Nov. 23, 1965 A. S. HAKIM 3,219,220

SAFETY CONTAINER

Filed July 17, 1964

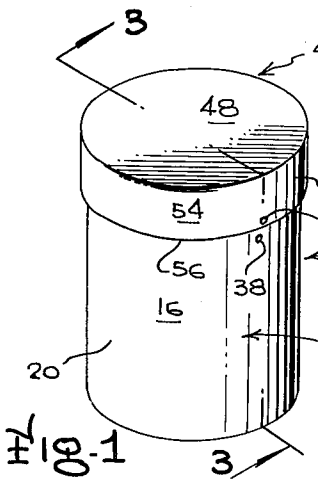


FIG-1

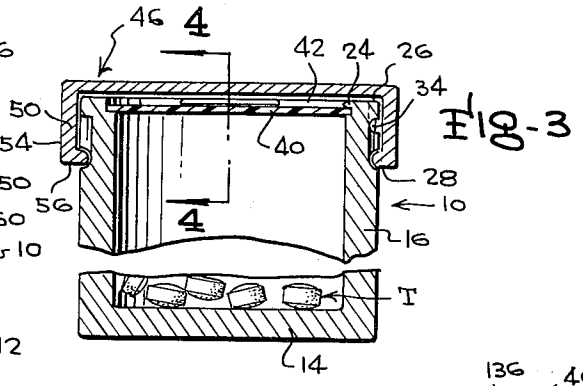


FIG-3

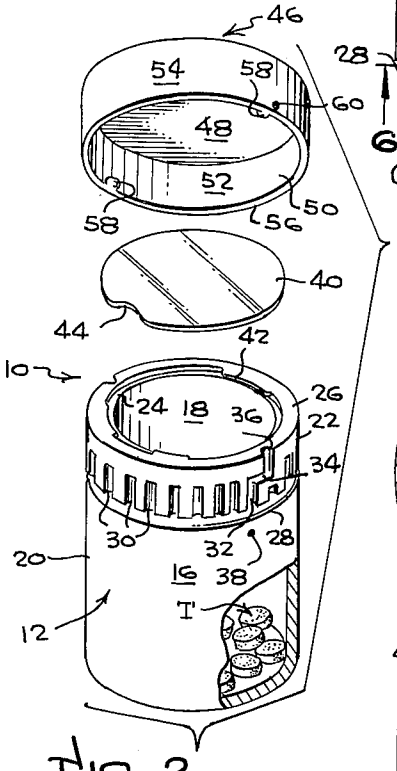


FIG-2

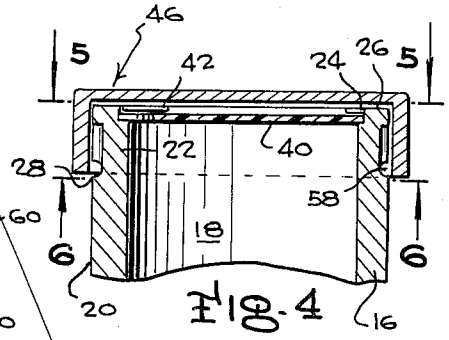


FIG-4

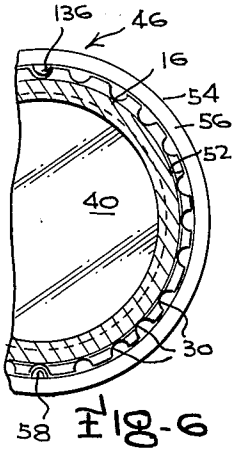


FIG-6

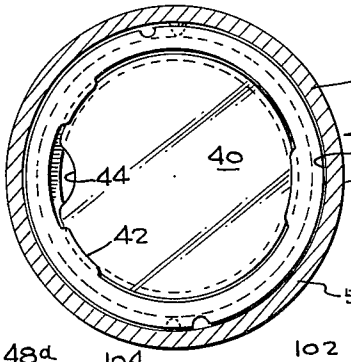


FIG-5

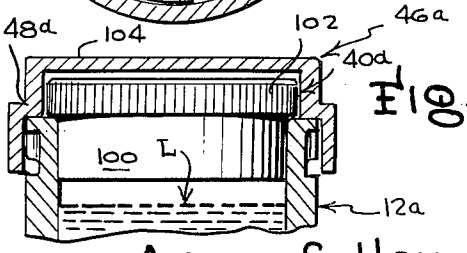


FIG-7

INVENTOR

ALBERT S. HAKIM

BY

Robert S. McMorrow

ATTORNEY

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SAFETY CONTAINER

Albert S. Hakim, P.O. Box 1026, Monroe, La.

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3 Claims. (Cl. 215—9)

The present invention relates to containers of the type adapted for safely storing medicines and other potentially dangerous materials, the containers requiring manipulations for access to the contents, which manipulations exceed the normal motor abilities of children, or other persons to whom the contents might prove harmful. The invention relates to the general class of containers disclosed in my prior application, Serial No. 349,008, now Patent No. 3,157,302.

A basic objective of the invention herein disclosed resides in the provision of a container as indicated which is provided with closure means readily removed by authorized persons, but which discourages opening by children and requires such manipulation as to require that a subtsantial degree of attention be given to the opening procedure. A related object is to supply a container and closure wherein the closure is rotatable and movable with respect to the container without effecting removal, thus discouraging random attempts at the opening thereof.

Another object relates to the provision of a safety container and cooperating cover wherein multiple slot and lug means are provided between the cover and the container, at least one such slot comprising a portion of a compound release passageway, the alignment of the lug and the release passageway being of sufficient difficulty to preclude opening by unauthorized persons, and the likelihood of chance alignment being minimized. A still further object is to provide a construction as aforesaid wherein additional manipulation is required after alignment of the lug and passageway whereby, even if random alignment occurs, the unauthorized person is still unlikely to gain access.

A further object of importance relates to the provision of a container for potentially dangerous substances (pills, liquid medicines, or the like), with a rotatable outer locking cover, and with an inner lid or cap to prevent damage and/or spillage of the contents resultant from movement of the outer cover.

Further objects and advantages will appear to those skilled in the art upon consideration of the following specification when read in conjunction with the annexd drawing, in which:

FIGURE 1 is a perspective view of a safety container constructed and assembled in accordance with the teachings of this invention;

FIGURE 2 is a disassembled perspective view thereof partially broken away;

FIGURE 3 is an enlarged, foreshortened sectional view, taken substantially on the line 3—3 of FIGURE 1, looking in the direction of the arrows;

FIGURE 4 is a fragmentary, detail sectional view on the line 4—4 of FIGURE 3, looking in the direction of the arrows;

FIGURE 5 is a transverse sectional view on the line 5—5 of FIGURE 4, looking in the direction of the arrows;

FIGURE 6 is a fragmentary sectional view taken substantially on the line 6—6 of FIGURE 4, looking in the dirction of the arrows; and

FIGURE 7 is a sectional view similar to FIGURE 4, showing a modification.

Referring to the drawing in greater detail, and initially to the form of the invention shown in FIGURES 1–6, the safety container is generally designated by reference numeral **10**. The device **10** includes a receptacle **12** which has a base **14** and a tubular side wall **16**, the receptacle being formed of any suitable material. Side wall **16** has inner and outer sides **18** and **20**, and includes an upper end portion **22**. In FIGURES 2, 3, and 4, it is seen that the end portion **22** terminates in stepped end edges, including a depressed interior edge **24** forming a ledge, and an exterior edge **26**.

The upper end portion **22** of the container has an annular groove **28** formed therein and extending about the full circumference thereof. The groove **28** is spaced downwardly from the edge **26**, and opens on the outer side **20** of the wall **16**. Communicating with the groove is a plurality of spaced apart, vertical slots **30** arranged substantially perpendicular thereto and being blind or closed. There is preferably provided a maximum number of the slots **30** (depending on the size of the containers) for a purpose described below.

Formed as part of the series of slots **30** and of substantially equal spacing, individually, therewith, are a pair of upright openings **32**, each forming the first portion of compound release passageways. The passageways, at least one of which must be supplied, further include a second portion **34** arranged generally parallel to the groove **28** and oppositely directed with respect to one another when a pair of passageways are provided, and a substantially vertical third or release portion **36** which opens on the edge **26**. For a purpose appearing below, marking indicia **38** (preferably an inconspicuous dot) is placed on the outer side **20** of the wall **16** in vertical alignment with the first portion **32** of the passageway.

In the first form of the invention **10**, which is particularly adapted for containing solid or granular substances such as medicines in tablet or capsule form, a removable inner cap **40** formed of a resilient material such as plastic is provided. The cap **40** is substantially discoidal as shown and is of a diameter to seat on the inner stepped ledge **24**. A plurality of lips **42** projects inwardly from the edge **26** to serve as retainers for the cap, and the cap is notched at **44** whereby it may be removed by placement of a fingernail or the like thereunder. The cap **40** is stationary relative to the receptacle **12** when in use, and is snap-fit in place.

A safety closure **46** for the receptacle **12** comprises a top **48** with a circumferential, depending, annular flange **50** of a diameter to fit about the end portion **22** of the receptacle side wall **16**, and of a depth to extend at least to the groove **28** when the cover is placed over the receptacle. The closure **46** is formed of any suitable material, and is opaque or nontransparent to conceal the locking means. The flange has inner and outer faces **52**, **54**, respectively, and a lower end edge **56**. Extending inwardly from the face **52** on diametrically opposed sides of the flange are lugs **58**, preferably integral with the flange. The lugs are dimensioned to slide in the groove **28**, slots **30**, and release passageway portions **32–36**. The flange outer face **54** carries marking indicia such as inconspicuous dots **60**, which serve to indicate the position of the lugs with sufficient clarity to advise authorized persons of the location thereof.

With the cap **40** in place, the closure **46** is employed in locking the receptacle **12**. Installation involves visual or trial and error alignment of the lugs **58** with the release portions **36** of the passagewgays, followed by movement of the lugs through the passageways to engagement in the groove **28**. Unlimited rotary movement of the cap is permitted by the slidable engagement of the lugs in the groove. Limited upward movement of the cap relative to the receptacle is permitted when the lugs are engaged in opposite pairs of slots **30**, but such movement is insufficient to permit access to the contents. Removal of

the cap is possible only by alignment of the indicia **38** and **60** effecting alignment of the lugs in the first portions of the release passageways, further removal requires an upward movement, a twisting movement in a determined direction, and a further upward movement. Even in the event of chance alignment of the lugs and first portions **32**, complete removal is made unlikely by the necessity for this further manipulation.

Damage to the contents of the receptacle, such as tablets T stored therein during rotation of the closure is prevented by the cap **40**.

In FIGURE 7 a modification is shown comprising a receptacle **12***a* adapted to contain liquids L. The cap **40***a* of the device comprises a stopper of plastic or similar material providing a liquid seal, and having a lower compressible stopper portion **100** and an upper gripping portion **102** facilitating removal. To accommodate the upward projection of the portion **102**, the closure **46***a* has a raised dome **104** projecting from its top **48***a*. Placement and removal procedures are described above with respect to the first form of the invention.

Having described and illustrated two embodiments of the invention in some detail, it will be understood that these descriptions and illustrations are offered merely by way of example, and that the invention is to be limited in scope only by the appended claims.

What is claimed is:

1. A safety container for potentially dangerous materials, the container comprising:

a receptacle including a base and a tubular side wall;

the side wall having inner and outer sides and an upper end portion;

the upper end portion terminating in stepped end edges including a depressed interior edge and an exterior edge;

a removable resilient cap seating on the interior edge of the receptacle side wall;

means extending inwardly from the exterior edge releasably engaging the cap;

the upper exterior end portion having an annular groove formed therein extending about the full circumference thereof and spaced from the stepped end edges;

the outer side of the side wall end portion having a plurality of spaced apart, closed slots therein arranged substantially perpendicular to the annular groove and opening thereon;

the end portion having a pair of diametrically opposite, compound release passageways therein, each having a first portion parallel with and spaced similarly with the closed slots, a second portion substantially parallel with the groove, and a substantially vertical release portion;

marking indicia on the side wall outer side in substantially vertical alignment with the first portions of the release passageways;

a closure comprising a top and a depending flange, the flange being of a diameter to fit about the upper end portion of the receptacle side wall and of a depth to extend at least to the annular groove;

lugs projecting inwardly from the flange on opposite sides; and

marking indicia on the flange indicating the location of the lugs, whereby the lugs are engaged in the first portion of the release passageways upon alignment of the indicia.

2. A safety container for potentially dangerous materials, the container comprising:

a receptacle including a base and a tubular side wall;

the side wall having inner and outer sides and an upper end portion;

the upper end portion terminating in stepped end edges including a depressed interior edge and an exterior edge;

a removable resilient cap seating on the interior edge of the receptacle side wall;

the upper exterior end portion having an annular groove formed therein extending about the full circumference thereof and spaced from the stepped end edges;

the outer side of the side wall end portion having a plurality of spaced apart, closed slots therein arranged substantially perpendicular to the annular groove and opening thereon;

the end portion having a pair of diametrically opposite, compound release passageways therein, each having a first portion parallel with and spaced similarly with the closed slots, a second portion substantially parallel with the groove, and a substantially vertical release portion;

marking indicia on the side wall outer side in substantially vertical alignment with the first portions of the release passageways;

a closure comprising a top and a depending flange, the flange being of a diameter to fit about the upper end portion of the receptacle side wall and of a depth to extend at least to the annular groove;

lugs projecting inwardly from the flange on opposite sides; and

marking indicia on the flange indicating the location of the lugs, whereby the lugs are engaged in the first portion of the release passageways upon alignment of the indicia.

3. A safety container for potentially dangerous materials, the container comprising:

a receptacle including a base and a side wall;

the side wall having an upper end portion;

removable cap means seated in the upper end portion;

the upper end portion having an exterior annular groove formed therein;

the end portion having a plurality of spaced apart, closed slots therein, arranged substantially perpendicular to the groove and opening thereon;

the end portion having at least one compound release passageway therein, including a first portion substantially parallel and spaced correspondingly with the closed slots, a second portion substantially parallel with the groove, and a substantially vertical release portion;

marking indicia on the side wall in substantially vertical alignment with the first portion of the release passageway;

a closure comprising a top and depending flange, the flange being of a diameter to fit about the upper end portion of the receptacle side wall and of a depth to extend at least to the annular groove;

lugs projecting inwardly from the flange on opposite sides; and

marking indicia on the flange indicating the location of the lugs whereby the lugs are engaged in the first portion of the release passageways upon alignment of the indicia.

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JOSEPH R. LECLAIR, *Primary Examiner.*