Dec. 28, 1965 N. SEQUEIRA 3,226,001

CANS AND BOTTLES WITH SELF-CONTAINED DRINKING STRAWS

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Fig. 1.

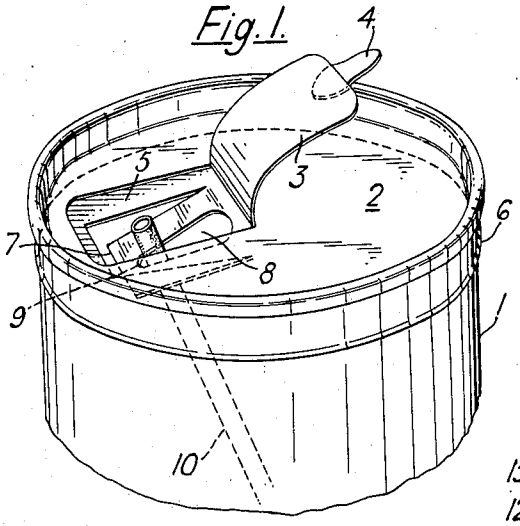


Fig. 3.

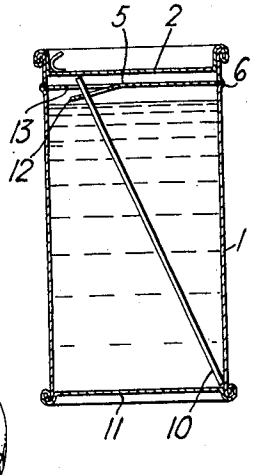


Fig. 2.

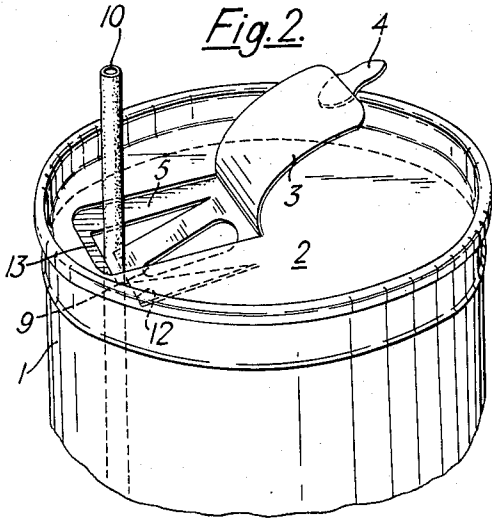
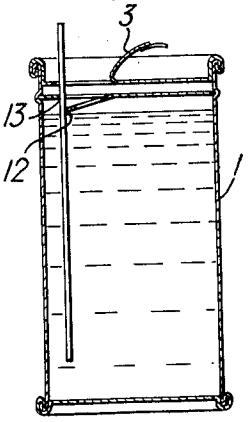


Fig. 4.



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Fig. 5.

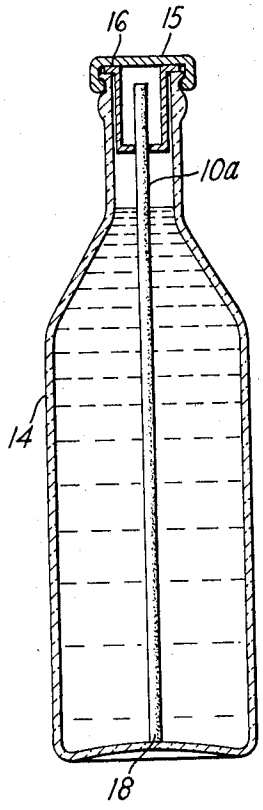


Fig. 6.

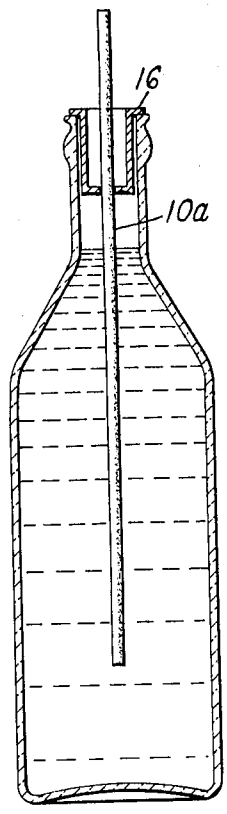
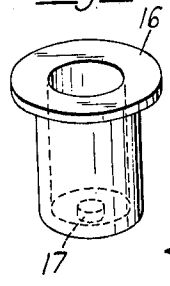


Fig. 7.



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Fig. 8

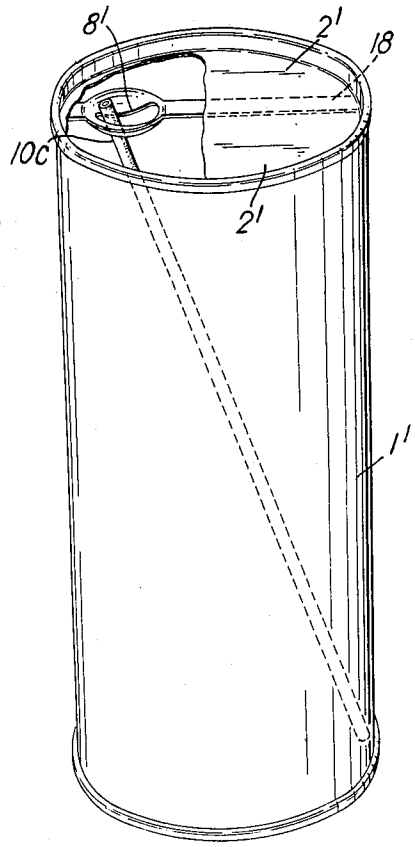
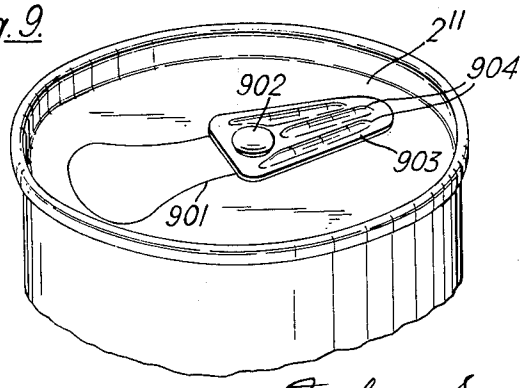


Fig. 9



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United States Patent Office

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3,226,001

CANS AND BOTTLES WITH SELF-CONTAINED DRINKING STRAWS

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Claims priority, application Great Britain, Sept. 26, 1963, 38,047/63; May 11, 1964, 19,615/64
3 Claims. (Cl. 229—7)

The present invention relates to drink dispensers in which a container, for example, a can or bottle, is provided with a drinking straw wholly enclosed within the container.

Such dispensers are attractive on account of the convenience to be expected in use. They are also attractive for hygienic reasons since the straw, being sealed in the container is protected from contamination and the use of a contamination-free straw is clearly preferable to drinking directly from the probably soiled container itself. Moreover, especially in the case of cans, drinking directly from the container can cause injury to the consumer.

Various proposals have been made for arranging that the straw is accessible and convenient to use when the container is opened and it is an object of the present invention to achieve such arrangements in a novel and improved manner.

In accordance with the present invention there is provided a drink dispenser which comprises a container having a seal or closure, engagement means for locating a drinking straw by engagement of the top portion thereof at a position within the container adjacent to the seal or closure, the engagement means being adapted to, or further means being provided which is adapted to, maintain the straw, when the container is open, at any desired height by gripping it. The straw may be formed of naturally occurring vegetable straw or, as is now more common in the art, of manufactured material, for example paper or a synthetic resin.

In one form of the invention, the engagement means is a component having an aperture for locating the straw with a portion of the straw protruding upwardly through the aperture. This form of the invention, although it may be applied with a container of the necked type, that is to say a container having a neck of significant axial length for the reception of a bung or other internal closure or a screw cap, crown cork or other external closure, for example by providing a fitting gripped within the neck is the preferred form of the invention where the container is a neckless container. By a neckless container is meant a container such as a jar, or a can which may have a removable lid, which may have a neckless filling aperture or which may be designed for opening by cutting, perforating or tearing away a part or the whole of a top wall which is seamed to the remainder of the can.

When applied to a neckless container the component is conveniently formed from part of an internal wall which partially or wholly covers the top of the container beneath the top thereof. For ease of manipulation of the straw after opening the container, the aperture in the component may be slot shaped, and the length of the straw such that its upper end cannot fall out of the aperture on movement relative thereto. In one construction, the component is a tongue, the aperture has a sliding fit on the straw, and an abutment is provided near the end of the tongue, the end of the tongue and the abutment being relatively positioned such that together they serve as a further means, as aforesaid, for gripping the straw. With the tongue formed from part of an internal wall as hereinbefore described, it is convenient also to form the abutment, which in some constructions may be provided by the wall of the container itself, from part of the internal

wall. Advantageously, the tongue is deformable, preferably downwardly, to vary the spacing of its tip from the abutment thereby enabling the grip on the straw to be set as required. In another construction, the component is a bridge extending across the container.

For a necked container, the engagement means is preferably provided in the form of a plug having an aperture positioned and dimensioned to have a gripping and sliding fit with the straw and at least one projection, conveniently a flange, by which the plug may be engaged between the mouth and the closure member. The plug, which is preferably cup-shaped, advantageously has a loose fit within the mouth so that, after removal of the closure member, the plug can be withdrawn with the straw, and slid downwardly thereon and re-inserted in the mouth to maintain the straw at a suitable height for drinking.

The following description of preferred embodiments of the dispenser, in which description reference is made to the accompanying drawings, is given for purposes of illustration.

In the drawings:

FIGS. 1 and 2 are perspective views of the upper portion of a first dispenser in which the container is a can, showing the dispenser in two different stages.

FIGS. 3 and 4 are respectively axial cross sections of the dispenser in the stages in which it is shown in FIGS. 1 and 2.

FIGS. 5 and 6 are axial cross sections of a second dispenser in which the container is a bottle, showing the dispenser in two different stages.

FIG. 7 is a perspective of the engagement means which form part of the dispenser of FIGS. 5 and 6.

FIG. 8 is a perspective of a third dispenser in which the container, is a can, part of the closure wall being shown broken away, and

FIG. 9 is a perspective of a further dispenser.

Referring now to FIGURES 1 to 4, the dispenser shown therein consists of a can **1** having a seamed-on closure top **2** by which the can is sealed. A section **3** of the top **2**, tearable open by a tab **4** enables the can to be opened when required. Alternatively, the top **2** may have a tearable section leading to a central boss shaped to be grasped by a complementary tool. Under the top **2** is a circular internal wall **5** secured in any convenient manner, e.g. as shown by a deformation **6** on the cylindrical wall of the can, or by being seamed to the can when the wall **5** is secured in place. In the latter case the can is filled through its bottom. At a position corresponding with the tab **3**, the internal wall **5** is cut to form a tongue **7** formed with a radial slot **8**. This slot widens inwardly as shown from its outer end **9** which is a snug fit upon straw **10** whose length is such that, in the inclined position best seen from FIG. 3 where its lower end contacts the bottom **11** and the cylindrical wall of the can diametrically opposite the tongue **7**, its end portion projects through end **9** of the slot. The straw is unable to fall out of the slot into the can and the purpose of having the end **9** of a snug fit upon the straw is to provide a positive positioning of the straw during automatic filling at the canning factory.

With the section **3** torn open, the upper end of the straw **10** is accessible to the fingers. The shape of the slot **8** enables it to be withdrawn easily for insertion, as shown in FIGS. 2 and 4, between the tip **12** of the tongue and an abutment **13** provided by the portion of the wall **5** which lies opposite the tip **12**, as will be clear from the drawings the tongue is bent downwardly clear of the abutment **13** by an amount, readily adjustable during manufacture, such that in passing between the tongue and abutment the straw is gripped with a firm sliding fit.

With the straw re-inserted as shown in FIGS. 2 and 4,

the contents of the container are obviously readily consumable via the straw.

If preferred the closure top may be provided in a plain form, i.e. without the tear-away section 3, for opening with a normal can-opener.

In less preferred modifications, the cylindrical wall of the container or a residual portion of the top 2 lying radially outwardly of the opening formed on tearing out the section 3, may be employed in place of the abutment 13.

A wall such as the wall 5 filling the whole cross section of the can, or a substantial part thereof is a convenient arrangement for providing and locating the tongue. An alternative but less convenient arrangement is to dispense with the wall 5 and solder or rivet the tongue to the inside of the top 2.

A dispenser, similar to that just described may be provided in a re-usable form by providing a snap-in or screw-on closure in place of the seamed-on closure top 2.

In the dispenser shown in FIGS. 5 to 7 a bottle 14 has a seal 15 in the form of a screw-on closure cap (or alternatively a crown cork) which, when in position, holds the upper flange 16 of a cup-shaped plug firmly against the lip of the neck of the bottle. The plug which has a loose fit within the neck, is formed in its base with an aperture 17 having a close sliding fit over a straw 10*a* of such length that the upper end projects upwardly through the plug towards the seal 15 whilst the lower end 18 contacts the bottom of the bottle.

On removing the seal, the straw and plug may be lifted upwardly together, the plug slid downwardly relative to the straw and dropped back into the neck so that the straw is held in a convenient drinking position as shown in FIGURE 6. The loose fit of the plug in the neck enables the lower end of the straw to be swung into contact with the wall of the bottle for consumption of the last of the contents. If desired the straw may be provided in a flexible form and of longer length within the bottle, though this is not normally necessary and it can interfere with the operation of normal capping machinery.

Suitable materials for the formation of the plug include synthetic resins and waxed paper.

In the dispenser of FIGURE 8, a can 1′ having a closure wall 2′, shown partly broken away for purposes of illustration, is spanned by a bridge 18 positioned below the wall 2′ both of them being seamed to the cylindrical wall of the can. Near one end, the bridge is formed with a radial slot 8′. The slot is tapered so that it has a gripping fit upon a straw 10*c* at its outer end and an easy sliding fit, or a substantial clearance fit, upon the straw at its inner end.

In the sealed container, the straw is gripped as shown in FIGURE 8 in the outer end of the slot 8′ and the straw extends diagonally downwards with its lower end touching the cylindrical and bottom walls of the can. After opening the can, e.g. by tearing open a tearable section as described with reference to FIGURES 1 to 4, the top of the straw may be swung towards the wider end of the slot 8′, thereby loosening its engagement with the slot. It may then be pulled upwardly and re-engaged with the outer (narrower) end of the slot to retain it at the required height.

In the dispenser shown in FIGURE 9 the container is a can of which the seamed-on closure wall 2″ is formed with a line of weakening 901 to define a tear-away portion. At the centre of the wall 2″ the tear-away portion is deformed outwardly to form a central boss firmly engaged within a complementary formation 902 upon a handle 903 in the form of a stamping strengthened by embossed ribs 904. By raising the end of the handle and pulling thereon, the tear-away portion is removable completely to give access to the top end of the straw. The component for locating and gripping the straw may be as shown in FIGURES 1 to 4, or FIGURE 8.

By the present invention, a dispenser of the kind referred to is provided in a form which is simple in use and does not seriously interfere with normal filling and sealing operations for the chosen container. The invention may be applied to containers of types other than those specifically described, with reference to the drawings, including jars, cans of the type in which a flat top is provided with a short neck or even a shallow flanged filling aperture for use with a complementary sealing plug, plastic containers in a wide variety of forms and containers formed from waxed or resinated paper. It makes the consumption of a wide variety of potable liquids including soups, beers and other carbonated and noncarbonated drinks more attractive, under conditions, including outdoor conditions where convenience and hygiene are often difficult to achieve. Finally it will be noted that subject to choosing the constructional materials suitably for the temperatures involved, the straw and liquid contents of the sealed dispenser may be pasteurised in situ.

It is within the scope of the invention to provide an additional straw or straws within the container. For example, a pair of straws may be inserted in the slot 8 or 8.′

I claim:

1. A drink dispenser which comprises a can, a wall sealing one end thereof, a drinking straw housed within the can with the first end of the straw positioned adjacent to the periphery of the sealing wall and the second end of straw in abutment with the periphery of the other end of the can at a position opposite from the first end of the straw, a straw engagement component within and adjacent to the sealing wall and spaced downwardly from said sealing wall and being seamed to the side wall of the container, said component being formed with an elongate tapered aperture, one end of which aperture has a gripping fit for the straw to engage the straw near the first end of the straw and thereby locate the straw in the can, and, after opening the sealing wall of the can, to grip the straw at any required position along the length thereof and thereby hold it projecting outwardly from the can by any required amount, and the other end of which aperture is wider than the outer transverse dimension of the straw.

2. A drink dispenser according to claim 1 in which the straw engagement component is an internal wall secured across the inside of the container adjacent to the sealing wall.

3. A drink dispenser which comprises a can, a wall sealing one end thereof, a drinking straw housed within the can with the first end of the straw positioned adjacent to the periphery of the sealing wall and the second end of the straw in abutment with the periphery of the other end of the can at a position opposite from the first end of the straw, a bridge secured across the can within and adjacent to the sealing wall, said bridge being formed with a tapered slot, one end of which slot has a gripping fit for the straw to engage the straw near the first end of the straw and thereby locate the straw in the can, and, after opening the sealing wall of the can, to grip the straw at any required position along the length thereof and thereby hold it projecting outwardly from the can by any required amount, and the other end of which slot is wider than the outer transverse dimension of the straw.

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