

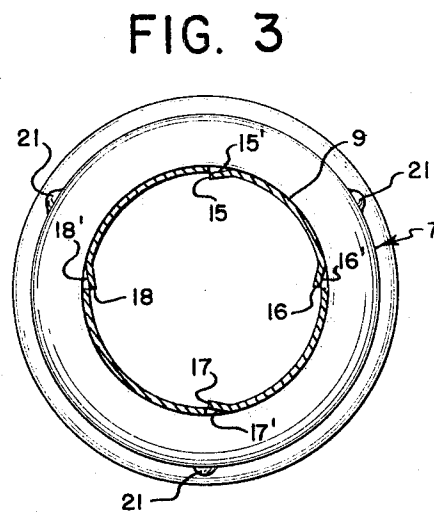
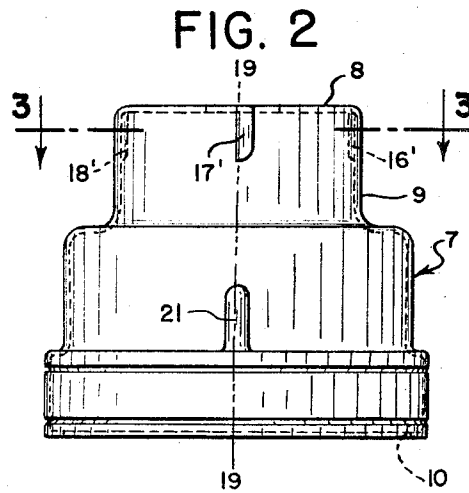
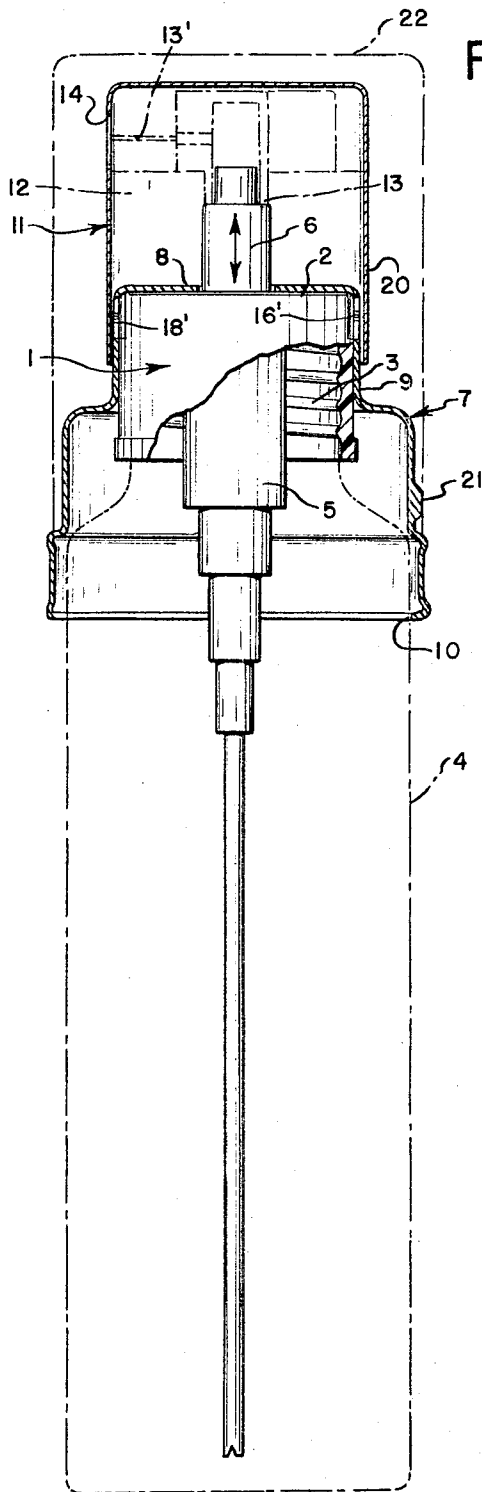
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COMPOSITE CONTAINER CAP AND OUTER COLLAR

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1

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COMPOSITE CONTAINER CAP AND
OUTER COLLAR

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The present invention relates to a composite container cap and more particularly to a composite cap comprised of a primary threaded cap member and an encompassing decorative collar member releasably connected together against relative rotation by a locking device formed integrally with the cap parts and automatically operable upon assembly of the collar member onto the cap in telescoping relationship. The composite cap of the present invention assembled in this manner may be threaded onto and unthreaded from an associated container by merely grasping the encompassing collar and turning it relative to the container. Due to the inherent locking of the cap parts, proper tightening of the composite cap to the degree necessary to prevent leakage from the container is assured and the locked parts of the cap may be easily rotated in an unthreading direction with respect to the container to effect removal of the composite cap when it is desired to refill the container. In addition, the orientation of the locking structure relative to the cap parts permits removal of the collar from the primary cap when desired.

With present composite cap constructions comprised of a threaded primary cap and decorative covering, the covering is merely press fit over the cap and the assembled unit attached to the container. Due to the nature of the connection between the cap and cover, however, there is a tendency for the cover to slip relative to the cap as the latter is threaded onto or unthreaded from the container. Such slippage in turn makes it difficult to properly tighten the cap onto the container to prevent leakage of the contents and also makes it difficult to remove the composite cap from the container when it is desired to refill the container.

According to the teachings of the present invention, a composite cap having a primary threaded cap and an encompassing cylindrical collar are releasably secured together by a plurality of longitudinally extending and oppositely facing locking edges formed on the inner surface of the collar. These locking edges extend inwardly of the collar and bite into the outer surface of the primary cap which is adapted to be frictionally retained within the collar and which for purposes of receiving the locking edges is made of deformable material. The locking edges by facing in opposite directions about the circumference of the cap and collar effectively prevent relative rotation of these parts in either the clockwise or counterclockwise direction, yet due to their longitudinal relationship with the cap and collar, the collar may be separated from the cap when desired by forcing the parts axially in the opposite directions. Also, the particular orientation of the locking edges on the collar readily effects an automatic locking of the collar onto the cap when the parts are telescoped over each other.

Having described the present invention in general terms, a more complete understanding thereof will be obtained from the reading of the following detailed description with reference being made to the accompanying drawings of which:

FIG. 1 is a cross-sectional view of the assembled composite cap with the associated container shown in phantom lines,

FIG. 2 is a side elevation of the decorative collar, and

2

FIG. 3 is a view taken along lines 3-3 of FIG. 2.

As shown in FIG. 1, the composite cap of the present invention comprises a primary cup-shaped valve cap 1 having a top 2 and an internally threaded skirt portion 3. This primary cap is adapted to be threaded onto the threaded opening of a suitable container shown in phantom lines at 4. The primary cap 1 is preferably made of plastic material and has at least an outer surface along the cylindrical skirt 3 that is deformable for reasons more fully described below.

Connected to the primary cap is an axially depressible valve tube 5 which extends along the longitudinal axis of the container 4. This valve tube forms a combined valve and outlet for the container and is normally urged axially outwardly of the valve cap to a closed position. The upper portion 6 of the valve tube extends axially outwardly of the top 2 of the primary cap and is depressible relative to the remaining portion of the valve tube to provide an opening for the dispensing of the contents of the container 4. The specific construction of the valve tube is conventional and per se forms no part of the present invention.

Releasably attached to the primary cap 1 is a rigid metal collar member 7. Advantageously, this member may be decorative in nature and will encompass the primary cap and the upper end of the container 4. The collar member is cup-shaped and provided with a centrally apertured top 8 and cylindrical skirt 9. The inner diameter of the upper portion of the skirt 9 adjacent the top 8 is substantially the same as the outer diameter of the primary cap 1 so as to form a press fit when the collar and cap are assembled in the manner shown in FIG. 1. Also, as shown in FIG. 1, the lower portion of the skirt of the collar member is enlarged to provide an opening 10 for the reception of the upper end of the container 4.

With the collar member assembled onto the primary cap, the depressible portion 6 of the valve tube extends axially through its apertured top 8 and for effecting a depression of the valve tube portion 6, an actuating cap 11 is provided. The actuator cap is cup-shaped and is provided with an insert member 12 at its upper end for connection to the valve portion 6. Specifically, the insert member is press fit into the actuating cap and is provided with a shoulder 13 which is frictionally secured to the valve portion 6 of the tube 5. Also, the insert means is provided with a passageway 13' for connecting the valve tube 5 to the exterior of the actuating cap through an opening 14 provided in the cap.

In accordance with the teachings of the present invention, the collar member 7 is releasably secured to the primary cap 1 so that relative rotation between the two is prevented when the composite cap is threaded onto or unthreaded from the associated container 4. The locking arrangement for preventing this relative rotation, nevertheless, permits axial movement of the collar with respect to the primary cap so that it is merely necessary to force the collar member axially over the primary cap to position it in operative, locked relationship therewith. This arrangement also permits the removal of the collar member from the primary cap, if desired, by opposite axial movement of the collar and cap relative to each other.

As shown in FIGS. 2 and 3, the skirt portion 9 of the collar member is formed with a plurality of elongated locking elements 15-18' having locking edges 15-18. These locking edges extend from the top 8 of the collar member in a direction parallel to the longitudinal axis 19 of the collar member. As shown in FIG. 3, the locking elements 15-18' are formed by axially extending indentations on the outer surface of the skirt portion of the collar member. Also, it will be noted from FIG. 3 that these locking edges face cir-

cumferentially of the collar member, two in the clockwise direction and two in the counterclockwise direction.

Upon assembly of the collar member onto the deformable plastic primary cap, these locking edges will indent or cut into the skirt portion of the primary cap, and due to the fact that the edges face in the two opposite directions circumferentially of the primary cap, relative rotation of the collar member with respect to the primary cap in either direction is effectively prevented. Accordingly, it is possible to completely tighten the composite cap onto the threaded opening of the associated container to prevent possible leakage without any tendency for the collar member to slip during this tightening. Also, in removing the composite cap from the container, rotation of the collar member in the unwinding will positively unthread the primary cap without any slippage resulting.

As indicated above, the locking edges of the collar member extend from the upper end 8 of the collar member so that the lines of indentation formed in the primary cap 1 will also extend from the upper end 2 of the cap. With this construction, the collar member may be removed from the primary cap without gouging or destroying the outer surface of the cap which will tend to take on its original shape after removal of the collar. This is so since the line of exit defined by the indentations formed in the primary cap will extend directly to the edge of its skirt portion 3 adjacent its upper end 2.

As shown in FIG. 1, the actuating cap 11 previously described is provided with an elongated skirt 20 which encompasses the upper end of the collar member 7 and, in turn, covers the indentations 15'-18' formed on the outer surface of the collar member. This actuating cap is held onto the composite cap solely by the engagement of the insert means with the depressible valve portion of the valve tube. Also, the skirt portion 20 is spaced from the skirt of the collar member 7 to prevent any marring of the collar member upon depression of the actuating cap when effecting a discharge of the contents from the container.

Finally, as shown in FIG. 3, the collar member 7 may be provided with outwardly projecting ribs 21 along the enlarged portion of its skirt. These ribs are adapted to extend outwardly of the collar member so as to frictionally engage a cover 22 shown in phantom in FIG. 1 that may be attached over the composite cap to prevent accidental depressing thereof while being carried about by the user.

The above description has been made with reference to the preferred embodiment of the present invention, and it is to be understood that various changes may be made without departing from the scope of the invention as defined in the following claims.

I claim:

1. A composite cap structure for connection to a threaded open portion of a container adapted to hold a product comprising:

- (a) a deformable cup-shaped primary cap having a top and threaded cylindrical skirt portion adapted to be threaded onto the threaded portion of said container;
- (b) a cup-shaped rigid collar member having a cylindrical skirt portion slidably and telescopically received over said primary cap, and
- (c) a plurality of locking elements on the inner surface of the skirt portion of said collar member with each element terminating in a radially inwardly extending locking edge facing circumferentially of the skirt portion of said collar member with at least one of said edges facing in a direction opposite to that of the remaining edges for locking said skirt portions together against relative rotation.

2. A composite dispensing cap structure for connection to the threaded open portion of a container adapted to hold a product to be dispensed comprising:

- (a) a deformable cup-shaped primary cap having a

top and threaded cylindrical skirt portion adapted to be threaded onto the threaded open portion of said container;

- (b) a dispensing tube connected to said primary cap and having an exposed outlet end extending axially through said top along the longitudinal axis of said skirt portion;
- (c) a cup-shaped rigid collar member having a centrally apertured top and a cylindrical skirt portion slidably and telescopically received over said primary cap with the exposed outlet end of said tube extending axially through said apertured top; and
- (d) a plurality of locking elements on the inner surface of the skirt portion of said collar member with each element terminating in a radially inwardly extending locking edge facing circumferentially of the skirt portion of said collar member with at least one of said edges facing in a direction opposite to that of the remaining edges for locking said skirt portions together against relative rotation.

3. A composite dispensing cap structure for connection to the threaded open portion of a container adapted to hold a product to be dispensed comprising:

- (a) a deformable cup-shaped primary cap having a top and threaded cylindrical skirt portion adapted to be threaded onto the threaded open portion of said container;
- (b) a valve dispensing tube connected to said primary cap and having an exposed outlet end extending axially through said top along the longitudinal axis of said skirt portion;
- (c) a cup-shaped metal collar member having a centrally apertured top and cylindrical skirt portion slidably and telescopically received over said primary cap with the exposed outlet end of said tube extending axially through said apertured top;
- (d) a plurality of circumferentially spaced and axially extending indentations on the outer surface of the skirt portion of said collar member forming elongated locking elements on the inner surface thereof with each of said elements located at and coextensive with a corresponding indentation and terminating in radially inwardly extending locking edges facing circumferentially of the skirt portion of said collar member and into locking engagement with the skirt portion of said primary cap and with at least one of said edges facing in a direction opposite to that of the remaining edges thereby holding said collar on said primary cap against relative rotation with respect thereto; and
- (e) a cup-shaped valve actuator cap mounted on the exposed outlet end of said dispensing tube for controlling the dispensing of product through said valve dispensing tube and having a cylindrical skirt portion telescopically encompassing the skirt portion of said collar member and the indentations on the outer surface thereof.

4. A composite dispensing cap structure according to claim 3 wherein

- (a) said collar member is press fitted on said primary cap with the opposed surfaces of the tops thereof in abutment with each other; and
- (b) said locking edges extend along the inner surface of said collar member from the top thereof.

5. A composite dispensing cap structure for connection to the threaded open portion of a container adapted to hold liquid contents comprising:

- (a) a deformable plastic cup-shaped primary valve cap with a valve passage therethrough and having a top and threaded skirt portion adapted to be threaded onto the threaded open portion of said container;
- (b) an axially depressible valve actuator tube extending through the top of said primary valve cap and forming a combined valve actuator and outlet for

5

said container and normally urged axially outwardly of said valve cap to a closed position;

- (c) a cup-shaped metal collar member having an apertured top and cylindrical skirt portion slidably telescoped over said primary valve cap with said combined valve actuator and outlet thereof extending axially through said apertured top;
- (d) a plurality of locking elements on the inner surface of the skirt portion of said collar member with each element terminating in a radially inwardly extending locking edge facing circumferentially of the skirt portion of said collar member with at least one of said edges facing in a direction opposite to that of the remaining edges for locking said skirt portions together against relative rotation.
- (e) a cup-shaped actuating cap having a top and cylindrical skirt portion telescopically received over said collar member with its skirt portion spaced radially from the skirt portion of said collar member; and
- (f) insert means in said actuating cap frictionally secured to said valve actuator tube and forming a passage leading to the exterior of said actuating cap for the discharge of the liquid contents from the container, said insert means having a tube-engaging shoulder for operating said valve actuator upon relative telescopic axial movement of said actuating cap and collar member.
6. A composite dispensing cap structure according to claim 5 wherein
- (a) said collar member is press fitted on said primary

6

valve cap with the opposed surfaces of the tops thereof in abutment with each other; and

- (b) said locking edges extend along the inner surface of said collar member from the top thereof.

7. A composite dispensing cap structure according to claim 6 wherein

- (a) said locking elements are defined by indentations formed on the outer surface of the skirt portion of said collar member; and

- (b) the skirt portion of said actuating cap covers said indentations.

8. A composite dispensing cap structure according to claim 7 wherein two pairs of locking elements are provided on said collar member equally spaced about the circumference of the skirt portion thereof with the locking edges of each pair facing in opposite directions.

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