

CONTAINER

BACKGROUND

Technical Field

[0001] The present disclosure relates to a container.

Description of Related Art

[0002] Liquid crystals are matter in a state which has properties between those of conventional liquids and those of solid crystal. For instance, a liquid crystal may flow like a liquid, but its molecules may be oriented in a crystal-like manner.

[0003] In practice, for example, a layer of a liquid crystal is delivered and sandwiched between two transparent electrodes to form a visual display used in electronic devices.

SUMMARY

[0004] A technical aspect of the present disclosure is to provide a container, which can avoid the chance that air is delivered together with the liquid to the subsequent manufacturing process of liquid crystal display.

[0005] According to an embodiment of the present disclosure, a container includes a first part and a second part. The first part has a through hole configured to allow a tubing to pass through. The second part is connected with the first part and has a containing space configured to allow a tip of the tubing to accommodate therein. The container has a first opening formed on

the second part and communicated with the containing space. The first opening is located between the first part and the containing space.

[0006] In one or more embodiments of the present disclosure, the first part is detachably connected with the second part.

[0007] In one or more embodiments of the present disclosure, the first part further has a positioning hole intersecting with the through hole. The container further includes a fastener configured to be detachably engaged at the positioning hole and to be at least partially inserted into the through hole.

[0008] In one or more embodiments of the present disclosure, the fastener has an outer thread. The first part has an inner thread formed at an inner wall of the positioning hole. The inner thread is detachably meshed with the outer thread.

[0009] In one or more embodiments of the present disclosure, the second part includes a sidewall and a base plate. The base plate is connected with the sidewall. The base plate and the sidewall together define the containing space.

[0010] In one or more embodiments of the present disclosure, the second part further has a connector and at least one connecting portion. The connecting portion is connected between the connector and the sidewall. The connector is detachably connected with the first part.

[0011] In one or more embodiments of the present disclosure, the first part has an outer thread. The connector has an inner thread. The outer thread and the inner thread are detachably meshed with each other.

[0012] In one or more embodiments of the present disclosure, the sidewall surrounds to define a second opening. The containing space is located between the second opening and the base plate. The second opening is communicated with the containing space and the first opening, and is configured to allow the tubing to pass through.

[0013] In one or more embodiments of the present disclosure, an inner dimension formed from the surrounded sidewall at least partially increases from the second opening towards the base plate.

[0014] In one or more embodiments of the present disclosure, a first area of a projection of the second opening on the base plate is less than a second area of a surface of the base plate facing to the second opening.

[0015] When compared with the prior art, the above-mentioned embodiments of the present disclosure have at least the following advantages:

[0016] (1) Since the tip of the tubing is still submerged in the liquid in the containing space of the second part of the container after the tubing together with the container is taken away from the old bottle, the chance that air gets into the tubing through the tip before the container is submerged into the liquid of the new bottle is effectively reduced. In this way, since no air gets into the tubing, the chance that air is delivered together with the liquid to the subsequent manufacturing process of liquid crystal display is also avoided.

[0017] (2) Since the first part is detachably connected with the second part, the first part with different sizes of the through hole to suit different sizes of the tubing can be replaced while using the same piece of the second part. Thus, the container is able to suit different sizes of the tubing in a convenient manner.

[0018] (3) Since the size of the second opening is independent of the size of the containing space, with the size of the second opening being smaller than the size of the containing space, the chance of the spilling out of the liquid out of the containing space of the second part of the container can be effectively reduced.

BRIEF DESCRIPTION OF THE DRAWINGS

[0019] The disclosure can be more fully understood by reading the following detailed description of the embodiments, with reference made to the accompanying drawings as follows:

[0020] Fig. 1 is a schematic view of application of a container according to an embodiment of the present disclosure;

[0021] Fig. 2 is a sectional view of the container of Fig. 1; and

[0022] Fig. 3 is a sectional view of a container according to another embodiment of the present disclosure.

DETAILED DESCRIPTION

[0023] Drawings will be used below to disclose embodiments of the present disclosure. For the sake of clear illustration, many practical details will be explained together in the description below. However, it is appreciated that the practical details should not be used to limit the claimed scope. In other words, in some embodiments of the present disclosure, the practical details are not essential. Moreover, for the sake of drawing simplification, some customary structures and elements in the drawings will be schematically shown in a

simplified way. Wherever possible, the same reference numbers are used in the drawings and the description to refer to the same or like parts.

[0024] Unless otherwise defined, all terms (including technical and scientific terms) used herein have the same meanings as commonly understood by one of ordinary skill in the art to which this disclosure belongs. It will be further understood that terms, such as those defined in commonly used dictionaries, should be interpreted as having a meaning that is consistent with their meaning in the context of the relevant art and the present disclosure, and will not be interpreted in an idealized or overly formal sense unless expressly so defined herein.

[0025] Reference is made to Fig. 1. Fig. 1 is a schematic view of application of a container 100 according to an embodiment of the present disclosure. As shown in Fig. 1, during the application of the container 100, the container 100 is mounted at an end of a tubing 200, and the container 100 is submerged into a bottle 300 filled with liquid L. For instance, the liquid L can be liquid crystal. During operation, the liquid L in the bottle 300 is delivered away from the bottle 300 through the tubing 200 for subsequent manufacturing process of liquid crystal display. In practical applications, a pump (not shown) may be employed for this delivery of the liquid L away from the bottle 300. However, this does not intend to limit the present disclosure.

[0026] Reference is made to Fig. 2. Fig. 2 is a sectional view of the container 100 of Fig. 1. Structurally speaking, as shown in Fig. 2, the container 100 includes a first part 110 and a second part 120. The first part 110 has a through hole 111. The through hole 111 is configured to allow the tubing 200

to pass through. The second part 120 is connected with the first part 110. In addition, the second part 120 has a containing space 121. The containing space 121 is configured to allow a tip 210 of the tubing 200 to accommodate therein. The container 100 has a first opening 122 formed on the second part 120 and communicated with the containing space 121. The first opening 122 is located between the first part 110 and the containing space 121. The first opening 122 allows the liquid L to flow through such that the liquid L is able to flow into the containing space 121 of the second part 120.

[0027] When the volume of the liquid L in the bottle 300 is less than a specific level after a certain amount of the liquid L in the bottle 300 is delivered away, the bottle 300 with the liquid L less than the specific level (abbreviated as the old bottle 300 below) will be replaced with a new bottle 300 filled up with plenty of the liquid L (abbreviated as the new bottle 300 below). During the replacement, the tubing 200 together with the container 100 is first taken away from the old bottle 300. Afterwards, the tubing 200 together with the container 100 is then put into the new bottle 300. As mentioned above, the second part 120 of the container 100 has the containing space 121. Provided that the specific level of the old bottle 300 is chosen such that the containing space 121 contains the liquid L when the old bottle 300 is to be replaced, when the tubing 200 together with the container 100 is taken away from the old bottle 300, there exists the liquid L in the containing space 121. As mentioned above, the tip 210 of the tubing 200 is allowed to be accommodated in the containing space 121. This means that the tip 210 of the tubing 200 is still submerged in the liquid L in the containing space 121 of the container 100 after the tubing 200 together with the container 100 is taken away from the old bottle 300.

[0028] As a result, since the tip 210 of the tubing 200 is still submerged in the liquid L in the containing space 121 of the second part 120 of the container 100 after the tubing 200 together with the container 100 is taken away from the old bottle 300, the chance that air gets into the tubing 200 through the tip 210 before the container 100 is submerged into the liquid L of the new bottle 300 is effectively reduced. In this way, since no air gets into the tubing 200, the chance that air is delivered together with the liquid L to the subsequent manufacturing process of liquid crystal display is also avoided.

[0029] Practically speaking, in order to increase the flexibility of application of the container 100, the first part 110 is detachably connected with the second part 120. In this way, the first part 110 with different sizes of the through hole 111 to suit different outer diameters of the tubing 200 can be replaced while using the same piece of the second part 120. Thus, the container 100 is able to suit different outer diameters of the tubing 200 in a convenient manner.

[0030] In addition, the first part 110 further has a positioning hole 112. The positioning hole 112 intersects with the through hole 111. In this embodiment, the container 100 further includes a fastener 130. The fastener 130 is configured to be detachably engaged at the positioning hole 112. Furthermore, the fastener 130 is at least partially inserted into the through hole 111. This means when the tubing 200 is present in the through hole 111, the fastener 130 inserting into the through hole 111 can press on the tubing 200. In this way, the position of the tubing 200 relative to the first part 110 can be fixed by the fastener 130.

[0031] To be more specific, the fastener 130 has an outer thread 131. The first part 110 has an inner thread 113. The inner thread 113 is formed at an inner wall of the positioning hole 112. The inner thread 113 of the first part 110 is detachably meshed with the outer thread 131 of the fastener 130. In this way, the fastener 130 can be detachably connected with the first part 110. In practice, the fastener 130 can be a bolt. However, this does not intend to limit the present disclosure.

[0032] On the other hand, structurally speaking, the second part 120 includes a sidewall 123 and a base plate 124. The base plate 124 is connected with the sidewall 123, in which the base plate 124 and the sidewall 123 together define the containing space 121.

[0033] In addition, the second part 120 further has a connector 125 and at least one connecting portion 126. The connecting portion 126 is connected between the connector 125 and the sidewall 123. The connector 125 is detachably connected with the first part 110. The first opening 122 is located between the connector 125 and the containing space 121.

[0034] To be more specific, the first part 110 has an outer thread 114. The connector 125 has an inner thread 127. The outer thread 114 of the first part 110 and the inner thread 127 of the connector 125 are detachably meshed with each other. In this way, the first part 110 and the second part 120 can be detachably connected with each other.

[0035] In this embodiment, the sidewall 123 of the second part 120 surrounds to define a second opening 128. The containing space 121 is located between the second opening 128 and the base plate 124 of the second part 120. The

second opening 128 is communicated with the containing space 121 and the first opening 122. Furthermore, the second opening 128 is configured to allow the tubing 200 to pass through.

[0036] Reference is made to Fig. 3. Fig. 3 is a sectional view of a container 100 according to another embodiment of the present disclosure. In this embodiment, as shown in Fig. 3, an inner dimension D is formed from the surrounded sidewall 123 of the second part 120. Moreover, the inner dimension D at least partially increases from the second opening 128 towards the base plate 124. This means the size of the second opening 128 can be designed to suit the outer diameter of the tubing 200 and the size of the second opening 128 is independent of the size of the containing space 121. With the size of the second opening 128 being smaller than the size of the containing space 121, the chance of the spilling out of the liquid L out of the containing space 121 of the second part 120 of the container 100 can be effectively reduced.

[0037] Geometrically speaking, in this embodiment, a first area A1 of a projection of the second opening 128 on the base plate 124 is less than a second area A2 of a surface of the base plate 124 facing to the second opening 128.

[0038] In conclusion, when compared with the prior art, the aforementioned embodiments of the present disclosure have at least the following advantages:

[0039] (1) Since the tip of the tubing is still submerged in the liquid in the containing space of the second part of the container after the tubing together with the container is taken away from the old bottle, the chance that air gets into

the tubing through the tip before the container is submerged into the liquid of the new bottle is effectively reduced. In this way, since no air gets into the tubing, the chance that air is delivered together with the liquid to the subsequent manufacturing process of liquid crystal display is also avoided.

[0040] (2) Since the first part is detachably connected with the second part, the first part with different sizes of the through hole to suit different sizes of the tubing can be replaced while using the same piece of the second part. Thus, the container is able to suit different sizes of the tubing in a convenient manner.

[0041] (3) Since the size of the second opening is independent of the size of the containing space, with the size of the second opening being smaller than the size of the containing space, the chance of the spilling out of the liquid out of the containing space of the second part of the container can be effectively reduced.

[0042] Although the present disclosure has been described in considerable detail with reference to certain embodiments thereof, other embodiments are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the embodiments contained herein.

[0043] It will be apparent to the person having ordinary skill in the art that various modifications and variations can be made to the structure of the present disclosure without departing from the scope or spirit of the present disclosure. In view of the foregoing, it is intended that the present disclosure cover modifications and variations of the present disclosure provided they fall within the scope of the following claims.

WHAT IS CLAIMED IS:

1. A container, comprising:

a first part having a through hole configured to allow a tubing to pass through; and

a second part connected with the first part and having a containing space configured to allow a tip of the tubing to accommodate therein;

wherein the container has a first opening formed on the second part and communicated with the containing space, and the first opening is located between the first part and the containing space.

2. The container of claim 1, wherein the first part is detachably connected with the second part.

3. The container of claim 1, wherein the first part further has a positioning hole intersecting with the through hole, and the container further comprises a fastener configured to be detachably engaged at the positioning hole and to be at least partially inserted into the through hole.

4. The container of claim 3, wherein the fastener has an outer thread, the first part has an inner thread formed at an inner wall of the positioning hole, the inner thread is detachably meshed with the outer thread.

5. The container of claim 1, wherein the second part comprises:

a sidewall; and

a base plate connected with the sidewall, wherein the base plate and the sidewall together define the containing space.

6. The container of claim 5, wherein the second part further has a connector and at least one connecting portion, the connecting portion is connected between the connector and the sidewall, and the connector is detachably connected with the first part.

7. The container of claim 6, wherein the first part has an outer thread, the connector has an inner thread, and the outer thread and the inner thread are detachably meshed with each other.

8. The container of claim 5, wherein the sidewall surrounds to define a second opening, the containing space is located between the second opening and the base plate, the second opening is communicated with the containing space and the first opening, and is configured to allow the tubing to pass through.

9. The container of claim 8, wherein an inner dimension formed from the surrounded sidewall at least partially increases from the second opening towards the base plate.

10. The container of claim 8, wherein a first area of a projection of the second opening on the base plate is less than a second area of a surface of the base plate facing to the second opening.