

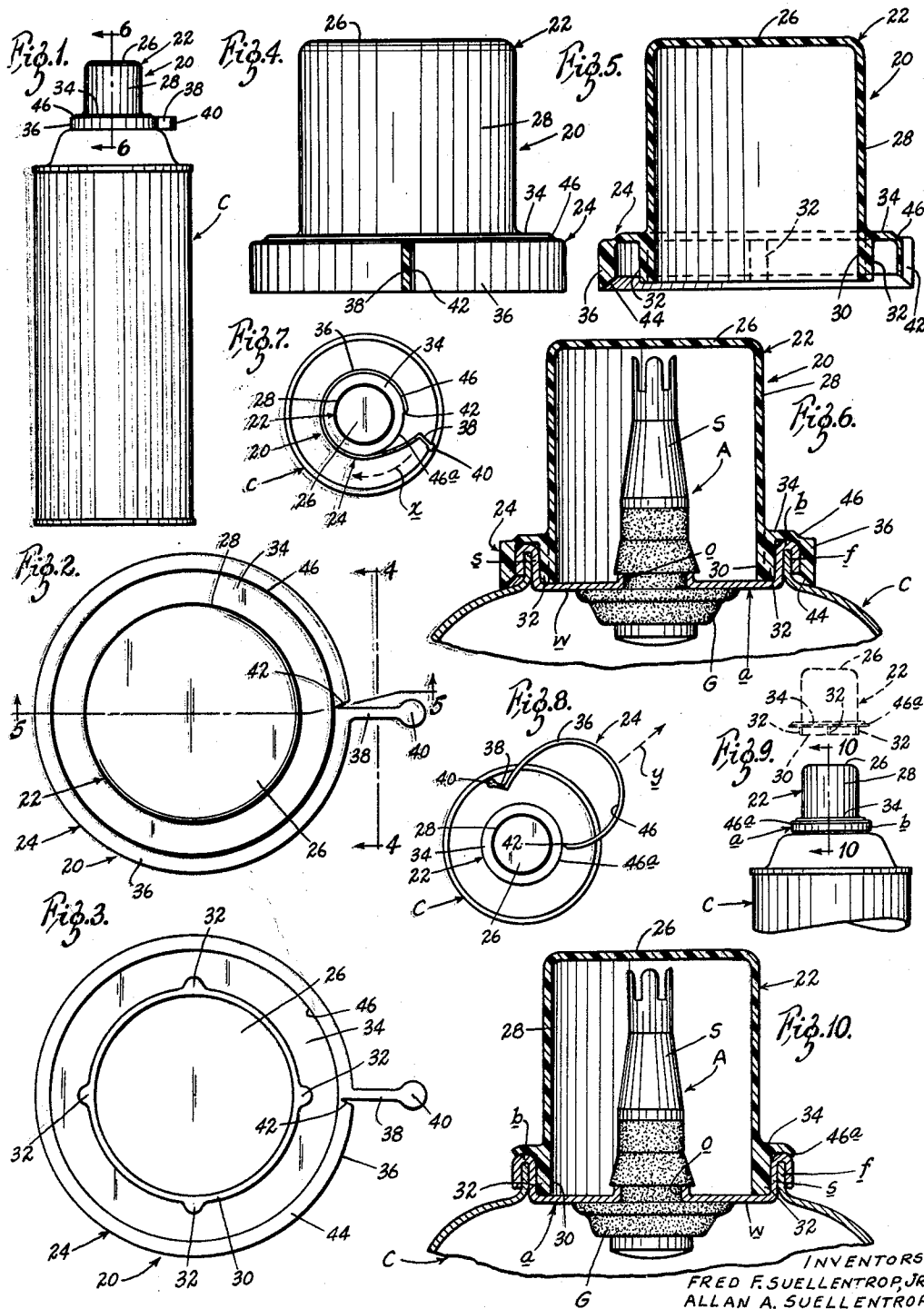
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COVER FOR CONTAINERS

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COVER FOR CONTAINERS

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1 Claim. (Cl. 222-182)

The present invention relates in general to dispensing containers, and more particularly to novel and improved cover means for protecting the dispensing valve assemblies of pressurized containers.

Specifically, the present invention contemplates an improved cover assembly that initially includes a cap body and a skirt section integral therewith, said skirt section being manually severable from the cap body, and being provided with means for facilitating that operation. The skirt section is disposable, in that once having been severed from the cap body of the cover assembly it may be discarded, whereas said cap body may be employed repeatedly thereafter, as will appear.

Prior to the time of severance however, the skirt section has two distinct functions. First of all, said skirt section aids materially in stabilizing the cap body during shipping and storing operations, as well as in the course of subsequent container handlings by prospective purchasers thereof.

It is obviously desirable from a sanitary standpoint alone, that dispensing valve assemblies of the character under consideration be protected against contamination. Furthermore, it is essential that the tiltable valve stems of such valve assemblies be shielded against accidental contact at any time, inasmuch as any movement of said stem, no matter how slight, would either result in the escape of some of the gas pressure, or the loss of some of the container contents, or both.

In other words, it is of critical importance to first of all protect the dispensing valve stems of pressurized containers during shipping operations. In the course of packing, loading, transporting, and unloading operations incident to the delivery of pressurized containers to their ultimate destination from a processing site, there is always danger that such containers may be mishandled, upset, or otherwise have their valve stems accidentally tilted. Assuming that containers had arrived at their destination intact, it is essential that their valve stems be shielded against tilting thereof in the course of handlings by merchants and prospective customers at the retail level. Furthermore, assuming that the purchase of such containers had been effected, it is important that the valve stems be protected against tilting thereof during the subsequent store to household transportation of the containers, as well as during time elapses that would normally obtain between dispensing operations, as is understood.

Accordingly, it is an object of the present invention to provide a novel and improved cover assembly for pressurized dispensing containers, said assembly being initially comprised of an integrally molded cap body and a disposable skirt section. The cap body includes a depending rim portion that is circumferentially spaced from said skirt section, and is provided with a plurality of circularly spaced ribs that project radially from its external peripheral surface in a direction toward the skirt section.

In addition to functioning in a stabilizing capacity for the cap body prior to the first dispensing operation, the skirt section of the cover assembly serves to guarantee that none of the contents of a particular container have been dispensed prior to the purchase of said container. Stated otherwise, the incorporation of the disposable skirt section in the original cover assembly, coupled with the fact that so long as said skirt section remains intact,

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visible evidence is automatically presented to prospective customers that the contents of that container had not been tampered with, as will appear.

Wherefore, it is another important object of the present invention to provide a cover assembly that incorporates means adapted to visibly indicate to prospective customers that there have been no prior dispensings of the container contents, either fortuitously or intentionally.

Preferably, the cover assembly of the present invention is molded of a plastic material such as flexible or yieldable polyethylene. The disposable skirt section aforesaid includes an annulus portion having a circularly formed tear type frangible connection at its upper end with a laterally projecting circular flange of the cap body, so that the annulus portion may be severed from said flange in consequence of manually pulling it more or less arcuately away from the flange along said frangible connection.

In contemplation of the immediately foregoing, it is another object of the present invention to provide a circularly formed frangible web connection between a laterally projecting flange of the cap body and the annulus portion of the skirt section, and to provide a manually engageable tab for facilitating the severance of said annulus portion from the flange circumferentially along said web connection, beginning from and ending at a vertically disposed slit or score formation provided in the external periphery of the annulus portion adjacent one side of said tab.

The invention is illustrated on a sheet of drawings that accompanies this specification. Objects and features of the invention that have not been specifically noted hereinabove, will be apparent from the detailed description that follows with reference to said drawings, wherein:

FIGURE 1 is a side elevational view of an exemplary container surmounted by the valve stem protective and tamper-proof cover assembly comprising the present invention;

FIGURE 2 is a top plan view, on an enlarged scale, of said cover assembly;

FIGURE 3 is a bottom plan view thereof;

FIGURE 4 is a front elevational view thereof, partly in section, taken vertically on the line 4-4 of FIGURE 2;

FIGURE 5 is a vertical transverse sectional view taken on the line 5-5 of FIGURE 2;

FIGURE 6 is a vertical sectional view taken on the line 6-6 of FIGURE 1, the view being drawn to a scale corresponding to that of FIGURES 2 through 5;

FIGURE 7 is a top plan view of FIGURE 1, suggesting the initial and thereafter partial severance of the skirt section of the cover assembly from the cap body portion thereof;

FIGURE 8 is a view similar to FIGURE 7 suggesting the final severance of said skirt section from the cap body portion of the cover assembly;

FIGURE 9 is a fragmentary view similar to FIGURE 1, illustrating the cap body of the present invention in place atop the container subsequent to the final severance of said skirt section; and

FIGURE 10 is a view similar to FIGURE 6 taken on the line 10-10 of FIGURE 9.

For the purpose of illustrating the present invention, the dispensing valve assembly disclosed in Patent No. 2,852,168, granted on September 16, 1958, to F. F. Suellentrop has been exemplarily shown in the drawings, said assembly being operatively mounted in the cupshaped top closure member of a typical pressurized container designated C. The valve assembly is designated A, and includes a generally tubular tiltable valve stem designated S, and a complementary hollow grommet designated G.

The well known and widely employed containers of

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the type illustrated, terminate at the top in a closure member *a* having a bottom wall *w* provided with a central opening *o* through which the grommet and the therein supported valve stem extends.

As shown in FIGURES 6 and 10, such top closure members are generally cupshaped, and are so designed as to include an annular beaded portion *b* that is crimped about an upstanding circular flange segment *f* comprising the upper end portion of the container body, said beaded portion constituting the upper extremity of the circular walls *s* of the closure member *a*.

Containers of the type under consideration are supplied with the top closure members *a* unattached. After a dispensing valve *A* has been properly mounted therein, the top closure member is positioned atop the flange *f*, whereupon the thus associated closure and container assembly is subjected to the action of a crimping machine whereby to form the annular sealing bead *b*.

It is not deemed necessary to elaborate on the various types of dispensing valve assemblies currently in use, inasmuch as the cover assembly of the present invention is applicable to all of them, so long as they are mounted in top closures of the character described. Nor is it believed requisite herein to describe the methods whereby the various fluids to be dispensed are introduced into the containers and pressurized, inasmuch as these methods are well known and understood in the art.

The cover assembly of the present invention, adapted to initially protect the valve and to prevent subsequent tampering with the container, is designated as a whole in the drawings by the numeral 20. The cover assembly 20 is molded of a flexible plastic such as polyethylene, and initially includes what will be considered a permanent cap body generally designated 22, and a disposable skirt section generally designated 24.

The cap body 22 includes a top wall 26, and a circular side wall 28 that terminates at the bottom in an annular rim portion 30. As seen to best advantages in FIGURES 3 and 5, the external peripheral surface of the rim portion 30 has formed thereon a plurality of circularly spaced radially projecting ribs 32, four such ribs being exemplarily shown. The upper ends of the ribs 32 merge into an annular flange 34 that projects laterally from the side wall 28 of the cap body, as shown.

The disposable skirt section 24 includes an annulus portion 36 having an internal diameter that is formed to correspond with the external diameter of the bead *b* of the container closure member *a*. Projecting radially laterally from the annulus 36, is a tear tab 38 that terminates as best seen in FIGURE 1, in a vertically disposed cylindrical segment 40, said segment providing a finger-piece adapted to facilitate manipulation of said tab as will appear.

As seen to best advantage in FIGURES 2 through 5, the annulus portion 36 is slit or scored contiguously to one side of the tab 38, as indicated at 42. The lower peripheral edge of the annulus portion 36 is feathered as at 44, whereby frictional application of the cover assembly 22 onto the bead *b* is facilitated.

Numeral 46 designates a circular web segment that, as best seen in FIGURE 5, connects the flange 34 of the cap body and the annulus portion 36. The web segment 46 constitutes a tear type frangible connection, so that the skirt section 24 may be severed from said flange in consequence of manually pulling it via the tab 38, more or less arcuately away from the flange as suggested by the broken line arrow *x* appearing in FIGURE 7. Following completion of the removal of the skirt section, the resultant peripheral appearance of the flange 34 is best seen in FIGURE 10. Inasmuch as said periphery is actually comprised of a circular segment of the web 46, it is designated 46*a*.

Although it is believed that the objectives of the present invention and the attainment of them should be apparent from the foregoing description augmented by an

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inspection of the drawings, a brief additional explanation will be given.

Thus it is to be observed that the cover assemblies 20 would obviously be dimensioned in accordance with the particular container top closure and dispensing valve contemplated. In other words for example, the height of the cap body 20 may be increased or diminished from that shown in the drawings depending on the size of the valve stem, as should be understood. Similarly, the circumference of the closure bead *b* would determine the diameters of the rim portion 30 and the annulus portion 36, and so on. In all cases however, the space obtaining between the internal periphery of an annulus 36 and the ribs 32 would be slightly smaller than the beading *b*, so that initially (after the container had been processed), the cover assembly 20 would so to speak be pressfitted onto the container closure *a*. The feathered edge 44 serves to facilitate this operation. Any attempt to thereafter remove the cover assembly without fracturing the scored region 42 of the annulus portion 36 would be extremely difficult, if not impossible.

To facilitate legitimate removal of the skirt portion 24 by the purchaser, the tab 38 and fingerpiece 40 arrangement is provided. The early tearing action, as previously noted, is suggested in FIGURE 7, it being understood that a person would hold the container *C* in one hand, and pull the tab 38 generally arcuately away from the flange 34. The completion of the severance or removal operation is suggested in FIGURE 8. There it is demonstrated how the tearing action that began at the slit or scoring 42 in FIGURE 7 also terminates at said scoring, whereupon the skirt portion 24 would be discarded, as suggested by the broken line arrow *y*.

The condition of the container and the cap body at this point is illustrated in FIGURES 9 and 10. The cap body 22 may be removed for the first dispensing operation as suggested in broken lines, and thereafter replaced and removed for further dispensings repeatedly until the contents of the container have been depleted, whereupon both the cap body and the container would also be discarded as is understood.

From the foregoing description it should be clear that the present invention provides a simple yet effective cover assembly that attains its objectives in novel fashion.

What we claim is:

In combination with a pressurized container provided with a cupshaped top closure member of the character described, said closure member including a bottom wall and a circular side wall that terminates at the top in an annular beaded portion, said bottom wall having a dispensing valve assembly mounted centrally therein with the tiltable valve stem projecting above the bottom wall aforesaid,

a cover assembly for said container and the projecting valve stem thereof, said assembly being molded of a flexible plastic material and comprising initially:

a cap body including a top wall and a circular side wall that terminates at the bottom in a rim portion, the external peripheral surface of the rim portion having a smaller diameter than the internal peripheral surface of said side wall of the top closure member;

a circular flange projecting laterally from the side wall of the cap body adapted to overlie said annular beaded portion of the top closure member;

a plurality of circular spaced ribs projecting radially from the outer peripheral surface of said rim portion and merging at their upper ends into said flange, each of said ribs being adapted to frictionally engage against the inner surface of said side wall of the top closure member;

a disposable skirt section circularly spaced from said rim portion and the ribs thereon, said skirt section comprising an annulus having an internal diameter in correspondence with the external diameter of said beaded portion of the top closure member;

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- a feathered lower edge thereon to facilitate pressfitting the annulus onto said beaded portion of the top closure member;
- a frangible circular web segment connection between the upper end portion of the skirt section and the laterally projecting flange of the cap body, said web segment being a component common to said annulus and flange;
- a vertical slit or score formation in the external peripheral surface of the annulus, said slit extending from the web segment aforesaid to the feathered edge of said annulus;
- a tear tab projecting radially laterally from the annulus contiguously to the slit;
- and a vertically disposed cylindrical fingerpiece on the

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free end of the tab to facilitate severance of the annulus from the laterally projecting flange of the cap body in consequence of manually pulling said tab arcuately away from said flange circumferentially along said frangible web segment, the severance beginning and ending at the slit or score formation aforesaid.

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