June 14, 1938. W. A. FLOWER 2,120,491

CLOSURE FOR CONTAINERS

Filed Sept. 28, 1937

Fig. 1.

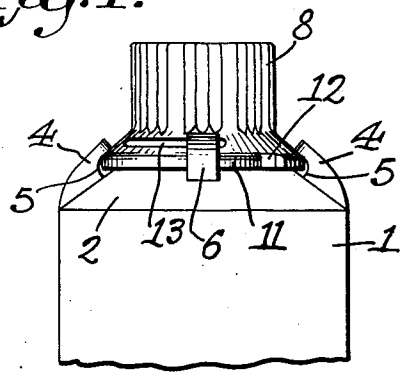


Fig. 2.

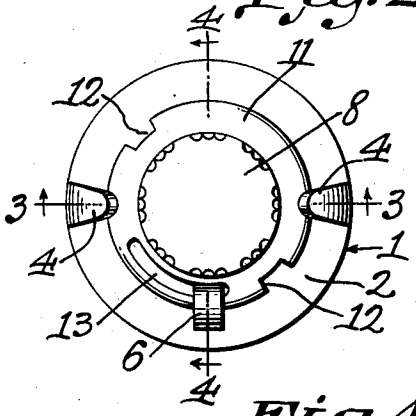


Fig. 3.

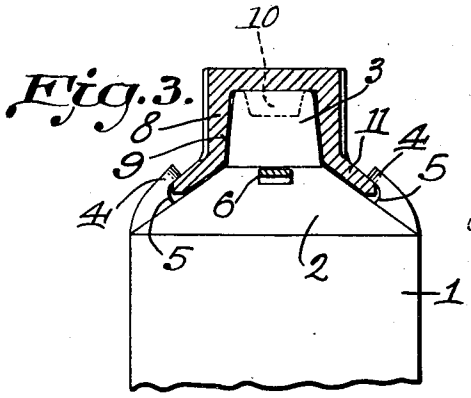


Fig. 4.

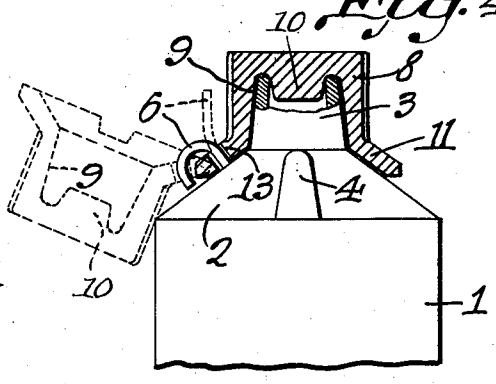


Fig. 5.

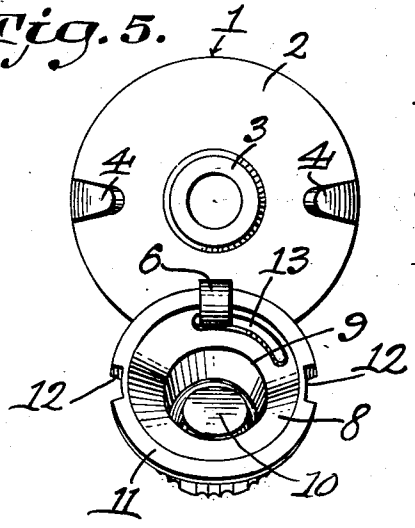
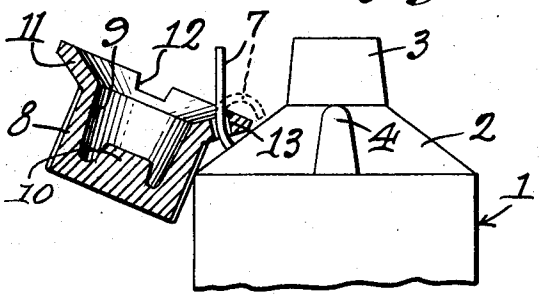


Fig. 6.



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CLOSURE FOR CONTAINERS

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Application September 28, 1937, Serial No. 166,218

5 Claims. (Cl. 221—60)

This invention relates to a closure for containers and while it is more especially designed for use in connection with collapsible tubes of the container type, it can also be employed in connection with other types of container, such as jugs, jars, etc.

An object of the invention is to provide a closure in the form of a cap which can be joined readily to the container but which, after being connected thereto, is not designed to be detached therefrom, new and novel means being employed whereby the cap is held to the container and at the same time permitted to be rotated into and out of interlocking engagement with retaining means on the container.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred forms of the invention have been shown.

In said drawing

Figure 1 is an elevation of a portion of a container provided with the present improvement, the cap or closure being shown secured in closed position.

Figure 2 is a plan view of the structure shown in Figure 1.

Figure 3 is a transverse section through the cap while in closed position, said section being taken on the line 3—3, Figure 2.

Figure 4 is a view similar to Figure 3 some of the section being taken on the line 4—4, Figure 2 and the cap being shown, by broken lines, in open position and by full lines in closed position, the cap attaching means being shown, by broken lines in the position assumed thereby prior to the application of the cap to the container.

Figure 5 is a plan view showing the cap in full open position.

Figure 6 is a view partly in elevation and partly in section showing a slightly modified means for connecting the cap to the container, said container being shown in open position and the cap attaching means being shown by full and broken lines in successive positions assumed thereby during the application of the cap to the container.

Referring to the figures by characters of reference 1 designates a container of any preferred type provided preferably with a tapered shoulder 2 and a tapered neck 3. This container can be a collapsible tube or it can be a jar made of metal, ceramic ware or any other material. In any case the container is provided, on its shoulder 2, with a desired number of retaining lugs 4 which are undercut as shown at 5 so as to provide spaces between them and the shoulder for the reception of portions of the cap as hereinafter explained.

Extending from the shoulder 2 at a point spaced from the lugs is an elongated tongue 6. If desired this tongue can be joined to the shoulder 2 close to the neck, as shown particularly in Figure 4 or, as shown in Figure 6, the tongue 7 corresponding with tongue 6, can be joined to the shoulder at a point remote from the neck 3.

The cap used in connection with the container has been indicated at 8 and has a cavity 9 so shaped that, when the cap is in closed position, it will loosely fit the outer surface of the neck 3. If desired a node 10 can be formed on the inner wall of the cavity to wedge into the open end of the neck when the cap is in closed position. An annular flange 11 is provided at the base of the cap and is formed with notches 12 in the edge thereof so located that when the cap is placed on neck 3 in one position, the two notches will receive the lugs 4. The thickness of the flange is such that when the cap is rotated after being placed in engagement with the lugs, portions of the flange will move into the clearances 5 under the lugs. Obviously, if desired, the top surface of the flange can be inclined at these points so as to set up a wedging action.

At a point between the notches the flange 11 is formed with an arcuate slot 13 concentric with the adjacent portion of the cap and so positioned as to receive the tongue 6, and at the same time allow a limited rotation of the cap upon the neck 3.

When the cap is to be applied to the container, the tongue 6 is extended upwardly from the shoulder as indicated by broken lines in Figure 4. This upwardly extended portion of the tongue is then inserted into the slot 13 and then outwardly and downwardly to form a loop as shown in Figure 4, thus serving as a hinge connection between the cap and the container which will prevent the cap from becoming accidentally separated from the container although permitting it to swing into open and closed position on the neck and also to have a sliding movement on the tongue.

Obviously when it is desired to close the container it is merely necessary to swing the cap onto the neck 3, this operation being possible only when the notches 12 are located where they will receive lugs 4. After the cap has thus been swung closed with node 10 extending into the open end of the neck 3, it is given a slight rotation, this being permissible due to the provision of slot 13. This rotation will be sufficient to move the notches 12 from under the lugs. Thus the cap will be securely held in closed position and the container cannot be opened until the foregoing operation is reversed.

Instead of arranging the tongue close to the base of the neck as shown in Figure 4 extending it outwardly and downwardly, it can be arranged nearer the outer margin of the neck and turned downwardly toward the neck as shown in Figure 6.

Obviously various other changes may be made within the scope of the claims.

What is claimed is:

1. The combination with a container having a neck and a shoulder surrounding the base of the neck, of undercut retaining means on the shoulder, an upstanding loop on the shoulder, a cap hingedly and slidably mounted on the loop and notched to receive the lugs, said cap being rotatable on the neck and shoulder and while in engagement with the loop to engage with or become disengaged from the undercut means.

2. The combination with a container having a neck and a shoulder portion, of a cap proportioned to fit loosely upon the neck, said cap having a marginal notch, undercut retaining means on the shoulder adapted to be received by the notch and to overlie a portion of the cap when said cap is rotated on the neck, a slidable and hinged connection between the cap and shoulder portion, and means in the cap for closing the neck when the cap is fastened.

3. The combination with a container having a shoulder portion and a neck with an opening, of a cap proportioned to fit loosely upon the neck, said cap having a marginal notch, means in the cap for closing the neck opening, undercut retaining means on the shoulder adapted to be received by the notch and to overlie a portion of the cap when said cap is rotated on the neck, and a slidable and hinged connection between the cap and shoulder portion, said connection including an upstanding loop on the shoulder portion, there being an arcuate slot in the cap through which the loop is extended.

4. The combination with a container having a shoulder portion and a neck portion, of undercut retaining means on the shoulder portion, a cap having a notched flared end and rotatably and loosely mounted on the wall of the neck portion, said end being notched to receive the retaining means when the cap is closed and said cap being rotatable for movement of the flared portion under the undercut portion of the retaining means, and a hinged connection between the cap and the container, said cap being rotatable relative to the connection.

5. The combination with a container having a neck portion with an outlet opening, and a shoulder portion, of undercut retaining means on the shoulder portion, a cap having a notched flared end and rotatably and loosely mounted on the wall of the neck portion, said end being notched to receive the retaining means when the cap is closed and said cap being rotatable for movement of the flared portion under the undercut portion of the retaining means, a hinged connection between the cap and the shoulder, said cap being rotatable relative to the connection, said connection including an upstanding loop on the shoulder portion, there being an arcuate slot in the flared portion of the cap through which the loop extends, and means in the cap for wedging into and closing the neck opening when the cap is in closed position.

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