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SAFETY COMBINATION CAP

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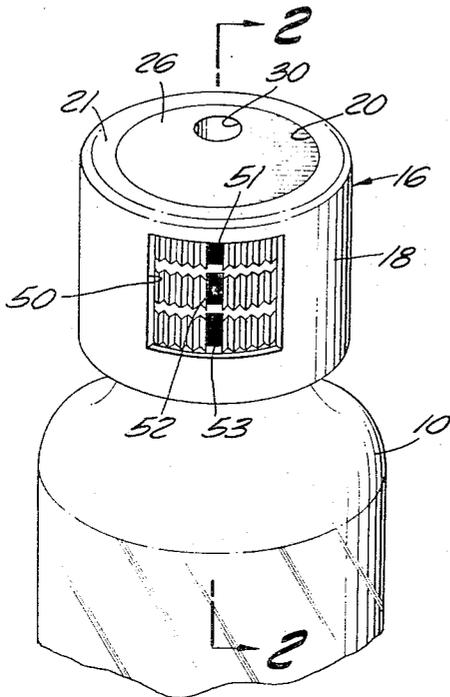


FIG. 1.

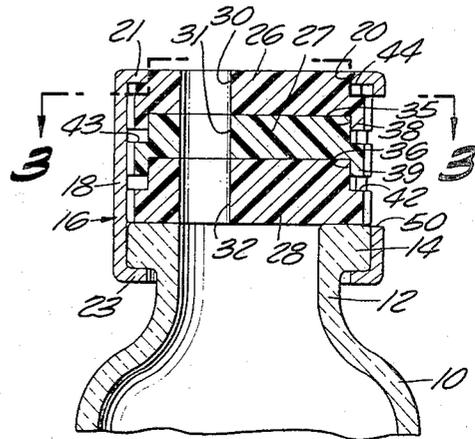


FIG. 2.

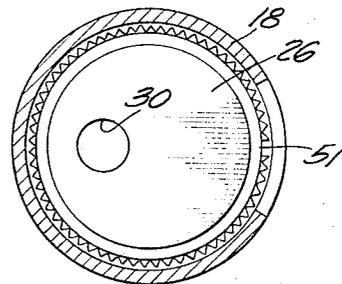


FIG. 3.

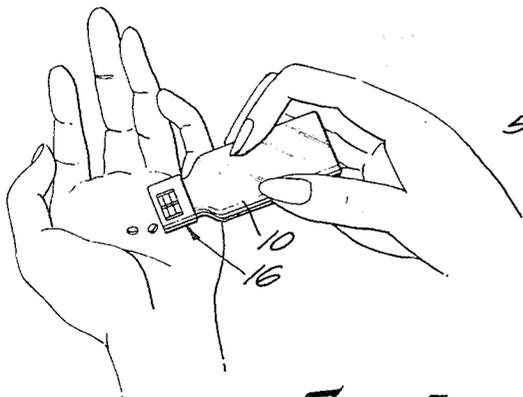


FIG. 5.

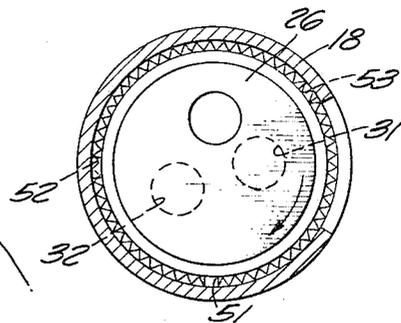


FIG. 4.

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SAFETY COMBINATION CAP
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This invention relates to a safety cap or closure for use with containers, such as bottles and the like, although it might be used with other types of containers. In the exemplary form of the invention described herein the invention is applied to a bottle.

In the preferred form of the invention it takes the form of a closure which while of simplified form, requires some thought or knowledge including manipulation of a combination to place the closure in position or condition for extracting the contents of the container, which as stated, may be a bottle. The invention is particularly adaptable to use with pill bottles. In this utilization of the invention protection is provided against children being able to get pills that may be harmful to them, out of a bottle. This follows because the operation of the closure requires sufficient thought, intelligence or manipulation, such that young children are unable to operate it for extracting contents of the bottle. The closure is, however, adaptable to use with other materials including liquids and powders. Realization of this protection is the primary object of the invention.

In a preferred, simplified form of the invention a cylindrical closure cap is provided having retained or jacketed within it a plurality of discs, for example three. The discs have eccentric, that is, off-center holes in them, which can be brought into alignment for extracting the contents of the container when the discs are individually rotated into predetermined positions. The closure is provided with a side opening for easy access to the peripheries of the discs so that they can be turned with a finger. A further object of the invention resides in this simplified but effective construction for realizing the purposes of the invention.

Further objects and additional advantages of the invention will become apparent from the following detailed description and annexed drawings wherein:

FIGURE 1 is a perspective view of a preferred form of the invention applied to a bottle;

FIGURE 2 is a sectional view taken along the line 2-2 of FIGURE 1;

FIGURE 3 is a view taken along the line 3-3 of FIGURE 2 with the closure adjusted to the open position;

FIGURE 4 is a view like that of FIGURE 3 with the closure in closed position;

FIGURE 5 is a pictorial view illustrating the use of the invention.

Referring now to FIGURES 1 to 5 of the drawings, numeral 10 designates a conventional bottle having a neck 12 with a neck flange or rim 14. The safety closure of the invention is designated generally at 16. It comprises a cylindrical housing or jacket 18 that may be made of a suitable material such as plastic or metal. The closure 18 has a top opening 20 and an inwardly extending top flange 21. The closure or cap 20 has an internal diameter corresponding to the diameter of the flange or rim 14 of the bottle and it has a bottom inturned flange 23 that extends inwardly underneath the neck flange or rim 14 on the bottle. The material of the closure 18 may be made of material that is sufficiently flexible, such that when it is put on the bottle or container, the bottom flange part 23 can be turned or bent under the neck flange or rim 14 to hold the closure in place. On the other hand, the closure may be internally threaded at the bottom to thread on to containers having threaded necks. Means may be

provided to lock the threaded closure in place after it is threaded on so as to make it difficult or impossible to unthread it.

Within the cap or closure 18 are three discs as designated at 26, 27 and 28. These discs may be made of a suitable material such as plastic or the like. Each disc has in it a hole which is eccentric, that is, offset from the centers of the discs; these holes being designated at 30, 31 and 32. The holes are of the same size and are at the same distance from the central axis of the closure. The discs may be simply flat circular discs. In the form shown in the drawings, however, the discs 26 and 27 are provided with bottom circular recesses 35 and 36. These recesses leave downwardly extending circular skirts 38 and 39 on the discs 26 and 27. The lower disc 28 does not have the bottom circular recess, but it might have. The upper parts of the discs are of slightly smaller diameter providing a square annular shoulder between the upper part of each disc and the lower part. This shoulder is designated at 42 for disc 28, 43 for disc 27 and 44 for disc 26. The inturned flange 21 fits into and engages in the square annular shoulder 44 of the disc 26. The discs are nested together as shown; the upper part of disc 28 nests into the recess 36 in disc 27. The upper part of disc 27 nests into the recess 35 in the disc 26. In this manner the discs are constrained to be held accurately in axial alignment and the nested relationship provides surfaces between discs whereby they can be rotated accurately relative to each other about the central axis.

The cap or closure 18 has a rectangular side opening as designated at 50 exposing peripheral portions of the discs 26, 27 and 28. Preferably the peripheries of the discs are knurled as may be seen in the figures so that they can be individually turned by the finger through the opening 50. Each disc has an edge index marker provided by an edge slot therein as designated at 51, 52 and 53 in FIGURE 1. These edge index markers are positioned relative to the holes or apertures 30, 31 and 32 in the discs such that when the index markers are aligned as shown in FIGURE 1, then the holes also are in alignment so that contents of the container 10 may be extracted therefrom.

FIGURES 3, 4 and 5 illustrate the manner of use of the safety closure. FIGURES 1 and 2 show the opened position in which the index markers 51, 52 and 53 are aligned and the eccentric holes in the discs are also aligned so that the contents of the bottle such as pills or the like, may be extracted therefrom. FIGURE 4 illustrates the closed or safety position in which the edge index markers 51, 52 and 53 are out of alignment and holes 30, 31 and 32 are also out of alignment such that contents of the bottle 10 cannot be extracted. The position of FIGURE 4 is realized simply by moving the discs individually out of the positions as shown in FIGURE 1. To again open the closure, the discs are individually moved back to the position of FIGURE 1 in which the index lines are in alignment. FIGURE 5 pictorially illustrates extraction of pills, the bottle having the safety combination cap thereon.

As can be seen, the cap or closure is held onto the container and this may be accomplished in various ways. Opening of the closure for release of material in the container is by adjustment of the safety combination in the cap, the parts thereof remaining in the cap at all times. The device is accordingly foolproof, but very effective for its purpose.

From the foregoing those skilled in the art will observe that the invention as described herein achieves and realizes all of the objects and advantages as set forth in the foregoing, as well as having many additional advantages that are apparent from the detailed description. The invention as described herein is an exemplary form of it. Various modifications and alternatives may be adopted by those

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skilled in the art, all within the scope and purview of the invention. As pointed out, the discs may be simply flat discs without being nested, if desired. Also, sealing means may be provided between the discs when the closure is used with liquids to prevent escape of liquid between the discs. The cap may be formed without being open at the top with a hole or aperture therein which is eccentric and with which the holes in the discs can be aligned.

The foregoing disclosure is representative of a preferred form of the invention, and is to be interpreted in an illustrative rather than a limiting sense, the invention to be accorded the full scope of the claims appended hereto.

What is claimed is:

1. A safety dispensing closure member for a container comprising a cylindrical cap configurated to be received on the neck of the container, such as a bottle, said cap having within it a plurality of disc members closely adjacent to each other and having a diameter substantially the same as the inside diameter of the cap, each of said discs having an aperture therein spaced at similar distances from the central axis of the cap, said cap having an opening in the side wall thereof exposing peripheral portions of said discs so that they can be individually rotated whereby the apertures in the discs can be brought into registry for dispensing materials such as pills from the container.

2. A closure as in claim 1 wherein each of said discs has an index marker on an edge surface thereof, said index markers being so positioned relative to the apertures in the discs, that when the index markers are aligned, the apertures in the discs are aligned.

3. A closure as in claim 1 wherein the said caps is open at the top having an inturned flange whereby the discs are held therein.

4. A closure as in claim 2 wherein the cap is open at

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the top having an inturned flange for holding the discs within the cap.

5. A closure as in claim 1 wherein the apertures in the discs are circular having centers spaced at equal distances from the central axis of the cap, the said aperture in the side wall of the cap being rectangular.

6. A closure as in claim 5 wherein each of said discs has an index marker on an edge surface thereof, said index markers being so positioned relative to the apertures in the discs, that when the index markers are aligned, the apertures in the discs are aligned.

7. A closure as in claim 1 wherein the said cap has three discs therein, the lower most of which is positioned to seal against the rim at the neck of the container.

8. A closure as in claim 7 wherein the apertures in the discs are circular having centers spaced at equal distances from the central axis of the cap, the said aperture in the side wall of the cap being rectangular.

9. A closure as in claim 1 wherein each disc has a portion of larger diameter and a portion of smaller diameter, some of the discs having circular coaxial recesses therein, the discs being nested together with portions of discs of smaller diameter fitting into recesses of adjacent discs.

10. A closure as in claim 1 having a bottom inturned flange adapted to fit under the neck rim flange of a bottle or the like.

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