The open top portion 8 and the open side portion 10 include a (top) outer joint and a (side) outer joint, respectively. Specifically, the open top portion is an outer

joint that has an inner-side surface 12 that conically tapers outward along the Z-axis. Similarly, the open side portion is an outer joint has an inner-side surface 13 that conically tapers outward along a center longitudinal axis, T-axis. In one aspect, either portion 8 and 10 may include an outer joint that tapers, while having a cylindrically shaped outer-side surface. For example, the outer-side surface of the top open portion 8 may be cylindrically shaped such that an outer diameter of the open top portion 8 is the same as an outer diameter of the neck 7, while the inner-side surface 12 is conically tapers, as described herein. In another aspect, either of the outer joints may be shaped differently. For example, the inner-side surface 12 of the top outer joint may be cylindrically shaped such that the open top portion has an inner diameter that is the same across (at least a portion of) a height of the open top portion along the Z-axis.

[0026] The downstem 3 includes a joint 14 that is fluidly coupled to a hollow tube 15. The joint 14 has an inner-side surface 21 (and an outer-side surface 22) that conically tapers outward (away from the hollow tube 15) along the T-axis.

[0027] The bowl 4 includes an open bottom portion 16 (at a first end of the bowl), an open top portion 18 (at a second end of the bowl that is opposite to the first end), and a middle portion 17 that is disposed between the bottom portion 16 and the top portion 18. As shown, the middle portion 17 is (at least partially) cylindrically shaped and fluidly couples the open bottom portion 16 with the open top portion 18. More about the middle portion 17 is described in **Fig. 4**. The bottom portion 16 includes an inner joint that has an outer-side surface 19 that conically tapers inward away from the middle portion 17 along the T-axis. In one aspect, an inner-side surface of the bottom portion 16 may be (at least partially) cylindrically shaped. The open top portion 18 is cylindrically shaped and includes a threaded portion. Specifically, this threaded portion is an outer thread. The cover 20 is a threaded cap that includes an inner thread. The threaded portion of the bowl 4 is arranged to threadedly couple to the cover, such that a user may close off (and seal) the open top portion 18 of the bowl 4.

[0028] The glass container 5 includes a closed bottom portion 23 at a first end of the container that is arranged to be removeably coupled to the open top portion of the glass water pipe, as described herein. The container also includes an open top portion (or open top) 25 (e.g., a second open top portion) at a second end of the container that is opposite to the first end, and a middle portion 24 that is disposed between the bottom portion 23 and the top portion 25. Specifically, the middle portion 24 fluidly couples the open top portion 25 with the closed bottom portion 23. The middle portion 24 is conically shaped, and tapers outward (along the central longitudinal axis, Z-axis) away from the closed bottom portion 23 and towards the open top portion 25. In one aspect, the closed bottom portion 23 is also conically shaped. Specifically, the closed bottom portion 23 is an inner (closed) joint that

has an outer-side surface 26 that conically tapers outward away from a bottom of the portion 23 and towards the middle portion 24, along the center longitudinal Z-axis. The open top portion 25 is cylindrically shaped and is arranged (and sized) to receive a cover (e.g., cover 28). As shown, the open top portion 25 includes a threaded portion that includes an outer thread. The cover 28 is a threaded cap that includes an inner thread, such that the threaded portion of the container 5 is arranged to threadedly couple to the cover 28 in order for a user to close off (and seal) the container.

[0029] The container 5 also includes a hollow interior 27 that is designed to hold objects, such as a smokable substance. In one aspect, the hollow interior 27 is a part of the middle portion 24 and top portion 25. In another aspect, the hollow interior may extend into the closed bottom portion, such that the container may be filled with objects from the bottom of the bottom portion 23 to the top portion 25.

[0030] In one aspect, the glass container 5 may be shaped differently. Specifically, the closed bottom portion 23 and/or the middle portion 24 may be (at least partially) cylindrically shaped. More about a glass container being cylindrically shaped is described in **Fig. 7**.

[0031] In one aspect, the elements of the water pipe system may be composed of one or more materials. For example, the water pipe 2, the downstem 3, the bowl 4, and the container 5 may each be made of glass, while covers 20 and 28 may be made out of plastic. In one aspect, at least some of the elements may be composed of one or more different materials. For example, the container may be composed of glass, plastic, and/or a metal (e.g., steel). In one aspect, the elements may be formed by at least one material as a single integrated unit. As an example, the bowl 4 and container 5 may be formed from one piece of glass.

[0032] In one aspect, the elements of the glass water pipe system 1 may be combined in order to create a single integrated unit. For example, the (outer joint of the) open top portion 8 of the water pipe 2 is arranged and sized to receive (through opening 9) the (inner joint of the) bottom closed portion 23 of the glass container 5, such that the glass container may sit atop the glass water pipe. In addition, the (outer joint of the) open side portion 10 is arranged and sized to receive (through opening 11) the joint 14 of the downstem, which is itself arranged and sized to receive the (inner joint of the) open bottom portion 16 of the bowl 4. Thus, each of these elements may be removeably coupled to one another, as shown in **Fig. 5**.

[0033] In another aspect, at least some of the side surfaces of the inner and/or outer joints may be ground (or roughened) surfaces. For example, the outer-side surface 26 may be a ground glass surface, the inner-side surface 12 may be a ground glass surface, or both surfaces 26 and 12 may be ground glass surfaces. As another example, the inner-side surface 13, the inner-side surface 21, the outer-side surface 22, and/or the outer-

side surface 19 may be ground glass. In one aspect, ground surfaces may provide additional friction for when inner joints are received by (and press-fitted into) outer joints. In another aspect, all of the inner joints and outer joints have ground surfaces. In another aspect, at least some of the surfaces may not be ground, thereby having a smooth clear surface (e.g., polished glass).

[0034] Fig. 2 shows the glass container 5 with the cover 28 according to an aspect of the present disclosure. Specifically, this figure shows that the cover, which is a threaded cap, is threaded on the (outer threads of the) open top portion 25 of the glass container 5. The glass container 5 (with the cover 28 coupled thereon) has a height (H_2) that extends from the bottom of the bottom closed portion 23 to a top of the cover 28. In one aspect, H_2 may be only the height of the glass container (e.g., from the bottom of the bottom closed portion 23 to a top (edge) of the open top portion 25). In one aspect, H_2 may be a height ranging from 2 cm to 40 cm. In another aspect, H_2 may range from 5 cm to 20 cm. In some aspects, H_2 is 6.5 cm. The glass container 5 has a (outer) diameter (D_2). As shown, D_2 is the outer diameter of the cover 28. In one aspect, however, D_2 is the diameter of the cylindrically open top portion 25. In another aspect, D_2 is the largest outer diameter of the conically shaped middle portion 24 (e.g., where the middle portion meets with the open top portion). In some aspects, when the middle portion 24 is cylindrically shaped, D_2 may be the outer diameter along (at least a portion) of the middle portion along the Z-axis. In one aspect, D_2 may be a diameter ranging from 2.5 cm to 20 cm. In another aspect, D_2 may range from 4 cm to 10 cm. In some aspects, D_2 is 5 cm.

[0035] As shown, the closed bottom portion 23 of the glass container 5 may have differing dimensions than the rest of the container (e.g., the middle portion 24). For example, the closed bottom portion 23 has a height (H_3) that extends from (a bottom edge of) middle portion 24 to a bottom of the closed bottom portion. In one aspect, H_3 may be a height ranging from 0.5 cm to 10 cm. In another aspect, H_3 may range from 1 cm to 5 cm. In some aspects, H_3 is 1.5 cm. The closed bottom portion also has a (outer) diameter (D_3). As shown, D_3 may be a smallest diameter of the conically shaped closed bottom portion. In another aspect, when the closed bottom portion is cylindrically shaped, D_3 may be the outer diameter along (at least a portion) of the bottom portion along the Z-axis. In one aspect, D_3 may be a diameter ranging from 2 cm to 10 cm. In another aspect, D_3 may range from 3 cm to 5 cm. In some aspects, D_3 is 3.5 cm.

[0036] As shown, the middle portion 24 is coupled to the closed bottom portion by an edge 30 that extends inward towards the central longitudinal Z-axis. In one aspect, this edge is arranged to make contact with and sit upon (a top edge) of the open top portion 8 of the glass water pipe, as shown in Fig. 5. As a result of the edge 30, the middle portion 24 has a larger diameter than the closed bottom portion 23. Specifically, an end of the middle portion (which has a smallest diameter of the middle

portion) that is coupled to a first side of the edge 30 (along the Z-axis) has a larger diameter than an end of the closed bottom portion 23 (which has a largest diameter of the closed bottom portion) that is coupled to a second, opposite side of the edge 30.

[0037] Fig. 3 shows a glass container with a cover according to another aspect of the present disclosure. Specifically, this figure shows a glass container 31 with a plug 36 as the cover for sealing the container. The container 31 is similar to container 5, such that container 31 includes a closed bottom portion 32, an open top portion 34, and a middle portion 33 that is disposed between the bottom and top portions. Also, the container 31 includes a hollow interior 38 that is designed to hold objects, where the hollow interior may extend from the middle portion 33 (and open top portion 34) into the closed bottom portion 32. Unlike glass container 5, however, the open top portion 34 does not include a threaded portion, but instead includes an outer lip at a top edge of the portion. The top portion 34 is arranged to receive the plug 36. In particular, the plug is arranged to be press fitted into the open top portion 34 of the container 31. In one aspect, the plug 36 may be composed of one or more materials, such as cork, plastic, rubber, and/or metal.

[0038] As shown, the shape of the container 31 is different than container 5. In particular, the middle portion 33 is coupled to the closed bottom portion 32 by an edge 37 that extends outward (from the middle portion 33 and towards the closed bottom portion 32) from the central longitudinal Z-axis. As a result, an end of the middle portion that is coupled to a first side of edge 37 (along the Z-axis) has a smaller diameter than an end of the closed bottom portion that is coupled to a second, opposite side of the edge 37. In one aspect, the middle portion 33 and the closed bottom portion 32 may have similar dimensions. For example, both portions taper inward (from their respective bottoms) along the Z-axis. As another example, both portions may have a same height along the Z-axis (e.g., a height of the middle portion 33 that extends from the open top portion 34 to the first side of the edge 37 may be the same as a height of the closed bottom portion 32 from the second side of the edge 37 to a bottom of the portion 32). As another example, the middle portion 33 and the bottom portion 32 may have the same (or similar) diameters along their respective heights in the Z-direction. In another aspect, the container 31 may have similar (or the same) dimensions as container 5 (e.g., the open top portion 34 may have a same diameter as D_2).

[0039] Fig. 4 shows a bowl with a cover according to an aspect of the present disclosure. As described herein, the bowl 4 includes the open bottom portion 16, the open top portion 18, and the middle portion 17 that is disposed between both other portions. This figure shows that the cover 20, which is a threaded cap that is threaded on the (outer threads of the) open top portion 18 of the bowl 4. The middle portion 17 includes two separate chambers. In particular, the middle portion includes a first (receiving) chamber 40 that is arranged to receive smokable sub-

stance, and a second (output) chamber 41 that is arranged to 1) receive smoke from the first chamber 40 that is produced when the smokable substance is ignited and 2) supply the smoke to the water chamber (via the downstem 3). More about the operation of the glass water pipe is described herein. Both chambers 40 and 41 are both separated by a restriction 42. The restriction 42 is a torus-type structure that surrounds a portion of an inner surface of the middle portion 17, and tapers inward towards the central longitudinal T-axis. At a center of the restriction is a hole 47 that fluidly couples the first chamber 40 with the second chamber 41. Furthermore, the hole has a smaller diameter than an inner diameter of the middle portion 17. Thus, the restriction reduces the inner diameter of the middle portion to restrict large objects from passing between both chambers. In one aspect, the restriction 42 may be a part (integrated with) of the middle portion 17. For example, when the bowl 4 is a glass bowl, the restriction may be formed of a glass wall that makes up the glass middle portion 17.

[0040] The bowl 4 (with the cover 20 coupled thereon) has a height (H_4) that extends from a bottom end of the open bottom portion 16 (e.g., the bottom end is opposite to another end of the bottom portion that is coupled to the middle portion 17) to a top of the cover 20. In one aspect, H_4 may be the height of the bowl without the cover (e.g., from the bottom end of the open bottom portion 16 to a top end of the open top portion 18). In one aspect, H_4 may be a height ranging from 4 cm to 20 cm. In another aspect, H_4 may range from 6 cm to 12 cm. In some aspects, H_4 is 7.5 cm. The bowl 4 has a (outer) diameter (D_4). In one aspect, D_4 is the diameter of the cylindrically open top portion 18. In another aspect, D_4 is the outer diameter of (at least a portion of) the cylindrically shaped middle portion 17. In yet another aspect, D_4 is the outer diameter of the cover 20. In one aspect, D_4 may be a diameter ranging from 1 cm to 8 cm. In another aspect, D_4 may range from 1.5 cm to 5 cm. In some aspects, D_4 is 2.5 cm.

[0041] Fig. 5 shows the glass water pipe system according to an aspect of the present disclosure. Specifically, as described herein, this figure shows each of the elements of the glass water pipe system 1 combined to create a single integrated unit. Thus, the container, which may hold objects (such as unspent smokable substance), is placed on top of the glass water pipe with cover 28 and the bowl 4 is placed inside the open side portion 10 with cover 20. Once combined, the system 1 may be stored away for later use.

[0042] As shown in this figure, the covers 20 and 28 are threaded caps. In one aspect, either (or both) of the caps may be safety (or child-resistant) caps. For instance, cover 28 may be a safety cap which may be threaded onto the open top portion 25 of the container 5 by twisting the cap in a first (clockwise) direction, but may not be removed by only twisting the cap in a second, opposite (counterclockwise) direction. Instead, to remove the cap, a user may push the cap towards the con-

tainer and twist in the second direction. As described herein, the covers 20 and 28 may be plastic. In another aspect, either of the covers may be composed of any material, such as metal, rubber, wood, etc.

[0043] As described thus far, the covers 20 and 28 may be threaded (safety) caps and/or plugs. In one aspect, the either of the covers may be any type of cover. For example, cover 28 may be a (e.g., plastic) lid that is pressed over the open top portion 25, having a lip that fits around an outer surface of the top portion. In one aspect, either of the covers may be latched and secured to the container 5 and/or bowl 4. For example, the cover 28 may be a swing-top (or flip-top) cap that is fitted with a (e.g., rubber) gasket and held in place by a metal latch.

[0044] Fig. 6 shows the glass water pipe system during use according to an aspect of the present disclosure. Specifically, this figure illustrates the water pipe system 1 that is ready for use. The closed bottom portion 6 includes water 60 with a water level that submerges at least a portion of the tube 15 of the downstem 3. The container 5 is removed from atop the open top portion 8 and the cover 20 is removed from the bowl 4.

[0045] Fig. 7 shows another example of a glass water pipe system 81 according to another aspect of the present disclosure. Specifically, the system 81 is similar to the glass water pipe system 1, except system 81 includes a different dimensioned water pipe and container, than water pipe 2 and container 5 of system 1. In particular, system 81 includes a cylindrical water pipe 82 that has a side outer joint 89 (similar to joint 10 of glass pipe 2) for receiving the bowl 4 (e.g., via the downstem). The water pipe 82 also includes a cylindrical water chamber (or neck) 87 and a cylindrical open top portion 88. As shown, the open top portion 88 and the water chamber 87 is one cylindrical tube.

[0046] The glass container 85 includes a closed bottom portion 83, an open top portion that is shown as being covered by cover 28, and a middle portion 84 that is disposed between the bottom portion and the top portion. The glass container 85 also includes a hollow interior 86. Unlike glass container 5, this container 85 is cylindrically shaped. Specifically, the middle portion 84 is (at least partially) cylindrically shaped and the closed bottom portion 83 is (at least partially) cylindrically shaped. Thus, the middle portion 84 may have a first diameter (e.g., D_2), and the closed bottom portion 83 may have a second diameter (e.g., D_3), where D_2 is larger than D_3 , as described herein. In one aspect, D_2 of the middle (cylindrical) portion 84 may be the same (or similar) to the diameter of the open top portion 88 (and/or water chamber 87). Thus, when the container is placed upon the water pipe 82, the outer surface of the middle portion 84 is flush with the outer surface of the portions 87 and 88.

[0047] Fig. 8 shows an exploded view of a coupling 70 that couples the glass container 5 to the glass water pipe 2 according to an aspect of the present disclosure. Specifically, this figure illustrates a portion of the water pipe system 1 that includes the glass container 5, a coupling

70, and the open top portion 8 of the glass water pipe 2. As shown, each of these elements are separate (separable or removable) from one another.

[0048] This figure shows only the open top portion 8 of the glass water pipe 2. As illustrated, the top portion includes an outer threaded portion 71 that extends along at least a portion of the height of the top portion in the Z-direction. In one aspect, the outer threaded portion may be composed of the same material as the open top portion (e.g., both made from glass).

[0049] The coupling 70 includes a glass container 79 with an open top portion 74 (e.g., third open top portion) and a closed bottom portion 75 (e.g., second closed bottom portion). The closed bottom portion 75 is conically shaped, which tapers inward along the Z-axis, away from the open top portion. Thus, a diameter of the portion 75 decreases along the Z-axis. In one aspect, the closed bottom portion may be (at least partially) cylindrically shaped, such that the diameter of the portion 75 remains the same along the Z-axis. The glass container 79 also includes a hollow interior 72. The open top portion 74 is arranged to receive and couple to the (e.g., bottom closed portion of the) glass container 5 such that the coupling holds (and retains) the container. Specifically, when coupled to the coupling, at least a portion of the container 5 (e.g., the closed bottom portion 23) is within the hollow interior 72. In one aspect, the coupling 70 may include an outer joint (not shown) that is arranged to couple and join to the closed bottom joint of the glass container 5, as described herein.

[0050] The open top portion includes a (e.g., plastic) threaded cap 76 and a retainer 78. In one aspect, the coupling may be a RODAVISS coupling. Specifically, the retainer 78 may be seated upon a circular glass protrusion (not shown) that is coupled to an outer surface of the glass container 79. In addition, the threaded cap 76 may be seated upon the retainer 78, such that the cap 76 may rotate but cannot be pushed downward and over a remainder of the glass container 79 (e.g., the cap cannot be pushed over the closed bottom portion 75). In one aspect, however, the cap 76 may be pulled upward and decoupled from the retainer 78. The coupling is arranged to be removeably coupled to the water glass pipe. Specifically, the open top portion 8 is for receiving the closed bottom portion 75 of the coupling 70. Once received, the coupling becomes arranged to be threadedly coupled to the outer threaded portion 71 of the open top portion 8. In particular, the threaded cap may include an inner threaded portion that threads over the outer threaded portion 71 when a user places the coupling atop the open top portion 8 and twists the cap in a first (e.g., clockwise) direction. Once threadedly coupled, the coupling may seal (or close off) the open top portion 8 of the glass water pipe.

[0051] Fig. 9 shows a glass water pipe system with the coupling shown in Fig. 8, according to an aspect of the present disclosure. Specifically, this figure shows that the coupling 70 is removeably coupled to the (the open

top portion 8 of the) glass water pipe 2, and shows that the glass container 5 is coupled to the coupling 70. The coupling 70 provides several advantages. For example, while the coupling 70 is coupled to the glass pipe 2, the opening 9 of the open top portion 8 is covered (sealed off) by the coupling. This may prevent liquid (e.g., cleaning solution) from escaping the opening 9 while the user cleans the water pipe (e.g., when shaking the solution within the pipe 2). In addition, the coupling provides protection to the glass water pipe when coupling the glass container 5 to the water pipe. For example, a user may damage (e.g., chip) the water pipe when coupling the glass container directly to the glass container. Thus, the coupling provides a buffer between the container 5 and the water pipe 2.

[0052] While certain aspects have been described and shown in the accompanying drawings, it is to be understood that such aspects are merely illustrative of and not restrictive on the broad disclosure, and that the disclosure is not limited to the specific constructions and arrangements shown and described, since various other modifications may occur to those of ordinary skill in the art.

[0053] In some aspects, this disclosure may include the language, for example, "at least one of [element A] and [element B]." This language may refer to one or more of the elements. For example, "at least one of A and B" may refer to "A," "B," or "A and B." Specifically, "at least one of A and B" may refer to "at least one of A and at least one of B," or "at least of either A or B." In some aspects, this disclosure may include the language, for example, "[element A], [element B], and/or [element C]." This language may refer to either of the elements or any combination thereof. For instance, "A, B, and/or C" may refer to "A," "B," "C," "A and B," "A and C," "B and C," or "A, B, and C."

Claims

1. An apparatus comprising:
 - a glass container (5) with a hollow interior, an open top (25) for receiving a cover (28) and a middle portion (24) disposed between the open top and a closed bottom portion (23), the bottom portion arranged to be removeably coupled to an open top portion (8) of a glass water pipe (2).
2. The apparatus of claim 1, wherein the bottom portion (23) has a side surface that is a ground surface.
3. The apparatus of claim 1, wherein the middle portion (24) has a first diameter and the closed bottom portion (23) has a second diameter, wherein the first diameter is larger than the second diameter.
4. The apparatus of claim 1, wherein the closed bottom portion (23) has a tapered side surface with a diam-

eter that decreases along a center longitudinal axis away from the middle portion.

5. The apparatus of claim 1 wherein the glass water pipe has a side outer joint (10) that is arranged to receive a glass bowl (4) having an open top portion (18). 5
6. The apparatus of claim 5, wherein the hollow interior is a first hollow interior and the closed bottom portion (23) is a first closed bottom portion, wherein the apparatus further comprises a coupling (70) that has 1) a hollow interior, 2) an open top portion (74) that is arranged to be removeably coupled with the closed bottom portion (23) of the glass container, and 3) a closed bottom portion (75) of the coupling, the open top (8) of the glass water pipe is for receiving the closed bottom portion (75) of the coupling. 10
15
7. The apparatus of claim 6, wherein the coupling comprises an inner threaded portion, wherein the open top portion (74) of the coupling comprises an outer threaded portion that is arranged to threadedly couple to the inner threaded portion of the coupling. 20
25
8. The apparatus of claim 5 wherein the glass water pipe has a cylindrical shape and a portion of the container and the open top portion (8) of the glass water pipe have a same outer diameter. 30
9. The apparatus of claim 1 or claim 5 or claim 8, wherein the cover (28) is a threaded cap, and the open top (25) of the container (5) includes a threaded portion that is arranged to threadedly couple to the threaded cap. 35
10. The apparatus of claim 9, wherein the threaded cap is a safety cap.
11. The apparatus of claim 1 or claim 5 or claim 8, wherein the cover (28) is a plug (36) that is arranged to be press fitted into the open top (25) of the glass container (5). 40
12. The apparatus of claim 1 or claim 5 or claim 8, wherein the open top portion (8) of the glass container includes an outer joint and the closed bottom portion (23) of the container includes an inner joint, wherein the outer joint is for receiving the inner joint. 45
50
13. The apparatus of claim 12, wherein the inner joint has a ground glass outer-side surface.
14. The apparatus of claim 12, wherein the outer joint has a ground glass inner-side surface. 55
15. The apparatus of claim 5, wherein the glass bowl comprises 1) an inner joint at a first end that is ar-

ranged to removeably couple to the side outer joint of the glass water pipe and 2) a threaded portion at a second, opposite end of the first end that is arranged to threadedly couple to a threaded cap (20).

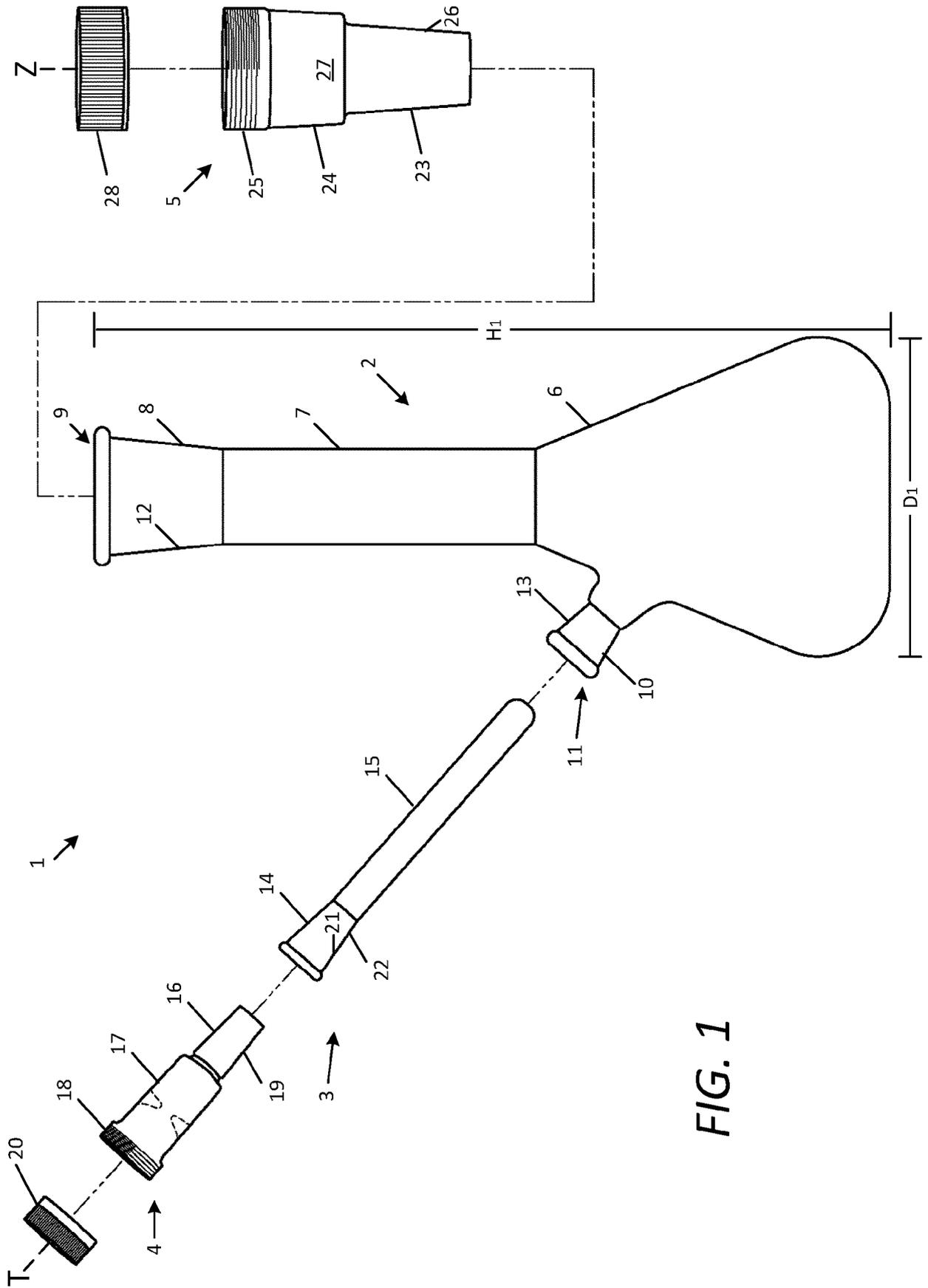
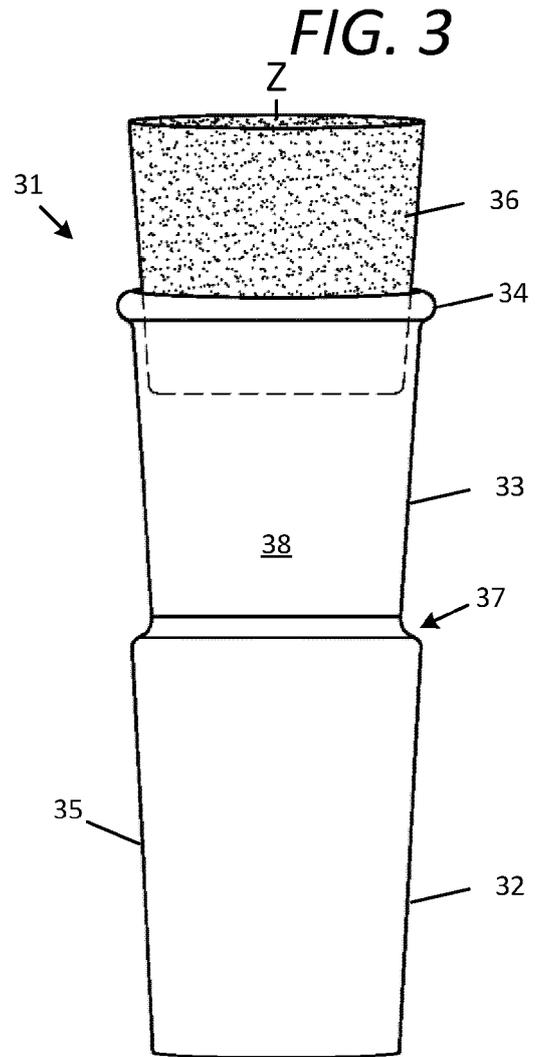
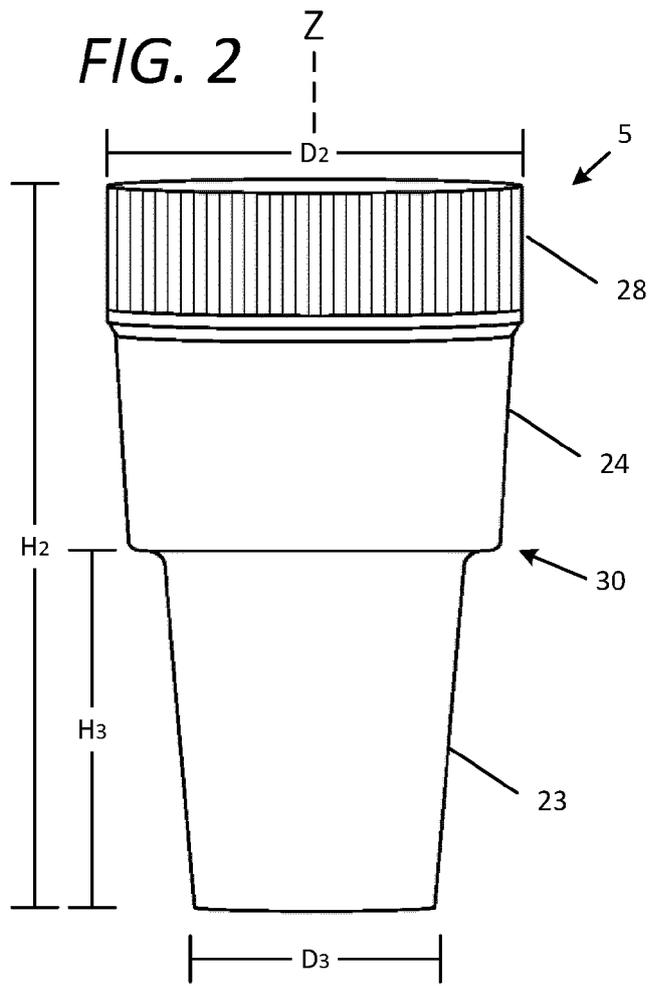


FIG. 1



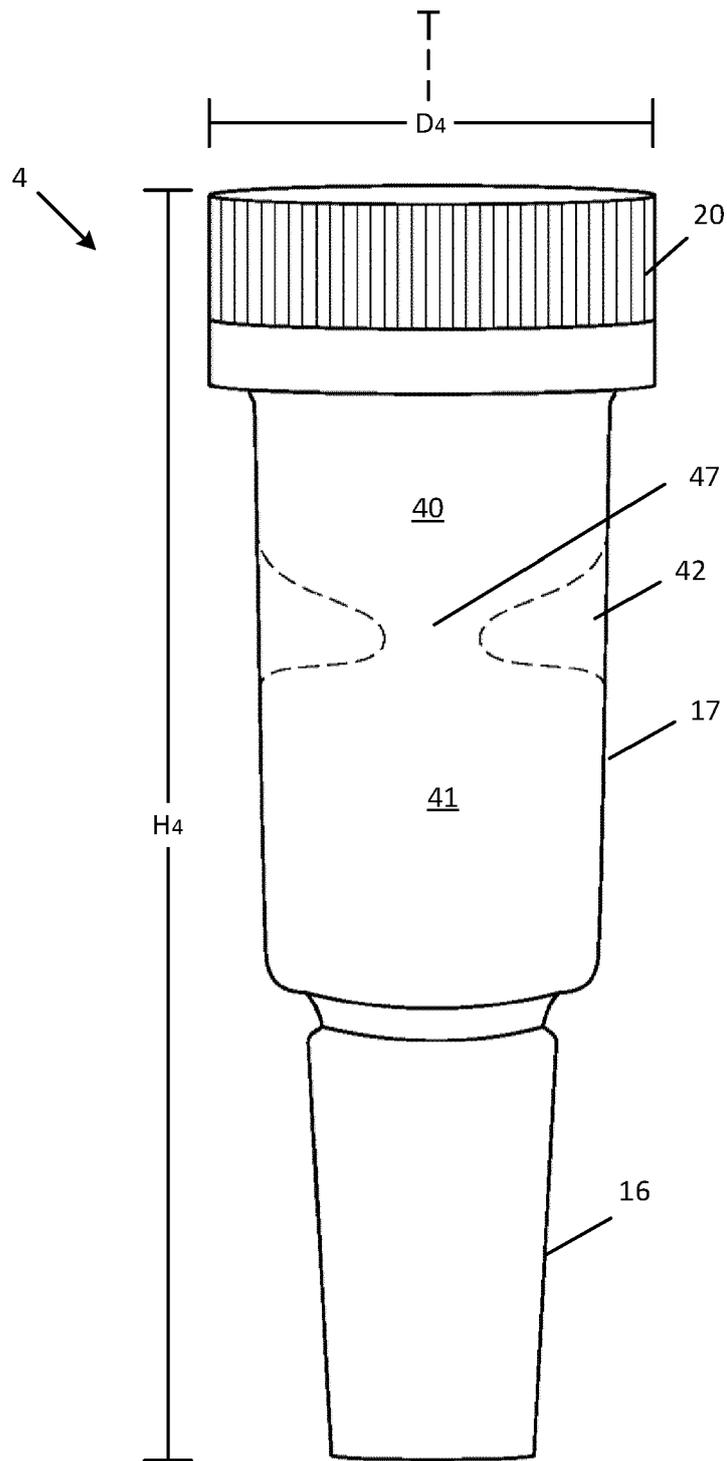


FIG. 4

FIG. 5

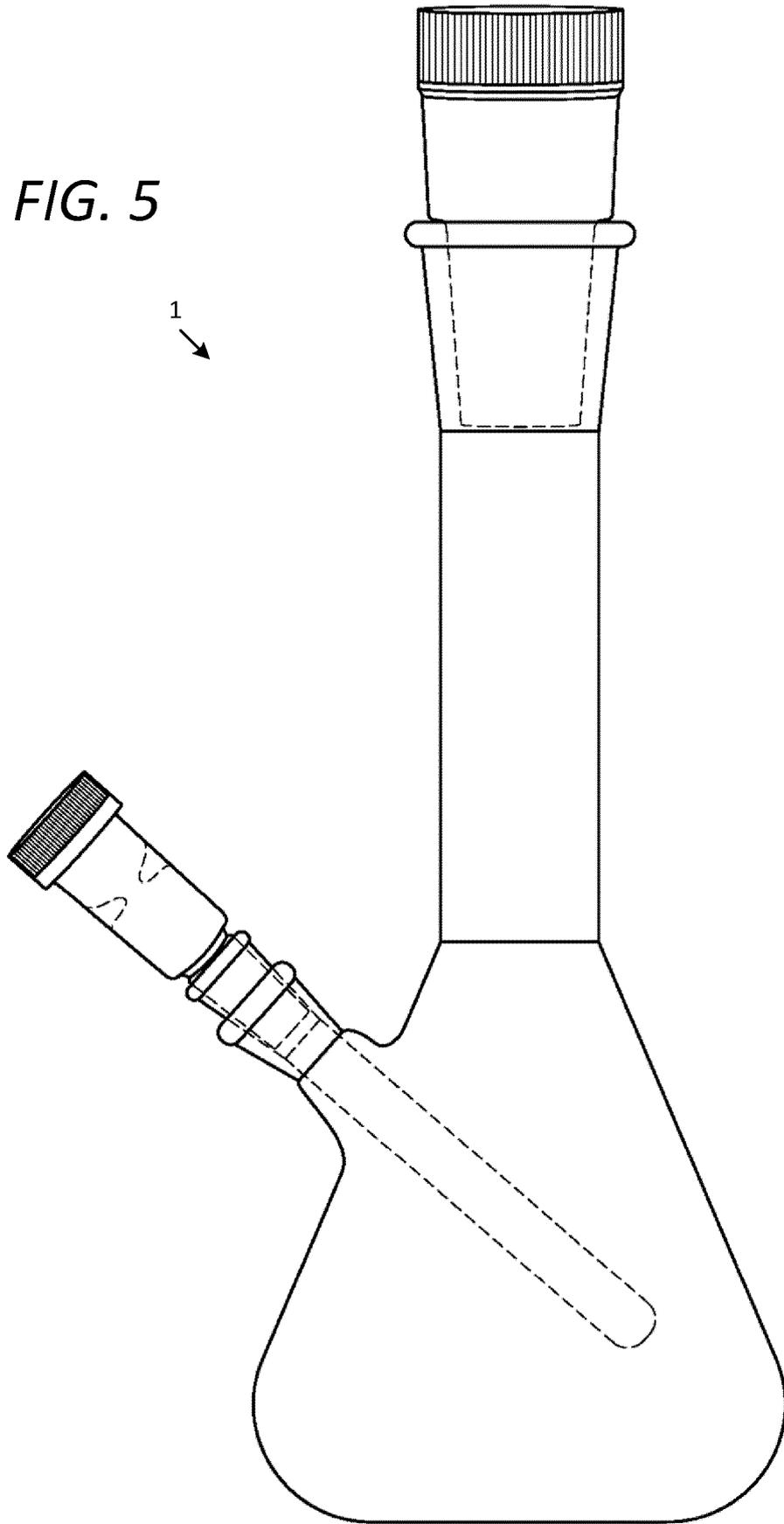
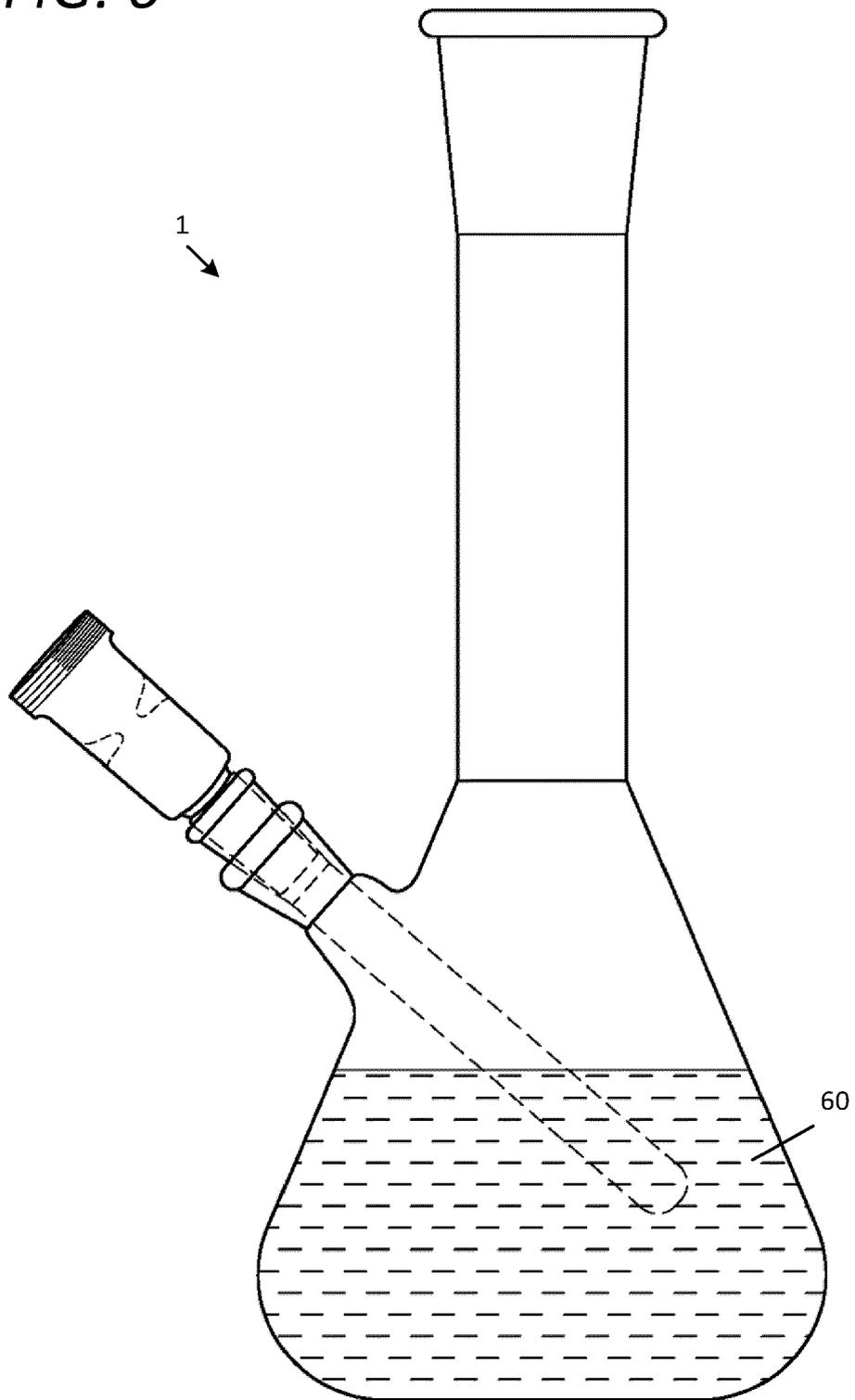
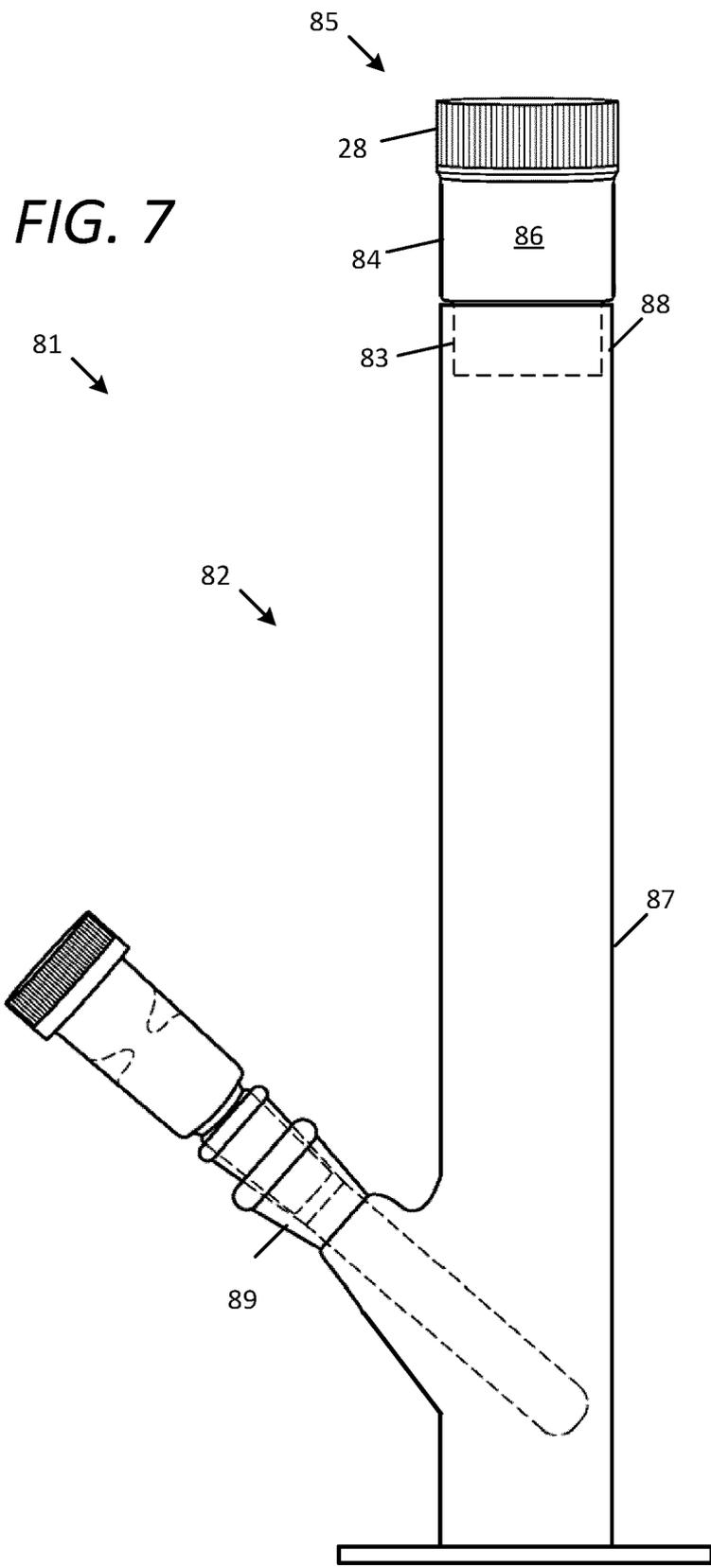


FIG. 6





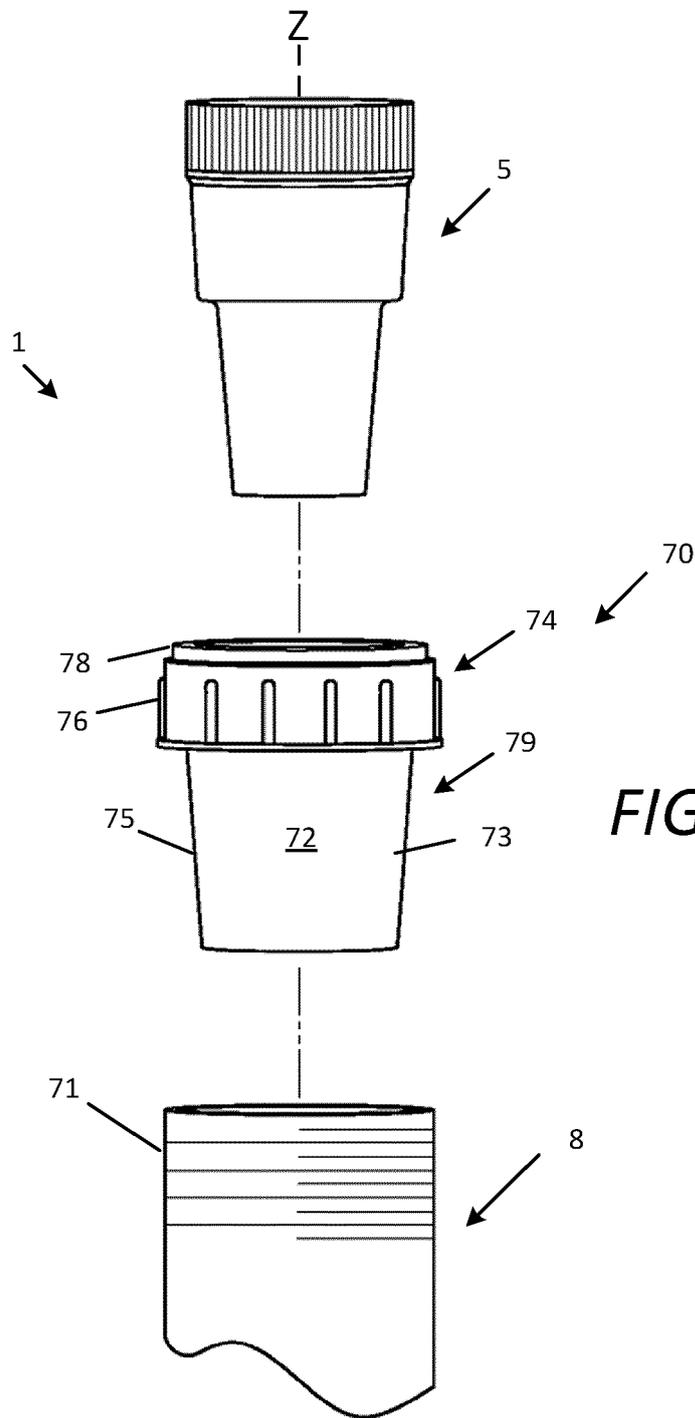
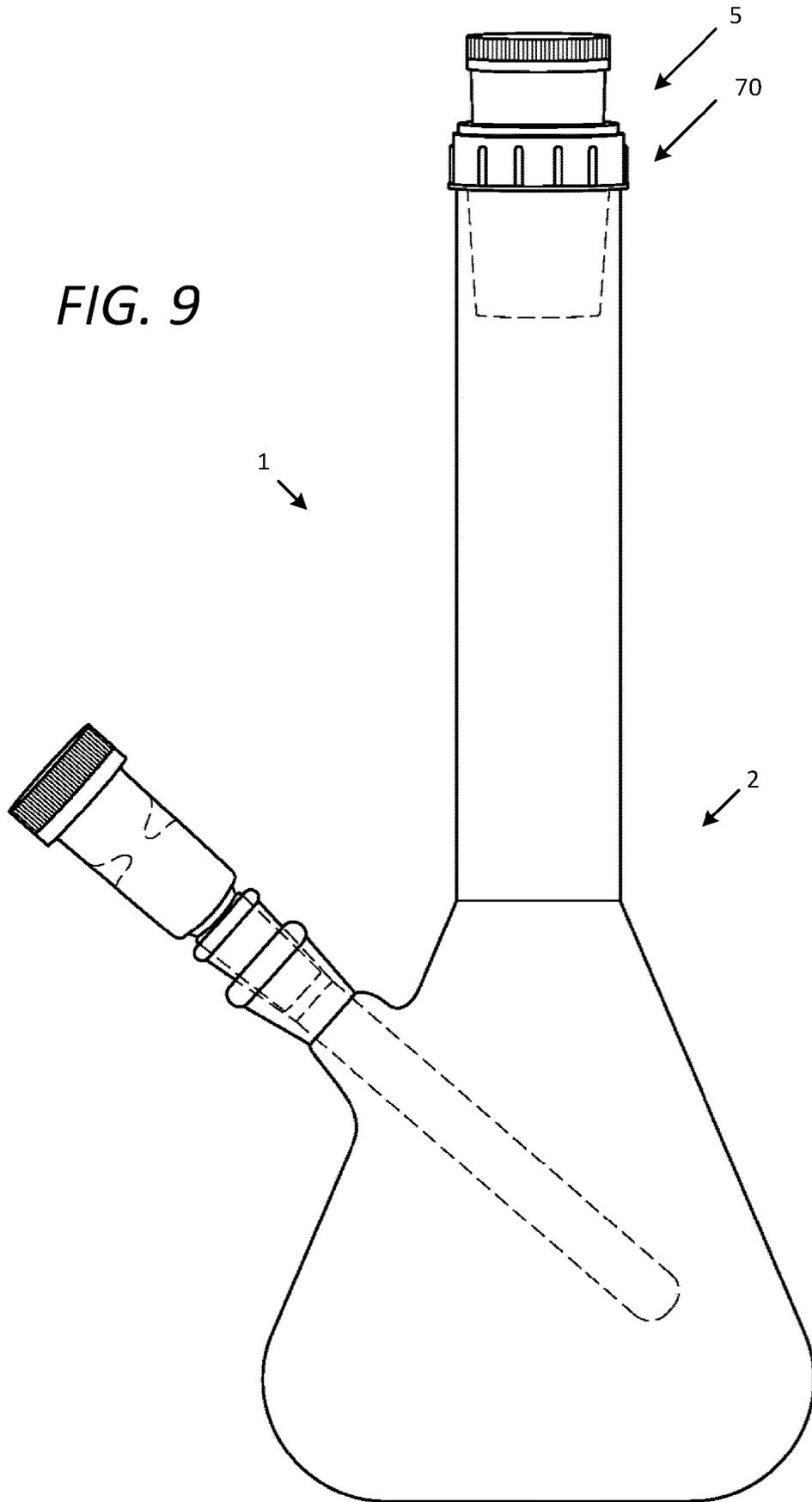


FIG. 8

FIG. 9





EUROPEAN SEARCH REPORT

Application Number
EP 21 17 6627

5

10

15

20

25

30

35

40

45

50

55

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 8 550 268 B1 (CHISHOLM BRIAN J [US]) 8 October 2013 (2013-10-08) * column 2, line 4 - column 3, line 5 * * figures 1,2 *	1-15	INV. A24F1/30
A	DE 297 03 869 U1 (VOSS HENDRIK [DE]) 30 April 1997 (1997-04-30) * figure 1 *	1-15	
A	US 3 924 772 A (MAGNANI EUGENIO) 9 December 1975 (1975-12-09) * the whole document *	1-15	
A	US 4 108 152 A (KAHLER RICHARD W) 22 August 1978 (1978-08-22) * the whole document *	1-15	
			TECHNICAL FIELDS SEARCHED (IPC)
			A24F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 November 2021	Examiner Calabrese, Nunziante
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.

EP 21 17 6627

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-11-2021

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 8550268	B1	08-10-2013	AR 091698 A1 25-02-2015
			AU 2013289137 A1 04-12-2014
			BR 112015000199 A2 27-06-2017
			CA 2874634 A1 16-01-2014
			CL 2015000043 A1 07-08-2015
			CN 104661925 A 27-05-2015
			CO 7240415 A2 17-04-2015
			EC SP15000325 A 30-11-2015
			EP 2872410 A1 20-05-2015
			ES 2573518 T3 08-06-2016
			MX 348549 B 19-06-2017
			MY 167937 A 04-10-2018
			NZ 701997 A 29-04-2016
			PE 20150151 A1 07-02-2015
			PH 12014502709 A1 02-02-2015
			PL 2872410 T3 30-09-2016
			RU 2015104163 A 27-08-2016
			SG 11201408264T A 29-01-2015
			TW 201412607 A 01-04-2014
			US 8550268 B1 08-10-2013
WO 2014011325 A1 16-01-2014			
ZA 201408576 B 28-09-2016			

DE 29703869	U1	30-04-1997	NONE

US 3924772	A	09-12-1975	AU 7793575 A 05-08-1976
			BE 825307 A 07-08-1975
			DE 2504485 A1 14-08-1975
			DE 7503256 U 26-06-1975
			ES 209747 U 16-04-1976
			FR 2260507 A3 05-09-1975
			GB 1469735 A 06-04-1977
			IT 1007292 B 30-10-1976
			JP S5168383 A 12-06-1976
			TR 18373 A 01-05-1977
			US 3924772 A 09-12-1975

US 4108152	A	22-08-1978	NONE
