Dec. 24, 1963 E. RASMUSSEN 3,115,269

CONTAINER

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Fig. 1.

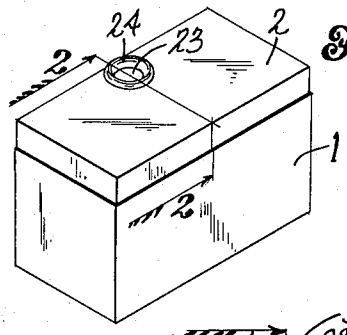


Fig. 2.

Fig. 3.

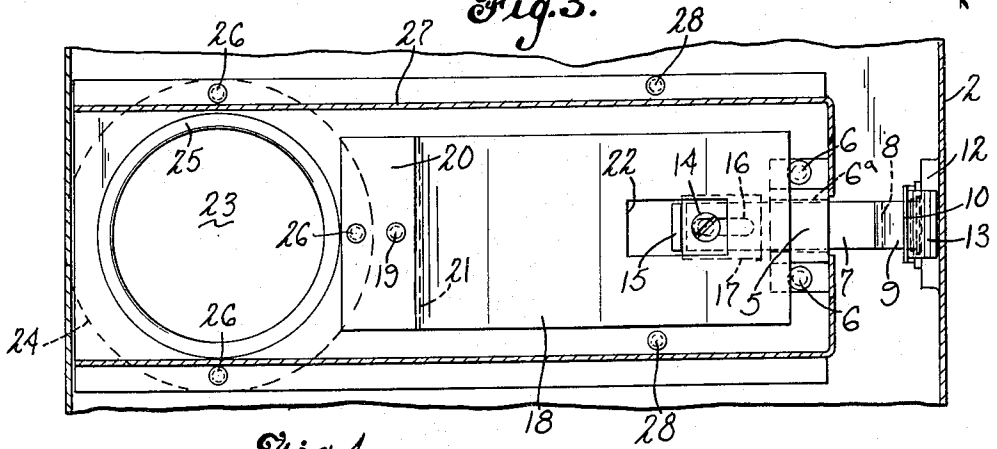
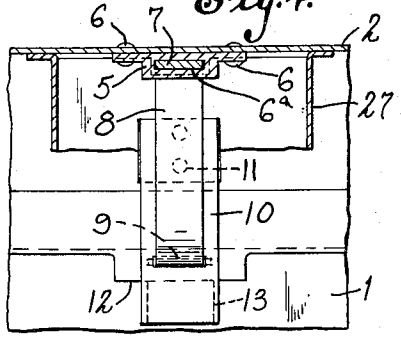


Fig. 4.



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Fig. 6.

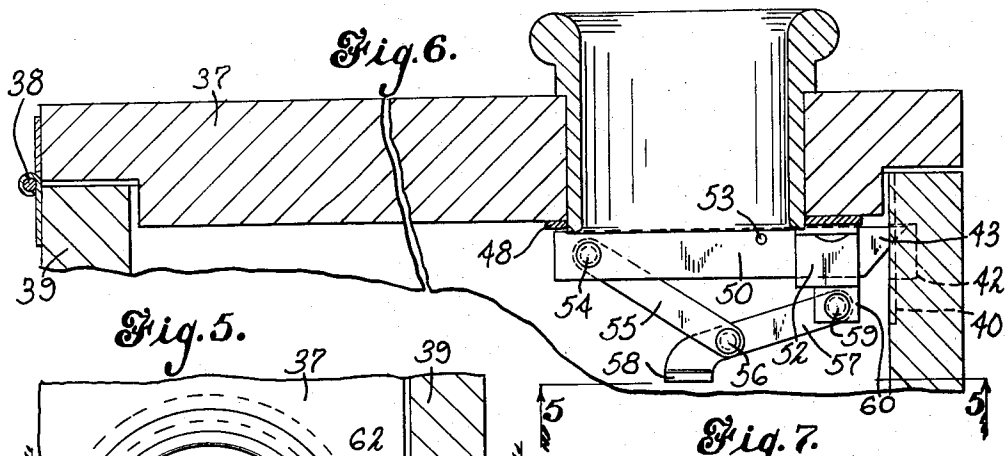


Fig. 5.

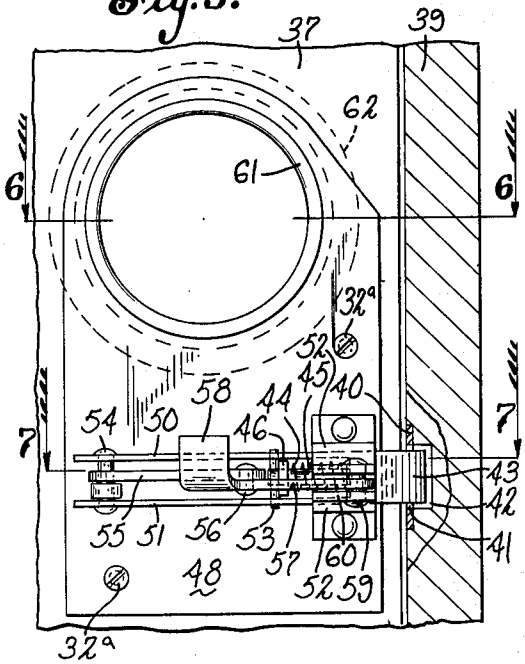


Fig. 7.

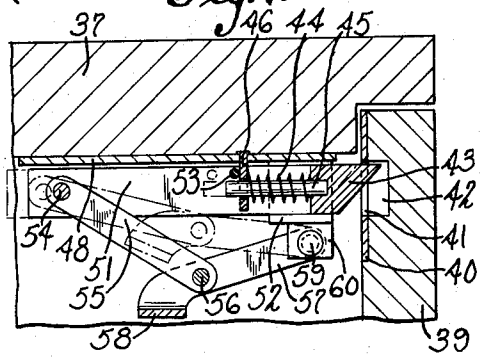


Fig. 8.

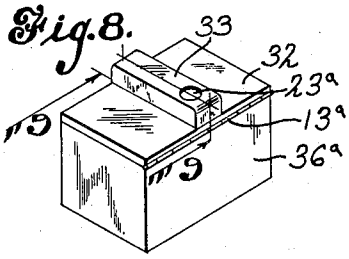
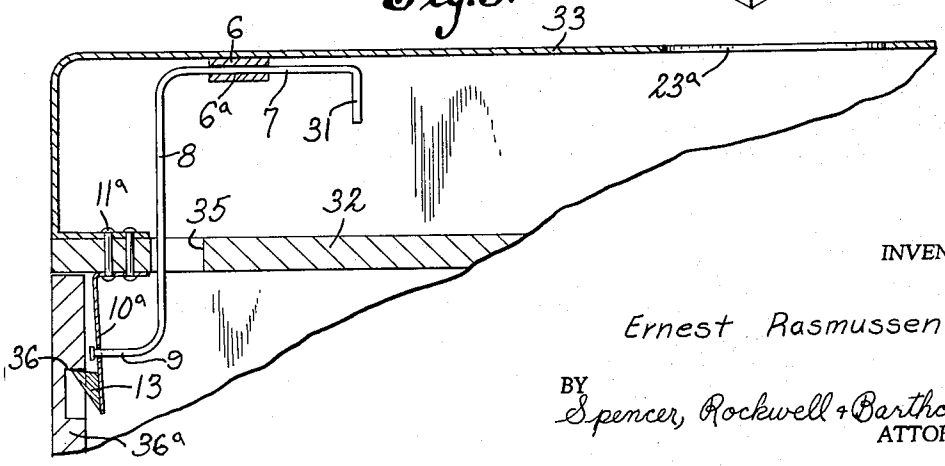


Fig. 9.



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CONTAINER

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6 Claims. (Cl. 220—55)

This invention relates to containers and relates more particularly to containers of the type comprising a body and a closure member. While not limited thereto the invention is especially useful as applied to portable containers.

It is an object of the invention to provide a novel container which may, for example, be portable having its closure means operable by a single human hand.

In accordance with one concept of the invention there is provided a container which may be transported and opened by persons handicapped to the use of a single hand and particularly to the use of a single finger.

It is another object of the invention to provide a novel container having a completely hidden mechanism for unlatching and latching the closure member of the container.

As indicated above, still another object of the invention is to provide a container which may be transported by a single finger of the human hand and which may have its closure member operable by this finger.

Another object of the invention is to provide a container adapted for the storage of articles to which access by children can be readily prevented. This aspect of the invention permits the adaptation of the container for the storage of medicines and other materials which are dangerous on indiscriminate use by children. For such storage the container may be either a cabinet or a compartment of a cabinet.

Other objects and advantages of the invention will be apparent from the following detailed description of several forms of the invention illustrated in the drawings by way of example and not by limitation.

In the drawings:

FIG. 1 is a perspective view of a container embodying the invention;

FIG. 2 is a sectional view taken on line 2—2 of FIG. 1;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2;

FIG. 4 is a sectional view taken on line 4—4 of FIG. 2;

FIG. 5 is a view partially in section taken on line 5—5 of FIG. 6, illustrating a modified form of the container;

FIG. 6 is a sectional view taken on line 6—6 of FIG. 5;

FIG. 7 is a sectional view taken on line 7—7 of FIG. 5;

FIG. 8 is a perspective view of another form of the container; and

FIG. 9 is a sectional view taken on line 9—9 of FIG. 8;

Referring to the drawings, the numeral 1 indicates a container body provided with a closure 2 for any suitable opening and closing function, in the form of FIGS. 1 through 4. Although the closure can be conjoined with the body in any well-known manner, the particular closure illustrated is hinged, as at 13a, to the body. The closure as illustrated is comprised of a boxlike element having a wall structure mating with the wall structure of the body. Mounted by suitable means such as rivets 6 on the inner face of the top of the closure 2 is a supporting guide 5 having a guide passage 6a in which an elongated latch-releasing member 7 is slidably mounted.

The release member 7 is formed at one end with two angular extensions 8 and 9 with the latter suitably secured to a resilient member 10, such as a leaf spring, intermediate the ends of the latter. One end of the leaf spring is fixedly attached, as by rivets 11, to the inner face of a side wall of the closure 2 and has mounted on its other end a dog 13 adapted to engage a suitable keeper such as the inwardly projecting shoulder 12 formed integrally on the container body.

Adjustably mounted on the other end of release member 7, by suitable means such as a screw 14, is a finger tab 15 for actuating the release member by a sliding movement of the latter in the passage 6a of the guide 5. The adjustment of finger tab 15 is accomplished by passage of the screw 14 through an elongated slot 16 in an angular extension 17 of the finger tab.

Although the finger tab 15 has been described as being adjustably mounted on the release member 7, it is to be understood that the finger tab may also be provided in fixed relationship to the release member if desired. The finger tab may be integral with the release means and formed therefrom, as in the embodiment illustrated in FIGS. 8 and 9 wherein similar elements are indicated by like numbers, by an angular extension 31.

In order to inhibit tampering with the latch means by tools or the like, the latch means is protected by a resilient spring plate 18 of elongated form having one end thereof mounted by a fastener, such as a rivet 19, to the inner face of closure 2. Spring plate 18 is offset from the inner face of the closure by means of angular extensions 20 and 21 and provided, for access to finger tab 15, with an elongated slot 22 which encompasses and through which the tab 15 extends when the plate 18 is pressed by a finger toward the inner face of the closure.

Access to the finger tab 15 is provided by means of a finger hole 23, in this instance through the closure 2, spaced from the tab a distance just slightly less than the length of an adult's finger, preferably the longest or middle finger, for finger-tip operation. As indicated above the spacing of the tab 15 from the finger hole may be varied by means of the adjustable mounting of the tab 15 on release member 7, as for example, to assure that this spacing is a distance greater than the length of a child's finger.

Also as shown in this form, in order to protect the finger on insertion in the opening 23 against any sharp edges, a ring 24 is mounted about the opening by an annular axial projection 25 tightly fitting within the opening. The ring may be secured to the closure as by upsetting projections 26 of the ring which extend through the top of the closure. Further, if desired, the latching and access means mounted on the closure 2 may be protected from the contents of the container by any suitable cover means such as boxlike shield 27 mounted on the inner face of the closure by the aforementioned projections 26 of the ring and rivets 28, with additional venting or access therein provided by means of a suitable aperture 29 having seated therein a removable plug 30.

The operation of the latch mechanism of the above-described form of the container will be apparent from the foregoing description. It will be noted that to open the closure a finger of the user is inserted through the finger opening in the closure, and the tip of this finger is engaged with the spring plate 18 in a manner to press the free end of this plate toward the inner face of the closure to thereby expose the finger tab 15 and bring the finger tip into engagement with the tab.

When the finger is so engaged, the tab may be pulled by a bending movement of the finger which causes the release member 7 to slide in a direction toward the finger hole. This movement of the release member 7 effects a bending movement of the leaf spring 10 which supports the dog 13, the bending movement effecting release of the dog from the keeper 12 of the latch mechanism. The closure may then be opened by continued finger pressure on the latch mechanism. It will be understood from the foregoing that when the closure is thereafter returned to its closed position, the dog 13 under the influence of the aforementioned spring 10 re-engages the keeper to latch the closure to the container body.

As indicated above, the form of FIGS. 1 through 4 is similar to that illustrated in FIGS. 8 and 9 wherein like numbers denote similar elements. However, the structure of FIGS. 8 and 9 differs in having the latch mechanism at least partially contained above a closure 32 in a boxlike compartment 33 mounted on the outer face of the closure 32 as by rivets 11a. The compartment 33 is, in effect, a part of the closure 32. The release member 7 of the latch mechanism extends toward the dog 13 through an aperture 35 formed in the closure 32. The release member 7 is connected to a spring member 10a similar to the member 10 described above, while member 10a supports the dog 13 and in turn is supported from the closure 32 by the rivets 11a. In this instance the dog 13 cooperates with a shoulder 36 provided on the inner face of the wall structure of the container body 32a.

In this form the finger hole, indicated at 23a, is located in the top of compartment 33 and is suitably spaced from finger tab 31. The operation of the latch mechanism is similar to that described above in connection with the form of the invention shown in FIGS. 1 through 4. In either of the above-mentioned forms the lid may be spring loaded (not shown) if desired.

As previously indicated, a further modification is shown in FIGS. 5 through 7 wherein the closure, indicated at 37, is mounted on the container body 39 as by hinge 38. A keeper plate 40 is secured to a side wall of the body 39 and has an aperture 41 registering with a recess 42 in the aforementioned side wall. The closure is held in closed position on the body by engagement of dog 43 extending through the aforementioned aperture in the keeper plate 40 and into the aforementioned recess wherein it is yieldingly held by the action of coil spring 44 which is mounted on guide pin 45 and compressed between flange 46 and dog 43. The flange 46 projects fixedly from the base plate 48, which is suitably mounted on the inner face of the closure 37, and is provided with an aperture for slidably receiving one end portion of guide pin 45. The other end portion of the guide pin is fixed to the dog 43.

The latch mechanism also includes a pair of slides 50 and 51 of elongated form in parallel and spaced-apart relationship slidably mounted on the base plate 48 through guides 52, each slide having one end thereof suitably secured to dog 43. A stop pin 53 extends through the slides 50 and 51 in fixed relation thereto to cooperate with flange 46 and thereby limit movement of the dog 43 to the right, as viewed in FIG. 7, that is, in a keeper-engaging direction. Pivotally mounted to the other ends of the slides 50 and 51 about pivot 54 is one end of a lever arm 55, which lever has the other end thereof pivoted as at 56 to an intermediate portion of an actuating lever 57. The last-mentioned lever is bent at one end into a finger-tab extension 58. The other end of the last-mentioned lever is pivoted as at 59 to the depending portions 60 of the guides 52.

Also provided on the base plate 48 is a hollow tubular member 61 extending therethrough and through the closure 37 to provide a finger hole for access to the latch mechanism. The member 61 may be tightly fitted in the closure and locates the base plate secured to the closure as at 32a. The member 61 is so located with reference to the finger tab 58 and of such an axial dimension that only the tip of an adult's finger reaching through the tubular member 61 may engage the tab 58. The operation of the latch mechanism will be understood from the foregoing description. When the finger tab 58 on the lever 56 is pressed toward the inner face of the closure member by the tip of one's finger, the slides 50 and 51 connected to the lever 57 through the pivotal arm 55 are moved in a direction to withdraw the dog 43 from the keeper plate 40.

When the dog is retracted, the closure may be opened by continued finger pressure on the latch mechanism. When the closure is partially opened, the finger of the user may be withdrawn from the finger hole provided by the member 61, and the outward and enlarged projection 62 of this member may be grasped in the hand to swing the closure fully open, if it is desired to operate the closure in this manner. In this form of the container no means is provided for blocking the finger hole from the interior of the container. It will also be appreciated that this form of the container may be advantageously employed in the construction of upright cabinets or the like. The form of FIGS. 1 through 4 and the form of FIGS. 8 and 9 are especially adapted for portable containers while not being limited thereto. It will be understood from the foregoing that in each of the last-mentioned forms the container structure may be transported about merely by hooking a finger through the finger hole.

While several forms of the container have been illustrated in the drawings and described above, it will be apparent to those versed in the art that the container is susceptible of other forms and changes in details without departing from the principles of the invention and the scope of the appended claims.

What I claim is:

1. In a container having a body element, a closure element for support on the first-named element, a latch mechanism to latch one element to the other, said mechanism comprising a keeper on one element coacting with a movably mounted dog on the other element, having an actuating member, said closure element completely enclosing said actuating member, and means defining a finger hole in one of said elements for access to the latch mechanism and spaced from said actuating member a distance somewhat less than the length of an adult's finger, the actuating member being adjustably connected to the dog for adjustment of said member toward and away from said means defining the finger hole so that the actuating member may be reached only by the distal end portion of an adult's finger and not by a child's finger.

2. In a container having a body element, a closure element for support on the first-named element, a latch mechanism to latch one element to the other, said mechanism comprising a keeper on one element coacting with a movably mounted dog on the other element, having an actuating member, said closure element completely enclosing said actuating member, and means defining a finger hole in one of said elements for access to the latch mechanism and spaced from said actuating member a distance somewhat less than the length of an adult's finger, the actuating member having a sliding movement to operate the latch mechanism and being adjustably connected to the dog for adjustment of said member toward and away from said means defining the finger hole so that the actuating member may be reached only by the distal end portion of an adult's finger and not by a child's finger.

3. In a container having a body element, a closure element for support on the first-named element, a latch mechanism to latch one element to the other, said mechanism comprising a keeper on one element coacting with a movably mounted dog on the other element, having an actuating member, said closure element completely enclosing said actuating member, and means defining a finger hole in one of said elements for access to the latch mechanism and spaced from said actuating member a distance somewhat less than the length of an adult's finger, the actuating member being adjustably connected to the dog for adjustment of said member toward and away from said means defining the finger hole so that the actuating member may be reached only by the distal end portion of an adult's finger and not by a child's finger, said means defining the finger hole being provided on the closure element and the closure element being operable to expose the contents of the container upon pressure exerted on the closure element through said actuating member, the actuating member being disposed substantially parallel to the general plane of the closure element.

4. In a container having a body element, a closure element for support on the first-named element, a latch

mechanism to latch one element to the other, said mechanism comprising a keeper on one element coacting with a movably mounted dog on the other element, having an actuating member, said closure element completely enclosing said actuating member, and means defining a finger hole in one of said elements for access to the latch mechanism and spaced from said actuating member a distance somewhat less than the length of an adult's finger, the actuating member being adjustably connected to the dog for adjustment of said member toward and away from said means defining the finger hole so that the actuating member may be reached only the distal end portion of an adult's finger and not by a child's finger, said means defining the finger hole being provided on the closure element and the closure element being operable to expose the contents of the container upon pressure exerted on the closure element through said actuating member, the actuating member being disposed substantially parallel to the general plane of the closure element, the actuating member being mounted in close proximity to the under side of the closure element and being shielded by a spring plate through which the last-named member is relatively extensible upon finger pressure on the plate, said plate being accessible through said means defining the finger hole.

5. In a container having a body element, a closure element for support on the first-named element, a latch mechanism to latch one element to the other, said mechanism comprising a keeper on one element coacting with a movably mounted dog on the other element, having an actuating member, said closure element completely enclosing said actuating member, and means defining a finger hole in one of said elements for access to the latch mechanism and spaced from said actuating member a distance somewhat less than the length of an adult's finger, the actuating member being adjustably connected to the dog for adjustment of said member toward and away from said means defining the finger hole so that the actuating member may be reached only by the distal end portion of an adult's finger and not by a child's finger, said means defining the finger hole being provided on the closure element and the closure element being operable to expose the contents of the container upon pressure

exerted on the closure element through said actuating member, the actuating member being disposed substantially parallel to the general plane of the closure element, the closure element being compartmented to enclose from within the means defining said finger hole and at least a part of the latching mechanism including the actuating member, tending to prevent articles dislocated within the container from striking the actuating member and operating the latter, and further tending to prevent articles within the container from being dislodged through the means defiining the finger hole.

6. In a container for articles of a disabled person, which may be supported and transported from place to place by a single finger and which may also be opened by the same finger, a body element, a closure element for support on the body element, a latch mechanism to latch one element to the other, said mechanism comprising a keeper on the body element coacting with a movably mounted dog on the closure element, having an actuating member, said closure element completely enclosing said actuating member, and means defining a finger hole in the closure element for support of the container and access to the latch mechanism and spaced from said actuating member, the actuating member being adjustably connected to the dog for adjustment of said member toward and away from said means defining the finger hole so that it may be adjusted to be reached by the distal end portion of the person's finger, the closure element being operable to expose the contents of the container upon pressure exerted on the closure member through said actuating member, and the closure member being compartmented to enclose from within the means defining said finger hole and at least a part of the latching mechanism including the actuating member, tending to prevent articles dislocated within the container from striking the actuating member and operating the latter and further tending to prevent articles within the container from being dislodged through said means defining the finger hole.

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