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BOTTLE CLOSURE

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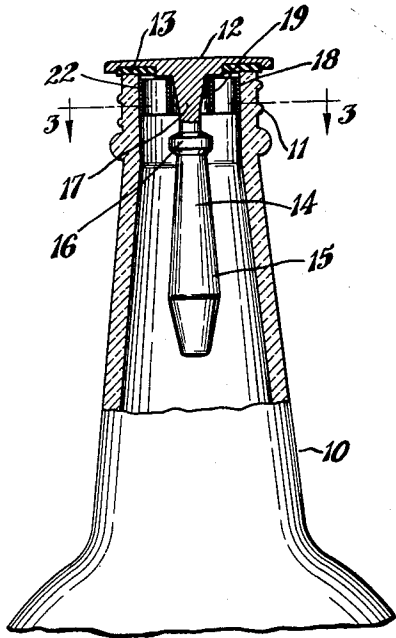


Fig. 1

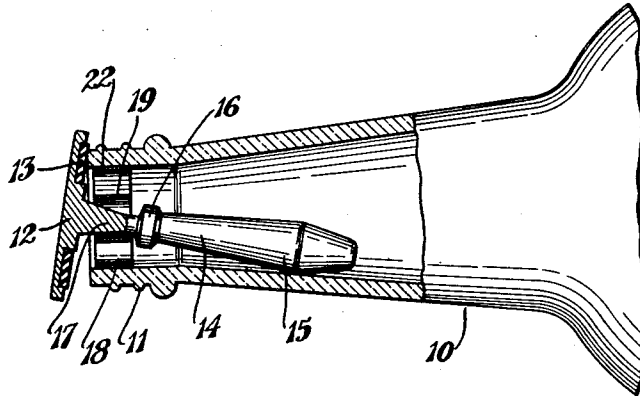


Fig. 2

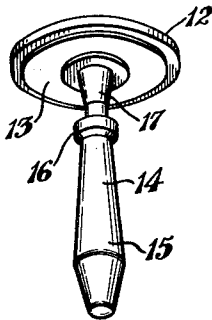


Fig. 4

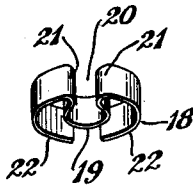


Fig. 5

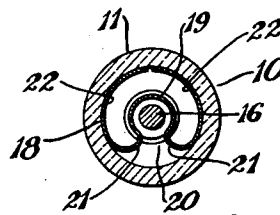


Fig. 3

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BOTTLE CLOSURE

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6 Claims. (Cl. 215—37)

The invention relates to a closure for bottles and more especially to a closure including a cap arranged to open as the bottle is tilted to a position for pouring the liquid contents therefrom, and which will close when the bottle is returned to an upright position.

An object of the improvement is to provide a closure of the kind referred to including a disk top or cap adapted to fit over the end of the bottle neck and having a weighted stem fixed thereto and suspended within the neck of the bottle, a spring clip surrounding said stem and being inserted into the bottle neck, whereby the closure may be quickly and easily attached to or removed from a bottle.

Another object is to provide such a bottle closure in which the weighted stem is suspended within said spring clip in the manner of a pendulum whereby it may swing outward against the side of the bottle neck, as the bottle is tilted, moving the cap away from the end of the neck to permit the liquid contents of the bottle to pour therefrom.

A further object of the improvement is to provide a bottle closure of the character referred to in which a pad of soft rubber or the like is provided upon the underside of the cap to substantially seal the bottle when in upright position.

A still further object is to provide a novel, one-piece spring clip surrounding the stem of the closure and adapted to be inserted into the end portion of the bottle neck in order to attach the closure thereto.

Still another object is to provide such a spring clip with a central substantially circular portion surrounding the stem and of considerably larger diameter than the enclosed portion of the stem, a shoulder being formed upon the stem at a point spaced below said spring clip, forming a stop to prevent the closure from becoming detached from the bottle when the same is tilted.

The above objects, together with others which will be apparent from the drawing and following description, or which may later be pointed out, may be attained by constructing the improved bottle closure in the manner illustrated in the accompanying drawing, in which

Figure 1 is a longitudinal sectional view of the neck of a bottle in upright position showing the improved closure attached thereto in closed position;

Fig. 2, a similar view showing the bottle neck tilted, the closure being shown in the open po-

sition it automatically assumes when the bottle is thus tilted;

Fig. 3, a transverse section through the neck of the bottle, the spring clip and the stem of the closure, taken as on the line 3—3, Fig. 1;

Fig. 4, a detached perspective view of the closure cap or disk with weighted stem; and

Fig. 5, a detached perspective view of the improved spring clip.

Similar numerals refer to similar parts throughout the drawing.

The neck portion of a bottle is indicated generally at 10 and may be of any usual design such as provided upon bottles for containing liquor and the like, having the threaded end portion 11 for receiving the usual screw cap which is dispensed with when the improved bottle closure is used.

The closure cap or disk is shown at 12, and may be of metal, glass or other suitable material. This cap is preferably of slightly greater diameter than the end portion of the bottle neck, and is provided on its underside with a pad of soft rubber or the like shown at 13 and adapted to fit upon and substantially seal the upper open end of the bottle neck when in upright position as shown in Fig. 1.

The stem 14 is fixed to the underside of the cap and may be formed integrally therewith as illustrated. This stem depends from the center of the cap and is preferably of such proportions as to provide a substantial weight to hold the cap firmly upon the neck of the bottle when in upright position. For this purpose the lower portion of the stem may be of increased diameter as indicated at 15.

The upper portion of the stem is preferably tapered downward from the point of juncture with the cap to the annular shoulder 16, as indicated at 17.

For the purpose of quickly and easily attaching the closure to the neck of a bottle in such a manner that it will normally close the bottle neck when the bottle is in upright position and will swing like a pendulum to open position when the bottle is tilted to pour the contents therefrom, a spring clip generally designated by the numeral 18 is associated with the closure cap and stem above described, and is arranged to be fitted within the upper end of the bottle neck.

This spring clip is preferably formed of a strip of flat spring metal as shown and comprises the central open ring portion 19 arranged to surround the tapered upper portion 17 of the stem

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above and normally spaced from the shoulder 16 thereof.

As will be seen in the drawing, this open ring portion of the spring clip is of greater diameter than the portion 17 of the stem which it surrounds but of less diameter than the shoulder 16, whereby the stem is free to oscillate within said open ring and is restrained from becoming entirely disengaged therefrom when the bottle is tilted to position to pour the contents therefrom.

The spring clip at each side of the opening of the central open ring portion 19 thereof is then bent as at 21 and then curved backward as at 22, forming an outer open spring ring of considerably greater diameter than the inner ring portion 19 and adapted to be inserted into the upper end portion of a bottle neck, as shown in Figs. 1 to 3 inclusive, where it is frictionally held in position.

When it is desired to attach the closure to the neck of a bottle, the reduced, tapered portion of the stem is inserted laterally through the opening 20 into the central or inner open ring portion 19 of the spring clip. With the spring clip thus surrounding the stem above the shoulder 16, the lower end portion of the stem is inserted longitudinally into the end of the bottle neck and the outer split ring portion 22 of the spring clip is compressed between the thumb and fingers and forced down into the neck of the bottle.

As the spring clip is released from the compressing pressure of the thumb and fingers it will spring outward against the inside of the bottle neck, frictionally retaining itself in the position shown in Figs. 1 to 3 inclusive.

When the bottle is placed in upright position, as in Fig. 1, the cap 12 will rest squarely upon the upper open end of the bottle neck, the rubber pad 13 upon the underside thereof contacting with the mouth of the bottle and substantially sealing the same, while the stem 14 will hang suspended through the spring clip and within the neck of the bottle as shown in said figure.

When the bottle is tilted to pour the contents therefrom, the stem will swing within the neck and rest against the lower side thereof, as shown in Fig. 2, the cap 12 swinging away from the mouth of the bottle at the lower side, as shown in said figure, so that the liquid contents may easily pour from the bottle.

In this position it will be apparent that the annular shoulder 16 will prevent the stem from passing outward through the inner ring portion 19 of the spring clip, thus preventing the closure device from becoming detached from the bottle.

If it is desired to remove the closure from the bottle it is only necessary to grasp the edge of the cap 12 and pull outward away from the bottle, removing the cap and stem together with the spring clip as a unit.

I claim:

1. A bottle closure including a closure cap adapted to rest upon the open end of a bottle neck, a stem fixed to said cap and adapted to be suspended within the bottle neck, and a spring clip surrounding said stem and adapted to frictionally engage the inside of the bottle neck.

2. A bottle closure including a closure cap adapted to rest upon the open end of a bottle neck, a stem fixed to said cap and adapted to be suspended within the bottle neck, a spring clip surrounding said stem and adapted to frictionally engage the inside of the neck neck, and means upon the stem for preventing it from becoming disengaged from the spring clip.

3. A bottle closure including a closure cap adapted to rest upon the open end of a bottle neck, a stem fixed to said cap and adapted to be suspended within the bottle neck, a spring clip surrounding said stem and adapted to frictionally engage the inside of the bottle neck, and a shoulder upon the stem below the spring clip.

4. A bottle closure including a closure cap adapted to rest upon the open end of a bottle neck, a stem fixed to said cap and adapted to be suspended within the bottle neck, a spring clip surrounding said stem and adapted to frictionally engage the inside of the bottle neck, and a rubber pad upon the underside of said cap.

5. A bottle closure including a closure cap adapted to rest upon the open end of a bottle neck, a stem fixed to said cap and adapted to be suspended within the bottle neck, and a spring clip surrounding said stem and adapted to frictionally engage the inside of the bottle neck, said spring clip comprising an inner ring portion and an outer split spring ring portion.

6. A bottle closure including a closure cap adapted to rest upon the open end of a bottle neck, a stem fixed to said cap and adapted to be suspended within the bottle neck, a shoulder upon said stem spaced below said cap, and a spring ring including an inner ring portion surrounding the stem above said shoulder and of greater diameter than the portion of the stem above the shoulder, and an outer split spring ring portion adapted to frictionally engage the inside of the bottle neck.

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