

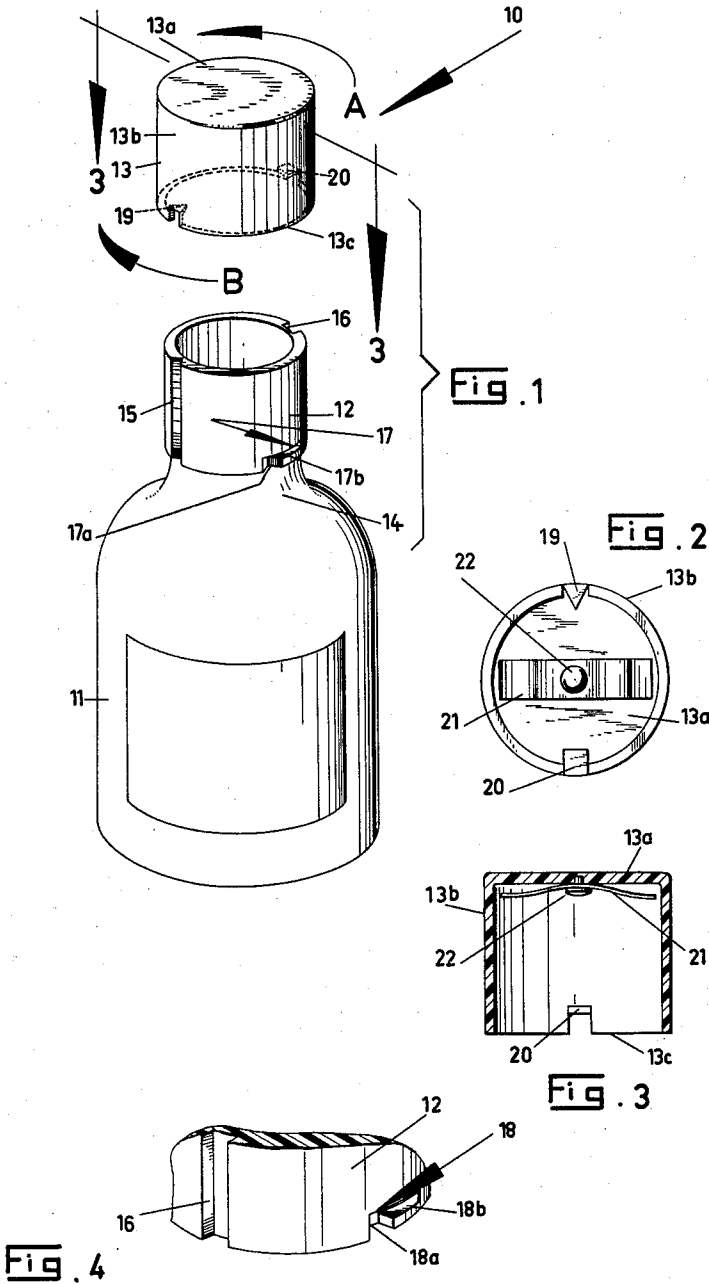
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SAFETY MEDICINE BOTTLE AND CAP

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SAFETY MEDICINE BOTTLE AND CAP

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This invention relates generally to safety devices and, more particularly to an improved design of safety medicine or drug bottle, the closure cap of which is exceptionally difficult for a young child to remove either by intent or accident.

It is well known that certain medicines, drugs and the like, although highly dangerous to young children, must, of necessity, be stored in a glass bottle with removable cap. Further, many such drugs intended for family or individual use are kept in medicine chests within the home.

The normal practice regarding the safe storage of such drugs is to place them in a hidden or, at least, relatively inaccessible location, well removed from the reach of children, and while these precautions serve in the main to prevent accidents, some of which prove fatal, accidents still occur due to babies and young children finding medicine bottles and swallowing the contents. This hazard has been aggravated further by the many drugs currently produced in capsule form, the bright colours thereof suggesting to very young children that they are candies.

To minimize this hazard, many systems of safety closures, as applied to medicine and drug bottles, have been proposed, the majority of which take the form of a screw-on sealing cap which although simple for adults to remove, is difficult, for a child to remove.

While these prior devices achieve many of their intended objects, their structure is often such as to increase the production costs of the bottle considerably, thus making their manufacture uneconomical.

Wishing to improve on such existing devices, it is, therefore a prime object of my invention to provide a safety medicine bottle and cap, referred to hereinafter by the abbreviated form of "safety bottle" which, although simple for use by adults, is of such a character as to be extremely difficult to be inadvertently opened by a young child.

It is another important object of the instant invention to provide a safety bottle which may be manufactured in substantially the same manner as standard medicine bottles in current use.

Still a further object of this invention resides in the provision of a safety bottle of the character heretofore described which is relatively inexpensive to manufacture yet highly efficient in use.

The above and various other pertinent objects and features of my invention will become more readily apparent from the following detailed descriptions of parts applicable thereto and when taken in conjunction with the annexed drawings wherein like characters of reference designate like parts in the several views, and in which:

FIG. 1 is a perspective view of a safety bottle embodying the invention and shown with the cap removed.

FIG. 2 is a plan view of the sealing cap used with my invention.

FIG. 3 is a sectional side elevation of the sealing cap as illustrated in FIG. 1, taken on the line 3-3.

FIG. 4 is a fragmentary perspective view of the bottle neck, showing one of the "locking" recesses therein.

Referring now to FIG. 1, a safety bottle embodying the instant invention and designated generally by the arrow 10 includes a body 11, a neck portion 12 and a sealing cap 13. Body 11 is of conventional structure and may be

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regarded as indicative of any standard design of bottle as used to hold drugs or the like.

Body 11 and neck portion 12 are formed integrally and are joined by a "waisted" or reduced section 14.

A vertically disposed, longitudinal slot 15 of V configuration is adapted to run the complete length of neck portion 12, and a similarly disposed slot 16, formed diametrically opposite slot 15, likewise runs the complete length of neck portion 12, slot 16 being of rectangular section and both slots 15 and 16 being formed within the outer peripheral surface of neck portion 12.

A "locking" recess 17 consisting of a V shaped notch 17a is formed on the lower outer edge of neck portion 12 at a location substantially mid-way between slot 15 and slot 16, recess 17 having a right angularly disposed channel 17b formed therewith, channel 17b running parallel with the lower edge of neck portion 12 and away from slot 15.

Referring now to FIG. 4, a further "locking" recess 18 consisting of a rectangular notch 18a is formed diametrically opposite notch 17 on the lower outer edge of neck portion 12, notch 18 being located substantially mid-way between slot 15 and slot 16, recess 18 having a right angularly disposed channel 18b formed therewith, channel 18b running parallel with the lower edge of neck portion 12 and away from slot 16.

Referring to FIGS. 1, 2 and 3, cap 13 which is of conventional configuration, having a circular top wall 13a, a cylindrical body wall 13b and a lower open end 13c is of such a diameter as to permit its being slidably received by neck portion 12 of safety bottle 10, the depth of body wall 13b being somewhat greater than the depth of neck portion 12.

Cap 13 has, formed within the peripheral edge of lower open end 13c, two inwardly projecting tabs, a first of which comprises a V tab 19 and a second of which comprises a rectangular tab 20, V tab 19 and rectangular tab 20 being rigidly located in diametrically opposed relationship to each other. Tab 19 is of such a configuration as to permit its being received within slot 15 and, likewise, tab 20 is adapted to be received by slot 16, tabs 19 and 20 being slidably operable in a vertical manner within their respective slots.

Referring particularly to FIGS. 2 and 3, a spring 21 is rotatably affixed to the underside of circular top wall 13a of cap 13 by conventional rivet means 22 or the like, spring 21, which may be a leaf spring, extending across cap 13 and internally thereof, the terminal ends of the said spring depending away from wall 13a and defining gaps between spring 21 and the inner peripheral face of body wall 13b.

In operation, cap 13 is located about neck portion 12 of safety bottle 10 in such a manner as to permit tabs 19 and 20 to be received by their respective slots 15 and 16, whereafter cap 13 is pressed downwardly until the terminal ends of leaf spring 21 contact the upper rim of neck portion 12. By further downward pressure against leaf spring 21, tabs 19 and 20 will pass beyond the confines of slots 15 and 16 and onto the reduced section 14 of bottle 10.

By twisting cap 13 anti-clockwise in the direction of arrow A tabs 19 and 20 will travel around reduced section 14 in sliding frictional contact with the lower edge of neck 12 until they become aligned with locking recesses 17 and 18. Upon alignment occurring, tab 19 will move upwardly into its accommodating recess 17, notch 17a thereof being adapted to receive tab 19 therein. Concurrently tab 20 will move upwardly into recess 18, notch 18a thereof being adapted to receive tab 20 therein. An anti-clockwise movement of cap 13 in the direction of arrow A is then made, tabs 19 and 20 moving into their respective channels 17b and 18b of recesses 17 and 18

and being securely retained therewithin by the pressure of spring 21.

Thus it will be seen that four distinct actions are required to remove sealing cap 13, namely:

- (1) A clockwise twist in direction of arrow "B."
- (2) A downward pressure.
- (3) A clockwise twist.
- (4) A lifting action.

Although such a series of actions may be quickly and easily performed by an adult it is highly unlikely that a baby or very young child would manage so to do, the removing actions being contrary to those normally used in unscrewing a cap.

The cap of my safety bottle may be manufactured in a suitable plastic or metal material, the tabs thereon either being moulded integrally or press formed.

The general design of the individual parts of the invention as described above may be varied according to the requirements of manufacture and production while still remaining within the spirit and principle of the invention without prejudicing the novelty thereof.

The embodiments of this invention in which an exclusive property or privilege is claimed are defined as follows:

1. In a safety medicine bottle, a neck portion, said neck portion being joined to the body of said bottle by a reduced section; a first slot formed vertically within the outer peripheral face of said neck portion; a second slot formed vertically within the outer peripheral face of said neck portion, said first and said second slots being located substantially in diametrical opposition to each other; said first slot having a different cross section from said second slot; a sealing cap, said sealing cap being slidably locatable upon said neck portion; said cap having a first inwardly disposed tab formed on its lower edge and a second inwardly disposed tab formed on its lower edge, said first and said second tabs having cross-sections to fit said first and second slots and being located substantially in diametrical opposition to each other; said sealing cap being slightly deeper than said neck portion of said bottle; resilient means located within said sealing cap, said resilient means biasing said cap away from said neck portion upon said cap being pushed down about said neck portion; said first and said second tabs being slidably operable within said first and said second slots respectively; said first and said second tabs being disposed adjacent said reduced section upon said cap being depressed to its full extent upon said neck portion; and locking means for the securing of said cap about said neck portion of said safety medicine, said locking means including a first recess and a second

recess, said first recess being formed on the lower outer edge of said neck portion at a location substantially midway between said first and said second slots, said second recess being formed also on the lower outer edge of said neck portion and substantially diametrically opposite said first recess; said first recess comprising a notch adapted to accommodate said first tab and having a perpendicularly disposed short channel formed therewith, said channel running parallel to said lower edge of said neck portion and being capable of receiving therein said first tab; said second recess comprising a notch adapted to accommodate said second tab and having a perpendicularly disposed short channel formed therewith, said channel running parallel to said lower edge of said neck portion and being capable of receiving therein said second tab; and said sealing cap being secured about said neck of said bottle by a first, downward movement, a second, anti-clockwise movement, a third upward movement and a fourth, anti-clockwise movement.

2. In a safety medicine bottle as defined in claim 1, said first vertical slot being of V configuration and said second vertical slot being of rectangular configuration; said first of said tabs being of V configuration and said second of said tabs being of rectangular configuration; and said tabs and slots acting as guide means for the location of said sealing cap about said neck portion of said safety medicine bottle.

3. In a safety medicine bottle as defined in claim 1, said resilient means including a spring, said spring being located immediately subjacent the upper wall of said sealing cap and pivotally attached centrally thereto, the terminal ends of said spring being so disposed as to abut against the upper rim of said neck portion upon said cap being biased downwardly thereabout.

4. In a safety medicine bottle as defined in claim 1, said resilient means including a spring, said spring being located immediately subjacent the upper wall of said sealing cap and pivotally attached centrally thereto, the terminal ends of said spring being so disposed as to abut against the upper rim of said neck portion upon said cap being biased downwardly thereabout; said spring being a leaf spring.

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