

Sept. 3, 1968

H. W. RIGOR

3,399,764

MEDICINE BOTTLE

Filed July 24, 1967

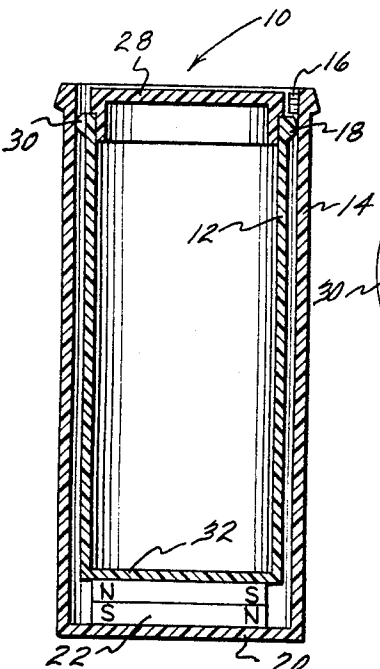


FIG. 1.

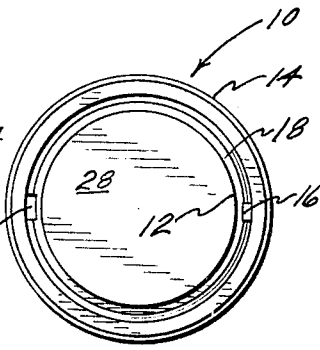


FIG. 2.

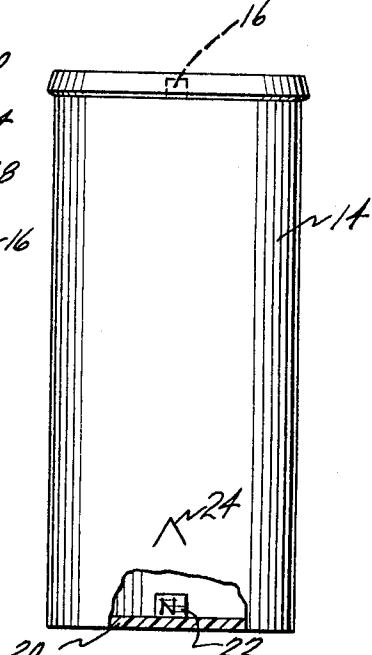


FIG. 3.

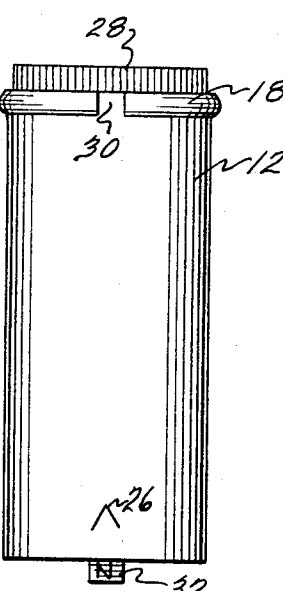


FIG. 5.

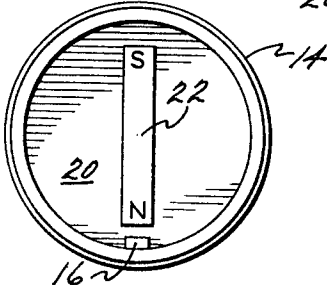


FIG. 6.

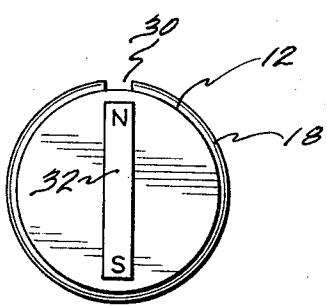


FIG. 7.

INVENTOR,
HERBERT W. RIGOR

BY
Anderson, Prange & Moore

ATTORNEYS

1

3,399,764

MEDICINE BOTTLE

Herbert W. Rigor, 685 Quartz Way,
Broomfield, Colo. 80020

Filed July 24, 1967, Ser. No. 655,541
9 Claims. (Cl. 206—1.5)

ABSTRACT OF THE DISCLOSURE

This invention relates to a safety container for medicines and the like which involves a special technique for opening same that prevents its being used by small children. Specifically, a hollow cylindrical inner container with a removable top and a small bar magnet attached to the bottom thereof is telescoped into an open-topped outer container that has a similar magnet fastened in its bottom. These two magnets function to hold the two containers telescoped one inside the other due to the attraction between the magnets when their unlike poles are adjacent one another, in which position the removable cap of the inner container is relatively inaccessible from the standpoint of its being removed or grasped for the purpose of removing the inner container from inside the outer one. Rotation of the inner container a half turn relative to the outer container places the like poles of the magnets together and the resulting repulsion forces exerted therebetween push the inner container out of the outer container where the user can grasp same and remove the cap.

Death and serious internal injury resulting from an accidental overdose of drugs is becoming an increasingly serious problem. Children are the ones most often the victims of this type of needless accident, although elderly people, those in failing health and persons already under the influence of one of the depressant drugs can easily have the same thing happen to them. There is almost no way of preventing one who wishes to take his own life from doing so through an overdose of drugs; but, there are steps that can be taken which will effectively limit the incidence of this occurring accidentally. One of the most effective means is through the design of a special container which requires a conscious reasoned effort based upon adult learning and motor skills before access can be had to the potentially poisonous contents. Such a container forms the subject matter of my U.S. Patents Nos. 3,120,318 and 3,311,247 in which I disclose a medicine bottle cap that functions in much the same manner as a simple combination lock that must be rotated back and forth in exactly the right sequence before it can be removed. Unfortunately, this patented cap has a few limitations that, so far, have prevented its widespread acceptance by the drug industry. Perhaps the most noteworthy of these is the expense of the cap which is substantial due to the complexity and precision of the moulding dies necessary for its production in large commercial quantities. The cost of dies to make caps that would screw onto even the most common sizes of externally-threaded screw-neck medicine bottles would be prohibitive. Another limitation is the degree of skill and manual dexterity required to open the aforesaid closure which is considerable. Thus, while closures of this design are extremely safe, they are also more difficult to operate and even some adults of advanced years cannot always get them open.

The medicine bottle of the instant invention, while admittedly not as foolproof as that of my previously-patented design, does have the advantages of being simpler, more versatile and easier to operate. By making use of the age-old principles of permanent magnetism, it becomes

2

possible to keep the inner container securely locked in an inaccessible position inside the outer container where small children, or adults for that matter, who do not know how it operates, cannot gain access to the potentially dangerous contents; yet, once the secret is known, these same fundamentals of magnetism operate to force the inner container from the outer whereupon the cap can be removed from the former in the usual manner.

It is, therefore, the principal object of the present invention to provide a novel and ingenious safety container for potentially dangerous medicine and the like.

A second objective of the invention herein disclosed and claimed is the provision of a medicine bottle that is kept closed by a pair of permanent magnets.

Another object is to provide a container wherein the principle that like poles of permanent magnets repel one another is utilized to open same.

Still another objective of the claimed invention is the provision of a container for medicinals that is equally well suited for use in packaging those in liquid or solid form.

An additional object is to provide a medicine bottle that can be reclosed by simply snapping the inside container into the outer one regardless of their relative rotational positions.

Further objects are to provide a medicine bottle of the class aforementioned that is inexpensive to manufacture, easy to use, safe, lightweight, compact, wide-mouthed for ready access to the contents, rugged, foolproof and decorative in appearance.

Other objects will be in part apparent and in part pointed out specifically hereinafter in connection with the description of the drawings that follow, and in which:

FIGURE 1 is a diametrical section showing the inner container latched in telescoped position inside the outer container;

FIGURE 2 is a top plan view of the assembled unit; FIGURE 3 is an elevation of the outer container alone with a portion thereof broken away and shown in section to reveal the magnet fastened inside thereof;

FIGURE 4 is a top plan view of the outer container; FIGURE 5 is an elevation like FIGURE 3 except that it shows only the inner container; and,

FIGURE 6 is a bottom plan view of the inner container.

Referring now to the drawings for a detailed description of the present invention and, initially, to FIGURES 1 and 2 for this purpose, reference numeral 10 has been employed to designate the medicine bottle in its entirety, and it will be seen to include an inner container housed inside an outer container, these having been designated by reference numerals 12 and 14, respectively. The inner container 12 comprises a hollow cylindrical open-topped vessel whose outside diameter is slightly less than the inside diameter of the similarly-shaped outer container 14 so that the former member can be both telescoped and rotated relative to the latter for a purpose which will be explained in detail presently.

In FIGURES 1-4, inclusive to which reference will now be made, it will be seen that the outer container 14 comprises an open-topped hollow cylindrical cup having a small inwardly-projecting detent 16 placed near the mouth thereof in position to engage the interrupted annular rib 18 surrounding the upper open end of the inner container 12 so as to releasably retain same inside said outer container. Permanently fastened to the bottom 20 of the outer container 14 on the inside thereof so as to extend diametrically thereacross is a small elongated permanent bar magnet 22 having the usual N and S poles disposed at opposite ends thereof. In addition, the outer container which, in the particular form illustrated, is transparent, is provided on its exterior surface with an index mark 24

(FIGURE 3). By making the outer container of a transparent material or providing it with, at least, a transparent window, a corresponding index mark 26 (FIGURE 5) on the inner container can be viewed therethrough; otherwise, these marks 24 and 26 should be relocated on adjacent visible portions of the inner and outer containers such as, for example, on the rims thereof that border their open ends.

Next, with reference to FIGURES 1, 2, 5 and 6, it will be seen that the upper open end of the inner container 12 is covered by a friction cap or closure 28 that performs the usual function of retaining the contents inside thereof. Rib 18 is, as aforesaid, interrupted at 30 to provide a notch adapted to pass detent 16 on the outer container when properly aligned therewith so that the inner container can be withdrawn from inside the outer container. Conversely, aligning notch 30 with detent 16 enables the inner container to be reinserted inside the outer one; however, in the preferred embodiment of the instant invention, one or both of these containers are formed from relatively thin-walled transparent plastic which will deform to the extent necessary to allow the chamfered rib 18 to "snap" past the detent into position therebeneath, thus eliminating the necessity for aligning said notch and detent.

Now, permanently fastened to the underside of the inner container 12 in diametrical relation thereacross is a second elongated permanent bar magnet 32 identical for all practical purposes to magnet 22. The inner container 12 is, as aforementioned, freely rotatable inside the outer one; therefore, they will automatically orient themselves as shown in FIGURE 1 so that the opposite poles of the two adjacent magnets lie together and attract one another so as to hold said inner container telescoped inside the outer one. Note that in this so-called "safe" position, detent 16 and notch 30 occupy a diametrically opposed relation to one another that is quite clearly revealed in both FIGURES 1 and 2. For purposes of illustration, the detent and notch have been shown located in the same plane as the magnets 22 and 32; however, this need not be the case as long as they are spaced angularly 180° from one another when said magnets are aligned as shown in FIGURE 1. It should also be noted at this point that the overall height of the inner container, including the closure 28 and magnet 32 on the bottom thereof, is such that said closure is either flush or slightly recessed inside the open end of the outer container so that it becomes inaccessible to the user insofar as being able to remove same until such time as the inner container is withdrawn from the outer one.

To open the assembly, it first becomes necessary to withdraw the inner container from the outer one and this is accomplished by simply rotating the inner one a half turn relative to the outer one. In actual use, the easiest way to accomplish this seems to be to grasp the top and bottom of the assembled unit between the thumb and forefinger of one hand so as to hold the inner container stationary while the outer container is turned a half turn with the other hand. Regardless of how this operation is carried out, it will result in the detent 16 being placed in direct alignment with notch 30 but, more important, the magnet 32 on the underside of the inner container will be repositioned such that its poles are adjacent like poles of magnet 22 causing them to repel one another and literally "pop" the inner container up and out of the outer one. Once this occurs, the closure 28 becomes accessible and can be removed from the inner container.

To reinsert the inner container, the closure is replaced and it is merely "snapped" back into the outer one past the detent 16 without bothering to realign the notch therewith.

Finally, as illustrated, index marks 24 and 26 are visible to the user and so located that they occupy a superimposed relation whenever the notch and detent are aligned. While these indicia are shown in the same plane

as that of the magnets, notch and detent, this has been done for simplicity of illustration and they may actually be anyplace on the two units so long as they cooperate to reveal the aligned relation between the notch and detent which, in turn, means that like poles of the magnets lie adjacent one another. In fact, the simplest form of the invention involves elimination of the index marks 24 and 26 entirely, substituting therefor the notch and detent which can be seen from the top of the assembled unit for purposes of aligning same.

Having thus described the several useful and novel features of the present invention in connection with the accompanying drawings, it will be apparent that the many worthwhile objectives for which it was designed have been achieved. Although but a single specific embodiment of the closure assembly has been illustrated and described, I realize that certain changes and modifications therein may well occur to those skilled in the art within the broad teaching hereof; hence, it is my intention that the scope of protection afforded hereby shall be limited only insofar as said limitations are expressly set forth in the appended claims.

What is claimed is:

1. A bottle for medicines and the like which comprises: an open-topped cylindrical outer container; an open-topped cylindrical inner container sized to telescope into the outer container and rotate freely therein; removable cap means forming a closure for the open top of the inner container; a first elongated permanent bar magnet fastened inside the outer container extending diametrically across the bottom thereof; and, a second elongated permanent bar magnet fastened outside the inner container extending diametrically across the bottom thereof, said first and second magnets cooperating to hold the inner container telescoped inside the outer container when the unlike poles thereof are placed in adjacent contacting relation, and said magnets cooperating to expel the inner container from the outer container when said inner container is rotated relative to the latter so as to place like poles adjacent one another.

2. The medicine bottle as set forth in claim 1 in which: one of said inner and outer containers carries a detent extending into the space therebetween and the other of said containers is provided with an interrupted annular rib having a notch therein, one of said rib and detent elements being located to releasably latch beneath the other in all relative rotational positions of the inner and outer containers except the one in which said detent and notch are aligned, and said detent and notch being so located as to reach aligned position when the first and second magnets are aligned with like poles adjacent one another.

3. The medicine bottle as set forth in claim 1 in which: indexing means are carried on exposed portions of the inner and outer containers, said means being located and designed to provide the user with visual indication of the fact that the first and second magnets are aligned with their like poles adjacent one another.

4. The medicine bottle as set forth in claim 1 in which: the relative lengths of the inner and outer containers together with the first and second magnets fastened thereto and the removable cap means are such that the latter element is substantially inaccessible insofar as removing same when the unlike poles of the magnets are in adjacent contacting relation to one another.

5. The medicine bottle as set forth in claim 2 in which: the detent is carried by the outer container projecting inwardly therefrom and the rib encircles the inner container in position to latch beneath said detent.

6. The medicine bottle as set forth in claim 2 in which: the annular rib is chamfered so that the detent can be forced thereover when reassembling the inner container inside the outer with said detent and notch misaligned.

5

7. The medicine bottle as set forth in claim 2 in which: at least a portion of the outer container is transparent and the indexing means carried by the inner container is visible therethrough when the first and second magnets are aligned with their like poles adjacent one another. 5

8. The medicine bottle as set forth in claim 3 in which: the outer container is transparent; and, in which the indexing means comprises visible indicia carried by the outside surfaces of the inner and outer containers.

9. The medicine bottle as set forth in claim 4 in which: 10
the cap means is accessible for removal from the inner

6

container when the latter is removed from within the outer container but said cap means is recessed beneath the open end of said outer container when the inner container is fully telescoped therein.

References Cited**UNITED STATES PATENTS**

2,600,589	6/1952	Swanson.
2,770,958	11/1956	Carew.

JAMES B. MARBERT, *Primary Examiner.*