April 30, 1940. W. C. BRENNEMAN 2,198,858

SNAP CAP STRUCTURE

Filed April 14, 1939

Fig. 1.

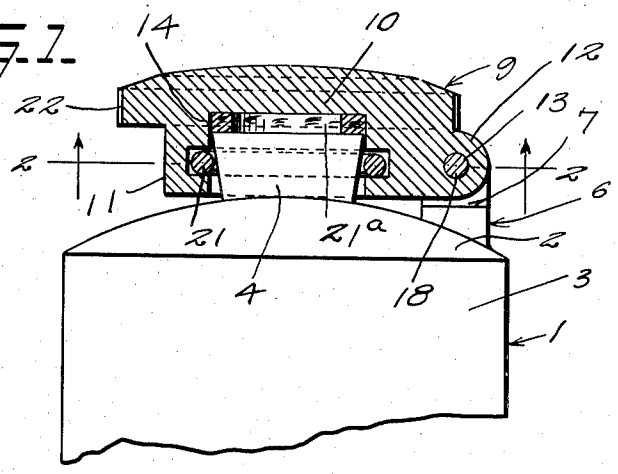


Fig. 2.

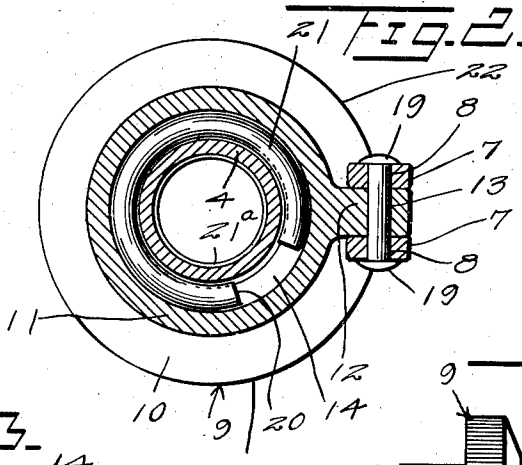


Fig. 3.

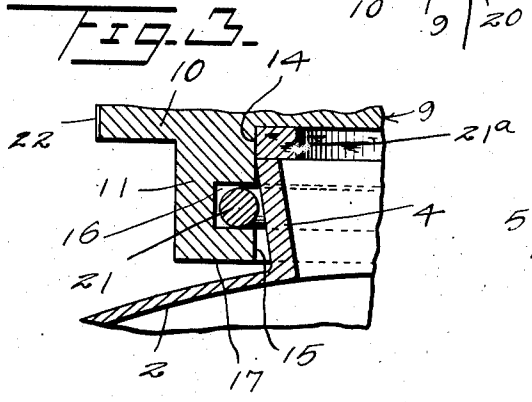
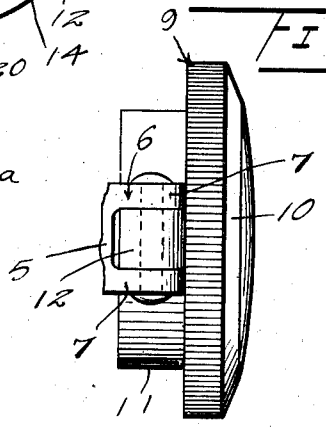


Fig. 4.



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SNAP CAP STRUCTURE

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Application April 14, 1939, Serial No. 267,930

3 Claims. (Cl. 221—60)

This invention relates to a snap cap structure designed primarily for employment with collapsible tubes, but it is to be understood that a cap structure, in accordance with this invention is for use in connection with any form of container for which it may be found applicable.

The invention has for its object to provide, in a manner as hereinafter set forth, a pivotally mounted latchable cap structure for connection with the breast of a container provided with a neck and with the structure including means for coaction with said neck for latching such structure in sealing position relative to the container and with said means capable of being shifted expeditiously to and from latched position.

The invention has for its further object to provide, in a manner as hereinafter set forth, a pivoted snap cap structure including a cap member having a rim portion provided with an internal groove spaced from the inner end of such portion for slidably supporting an extendible and contractible latching element for coaction with the neck of a container for latching said structure in closing relation with respect to the container.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a snap cap structure for the purpose referred to which is simple in its construction and arrangement, strong, durable, compact, readily installed with respect to a container, thoroughly efficient in its use, and comparatively inexpensive to manufacture.

Embodying the objects aforesaid and other which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawing, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

A snap cap structure in accordance with this invention is designed primarily for use of tubes containing toothpastes, cream for any purpose, shoe polish, etc., and with the tubes having inversely tapered necks. The tube with which the cap structure is associated will be hereinafter referred to as a container.

In the drawing:

Figure 1 is a fragmentary view in side elevation of a container showing the adaptation therewith of a snap cap structure in accordance with this invention, said structure being shown in vertical section,

Figure 2 is a section on line 2—2 Figure 1,

Figure 3 is a fragmentary view of the container and cap structure in vertical section and upon an enlarged scale, and

Figure 4 is a view in elevation looking towards the pivoted side of the cap member.

With reference to the drawing, 1 generally indicates a container including a breast 2 at the upper end of a body part 3. Disposed axially of, connected to and extending from the breast 2 is an outlet neck 4. The neck 4 is outwardly divergent, thereby forming an inverted conical section the perimeter of which forms a smooth line. Connected at its inner ends, to the outer face of the breast 2, adjacent the perimeter of the latter and intersected centrally by the vertical median of the breast 2 is the inner end or base 5 of a U-shaped support or yoke 6. The sides or arms of the support 6 are of like form, disposed in parallel spaced relation and indicated at 7. The arms 7 in proximity to their outer ends are formed with aligned openings 8 for a purpose to be referred to.

The snap cap structure includes a cap member which is generally indicated at 9 and it includes a circular body part 10 having its inner face merging into an annular rim 11 of less diameter than and arranged coaxially with the body part 10. Integral with the inner face of body part 10 and the outer face of the rim 11 is laterally extending arm 12 formed in proximity to its outer end with an opening 13. The inner face of body part 10 is formed with a circular recess 14 having its side wall forming a flush continuation of the inner face of the rim 11. The inner diameter of the rim 11 and the diameter of the recess 14 is slightly greater than the diameter of the outer end of the neck 4. The rim 11 is formed on its inner face 15 with an inwardly opening annular groove 16 of square contour in vertical section. The groove 16 is spaced from the inner end surface 17 of rim 11 and also from the point of mergence of the rim 11 with the inner face of body part 10. The groove is disposed equi-distant from said inner end surface 17 and said point of mergence. The cap member 9 may be constructed of any suitable material preferably "Bakelite."

The snap cap structure includes a pivot 18 for the cap member 9, and in this connection it will be stated that the arm 12 has its outer terminal portion arranged between the arms 7 of the support 6. The opening 13 of arm 12 is to align with the openings 5 of the arms 7 and the pivot 18 is positioned in the aligned openings 8, 13. The

ends of pivot 18 are upset, as at 19 against the outer faces of the arms 7. The member 6, pivot 18, arm 12, when assembled provide a hinge connection between the cap member 9 and container 1.

The snap cap structure includes an extendible and contractible latching element 20 which coacts with the neck 4 for latching the cap member 9 in closing relation with respect to the neck. The member 20 is in the form of an annular split spring 21 loosely mounted in and extended from the groove 16 to encompassing relation with respect to the neck 4. The inner side of element 20 coacts with the outer periphery of the tapered neck 4 for releasably securing cap member 9 to said neck.

The snap cap structure includes a sealing element 21^a for the upper end of neck 4. The element 21^a is of an annular form and of an outer diameter of any suitable material preferably cork. The closure 21^a is of a diameter to snugly fit the wall of the recess 14 throughout. The element 21^a is of a thickness to extend into and snugly fit a portion of the inner face of rim 11 in close proximity to the point of mergence of rim 11 with body part 10. The body of the element 21^a in transverse cross-section is of greater length than the body of the neck 4 in transverse cross-section. When the cap member 9 is latched to the container the element 21^a is in sealing position and in such position it seats on the upper edge of the neck 4, bears against the base and wall of recess 14, bears against the inner face of rim 11 and extends inwardly from the top edge of the neck 4. The element 21^a is permanently carried by the cap member 9.

The overhang of body part 10 with respect to the rim 11 facilitates the shifting of cap member 9 from latched position to open the container. Preferably the edge 22 of body part 10 will be milled as shown.

What I claim is:

1. In a latchable snap cap structure for containers, a container neck, said neck being outwardly divergent, thereby forming an inverted conical section the perimeter of which forms a smooth line, a cap member including a body part for opposing in laterally extended relation the outer end of the neck and an annular rim integral with the inner face of and inset relatively to said body part, said rim for encompassing in spaced relation said neck and having its inner face formed with an annular groove of square cross-section, an arm integral with a part of the inner face of laterally extended portion of said body part and the outer face of the rim and extending laterally from the edge of said member, means for hinging the outer end of the arm with the breast of the container of which said neck forms a part, and an extendible and contractible latching means slidably mounted in said groove in the form of a split annulus, said means having a continuous portion corresponding to the length thereof normally extended from the said groove for encompassing and for engaging and coacting with a part of the outer side face of the neck for latching the cap member in closing relation with respect to the neck.

2. In a latchable snap cap structure for containers, a container neck, said neck being outwardly divergent, thereby forming an inverted conical section the perimeter of which forms a smooth line, a cap member including a body part for opposing in laterally extended relation the outer end of the neck and an annular rim integral with the inner face of and inset relatively to said body part, said rim for encompassing in spaced relation said neck and having its inner face formed with an annular groove of square cross-section, an arm integral with a part of the inner face of laterally extended portion of said body part and the outer face of the rim and extending laterally from the edge of said member, means for hinging the outer end of the arm with the breast of the container of which said neck forms a part, an extendible and contractible latching means slidably mounted in said groove in the form of a split annulus, said means having a continuous portion corresponding to the length thereof normally extended from the said groove for encompassing and for engaging and coacting with a part of the outer side face of the neck for latching the cap member in closing relation with respect to the neck, said body part having its lower face formed with a recess, the inner face of said rim forming a continuation of the wall of said recess, and an annular sealing element abutting the base of the recess and snugly engaging with said wall and the inner face of the rim and for bearing on the top edge of said neck when the cap member is in closing position.

3. In a latchable snap cap structure for containers, a container neck, said neck being outwardly divergent, thereby forming an inverted conical section the perimeter of which forms a smooth line, a cap member including a body part for opposing in laterally extended relation the outer end of the neck and an annular rim integral with the inner face of and inset relatively to said body part, said rim for encompassing in spaced relation said neck and having its inner face formed with an annular groove of square cross-section, an arm integral with a part of the inner face of laterally extended portion of said body part and the outer face of the rim and extending laterally from the edge of said member, means for hinging the outer end of the arm with the breast of the container of which said neck forms a part, an extendible and contractible latching means slidably mounted in said groove in the form of a split annulus, said means having a continuous portion corresponding to the length thereof normally extended from the said groove for encompassing and for engaging and coacting with a part of the outer side face of the neck for latching the cap member in closing relation with respect to the neck, said body part having its lower face formed with a recess, the inner face of said rim forming a continuation of the wall of said recess, and an annular sealing element abutting the base of the recess and snugly engaging with said wall and the inner face of the rim and for bearing on the top edge of said neck when the cap member is in closing position, the body of said sealing element in transverse cross-section being of greater length than the transverse cross-sectional length of the body of the neck whereby said element when in sealing position will extend laterally from the inner face of the neck.

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