Sept. 7, 1965 G. BUGLA ETAL 3,204,800

SAFETY CAPS

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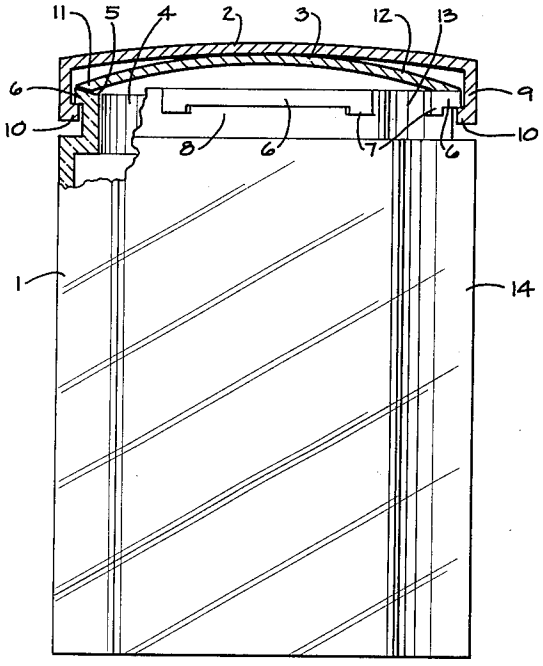


Fig. 1

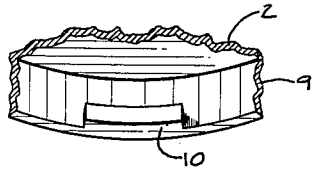


Fig. 2

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SAFETY CAPS

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The present invention consists of improvements in safety caps by which is meant caps which are "child-proof," in the sense of being inaccessible to young children, in virtue of the fact that the cap is non-detachable thereby, so that such materials as pills dangerous to children may be safely contained therein without any danger that a small child will be able to open the container and consume the pills.

A further object is to provide an invention of the character herewithin described which is conspicuously simple to operate by anyone other than a small child, as compact and free from projections as any ordinary pharmaceutical container, and low in price from a manufacturing standpoint.

A further object is to provide a device of the character herewithin described the locking element of which functions, together with the container itself to provide an effective air or liquid tight seal when the combination is locked.

With the foregoing objects in view, and such others as may become apparent as this specification proceeds, the present invention consists in the following construction and arrangement of parts, all as hereinafter more particularly described, reference being had to the accompanying figures in which:

FIGURE 1 is an elevation, partly in section, of the present inventive combination.

FIGURE 2 is a fragmentary perspective representation of the cap forming part of the present invention.

In the drawings, like characters of reference designate similar parts in the several figures.

The present invention comprises, the combination with a lockable two-part container comprising a tubular body portion collectively designated **1**, and a rotatably detachable cap collectively designated **2**, of a spring lock collectively designated **3**. The mouth **4** of container **1** is preferably of plastic and bevelled upon the annular rim **5** thereof. Projecting outwardly from the edge of the said mouth are a plurality of spaced, partially circumscribing shoulder-portions **6** having downwardly projecting dentils **7** at the ends thereof so as to provide shallow elongated recesses **8**.

Cap **2** is provided with a surrounding flange **9**. Upon the under-edge of the said flange are inwardly projecting portions **10** designed to mate with the recesses **8**.

Associated with the container and cap **1** and **2** aforesaid is the spring lock **3** preferably of plastic which takes the form of a concave-o-convex flexible disc preferably having an annular edge **11**. As will be seen from the accompanying FIGURE 1, this disc is disposed with the convex side **12** uppermost so that the apex thereof is in contact with cap **2**. The rim **11** is in contact with surface **5**. When the cap is pressed downwardly with the portions **10** positioned between the shoulder-portions **6**, disc or spring lock **3** will be flattened and spring-biased. In virtue of this deformation, the annular edge **11** thereof will almost make perfect sealing contact with annular surface **5**. If now the cap be rotated so that the portions **10** mate with the recesses **8**, the disc or spring lock **3** will be relaxed just sufficiently such that the edge **11** will make perfect sealing contact with **8** edge **5**. It will also be apparent that in this position, the cap cannot be rotated without being pressed downwardly. This is an action which a small child would have neither the strength or intelligence to effectuate. Hence the combination is "child-proof."

It will be noted that the annular mouth area **13** is preferably recessed with respect to the cylindrical wall **14** of the container **1**. As a result, the outer annular surface **15** of flange **9** is coincident with surface **14**. As a result this device is as free from projecting parts as is any modern pharmaceutical container.

Since various modifications can be made to the novel subject-matter herein, without departing from the inventive concept which the same embodies, it is not intended that protection of this invention by Letters Patent should be interpreted as restricted to the particular modification or modifications thereof particularly described and exemplified.

What we claim as our invention is:

A tamper proof container comprising, in combination, an open mouthed, tubular, body portion, a cap therefor, interlocking means co-acting between said body portion and said cap, and spring sealing means also co-acting between said body portion and said cap wherein said spring sealing means are characterized by being in the form of a concave-o-convex plastic disc with the convex surface uppermost, said disc being yieldable downwardly so as to be capable of expansion circumferentially under the influence of a downward bearing effort at its central apex by the underside central portion of the surface of said cap, and having an inwardly and downwardly converging bevelled perimeter the slope whereof changes under said circumferential expansion, the open mouth of said body portion being characterized by having an inwardly and downwardly converging bevelled perimeter, the slope of the two perimeter being such that they form a surface contacting interfacing annular seal only when said cap is interlocked with said body portion and said sealing means expanded circumferentially thereby.

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