

[54] SAFETY CONTAINER

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[51] Int. Cl. **B65d 55/02, A61j 1/00**

[58] Field of Search **215/9, 95, 98**

[56] References Cited

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[57] ABSTRACT

A metal aerosol type canister, the top of which is cylindrical and is provided with three annular grooves forming three an-

nular ribs, each of which ribs has a narrow gap, all three of which gaps are aligned axially. A mark is provided on the canister body which is aligned with said gaps and low enough to be exposed to view when a safety cap is applied to cover the canister top. This cap is a hollow cylinder having an internal lug which must be aligned with said gaps in order for the cap to be applied to or removed from the canister. Such alignment is facilitated by an external mark on the cap which is radially aligned with said lug. Above said lug, the cap is provided with an annular internal recess for holding a pair of plastic rings snapped in place in said recess so as to be trapped therein, in end-to-end relation. Semi-annular slots are formed in the cap in the area of said recess to accommodate two finger engaging lugs, one of which extends radially outwardly from each ring for use in manually rotating said rings independently of each other. Each ring also has a locking lug extending radially inwardly therefrom and these lugs must both be axially aligned with said mark on said cap and the mark on the canister for the cap to be applied to or removed from the latter. Circumferentially spaced on said rings and outwardly exposed through said semi-annular slots are code marks for enabling a person who understands the code combination to set the rings to properly align the internal ring lugs for facilitating applying the cap to or removing the same from the container.

2 Claims, 4 Drawing Figures

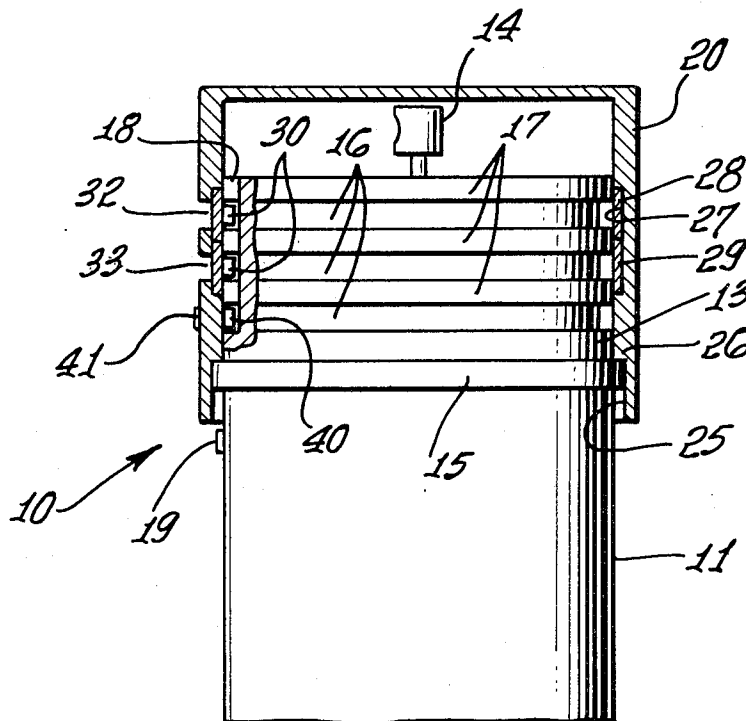


FIG. 2.

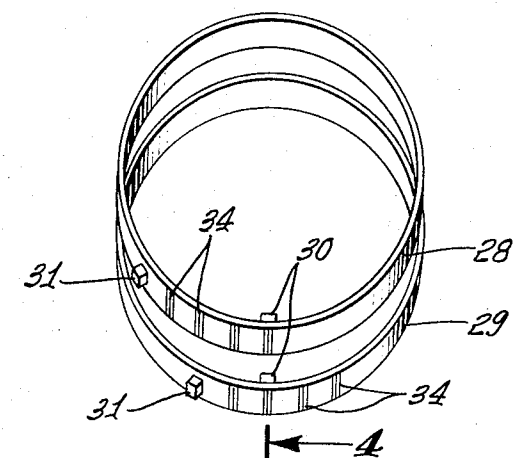


FIG. 3.

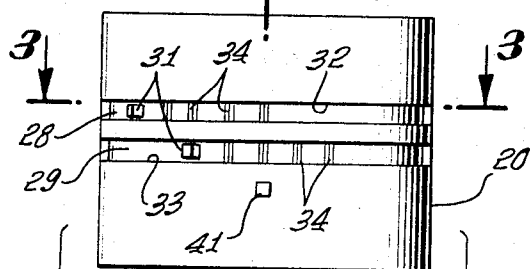
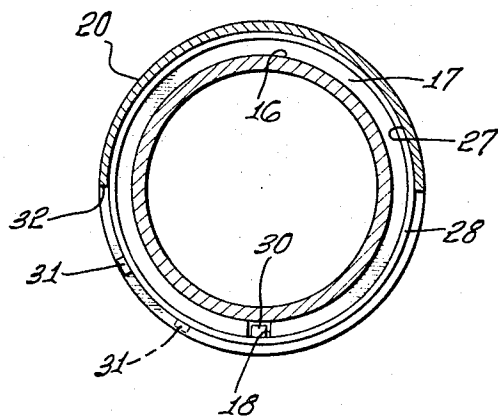


FIG. 4.

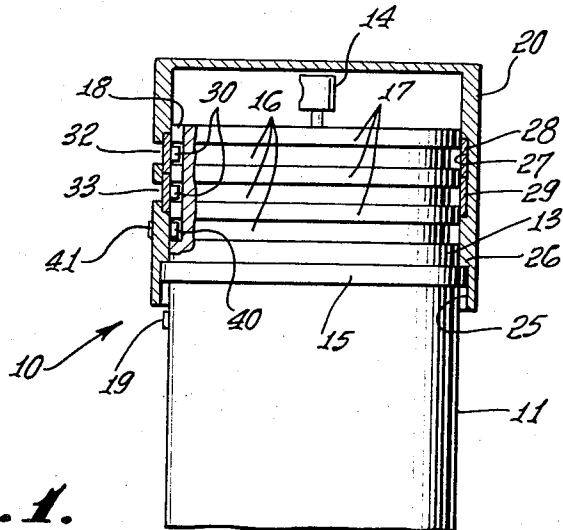
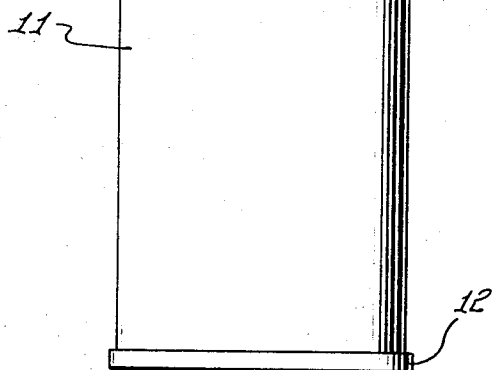


FIG. 1.



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SAFETY CONTAINER

The principal object of the invention is to provide a simple, inexpensive and reliable locking device for a container used for packaging toxic commodities to prevent unauthorized opening of such containers, particularly by children.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a vertical elevational view of the preferred embodiment of the invention including an aerosol canister and a cap applicable thereto to prevent unauthorized access to the contents thereof with said cap spaced upwardly from the top of said canister but properly aligned axially with the latter for application to said canister.

FIG. 2 is a perspective view of two code carrying locking rings which are a part of the cap of said invention with these rings axially aligned as they are in the cap shown in FIG. 1 so as to permit the axial application of said cap to the top of said canister.

FIG. 3 is a transverse sectional view taken on the line 3—3 of FIG. 1 and illustrating the manner in which said locking rings are installed in said cap so as to be individually and separately manually operable in using the invention.

FIG. 4 is a fragmentary vertical sectional view taken on the line 4—4 of FIG. 1 and illustrating the invention with the cap thereof fully applied to the top of the canister of the invention and while the internal lugs of said cap and said rings are still in axial alignment.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The invention is applicable to any type of container and is intended primarily for use on containers packaging toxic materials in order to prevent unauthorized access thereto by children. For illustrative purposes, the invention is shown and described herein as embodied in an aerosol canister 10 having a body 11, a bottom 12 and a top 13 which is provided with an aerosol release valve 14.

The top 13 is cylindrical in shape and is secured to the canister body 11 by a bead 15. Above this bead, the top 13 is provided with three annular grooves 16 which produce a corresponding number of annular ribs 17, each of which has a gap 18, these gaps being axially aligned. Applied to the exterior of the canister body 11 in alignment with the gaps 18 and a sufficient distance below the bead 15 so as not to be covered when the canister 10 is closed is a mark 19.

The canister 10 also includes a cap 20 which preferably comprises a thin walled cylindrical plastic shell which when properly applied fits snugly downwardly over the top 13 as shown in FIG. 4. The cap 20 has a counter bore 25 at its lower end which fits down over the bead 15 and provides a shoulder 26 resting on said bead and limiting the downward movement of the cap on the canister top 13. The cap 20 has a uniform inside diameter above the bead 15 excepting for the formation therein of a shallow annular recess 27 in which a pair of thin plastic locking rings 28 and 29 are assembled by snapping these outwardly into place in said recess, these rings however fitting in said recess loosely enough so that they are readily rotatable therein. Each of said rings has an internal locking lug 30 and an external manipulating lug 31. The wall of the cap 20 in the area of the recess 27 is provided with semicircular slots 32 and 33 which are disposed respectively opposite central portions of the outer surfaces of the rings 28 and 29 so that external manipulating lugs 31 of said rings extend outwardly through said slots for engagement with a finger for the purpose of rotating one of said rings.

It is to be noted in FIG. 2 that the circumferential spacing of the lugs 30 and 31 on the locking ring 28 is different than this spacing on the locking ring 29. It is also to be noted in this view that axial code marks 34 are applied to the outer faces of the rings 28 and 29 and extending rightward from the manipulating lug 31 of each ring and that the internal locking lug 30 on each of these rings is disposed opposite a different one of the code marks 34, the reason for this being made clear in the description of the operation which follows.

Near the mid points of the semi-circular slots 32 and 33, the cap 20 has provided thereon an internal locking lug 40 and, in radial alignment with this lug and on the outside of the cap, a mark 41 which may be referred to hereinafter as the "cap mark."

OPERATION

The present invention amounts, in substance, to providing a canister 10 having a cap 20 with a combination lock mechanism embodied in the canister top and the cap which permits the cap to be quickly applied to or removed from the canister by any person having the combination of the lock but which foils anyone else from gaining access to the can, once the cap has properly been applied thereto. The drawings all illustrate the invention with the internal locking lugs 30 and 31 of the locking rings 28 and 29 and the internal locking lug 40 of the cap 20 in axial alignment as they must necessarily be whenever it is desired to apply the cap 20 to the top 13 of the canister 10 or to remove said cap from the canister.

The first step in preparing the cap 20 for application to the canister is to have reference to the code combination of the lock embodied in that particular specimen of the invention and then, guided by this combination and with reference to the code marks 34, rotate the locking rings 28 and 29 bearing these code marks so that the proper code mark in each instance is in alignment with the cap mark 41. If the operator does not know the code and starts with the cap 20 already separated from the canister 10, he may readily determine the code for that cap by looking inside the latter and observing what the code is when he places the internal locking lugs 30 in alignment with the cap mark 41. He can then make a mental note, or even a written note for future reference, as to what this code is before he applies the cap to the canister.

After the cap 20 has thus been applied to the canister 10, the rings 28 and 29 are deliberately rotated by application of a finger to the external manipulating lugs 31 of said rings so as to shift the internal locking lugs 30 of these rings into certain of the grooves 16 and out of axial alignment with the internal locking lug 40 of the cap 20. This locks the cap 20 on the canister 10 and retains the cap thus locked on the canister until the locking rings 28 and 29 are rotated in the cap 20 so as to bring all the internal locking lugs into axial alignment with each other and then rotate the cap 20 on the canister 10 until the canister mark 19 and the cap mark 41 come into axial alignment which will facilitate immediate separation axially of the cap from the canister.

We claim:

1. In combination:

- a container having a cylindrical top having a plurality of annular grooves producing an equal number of annular ribs, each rib having a gap, said gaps being axially aligned;
- a cylindrical cap closely fitting said container top;
- a lug formed internally on said cap;
- a shallow annular recess being formed internally in said cap above said cap lug;
- a relatively thin ring confined within said recess and rotatable therein,
- a slot being formed in the cap within the area of said recess in a plane normal to the cap axis, through which slot a substantial portion of said ring is visible from outside of said cap;
- an internal lug formed on said ring, said internal lugs acting to prevent said cap being applied to or removed from said container top unless said lugs are axially aligned with said rib gaps, said lugs being located in circumferential alignment respectively with certain of said grooves when said cap is so applied;
- external marks on said cap and said container which are in axial alignment when said internal cap lug and said rib gaps are axially aligned;
- a lug formed externally on said ring and extending through said slot for use in manually rotating said ring in said recess; and

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code marks at circumferential intervals on said ring and visible through said slot, a particular undisclosed one of which code marks must be brought into axial alignment with said external cap mark for said internal lugs to be in axial alignment.

2. A combination as recited in claim 1 wherein three annular ribs and recesses are provided on said container top, the gaps in said ribs being in axial alignment;

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and wherein two rings positioned end-to-end are confined within said annular recess, each of said rings having internal and external lugs and externally exposed code marks and wherein two slots are provided in said cap in the area of said recess, one for each of said rings, the external lugs of said rings extending respectively out through said two slots.

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