

April 22, 1969

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3,439,796

TAMPERPROOF CONTAINERS

Filed Feb. 27, 1968

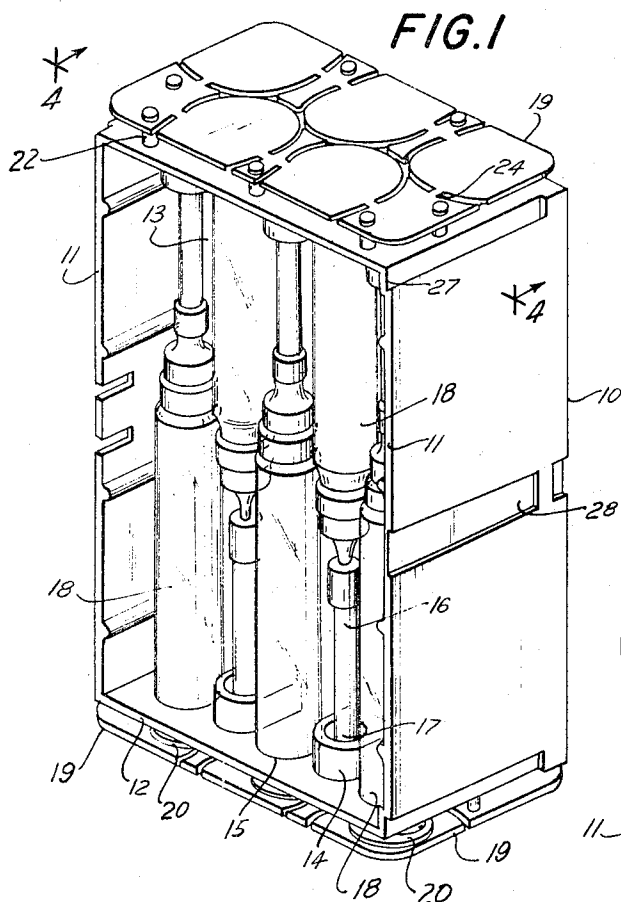
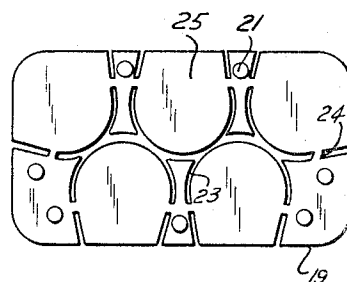
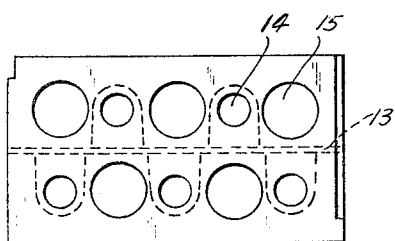
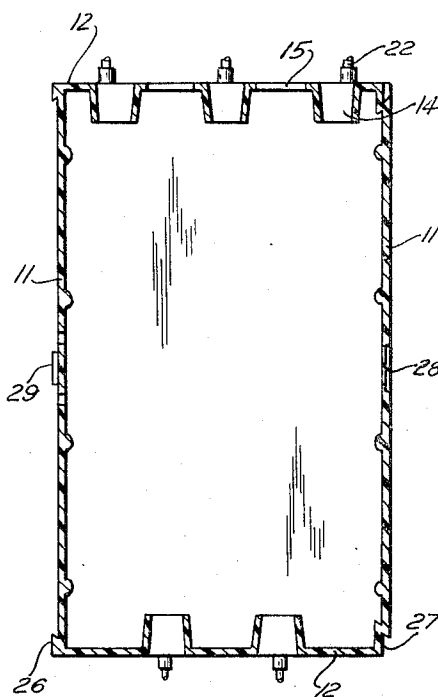


FIG. 2

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TAMPERPROOF CONTAINERS

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Filed Feb. 27, 1968, Ser. No. 708,561

Int. Cl. B65d 85/30, 85/42, 85/54

U.S. Cl. 206—17.5

7 Claims

ABSTRACT OF THE DISCLOSURE

A tamperproof container for disposable syringes is formed of a rigid material, such as metals or polystyrene, and includes opposing end walls with alternate retaining cups and holes, a retaining cup of one wall being directly opposite a hole in the opposing wall. Syringes are inserted through the holes, needle-end first, and directed so that the needle-ends fit into the cups. The barrels of the syringes extend beyond the holes, and the syringes are held in place by end-caps over the protruding ends of the syringe barrels. The end-caps are permanently attached to the opposing walls by means of pins. The end-cap contains cut-aways and undercuts which permit the breaking off of sections of the end-cap covering the protruding ends of the barrels of the syringes, thereby enabling one to remove one syringe at a time while the others are kept in place.

Background of the invention

The present invention relates generally to improvements in containers and particularly to an improved tamperproof container for syringes, cartridges and the like.

Medicinals which are administered by injection are frequently marketed in sterile, pre-filled, disposable syringes or cartridges. It is desirable to package these syringes in tamperproof containers wherein the syringes are separated from contact with one another and from which containers the syringes may be continually removed while the remaining syringes are kept in place.

Narcotics are frequently dispensed in hospitals from such pre-filled, disposable syringes, and a common problem is the potential for tampering with the narcotics once they have been issued from the pharmacy. Many forms of tamperproof packages for syringes have been employed or proposed, but these possess many drawbacks and disadvantages. They are difficult to employ, are of limited application and present many problems in their loading and use.

Summary of the invention

It is a principal object of the present invention to provide an improved container for holding syringes, cartridges and the like.

Another object of the present invention is to provide an improved tamperproof container for holding syringes.

Still another object of the present invention is to provide an improved tamperproof container which is simple to assemble, load and close.

A further object of the present invention is to provide a container of the above nature characterized by its versatility, simplicity, ruggedness, low cost and attractive appearance.

A still further object of the present invention is to provide means for interlocking two or more said containers providing units containing any multiples of the number of syringes in one container.

These and other objects of the present invention will become apparent from a reading of the following description taken in conjunction with the accompanying drawings.

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The present invention contemplates the provision of a container comprising two side walls which are joined to two end walls. The walls are of the same breadth and the side walls are about the length of the syringe which is to be held in the container. A panel may be joined to said walls to form a closure, and preferably this panel is joined to said walls at a line which will form two separate compartments of substantially the same dimensions.

Each of the opposing end walls has alternating retaining cups and holes, the retaining cups facing into the container. A retaining cup of one end wall is substantially directly opposite a hole in the opposing end wall. The end walls also have outwardly projecting pins. The side walls, end walls, retaining cups, pins and panel are preferably of unitary construction.

The syringes are inserted needle-end first through the holes and directed so that the needle-ends fit into the retaining cups. The barrels of the syringes extend beyond the holes, and the syringes are held in place by end-caps which are placed over the protruding ends or flanges of the syringe barrels. The end-caps contain holes into which the protruding pins are inserted. After insertion, the pins are treated to create a permanent union of the end-caps with the end walls.

The end-caps contain cutaways and undercuts to provide sections which cover the protruding ends or flanges of the syringe barrels. Each of these sections may be readily broken off to expose the end of one syringe which can then be readily removed from the container. The removal of a syringe does not disturb the positions of the remaining syringes which are held in place, and once a section of the end-cap has been removed, it cannot be readily replaced. This prevents any tampering with the syringe and its replacement without such action being evident.

The containers are preferably constructed to contain 5 syringes on each side of the separating panel but, if desired, containers to hold a larger or smaller number of syringes may be constructed.

Preferably, two or more containers may be joined by means of interlocking. At the ends of one side wall of the container there are a set of tapered channels perpendicular to the direction of the length of the wall. The opposing side wall has a corresponding set of rails. Two or more containers can be joined by inserting the rails on the side of one of the units into the channels on the side of another unit and sliding the units together. If desired, the side walls may be provided with one or more opposing depressions and outwardly projecting pins which pins snap into the depressions when the rails and channels are properly aligned thereby preventing the units from becoming disengaged.

The walls, separating panel, and end caps are constructed of a rigid material such as metals, polystyrene and the like. The material may be opaque, translucent or transparent and carry any printed or decorative matter and may be colored if desired. Information may also be placed on the container by means of engraving.

Brief description of the drawings

FIGURE 1 is a front perspective view of a locked assembled container, with the syringes in place embodying the present invention.

FIGURE 2 is a front view of an end wall.

FIGURE 3 is a front view of an end cap.

FIGURE 4 is a sectional view taken along the line 4—4 in FIGURE 1.

Referring to the drawings which illustrate a preferred embodiment of the present invention, reference numeral 10 generally designates the improved container formed of polystyrene or other suitable material.

The container includes two side walls 11 and two

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end walls 12 joined by a panel 13 which is placed so as to form two compartments of substantially the same dimensions. Each of the opposing end walls 12 has alternate retaining cups 14 and holes 15, the retaining cups 14 facing into the container. A retaining cup 14 of one end wall 12 is directly opposite a hole 15 in the opposing end wall 12. The syringes 16 are inserted needle-end 17 first through the holes 15 and directed so that the needle-ends 17 fit into the retaining cups 14. The barrels 18 of the syringes 16 extend beyond the holes 15, and the syringes 16 are held in place by end-caps 19 which are placed over the protruding ends or flanges 20 of the syringe barrels 18. The end-caps 19 contain holes 21 into which pins 22 that are part of and project outward from the end walls 12 are inserted. After all of the syringes 16 have been placed into the container 10, the end-caps 19 are put into place and the pins 22 are melted to form a permanent union of the end-caps 19 to the container 10. The side walls 11, and walls 12, retaining cups 14, pins 22, and the panel 13 are of unitary construction.

The end-caps 19 contain cutaways 23 and undercuts 24 to provide sections 25 which cover the flanges 20 of the syringe barrels 18. When a syringe 16 is needed, a section 25 is broken off thereby exposing the flange 20 of the syringe 16 which can then be readily removed from the container.

Two or more containers 10 may be joined by interlocking which may be effected by inserting the rails 26 on a side wall 11 of the one container into the grooves 27 of another container and sliding the rails 26 into place. Desirably, one side wall has an outwardly projecting pin 29 which is directly opposite a depression 28 on the outer surface of the opposing side wall. When two containers are joined together by fitting the rails 26 of one into the grooves 27 of the other, the pin 29 of one container snaps into the depression 28 of the second container.

I claim:

1. A container comprising opposing side walls and op-

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posing end walls, said end walls having outwardly projecting pins and alternating holes and inwardly directed retaining cups, the retaining cups on one wall being substantially directly opposite the holes in the opposing wall, and end-caps secured to the end walls by means of the outwardly projecting pins, said end-caps comprising a plurality of sections, cut-aways, and undercuts, the sections opposite the holes in the end walls being removable by breaking, and the remaining sections containing holes through which the pins are passed and then sealed to said sections.

2. A container according to claim 1, wherein the side walls and end walls are joined by a panel positioned to divide the container into two compartments of substantially equal dimensions.

3. A container according to claim 2, wherein the side walls, end walls, panel, retaining cups and pins are of unitary construction.

4. A container according to claim 3, wherein one side wall has a pair of tapered channels perpendicular to the direction of the length of the wall, and the opposing side wall has a pair of tapered rails, similarly tapered, and perpendicular to the direction of the length of the wall.

5. A container according to claim 4, wherein one of the side walls has a depression in its outer surface and the opposing side wall has an outwardly projecting pin in a position opposite to the position of said depression.

6. A container according to claim 5, which is constructed of polystyrene.

7. A container according to claim 6, wherein the pins are sealed to the end-caps by heating.

References Cited

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