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PLASTIC CONTAINER WITH ATTACHED COVER

Filed Oct. 3, 1966

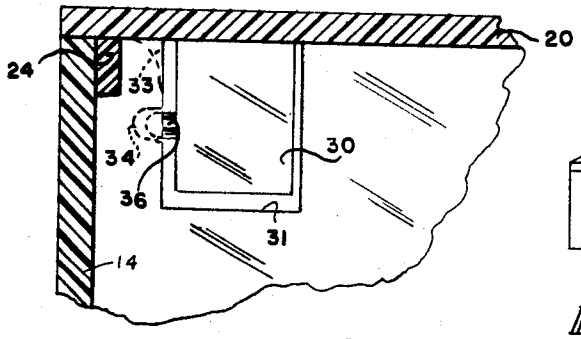


Fig. 2

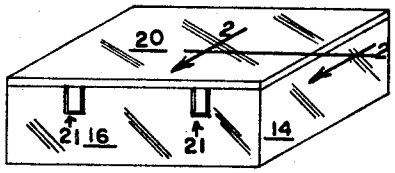


Fig. 5

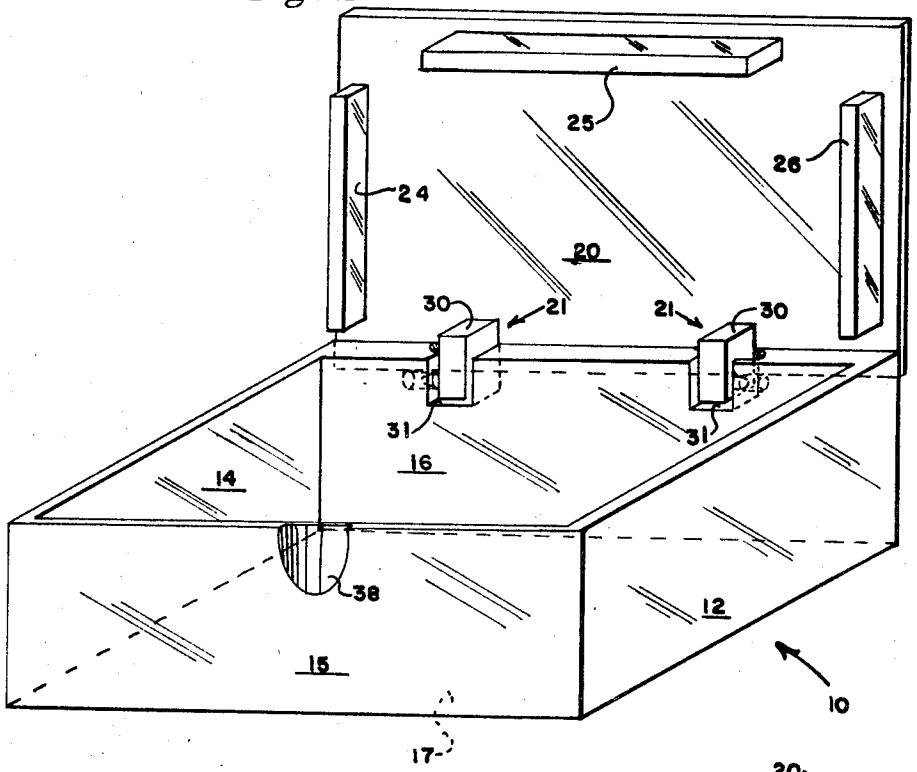


Fig. 1

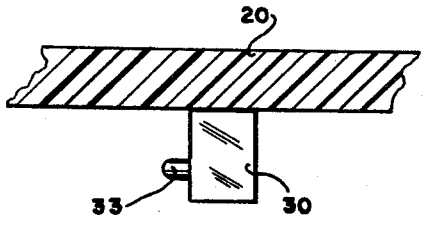


Fig. 4

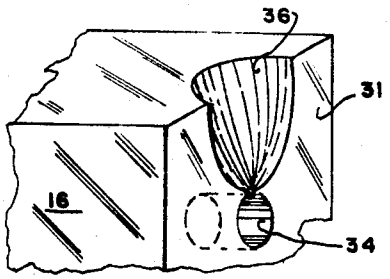


Fig. 3

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PLASTIC CONTAINER WITH ATTACHED COVER

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ABSTRACT OF THE DISCLOSURE

A container having a bottom and four sides that terminate in a planar edge around the container opening includes a planar cover arranged to seat in face engagement on said planar edge, and a pair of hinges in one wall secures the top to the container. The hinges include pintle supports depending from the cover and laterally directed pintles which pivotally mount in pintle holes in pintle support accommodating notches in the one wall.

This invention relates to containers with attached covers, and more particularly to plastic covered boxes of parallelepiped shape, especially a right polyhedron shape, having no external protrusions beyond the confining walls in closed position.

Many types of plastic boxes or containers, that is, boxes made of synthetic resins, polymers, elastomers and the like, are available in many different forms. Most of the commercial plastic containers, however, have hinges which protrude beyond the peripheral surfaces of the walls of the container in closed position, or have latch means which, likewise, protrude beyond the peripheral confines of the container in closed position. Containers having the protrusions beyond their peripheral confines of the box do not stack well since the protrusions prevent the placement of the containers in close proximity to each other, particularly when the protrusions on adjacent boxes are in engagement. This makes for unstable stacking, and when stacked in a large shipping container, such boxes take more room, Further, stacking of different sizes of containers is not feasible.

According to the present invention I have provided a plastic container of parallelepiped or right polyhedron design in which the exterior surfaces, in closed position, have no protrusions, so that the containers may be stacked vertically as well as horizontally in face engagement with an adjacent similar container. The container of the invention includes a concealed hinge which, in closed position, is retained entirely within one wall of the container so as to provide a container which has no protruding hinges, either internally or externally of the container, but which is easily assembled and disassembled. The container of the invention includes means for holding the cover tightly shut on the container and includes friction latch means secured to the cover of the box for retaining the cover in position on the container body.

Included among the objects and advantages of the present invention is a plastic, hinged, covered container provided with concealed hinges and having no external appendages, in closed position, to permit close proximity stacking of the containers, of the same or different size, both horizontally and vertically.

Another object of the invention is to provide a plastic container having concealed hinges in which the parts of the hinge are easily engaged and disengaged.

A still further object of the invention is to provide a plastic container having a hinged cover which is arranged to be frictionally held closed in covering position over the container.

These and other objects and advantages of the invention may be readily ascertained by referring to the following description and appended illustrations in which:

FIG. 1 is a perspective view of a container embodying a concealed hinge and cover securing means;

FIG. 2 is an enlarged detailed view of a portion of the container, illustrating the positioning of the hinge of the container in closed position, taken along section line 2—2 of FIG. 5;

FIG. 3 is an enlarged detailed section of a pintle hole and guide for a hinge pintle according to the invention;

FIG. 4 is an enlarged detailed view of the pintle support and cover according to the invention; and

FIG. 5 is a perspective view of a closed container according to the invention.

In general, the container according to the invention is a parallelepiped covered box, or a right polyhedron which is hollow and the body of which includes a bottom and four upright sides depending therefrom, with intersecting edges to form four corners of the container. A planar cover is hingedly attached to one wall of the container to provide a cover thereon and, when closed, the exterior configuration of the container is a smooth surfaced parallelepiped box. The container can be made in a variety of sizes and shapes, with a major cross-sectional configuration being square, rectangular or the like. Additionally, the hinges for the cover of the container may be placed on any wall so that the cover opens along a long wall or along a short wall. The containers may be made of a variety of "plastics," which include synthetic resins, polymers, elastomers, etc., depending upon the requirements of the use. The material may be rigid, semi-rigid or resilient and flexible, depending upon the desires of the user. Such containers have found wide use as pill boxes, containers for small parts, cigar containers, and similar uses.

In the container selected for illustration, a body, shown in general by numeral **10**, includes sides **12** and **14**, front **15** and rear **16** integrally attached at right angles to a bottom **17**. The walls may be of uniform height and of uniform thickness except, in the particular instance shown, the rear wall **16** is slightly thicker. All of the walls intersect and form a planar lip around the opening to the container. A planar cover **20** is mounted by means of concealed hinges **21**, explained in detail below, and the cover **20** is a planar member arranged to seat along its peripheral edge on top of the walls of the body. Three friction members **24**, **25** and **26** are secured to the cover in such a manner that, when closed, the friction members engage the adjacent inside wall of the container, as shown in FIG. 2 where the friction member **24** engages the inside of the wall **14** and the planar cover **20** seats tightly on the top of the walls.

The hinge for the container is normally arranged in pairs; however, two or more of the hinge members may be used for hinging the cover to the body. The hinge includes a pintle support **30** which is integrally attached to the cover **20** in position to mate with an opening **31** in the rear wall **16** of the body, as shown in FIG. 2. The opening **31** should be of a sufficient size to permit free pivotal movement of the pintle support **30**, and is shown somewhat exaggerated for illustartion purposes. A pintle **33** is integrally mounted on the pintle support **30**, facing in a direction to engage a pintle pivot hole **34** which is formed in the wall **16**. A pintle guide **36** provides means for moving the pintle downwardly into the opening **34**, shown in detail in FIG. 3. As illustrated, the pintles are directed outwardly; however, the pintles may be placed on the other side of the pintle support block to provide the inwardly directed pintles. A finger grip **38**, which is a notch in the top edge of the front wall **15** sloping outwardly, provides means for opening the cover by inserting a finger or a fingernail under the cover and prying upwardly.

The friction members **24**, **25** and **26** are secured to the planar cover **20** in such a manner that all three engage the walls when the cover is in closed position. The members may be made with straight sides engaging the box walls or may be slightly tapered and/or the lower outside edge thereof be beveled to permit the cover to move into registered position for closing. The tapered members provide means for increasing the friction as the cover is moved to fully closed position.

The configuration of the closed container is parallelepiped with six smooth external surfaces with no protrusions, which permits the containers to be stacked closely adjacent each other, both horizontally as well as vertically. The corners of the container may be sharply square or relieved, according to the desires of the user, without changing the stacking characteristics of the container. In addition, the friction members may be shorter or longer, or may be split so that one or more of the friction members may be provided along the sides or only one or more such members may be used, usually depending upon the size of the container and the material of which the container is made. The size of the container will dictate the requirements of the number of hinges, for large containers more than two such hinges may be necessary to provide the proper hinging action for the cover.

While the invention has been illustrated by reference to a particular embodiment, there is no intent to limit the spirit or the scope of the invention to the precise details so set forth except as defined in the following claims.

I claim:

1. A container comprising a hollow body having a bottom and four depending upright walls intersecting so as to form four corners and a planar lip extending around the container opening, and one said wall being a hinge support wall; a planar cover arranged to seat in face engagement on said planar lip and close said container; at least two hinges releasably connecting said cover to said body, each said hinge including a pintle support

mounted on and depending from said cover along one edge and spaced from the adjacent sides thereof in direct alignment with said hinge support wall, there being a narrow notch in said hinge support wall accommodating each pintle support and arranged to permit free pivoting of said pintle support therein; a pintle depending laterally from each said hinge support having its axis parallel to the plane of said cover, there being a pintle pivot hole in each said hinge support wall opening into said notch and arranged to mate with an associated pintle; a pintle guide in each said notch extending from the top of said hinge support wall to said pintle pivot hole; and at least one friction member depending from said cover in position to frictionally engage an adjacent wall of said body in closed position and hold said cover on said lip, said body having smooth exterior surfaces and said top having an exposed continuous edge, and said container having six smooth exterior surfaces in closed position without projecting appendages.

2. A container according to claim **1** wherein said pintles depend outwardly from said pintle supports.

3. A container according to claim **2** wherein two hinges pivotally secure said cover to said body.

4. A container according to claim **1** wherein two opposed friction members are mounted on said cover arranged to frictionally engage opposed walls of said body.

5. A container according to claim **1** wherein the wall opposite said hinge support wall includes a cutout adjacent the top edge thereof forming means for opening said cover.

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