Oct. 6, 1936. R. E. DESCHNER 2,056,170

SANITARY CLOSURE FOR RECEPTACLES CONTAINING POURABLE SUBSTANCES

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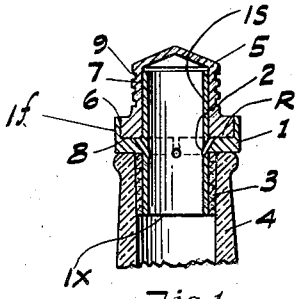

Fig. 1.

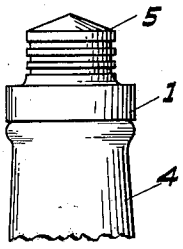

Fig. 2.

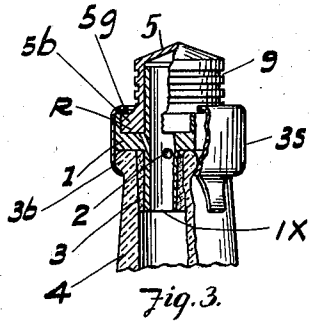

Fig. 3.

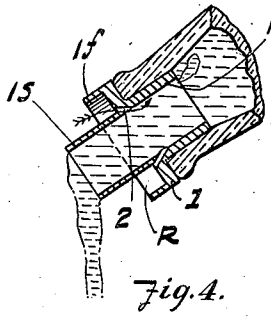

Fig. 4.

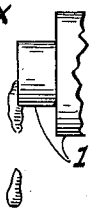

Fig. 5.

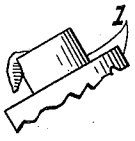

Fig. 6.

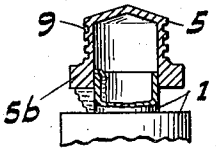

Fig. 7.

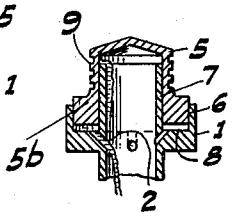

Fig. 8.

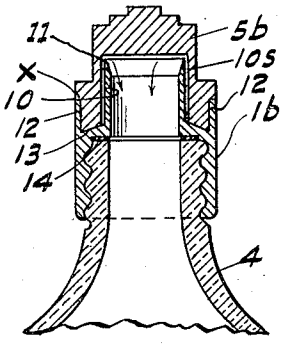

Fig. 9.

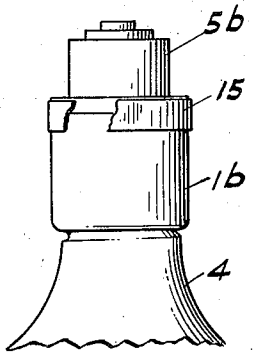

Fig. 10.

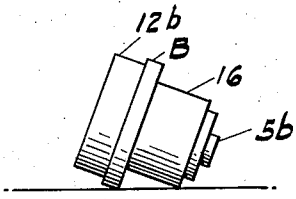

Fig. 11.

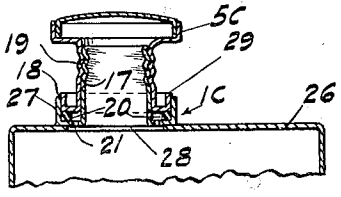

Fig. 12.

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SANITARY CLOSURE FOR RECEPTACLES CONTAINING POURABLE SUBSTANCES

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Application January 15, 1935, Serial No. 1,886

19 Claims. (Cl. 215—73)

This invention pertains to a cap or closure applicable to bottles, pitchers, cans and the like for forming an airtight seal on such containers, allowing quick and easy removal of the contents, and furnishing a means of returning to the container any part of the contents which may cling to the outside of the pouring lip after the pouring operation is completed. Said closure is intended for use on receptacles containing ketchup, mustard, syrup, French dressing, cocktail sauce, salad oil, olive oil, hair oil, and any other desired liquid or semi-liquid substances.

It is one of the major objects of the invention to provide an improved airtight seal for containers which are used intermittently to dispense their contents.

It is another object of the invention to provide a sanitary dispensing means which does not allow any part of a container's contents to cling to the outside of said container where it would be unsightly and exposed to the action of bacteria or other means of contamination.

It is still another object to provide a time saving device which saves the time ordinarily spent in cleaning the outside of dispensing containers after use.

It is yet another object to provide a two-part cap which may be sealed to the top of a full container to assure the purchaser that he is receiving the original contents of said container.

It is a still further object to provide a cap which may be transferred from one container to another and used time after time.

It is also an object to provide an inexpensive and attractive cap which may be manufactured by the moulding process, cutting process, or metal pressing process.

Still further objects, features and advantages of the invention will hereinafter appear.

In the drawing forming a part of the present application—

Fig. 1 is a vertical mid-section of my cap showing it applied to a bottle.

Fig. 2 is an elevation of Fig. 1.

Fig. 3 is a broken elevation of the cap shown in Figs. 1 and 2, showing it applied to a bottle and sealed.

Figs. 4, 5, 6, 7, 8, illustrate the various steps employed in operating the device when it is applied to a bottle containing ketchup or other heavy fluid. The lighter the fluid, the less it tends to cling to the outside of the pouring lip, therefore, the invention is shown operating on the most difficult substance.

Fig. 9 is a mid-sectional view showing a modification of the device.

Fig. 10 is an elevation of Fig. 9 showing the upper and lower halves of the cap sealed together.

Fig. 11 is a view showing the manner in which the detachable portion of the cap lies on any supporting surface.

Fig. 12 is a sectional view of another modification forming a third sample.

In Figs. 1 to 8, 1 indicates the lower body portion of the cap which is applied in a rather stationary manner to the container, 2 are passages drilled to connect the annular recess or sump R in the part 1, to the inside bore of 1, and 3 is a resilient substance such as cork which holds the lower body portion tightly to the container's neck 4 by forming a bond between said neck and the inner part 1X of the spout member 1S. 5 indicates the upper body portion of the cap which is detachable and has a sliding fit within the lower body portion with surfaces in contact at 6, 7 and 8. 9 indicates corrugations intended to form a gripping surface for a person's fingers.

The cap shown in Figs. 1, 2, and 3, is constructed of some such substance as hard rubber or of a substance known as "bakelite." These may be procured in colors to enhance the attractiveness of the cap and they will not be attacked chemically by oil or by ordinary food substances.

In Fig. 3 the metallic seal band 3S is shown having its lower portion crimped over the top bead 3b of the bottle neck, and its upper portion crimped over the outer joint between the parts 1 and 5.

Figs. 4 to 6 inclusive illustrate successive operations in pouring with the upper body portion 5 of the cap shown in Fig. 1 removed. In Fig. 7, the cap 5 is shown partially replaced. As it is pushed down, the fluid substance is carried down into the annular recess in the cap body 1. Fig. 8 shows the fluid being forced back into the center passage or bore of 1 through the passages 2. After the top 5 is seated down tight in the recess in 1, enough fluid remains between the surfaces at 6, 7, and 8, to form an airtight seal for the container.

During the pouring operation shown in Fig. 4 the ports 2 act as air inlets if the liquid being poured is heavy.

The weight of the column of fluid or other pourable substance between the ports 2 and the pouring lip tends to draw air in through ports 2 as shown if the center passage through which the fluid is moving is entirely filled by said fluid. The air entering through ports 2 bubbles upward-

ly into the container to replace the fluid being removed and the speed of the pouring operation is thereby increased.

When light, thin liquid is to be poured from containers, the ports 2 should be made very small so the liquid will not pass from the main passage out through them.

Fig. 9 shows a modification in which there are no drilled passages leading from the annular recess in 1b to the center passage thereof. Instead, an annular space 10S is provided between the spout member and cap to provide a return passage to the bottle for the liquid when the cap is replaced.

The lowest edge of the top member 5b is made slanting so that the fluid scraped from surface 10 tends to remain close to 10 as 5b travels downward. As the top 5b is pushed down on 1b, it scrapes all but a thin film of the fluid from surface 10. 5b then makes tight sliding contact at 12 and as the surfaces at 13 approach each other the fluid in the recess is forced upward between surfaces 10 and 11 and thence back into the center passage of 1b as shown by the arrows. The slanting lower edge on 5b could be used on 5 of Fig. 1.

Another feature illustrated in Fig. 9 is that of holding the lower body portion of the cap on the container by screw threads and using a gasket 14 to form a tight seal. The screw threads could be replaced by the cork of Fig. 1 or other equivalent means.

Figs. 9 and 10 show a construction of 1b and 5b which facilitates the use of a tape seal 15 to hold the two parts of the cap in air-tight union such as would be desired on a container that was to be transported or stored for a long period.

Fig. 11 shows the top portion of this cap 5b as it lies on any supporting surface. The lower portion 12b (which may be wet when in use) is held out of contact with the supporting surface through the medium of the annular boss B by the heavier upper portion 16 which overbalances 12b.

Fig. 12 illustrates a pressed steel cap which is made for use on containers which must stand rough usage. The bottom part 1c and the top part 5c are provided as before with sliding surfaces as at 17 and 18. 1c and 5c are also provided with threads at 19 so that 5c may be positively held in place on 1c. A gasket 20 forms an air-tight seal and passages 21 allow any fluid caught by the cap to drain back into the container any residue of a pourable substance. In this view the container 26 is shown provided with a circular upstanding flange 27 around its outlet opening 28 and the part 5c is furnished with an expanded base portion 29 which is channel shaped in cross section to fit within said flange 27.

With further regard to the sealing means shown in Fig. 3, the rubber portion or cap 5 has abutting contact with the annular recess R at points 6, 7 and 8, as indicated in Fig. 1. The body portion 1 of the stopper or lower unit of the closure may rest directly upon the upper end of the bottle or other container. The upstanding outer flange 1f of the stopper portion fits around the base portion 5b of the cap. The seal band 3s has an inwardly crimped upper portion which overlaps the joint between the parts 1f and 5b, a gasket 5g (Fig. 3) being shown interposed between said joint and the crimped part of the seal.

It is obvious that the invention is not limited entirely to the embodiments shown in the drawing, but may be applied to still other types of containers and may be modified within the skill of those versed in the art.

I claim:

1. A device of the kind described comprising a spout portion for pouring and having a cavity provided with relatively small drainage passages communicating with said spout portion, and means projectable into said cavity for directing residue from said spout portion after pouring thru said passages into said spout portion.

2. A device of the kind described comprising a spout having an overflow reservoir provided with a passage communicating with said spout, and means projectable into said reservoir for directing residual overflow back into said spout.

3. A closure construction for bottles and the like comprising; a spout member permanently attached to the bottle and having a liquid-collecting recess extending around the spout portion thereof, there being a drainage passage leading from said recess to the interior of said bottle, and a cap having a part which when applied to said spout will occupy said recess and force liquid which may be in said recess back into the bottle through said passage.

4. A sanitary cap having in combination: a part grippable by the mouth of a container, said part having a lateral extension provided with an upstanding flange forming a sump which rests on the neck of said container, and a cover for said part, a portion of said cover extending into said sump and directing any residue from said container, which remains in said sump after pouring, back into the body portion of said container.

5. In a device of the kind described, the combination with a container: of a closure therefor comprising a two-part cap, means to secure one of said parts to the other and the combination of the two to a container, one of said parts having an upwardly directed structure forming an open mouth and the other of said parts having a structure slidable within said mouth and one of said parts cooperating with the other to direct pourable residue collectible in said mouth back into the container.

6. A two-part stopper, one of said parts being fittable to the mouth of a container and provided with a bore, said part having a recess circumscribing the wall of said bore, the other of said parts being slidable within the first said part and provided with an annular boss to elevate that portion of the latter part which slides within the first said part when it is placed on a support in a recumbent position.

7. A one piece plug stopper part having a tubular portion including a bore insertable in the mouth of a container, a circumferential flange circumscribing said tubular portion, said flange being provided with an upstanding annular portion and forming with said tubular portion an annular recess having an upwardly directed mouth for collecting residual overflow, there being a flow-back passage leading from said recess to said bore.

8. A plug stopper having a bore extending axially therethru, means providing an annular recess circumscribing said stopper, into which overflow from said bore is collectible there being ports leading from said recess to said bore, and a cap, a portion of which upon application to said stopper slides within said stopper to discharge the contents from said recess back into said bore.

9. Means detachably attachable to the mouth of a bottle including a recess for collecting residue

remaining at the mouth of the bottle after a portion of the contents has been poured therefrom, and a cover part having a portion fittable within said recess which while being affixed thereto will direct the residue from said recess back into said bottle.

10. A device of the kind described having a stopper member consisting of a tubular spout portion and a body portion in a spaced relation to its ends, said body portion having an upstanding peripheral flange spaced outwardly from said spout portion, a cap having an annular base portion fitted into the space between said spout portion and said flange of said stopper member, and a seal band having an inwardly directed edge portion overlying the joint between the base portion of said cap and the edge of said upstanding flange.

11. The subject matter of claim 10 and, there being a gasket interposed between said joint and said inwardly directed portion of said seal band.

12. The subject matter of claim 10 and, a bottle upon which said stopper member and cap are mounted to form a closure, said bottle having an external peripheral bead around its mouth and the lower end portion of said seal band being crimped over said bead.

13. A device of the kind described comprising a spout portion for pouring, and a sump portion adjacent said spout portion for collecting residue adhering to said spout portion after pouring; and means projectable into said sump portion to direst residue therefrom back into said spout portion.

14. A device of the kind described comprising a spout portion having an annular recess extending therearound including an upstanding flange, there being drainage passages leading from said recess to said spout portion, and a closure having a recess which fits slidably over said spout portion for directing residue collectible thereon into said recess, and a part fastened to said closure fitting slidingly within said recess.

15. As an article of manufacture, a closure comprising a two part structure, one part consisting of a stopper having a spout portion, and a circumferential flange circumscribing said spout portion, the outer edge of said flange having an upstanding annular portion and a downwardly depending skirt portion each of which lies parallel to said tubular portion, said flange and upstanding portion forming with said tubular portion an annular recess, and a cap forming the other unit of said structure, said cap fitting over the tubular portion of said stopper and having a base portion to engage said recess with a sliding fit.

16. The combination with a container of means comprising a spout portion for pouring, a sump portion adjacent said spout portion for collecting residue adhering to said spout portion after pouring, and means projectable into said sump portion to direct residue therefrom back into said container.

17. As an article of manufacture, a closure comprising a two-part structure, one part consisting of a stopper having a tubular portion, and a circumferential flange circumscribing said tubular portion, the outer edge of said flange having an upstanding annular portion, said flange and upstanding portion forming with said tubular portion an annular recess, there being ports communicating with said recess and said tubular portion, and a cap forming the other unit of said structure, said cap fitting over the tubular portion of said stopper and having a base portion to engage said recess with a sliding fit.

18. As an article of manufacture, a closure comprising a two part structure, one part consisting of a stopper having a tubular portion, and a circumferential flange circumscribing said tubular portion, the outer edge of said flange having an upstanding annular portion which lies parallel to said tubular portion, said flange and upstanding portion forming with said tubular portion an annular recess, there being ports communicating with said recess and said tubular portion, and a cap forming the other unit of said structure, said cap fitting over the tubular portion of said stopper and having a base portion to engage said recess with a sliding fit.

19. As an article of manufacture, a closure comprising a two-part structure, one part consisting of a stopper having a spout portion, and a circumferential flange circumscribing said spout portion, the outer edge of said flange having an upstanding annular portion and a downwardly depending skirt portion, said flange and upstanding portion forming with said tubular portion an annular recess, and a cap forming the other unit of said structure, said cap fitting over the tubular portion of said stopper and having a base portion to engage said recess with a sliding fit.

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