Jan. 5, 1943. J. A. LE VASSEUR 2,307,691

SANITARY LIQUID DISPENSER

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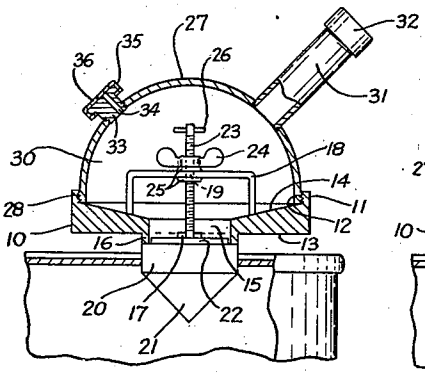


Fig. 1.

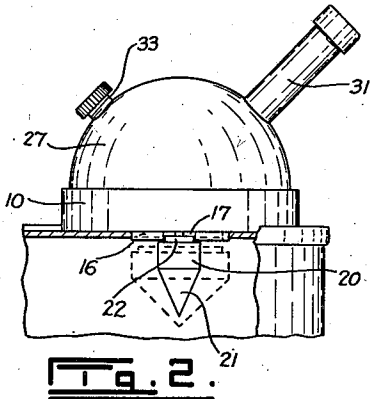


Fig. 2.

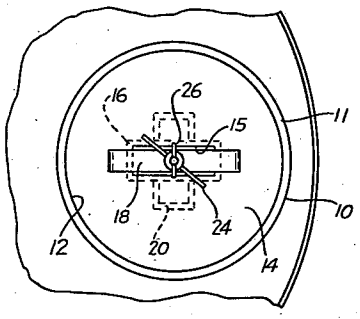


Fig. 3.

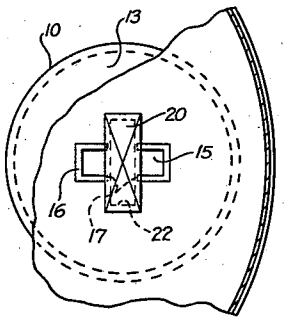


Fig. 4.

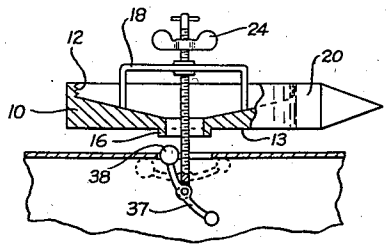


Fig. 5.

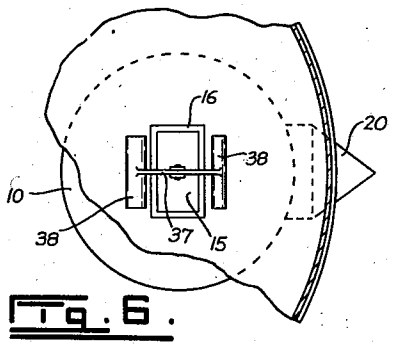


Fig. 6.

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SANITARY LIQUID DISPENSER

Filed Jan. 18, 1940 2 Sheets-Sheet 2

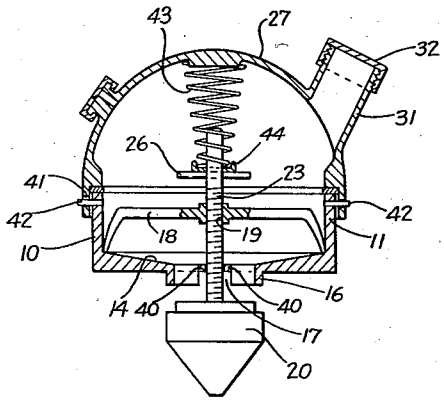


Fig. 7.

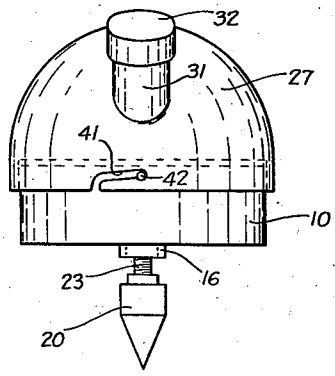


Fig. 9.

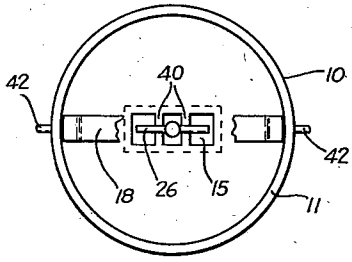


Fig. 8.

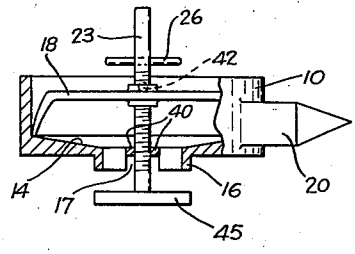


Fig. 10.

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UNITED STATES PATENT OFFICE

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SANITARY LIQUID DISPENSER

Joseph Armand Le Vasseur, Vancouver, British Columbia, Canada

Application January 18, 1940, Serial No. 314,555
In Canada November 14, 1939

11 Claims. (Cl. 221—23)

This invention relates to a sanitary liquid dispenser for receptacles and particularly cans.

An object of the present invention is the provision of a device which may be attached to a can to dispense the liquid contents thereof without spilling them.

Another object is the provision of a device which may be attached to cans containing liquids used for human consumption such as soups, fruit juices and vegetable juices, for dispensing said liquids over a period of time without fear of contamination.

Another object is the provision of a liquid dispenser for cans adapted to keep the cans airtight after they are opened.

A further object is the provision of a device which may be used to puncture a can and then secured thereto to act as a sanitary liquid dispenser.

A still further object is the provision of a liquid dispenser for cans including means for supplying air to the cans as the liquid is removed therefrom.

With these and other objects in view, the present invention consists essentially of a sanitary liquid dispenser for cans or the like, comprising a base having a slot extending therethrough, a cover removably mounted on the base, a spout associated with the cover, a sleeve depending from the base in registry with the slot, means for puncturing the can to form a hole the same size and shape as the sleeve, and means for drawing the sleeve down into the hole and securing the dispenser on the can, as more fully described in the following specification and illustrated in the accompanying drawings, in which

Figure 1 is a sectional view of the sanitary dispenser just being applied to a can, the latter being partly in section,

Figure 2 is a side elevation of the dispenser secured in position on a can shown partly in section,

Figure 3 is a plan view of the dispenser with its cover removed,

Figure 4 is a view of the inner surface of the can top with the dispenser in position,

Figure 5 is a sectional view similar to Figure 1 of an alternative form of dispenser with its cover removed,

Figure 6 is a view similar to Figure 4 with the alternative dispenser secured in position,

Figure 7 is a vertical sectional view of another alternative,

Figure 8 is a plan view of the dispenser of Figure 7 with its cover removed and a part broken away,

Figure 9 is a side elevation of the dispenser of Figure 7, and

Figure 10 is a side elevation, partly in section, of the base of a further variation of the invention.

Referring more particularly to the drawings, 10 is a circular base having an upwardly projecting flange 11 extending around its upper surface at the periphery thereof, said flange being formed with screw threads 12 in its inner surface. This base is formed with a flat bottom 13 and has a concave upper surface 14 which slopes from its outer edge downwardly to a central elongated slot 15 extending through the base 10. The slot 15 is preferably rectangular and a sleeve 16, which is the same shape as the slot, registers therewith and depends downwardly from the bottom of the base. An opening 17 is cut in each side of the sleeve 16 substantially midway between the ends thereof. A substantially inverted U-shaped supporting bracket 18 is mounted on the upper surface 14 of the base and straddles the slot 15, said bracket having an orifice 19 formed centrally thereof over the slot.

A blade 20, elongated in cross section, is provided which is formed with a cutting point 21 at its lower end while at its inner end said blade is the same shape as the slot 15 and the sleeve 16.

A projection 22 formed on the inner end of the blade, is the same shape as the blade while the sides and ends of the projection are spaced from the sides and ends of the blade a distance equal to the thickness of the wall of the sleeve 16. The projection 22 is designed to fit just nicely into the sleeve at which time the outer surfaces of the blade are flush with the outer surfaces of said sleeve. Furthermore, the width of each opening 17 is equal to the width of the projection 22 so that the blade may be turned and the projection fitted into said openings which are in line with each other.

A threaded stem 23 extends upwardly from the blade 20 through the slot 15 and through the orifice 19 of the bracket 18 where a wing nut 24 is threaded thereon above said bracket. This wing nut is provided with a sleeve which extends through the orifice 19 and has a collar 25 at each end thereof, said collars being adapted to prevent the wing nut from moving up or down when it is turned so that the stem 23 must move up or down as the nut is rotated. A pointer 26 located on the upper end of the stem 23, is adapted to

indicate the position of the blade 20 with respect to the sleeve 16.

A cover 27, preferably dome-shaped and having threads 28 on its outer surface at the edge thereof, is adapted to be screwed into the base 10, the threads 12 of the flange 11 co-operating with the threads 28 of the cover for this purpose. When assembled the cover and the base form a chamber 30. A comparatively long spout 31 projects outwardly from the cover 27 and has a cap 32 removably mounted on its outer end while a plug 33 is fitted into the cover, said plug having an air passage 34 extending therethrough and a cap 35 rotatably mounted in its outer end with an orifice 36 formed therein adapted to be brought into registry with the passage when the cap is turned.

When it is desired to attach the dispenser to a can, the blade 20 is turned until it extends longitudinally of the sleeve 16 and the projection 22 is drawn upwardly into said sleeve by turning the wing nut 24 on the stem 23, see Figure 1. Then the blade is forced through the top of the can making a hole into which the sleeve 16 snugly fits since the sides and ends of the latter are flush with the sides and ends of the blade. Next, the nut 24 is turned to allow the blade to drop downwardly sufficiently to permit the projection 22 to clear the sleeve 16, at which time the stem 23 is rotated a quarter turn until said projection is brought into registry with the openings 17 in the sleeve and then the nut is again turned to draw the projection into said openings. As the projection is drawn upwardly, it is brought into engagement with the under side of the can top and moves the latter against the bottom 13 of the base 10. In other words, it brings the can top and the bottom 13 together and forms a tight joint therebetween and, if desired, a washer may be provided between these parts. At the same time the blade securely fastens the dispenser to the can.

When the cap 32 is removed from the spout 31 and the cap 35 of the plug 33 turned to bring the orifice 36 into registry with the air passage 34, the contents of the can may be poured out through the dispenser since the spout is now in communication with the interior of the can through the chamber 30, the slot 15 and the sleeve 16. The blade 20 devides the sleeve into two sections so that as the can is tipped in the direction of the spout, the liquid contents run through the portion of the sleeve below the blade while air entering through the air passage 34, passes into the can through the portion of the sleeve above the blade.

In the alternative illustrated in Figures 5 and 6, the blade 20 projects outwardly from the side of the base 10 and an arm 37 is pivotally mounted at substantially its mid point on the lower end of the stem 23, said arm being provided with a weight 38 at each end thereof. These weights are preferably fairly long and one is a little heavier than the other.

With this arrangement, the top of the can is punctured by means of the blade 20 which makes a hole just large enough for the sleeve 16 to fit into. To attach the dispenser to the can, the stem 23 is moved downwardly to its lowermost position, the arm 37 is pivoted to bring the heavier weight 38 against the stem, said stem is inserted through the hole into the can until the upper weight clears the can top at which time said weight drops downwardly until the other weight engages the lower surface of the can top, and then the nut 24 is turned to draw the weights against the underside of the can top and the sleeve 16 down into the hole to form a fluid tight joint. From then on the alternative dispenser is operated and functions the same as the previously described dispenser.

In the alternative of Figures 7, 8 and 9, the supporting bracket 18 is loosely mounted on the upper surface 14 of the base 10 and the orifice 19 is threaded internally so that the bracket is threaded on to the stem 23, thus making the wing nut 24 unnecessary. The bracket extends all the way across the surface 14 and a pair of spaced bars 40 span the slot 15 centrally thereof between which the stem 23 extends. The bars 40 and the length of the bracket 18 prevent any undue lateral movement of the stem. The cover 27 may be threaded on to the base, as in Figures 1 to 6, or it may be provided with bayonet slots 41 adapted to co-operate with pins 42 projecting outwardly from the base, as shown in Figures 7, 8 and 9. In the latter case, the pointer 26 is spaced from the upper end of the stem 23 and a compression spring 43 extends between a seat 44 resting on the pointer, and the inner surface of the cover 27 at the top thereof. This spring exerts pressure against the cover when it is in position to co-operate with the bayonet slots 41 and pins 42 to hold said cover on the base 10. In this example, the bracket 18 is rotated to raise and lower the stem 23. This alternative is used in the same manner as the dispenser of Figure 1.

Figure 10 illustrates a variation of the form of the invention shown in Figures 7 to 9. The blade 20 projects outwardly from the side of the base 10 and an arm 45 is secured at substantially its mid point to the lower end of the stem 23. After the can has been punctured by the blade 20, the arm 45 is inserted through the opening, after which it is turned and drawn upwardly into the openings 17 of the sleeve 16.

In each form of this invention, the blade 20 makes a hole in the can top the same size and shape as the sleeve 16 so that the latter fits snugly thereinto and the base 10 is drawn tightly against the can top. The blade of the form of the invention illustrated in Figures 1 to 4 and 7 to 9 and the arm 37 with the weights 38 and the arm 45 in the alternatives, firmly secure the dispenser to the can top and, at the same time, aid in forming a fluid tight joint between them without interfering in any way with the pouring of the liquid from the can. As described above, air is supplied to the can as the liquid is poured therefrom.

With this device, it is possible to remove part of the contents of the can and then to keep the rest therein indefinitely in a sanitary manner. The cap 32 closes the end of the spout 31 while the cap 35 may be turned to move the orifice 36 out of registry with the air passage 34 thus preventing any additional air from entering the can. The concave surface 14 of the base 10 causes any liquid remaining in the dispenser to drain back into the can.

In order to release the dispenser, it is only necessary to turn the nut 24 or the bracket 18, as the case may be to permit the stem 23 to drop downwardly either to permit the blade 20 or the arm 45 to clear the sleeve 16 so that it may be turned and brought into registry with said sleeve or to permit the heavier weight 38 to drop downwardly until the arm 37 assumes a position opposite that shown in Figure 5, in either case the dispenser then may be removed from the can.

The construction of this dispenser is so simple that it is very easily washed after use.

From the above it will readily be seen that a liquid dispenser has been provided to be attached to a receptacle, such as cans, for dispensing the liquid contents thereof without spilling them and closing the receptacle to keep the contents for comparatively long periods of time in a sanitary condition.

Various modifications may be made in this invention without departing from the spirit thereof or the scope of the claims, and, therefore, the exact forms shown are to be taken as illustrative only and not in a limiting sense, and it is desired that only such limitations shall be placed thereon as are disclosed in the prior art or are set forth in the accompanying claims.

What I claim as my invention is:

1. A sanitary liquid dispenser for cans or the like, comprising a base having a slot extending therethrough, a cover removably mounted on the base, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, said sleeve being adapted to extend through a hole punctured in a can, means below the sleeve adapted to be moved beneath the punctured surface of the can, and means supported on the base and extending through the sleeve connected to the latter means for drawing said means against said cam surface to secure the dispenser firmly on the can.

2. A sanitary liquid dispenser for cans or the like, comprising a base having an elongated slot extending therethrough, a cover removably mounted on the base forming a chamber therebetween, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, said sleeve being adapted to extend through a hole punctured in a can, a stem extending downwardly through the slot and sleeve, means on the lower end of the stem to be moved beneath the punctured surface of the can, and means supported on the base for drawing the stem outwardly to draw the latter means against said can surface to secure the dispenser firmly on the can.

3. A sanitary liquid dispenser for cans or the like, comprising a base having a slot extending therethrough, a cover removably mounted on the base, a spout extending outwardly from the cover, a blade, elongated in cross section, suspended beneath the base, said blade being adapted to puncture a can to form an elongated hole therein, and means supported on the base and extending through the slot connected to the blade for turning the blade to a position extending across the hole, said means being adapted to draw the blade against the inner surface of the can thereby drawing the base against the outer surface of the can thereof firmly to secure the dispenser on the can.

4. A sanitary liquid dispenser for cans or the like, comprising a base having a slot extending therethrough, a cover removably mounted on the base, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, a blade, elongated in cross section, suspended beenath the base in registry with the sleeve, said blade being adapted to puncture a can to form a hole therein the same size and shape as the sleeve, and means supported on the base and extending through the sleeve connected to the blade for turning the blade to a position extending across the sleeve, said means being adapted to draw the blade against the inner surface of the can thereby drawing the sleeve into the hole and the base against the outer surface of the can firmly to secure the dispenser thereon.

5. A sanitary liquid dispenser for cans or the like, comprising a base having an elongated slot extending therethrough, a cover removably mounted on the base forming a chamber therebetween, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot and having an opening in each side thereof, said openings being in line with each other, a blade having its upper end the same size and shape as the sleeve, a projection formed on the upper end of the blade, said blade being held against the sleeve with the projection extending thereinto and being adapted to puncture a can to form a hole therein the same size and shape as the sleeve, and means supported on the base and extending through the sleeve connected to the blade for raising and lowering the blade, whereby said blade may be lowered after the can is punctured to clear the projection from the sleeve, turned and then drawn upwardly with the projection in registry with the sleeve openings to bear against the inner surface of the can thereby drawing the base against its outer surface firmly to secure the dispenser thereon.

6. A sanitary liquid dispenser for cans or the like, comprising a base having a slot extending therethrough, a cover removably mounted on the base, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, said sleeve being adapted to extend through a hole punctured in a can, a stem extending downwardly through the slot and beyond the sleeve, an arm pivotally mounted at substantially its mid point on the lower end of the stem, a weight on each end of the arm, and means supported on the base for raising and lowering the stem with the arm, whereby the lower end of the stem may be inserted through the hole into the can, the arm pivoted to bring the weights against the inner surface of the can, and the stem moved upwardly to draw the sleeve into the hole and the base against the outer surface of the can.

7. A sanitary liquid dispenser for cans or the like, comprising a base having an elongated slot extending therethrough, a cover removably mounted on the base forming a chamber therebetween, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot and having an opening in each side thereof in line with each other, said sleeve being adapted to extend through a hole punctured in a can, a stem extending through the slot and sleeve, and means on the lower end of the stem to be moved beneath the punctured surface of the can, and means supported on the base for drawing the stem outwardly to draw the latter means into the sleeve openings against said can surface to secure the dispenser firmly on the can.

8. A device according to claim 2 in which the means on the lower end of the stem comprises a blade projecting downwardly therefrom and having a blunt upper end adapted to be drawn against the can surface.

9. A sanitary liquid dispenser for cans or the like, comprising a base having an elongated slot extending therethrough, a cover removably mounted on the base forming a chamber therebetween, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, said sleeve being adapted

to extend through a hole punctured in a can, a threaded stem extending downwardly through the slot and sleeve, means on the lower end of the stem to be moved beneath the punctured surface of the can, and means threaded on to the stem and supported on the base for drawing the stem outwardly to draw the latter means against said can surface to secure the dispenser firmly on the can.

10. A sanitary liquid dispenser for cans or the like, comprising a base having an elongated slot extending therethrough, a cover removably mounted on the base forming a chamber therebetween, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, said sleeve being adapted to extend through a hole punctured in a can, a bracket mounted on the base and straddling the slot therein, a threaded stem extending through the bracket and the sleeve below the latter, means on the lower end of the stem to be moved beneath the punctured surface of the can, and a nut threaded on the stem bearing on the bracket for drawing the stem outwardly to draw the latter means against said can surface to secure the dispenser firmly on the can.

11. A sanitary liquid dispenser for cans or the like, comprising a base having an elongated slot extending therethrough, a cover removably mounted on the base forming a chamber therebetween, a spout extending outwardly from the cover, a sleeve depending from the base in registry with the slot, said sleeve being adapted to extend through a hole punctured in a can, and an inverted substantially U-shaped bracket threaded on the stem and loosely mounted on the base for drawing the stem outwardly to draw the latter means against said can surface to secure the dispenser firmly on the can.

JOSEPH ARMAND LE VASSEUR.