April 11, 1944. H. OVEREND 2,346,181

CAP CLOSURE FOR CONTAINERS

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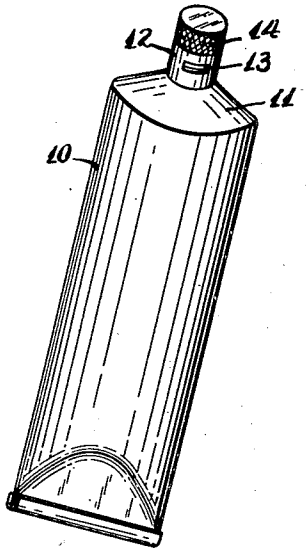

Fig. 1.

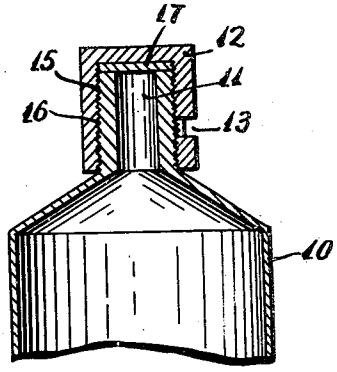

Fig. 2.

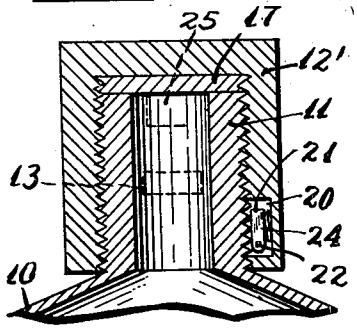

Fig. 4.

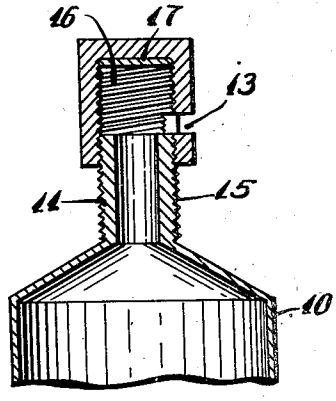

Fig. 3.

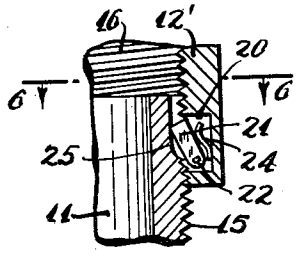

Fig. 5.

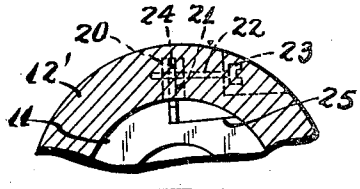

Fig. 6.

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CAP CLOSURE FOR CONTAINERS

Henry Overend, Liverpool, England

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1 Claim. (Cl. 221—60)

This invention relates to new and useful improvements in a cap closure for containers.

More specifically the invention proposes the construction of a cap closure characterized by a screw cap adapted to be applied to a metallic foil collapsible tube or other container having flexible walls and a rigid neck arranged in a manner to receive the said cap.

Still further the cap according to this invention is also suitable for application to a can or bottle or the like container from which the contents such as a liquid, lubricant, pasty substance or powder is adapted to be sealed by the cap for transporting or storage.

Still further it is proposed to provide the cap wall on one side thereof with a slot extending to the interior thereof which allows the contents of the container to be poured or sprinkled from the container and arranged in a manner to eliminate the necessity of completely unscrewing the cap to prevent the mislaying of the cap when the contents of the container are required for use.

Another object of this invention proposes to threadedly mount the cap upon the neck of the container in such a manner that it is adapted to be unscrewed a turn or two for uncovering the slot in the side of the cap to permit finger pressure applied to the body of the tube or container to expel the contents thereof through the slot.

Another object of this invention proposes the application of this cap to a flexible container constructed of rubber or Celluloid and arranged in a manner so that intermittent pressure on the side walls of the container causes the contents thereof to spurt through the slot in the cap.

A further object of this invention proposes the application of a cap to a container and arranged in such a manner that the cap remains in position upon the container at all times, during the closed position thereof and the open position thereof while the contents of the body are being removed.

A further object of this invention proposes the construction of a cap which is adapted to be machined, stamped out or manufactured by any other known method from material such as metal, glass, wood, earthenware, rubber, Celluloid, plastic compositions or the like material and which cap is provided with a disc cushion of cork or rubber adjacent its inner face and which is adapted to engage the opening in the neck of the container when the cap is in position thereon for hermetically sealing the end of the container.

A further object of this invention proposes to provide the exterior wall of the cap adjacent its top edge with a plurality of serrations, and oddly shaped flange, a hexagonal or octagonal configuration for the purpose of permitting the end of the cap to be conveniently grasped between one's fingers when unscrewing the cap to expose the slot thereof.

Another object of this invention is to construct a cap closure which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claim in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a perspective view of a metallic foil tube having a cap closure constructed in accordance with this invention.

Fig. 2 is a vertical sectional view of a portion of Fig. 1.

Fig. 3 is a view similar to Fig. 2 but illustrating the open position of the cap.

Fig. 4 is a view similar to Fig. 2 but illustrating a modification of the invention.

Fig. 5 is a detailed view of a portion of Fig. 4 but illustrating the position of the parts when the cap is open.

Fig. 6 is a horizontal sectional view taken on the line 6—6 of Fig. 5.

The cap closure for containers, according to this invention, is used in combination with a container 10 having an end in the form of a neck opening 11 through which the contents of the container are adapted to be discharged. The container in the drawing is shown to be a metallic foil tube, however, this application is merely for the purpose of illustration and the cap closure may be equally well applied to a container constructed of Celluloid, a metallic container, a glass or porcelain container or any other desired container from which pastes, lubricants, oils, liquids, powders or other similar substances are adapted to be discharged.

The cap closure is characterized by a cap 12 movably mounted upon the neck 11 and which is provided with an opening 13 in one of its side walls. The outer periphery of the cap 12 adjacent its top end is provided with gripping ele-

ments 14. These gripping elements are in the form of serrations and are provided for permitting the cap to be conveniently gripped and turned with relation to the neck 11.

A releasible means is provided for holding the cap 12 inwards upon the neck 11 and in a position in which the opening 13 is beneath the discharge end of the neck 11 and closed thereby. This means comprises screw threads 15 formed on the outer periphery on the neck 11 and which cooperate with complementary screw threads 16 formed on the inside of the cap 12. The arrangement between the screw threads 15 and 16 is such that the cap 12 is adapted to be gripped and rotated with relation to the neck 11 to position the opening 13 adjacent the outer end of the neck 11 as shown in Fig. 3 for permitting the contents of the container to discharge therethrough when finger pressure is applied to the side walls of the container. The inside of the cap 12 is provided with a cushion disc 17 of cork or rubber and which is adapted to engage against the end of the neck 11 when the cap 12 is entirely in position thereon as shown in Fig. 2 for hermetically sealing the end of the container 10.

The operation of this form of the invention is as follows: During transporting or storage the cap 12 is screwed entirely onto the neck 11 for causing the opening 13 to be closed by the side walls of the neck and to engage the cushion disc 17 against the end of the neck 11 to hermetically seal the contents of the container. When it is desired to discharge a portion of the contents of the container it is merely necessary to unscrew the cap 12 by gripping the end thereof and turning with relation to the container to position the opening 13 adjacent the end of the neck 11 to permit the contents thereof to discharge through the opening when the side walls of the container are compressed.

To again close the container it is merely necessary to turn the cap 12 into position upon the neck 11 as shown on Fig. 2 and the contents of the container which were located within the hollow in the cap in the open position thereon will be forced back into the container through the opening of the neck 11.

According to the modification of the invention shown in Figs. 4 to 6, the construction of the cap closure for containers is similar to that previously described except that the cap 12' is provided with an auxiliary means for locking the cap against further outward movement when the cap is in a position in which its opening 13 is in position above the discharge end of the neck 11. This means is applied to one side of the cap 12' adjacent the bottom thereof and is characterized by an inwardly extending cutout 20 extended inwards from the inside portion of the cap 12'. A bolt 21 is located within the cutout 20 and is fixedly keyed to the shank 22 of a pin 23.

A spring 24 is mounted upon the inside wall of the cut-out 20 and engages against the back edge of the bolt 21 for urging the same outwards to engage against the periphery of the neck 11 as shown in Fig. 4. The top edge of the neck 11 is provided with a cutout 25 into which the spring 24 tends to force the bolt 21 when the cap 12' reaches a position in which the opening 13 is adjacent to the discharge end of the neck 11. This cutout 25 is arranged to prevent further outward movement of the cap, but the pin 23 is provided with a screw head exposed from the cap 12' and which is adapted to be turned for disengaging the bolt 21 from the cutout 25 when it is desired or becomes necessary to free the cap 12' to permit the same to be completely disengaged from the neck 11. In other respects this form of the invention is similar to that previously described and like reference numerals are used for identifying the like parts in each of the several views.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claim.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

In a container having a neck portion upon which a cap having a side opening is threadedly engaged to permit the contents of the container to be ejected through said side opening when said cap is moved outwardly relative to said neck causing said side opening to be positioned beyond the end of said neck, and means for limiting the outward movement of said cap to a position in which said side opening will be beyond the end of said neck while leaving said cap free to be moved inwardly on said neck to again close the container, said means comprising a headed pin rotatively extended across a recess extending radially outwardly from a point adjacent the threaded portion of said cap, a bolt fixedly mounted on said pin and disposed within said recess, resilient means secured to a side wall of said recess and adapted to engage said bolt to urge it inwardly toward said neck, a keeper formed on said neck, said keeper comprising a radially extending wall adapted to be engaged by said bolt to limit the outward movement of said cap when said bolt and said keeper are in alignment, and cam means disposed on said neck for urging said bolt radially outwardly when said cap is moved inwardly, said pin being countersunk within said cap and said head being adapted to be engaged by a turning tool for turning said pin to free said bolt from said keeper and against the action of said resilient means, whereby said cap may be completely removed from said neck when desired.

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