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C. E. DRIZA ETAL

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MULTIPOSITION MOLDED PLASTIC CONTAINER

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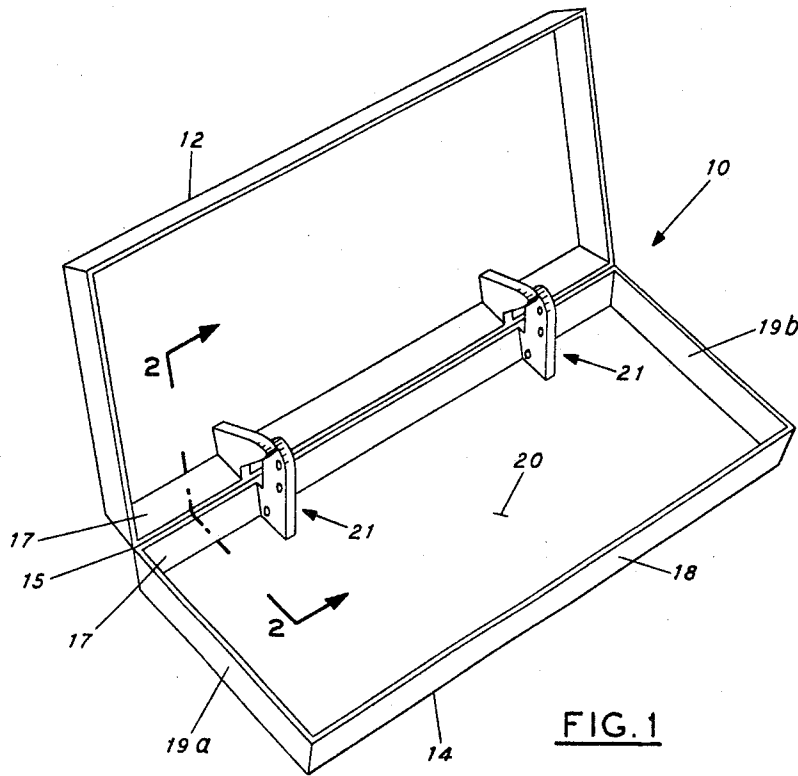


FIG. 1

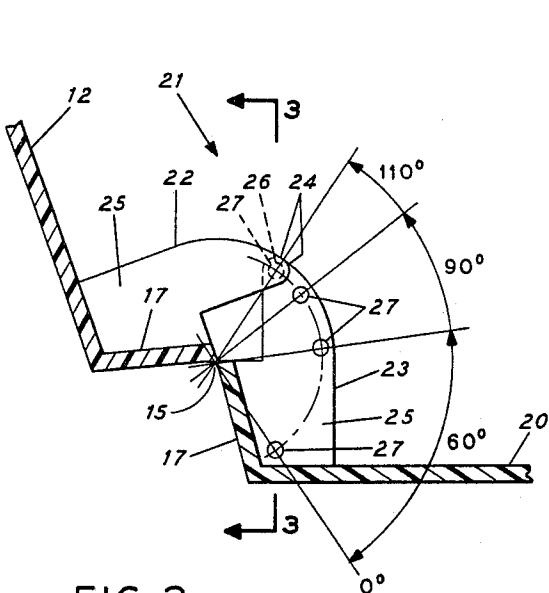


FIG. 2

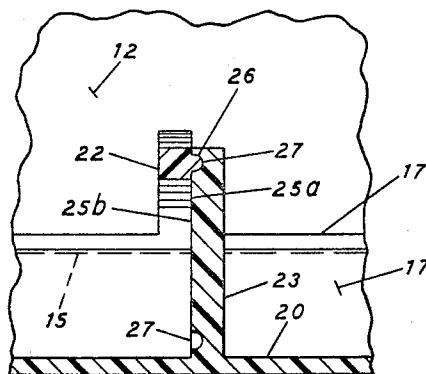


FIG. 3

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MULTIPOSITION MOLDED PLASTIC CONTAINER
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3 Claims. (Cl. 220—31)

The present invention relates to molded plastic containers and more particularly to containers having multi-
positioned high strength hinge constructions.

Various molded containers are available to display jewelry and the like. In one example, the container includes bimolded cover and body sections fitted together by hinges formed of twin U-clamps supporting a pivot rod. In another example, the container provides unmolded cover and body sections connected by an integrally molded strip across the mating edge of one wall of the sections. However, none of the prior art containers have combined the low cost of molded plastic construction with fastening elements for the purpose of stably maintaining the cover and body sections in various open positions relative to one another.

In accordance with the invention, stability between sections of a plastic display container is maintained in various positional orientations by forming the container with an integrally molded hinge construction and a pair of integrally molded fastening elements located interiorly of the broad and side walls of each section adjacent to the hinge. Each pair of fastening elements has adjacent parallelogram faces that overlap during pivotal movement of the sections. Each pair of fastening elements also includes a series of ball-in-socket locks formed by placing a protrusion on the first element and a series of shallow openings in the second element along the pivot path of the protrusion. Thus after the sections are pivoted about the hinge and the protrusion positioned in one of the shallow openings, it can be seen that the cover and body sections of the container are rigidly locked in predetermined positional orientation relative to each other to thereby allow the shopkeeper to best display products or groups of products for sale.

Other objects and features of the invention will become more apparent as the description proceeds. While there will be shown and described specific structures embodying the invention, it should be understood that the invention is not limited in this regard as variations will be apparent to those skilled in the art.

In the drawings, FIGURE 1 is a perspective view of an integrally molded plastic container of the present invention;

FIGURE 2 is a section taken along line 2—2 of FIGURE 1; and

FIGURE 3 is a section—partially cut away—taken along line 3—3 of FIGURE 2.

FIGURE 1 is a perspective view of an integrally molded plastic container generally indicated at 10 comprising cover section 12 in open positional orientation with respect to and hingedly attached with a body section 14 by means of flexible strip 15 arranged along the rear walls 17 of the sections. Various moldable plastic materials can be used in forming the container with the following nonexclusive listing of materials being preferred: polypropylene, polyethylene, polychlorotrifluoroethylene and polyamides of the nylon type. The body section is identical with the cover section and includes a shallow cavity for supporting jewelry and the like formed by a front wall 18 parallel with rear wall 17, side walls 19a and 19b and broad wall 20, with side, rear and front walls of the cavity being tapered outwardly with respect to the broad wall to strengthen the container. As the sections are pivoted about the strip 15 the container may

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be either closed wherein the walls of the cavity are placed in edge-to-edge abutting relationship or be opened at various preferred positional orientation by means of pairs of fastening elements generally indicated at 21 attached integrally to the rear and broad walls of the sections.

FIGURE 2 is a section taken along line 2—2 of FIGURE 1 enlarged to illustrate the fastening elements and their integral attachment to the walls of the container. Each pair of elements includes a first element 22 integrally attached to the broad and rear walls of the cover section and a second element 23 attached to the broad and rear walls of the body section. The longitudinal axes of symmetry of the elements are offset with respect to each other with only the interior face of each element defining planes coincident in space. The elements are reduced near ends 24 remote from the broad wall in order to avoid contacting the rear walls of the opposite section when the sections are placed in edge-to-edge contact. The first element 22 is similar in shape to second element 23 and is a modified six-sided prism having parallelogram faces 25 that extend substantially normal to the broad wall of the sections to a length that is less than two times the depth of either section. A protrusion 26 is formed on the first element and has a rounded edge in surface contact with the second element. In the second element, there are provided shallow openings 27 along the pivot path that the protrusion takes as pivoting occurs about strip 15, such openings being equally spaced from the strip 15. As the cover section is pivoted about the strip and in cooperation therewith, the protrusion 26 is positioned within one of the series of openings 27 in the second element to lock the sections in predetermined positional orientation, such orientation being specifically from a closed position, 0 degree to various positions of openings ranging from 60 through 110 degrees as shown.

FIGURE 3 is a partially-cutaway section taken along line 3—3 of FIGURE 2 enlarged to show protrusion 26 positioned within a shallow opening 27 thereby positioning the cover and body section in a predetermined relationship of 110 degrees with respect to the closed position of the sections. The length of the protrusion above surface 25a of the first element may be greater than the depth of openings 27 below surface 25b of the second element in order that a lateral tension be placed on these members to insure against slippage between the protrusions and the sides and end surfaces defining the opening. The arrangement of the protrusions within these openings resembles a series of ball-and-socket locks with the protrusion being the ball and the openings being the sockets.

Thus it is seen that the plastic container here disclosed has all portions integrally molded to eliminate separate body and cover sections and separate means for attaching them together and provides for interiorly locking means for maintaining these sections in a series of independent positional orientations relative to each other. The container is usually produced by forming the plastic under heat and pressure in a mold (injection molding) but there may be other methods equally convenient available to provide the container defined by the following claims.

What is claimed is:

1. An integrally molded plastic container comprising a body section, a cover section adapted to overlay the body section, said body and said cover sections each having front, rear, side and broad walls, means for hingedly attaching said sections to each other with their rear walls in substantial edge-to-edge abutting relationship, and a pair of fastening elements adjacent to said hinge means for locking said body and cover sections relative to each other, each of said fastening elements including first and second elements formed integrally with the container, said first element having a protrusion at an end remote from its forming plane with one of said sections in sliding

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contact with said second element, said second element having at least two shallow openings formed therein for engagement with said protrusion, each opening being located a distance from said hinge means equal to the distance from the protrusion to the hinge means to serially engage said protrusion and place the body and cover sections in a predetermined locking relationship.

2. The container in accordance with claim 1 in which said protrusion has a finite length L measured along its axis of symmetry, and each of said openings have a finite depth D measured along its axis of symmetry, said container being formed so that length L of said protrusion is greater than depth D of each of said openings.

3. An integrally molded plastic container comprising a body section, a cover section adapted to overlay the body section, means for hingedly attaching said sections to each other, and locking means integrally molded within and located interiorly of said sections adjacent to said hinge means to maintain said sections in a series of independent positional orientations relative to one another, said locking means including at least first and second fastening elements formed integrally with the container,

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said first element having a protrusion at an end remote from its forming plane with one of said sections in sliding contact with said second element, said second element having at least two shallow openings formed therein for removable engagement with said protrusion, each opening being located a distance from said hinge means equal to the distance from the protrusion to said hinge means to serially engage said protrusion and place the body and cover sections in a predetermined locking relationship.

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