Sept. 2, 1941 C. L. ALLEN 2,254,408

SANITARY PUMP CLOSURE

Filed March 19, 1940

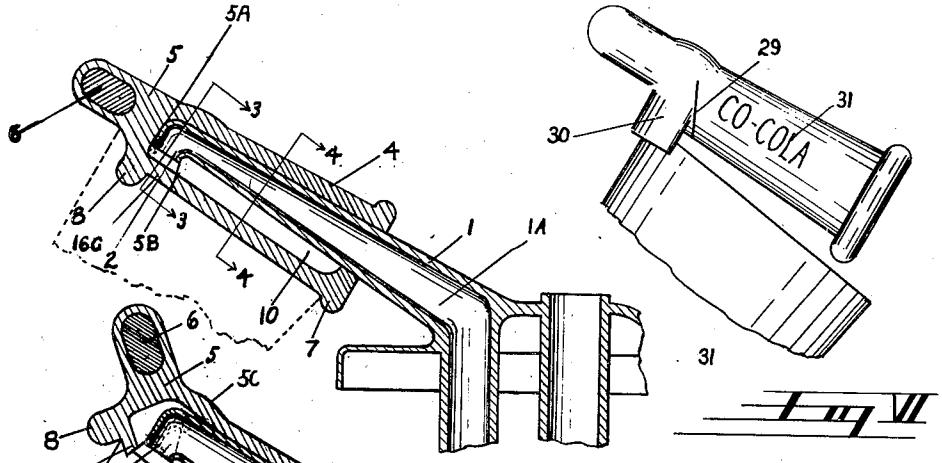


Fig. I

Fig. VII

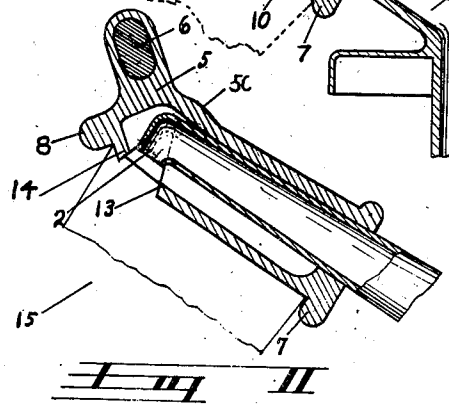


Fig. II

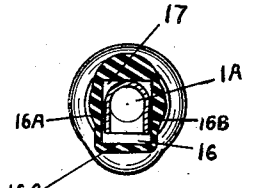


Fig. III

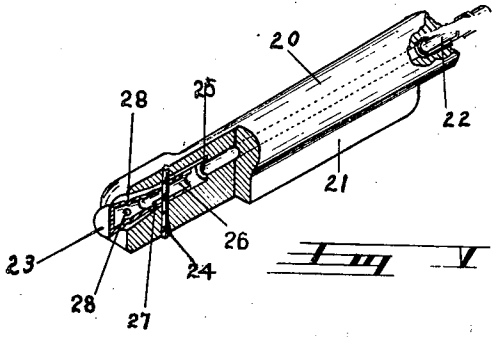


Fig. V

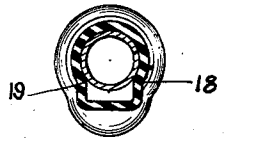


Fig. IV

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SANITARY PUMP CLOSURE

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5 Claims. (Cl. 137—111)

My invention relates to sanitary pump closures.

The primary purpose and object of my pump closure is to maintain the spout of the pump in a sanitary condition, and one in which the drip from the spout will be maintained within the closure.

Heretofore in fountain pump spouts, the attendant at the fountain frequently breaks the drinking glass by the same coming in contact with the metal spout. I provide an attachment for the spout that is made of a stretchable, highly compressible material, as live rubber, that may be removably attached to the spout and against which the glass to be filled with the beverage contacts, to thereby prevent normal breakage that occurs where the glass is brought into contact directly with the metal, and as the glass contacts the closure, the outer end of the closure is raised, to thereby place an opening within the closure immediately below the discharge end of the spout of the pump, to permit the beverage to flow directly from the pump spout into the glass; and when the beverage is removed from the pump spout into the glass, and when the glass is removed from the closure, the inherent resiliency of the closure shapes the opening made by the glass in the closure shut, to prevent normal drip that occurs when the flow of the fluid through the spout is stopped by the attendant.

In the pumping of syrups at the soda fountain, where the top surface of the syrup remaining in the spout is exposed to normal air, oxidation occurs in the form of the crystallizing of the syrup at the surface within the spout, which if left for a protracted period actually seals the syrup within the spout, to prevent free pumping thereafter. Through the use of my new and improved closure, this is retarded, if not entirely prevented.

Through the use of my new and improved closure, the breakage of the beverage glass is prevented. Drip eminating from the spout is prevented from flowing down the under side of the spout to attract flies and such objects thereto, and the closure being freely removable permits the maintaining of the closure in a highly sanitary condition at all times.

The method of manufacturing the closures permits their pneumatic removal from the core of the mould, to speed up production and to prevent damage to the closure during the removal of the same from the curing mould in which the same is formed.

With these and incidental objects in view, the invention consists in certain novel features of construction and combination of parts, the essential elements of which are set forth in the appended claims, and a preferred form of embodiment of which is hereinafter shown with reference to the drawing which accompanies and forms a part of this specification.

In the drawing:

Fig. I is a sectional side view of a soda fountain pump spout and a sectional side view of one of my new and improved closures shown in normal position upon the spout, with the closure being shown in its normal closed position.

Fig. II is a sectional side view of the spout of the pump and a sectional side view of the closure illustrating the closure in open position and being opened by a beverage glass shown in position for receiving the beverage therein, and with the closure being opened by the top edge of the beverage glass.

Fig. III is a sectional end view of the closure and spout of the pump. This view was taken on line 3—3 of Fig. I, looking in the direction indicated.

Fig. IV is a sectional end view of the assembly illustrated in Fig. I. This view is taken on line 4—4 of Fig. I, looking in the direction indicated.

Fig. V is a fragmentary partially sectional end view of the core upon which the closure is molded in the production of the closure.

Fig. VI is a side view of a slightly modified form of closure and a fragmentary side view of the beverage glass disposed thereunder and in position for normally opening the closure when upward and outward pressure is applied to the glass.

Like reference characters refer to like parts throughout the several views.

I have shown in Fig. I my device as being applied to the spout 1 of the ordinary soda fountain pump, with the beverage to be dispensed being pumped through the inside of the spout, as illustrated at 1A.

The spout 1 has a discharge opening 2 disposed in its outer end, through which the beverage to be dispensed flows. I provide a closure made of live rubber or other highly stretchable compressible material. The base end of the closure 4 has an opening disposed therein to tightly fit the base end of the closure to the outer surface of the spout 1.

The outer end 5 of the closure projects substantially beyond the outer end of the spout 1, and a wall 5A is formed within the closure and against which the outer end of the spout engages, to thereby position the closure 4 relative to the

spout and to position a slit 5B that is formed upon the under side of the closure, and to place an opening in registry with the discharge opening 2 of the spout 1.

In order to further aid in the closing of the slit 5B, I may counterweight the outer end 5 of the closure, as illustrated at 6. I provide an enlarging ring 7 about the base end of the closure, and I provide a knob 8 on the under side of the closure and outward from and in spaced relation with the slit 5B.

In the normal use of the beverage glass, it may be made to engage the under side of the outer end 5 of the closure, or it may be made to engage the knob 8, as illustrated in Fig. II, and by applying upward pressure on the outer wall of the glass, the slit 5B is opened to permit the beverage to flow directly from the discharge 2 of the spout directly into the beverage glass.

When the diameter of the upper end of the beverage glass 15 is made of suitable dimensions, the opposite walls of the glass adjacent its top end may be made to engage the knob 8 and the band 7, to hold the adjacent walls 13 and 13 of the slit spaced apart, as illustrated in Fig. II, or the beverage glass may be placed as illustrated in dotted position in Fig. I, to actuate the closure and the slit 5B into suitable open position.

It may be found desirable to also increase the cross-sectional area of the closure opposite to that of the slit 5B, as illustrated at 5C, to further increase the resistance to the opening of the slit and to further increase the tendency for the slit to be closed when the beverage glass is removed.

A pocket 10 is disposed within the closure and upon the under side, into which the drip, if any, falling from the spout will gravitate and be retained within the closure when the beverage glass 15 is removed from placement.

It will be noted that Fig. III is taken on line 3—3 of Fig. I, looking in the direction indicated, and that substantial clearance, as illustrated at 16, will be disposed immediately below the discharge opening of the spout. Clearance is also provided at each side, as shown at 16A and 16B between the side walls of the metal spout and the inside side walls of the closure. The top side of the lip, 16C, catches any drip falling from the spout and delivers the same into the portion 10 when the closure is in normal closed condition.

The purpose of increasing the area, as illustrated at 16, is to prevent any undue frictional resistance of the inside surface 16C of the closure engaging the under side of the spout when the outer end 5 is raised, and the slit 5B is opened to permit the discharge of the beverage into the receptacle disposed therebelow.

Added area is also made, as illustrated at 17, to further reduce friction. By making the inside of the closure as shown at 17, it also aids in the hinging action of the closure at that point. It will be noted that Fig. IV is taken on line 4—4 of Fig. I, looking in the direction indicated.

It will also be noted that the side wall of the closure 4 is made to extend down below the horizontal center line of the spout, as illustrated at 18 and 19, to afford a gripping action of the closure to the side walls of the spout throughout the length of the spout, and to thereby prevent the drip-receiving portion 10 to be substantially in the clear with the under side of the spout.

In the manufacture of these closures I have found that the using of a core, as illustrated in Fig. V in the rubber mold, is of great advantage in rapid production of the closures.

The body element 20 of the core is made substantially of the diameter of the spout to which the closure is to be attached, with the under side 21 compensating for the drip catch portion of the closure.

An air inlet fill 22 is disposed at one end of the core to permit the attachment of an air hose thereto, and a vent valve 23 is disposed in the opposite end of the core, and with a port 25 running longitudinally of the core in order that air may freely flow from the inlet 22 to the valve 23. At the time of the molding of the closure, the vent valve 23 is in retracted position within the core. I limit the movement of the vent valve 23 by placing a pin 24 in the core and through the shank end 26 of the vent valve, and I place a slit 27 in the vent valve, with the pin 24 passing through the slit 27.

After the closure has been cured within the mold, air is admitted into the core under pressure, which forces the vent valve 23 outward to permit air to pass through ports 28 disposed within the vent valve. This air passes out and around the core, to thereby relieve the finished closure from the mold and to eject the same from the core after the jacket of the mold has been removed.

In Fig. VI, I have shown a modified form of closure, and I have also shown an indicia at 31, as Co-Cola, for indicating the syrup to be pumped through the closure as an aid to the soda fountain operator in knowing the particular syrup that is to be pumped through the closure in question. While I have shown the indicias as being Co-Cola, I do not wish to be limited to that one product, as the full line of syrups may be indicated upon the line of closures.

While the form of mechanism herein shown and described is admirably adapted to fulfill the objects primarily stated, it is to be understood that it is not intended to confine the invention to the embodiment herein shown and described, as it is susceptible of embodiment in various forms, all coming within the scope of the claims which follow.

What I claim:

1. In a device of the class described, a one-piece body element of live rubber, said body element having an elongated recess extending the major portion of its length and open at one end to enable it to be fitted snugly to the spout of a soda fountain pump, a drip pocket disposed within said body element and opening, along its top side into the lower portion of said recess, a radially extending flange disposed about the open end of said body element, a transverse slit between the ends of said pocket and recess and extending through the bottom and side walls of said body element, a knob disposed upon the under side of said body element, said slit being disposed between the flange and the knob to enable a beverage container to engage the knob and open the slit when upward pressure is applied to said container.

2. In a device of the class described, a one-piece body element of live rubber, said body element having an elongated recess extending the major portion of its length and open at one end to enable it to be fitted snugly to the spout of a soda fountain pump, a drip pocket disposed within said body element and opening, along its top side into the lower portion of said recess, a radially extending flange disposed about the open

end of said body element, a transverse slit between the ends of said pocket and recess and extending through the bottom and side walls of said body element, a knob disposed upon the under side of said body element, said slit being disposed between the flange and the knob to enable a beverage container to engage the knob and open the slit when upward pressure is applied to said container, and a projection formed integral with the body element and projecting beyond the knob, said projection being counterweighted to aid in closing said slit.

3. In a device of the class described, a one-piece body element made of suitable stretchable material, said body element having an elongated recess extending the major portion of its length and open at one end to enable it to be fitted snugly to the spout of a soda fountain pump, a drip pocket disposed within said body element and opening, along its top side into the lower portion of said recess, a radially extending flange disposed about the open end of said body element, a transverse slit between the ends of said pocket and recess and extending through the bottom and side walls of said body element, and positioned in registry with the discharge outlet of said spout, a knob disposed upon the under side of said body element, said slit being disposed between the flange and the knob to enable a beverage container to engage the knob and open the slit when upward pressure is applied to said container, and a projection formed integral with the body element and projecting beyond the knob, said projection being counterweighted to aid in closing said slit.

4. In a device of the class described, a one-piece body element made of suitable stretchable material, said body element having an elongated recess extending the major portion of its length and open at one end to enable it to be fitted snugly to the spout of a soda fountain pump, a drip pocket disposed within said body element and opening, along its top side into the lower portion of said recess, a radially extending flange disposed about the open end of said body element, a transverse slit between the ends of said pocket and recess and extending through the bottom and said walls of said body element, and positioned in registry with the discharge outlet of said body element, said slit being disposed between the flange and the knob to enable a beverage container to engage the knob and open the slit when upward pressure is applied to said container, and a projection formed integral with the body element and projecting beyond the knob, said projection being counterweighted to aid in closing said slit.

5. In a device of the class described, a one-piece body element of suitable stretchable material, said body element having an elongated recess extending the major portion of its length and open at one end to enable it to be fitted snugly to the spout of a soda fountain pump, a drip pocket disposed within said body element and opening, along its top side into the lower portion of said recess, a radially extending flange disposed about the open end of said body element, a transverse slit between the ends of said pocket and recess and extending through the bottom and said walls of said body element, and a knob disposed upon the under side of said body to assist in opening said slit.

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