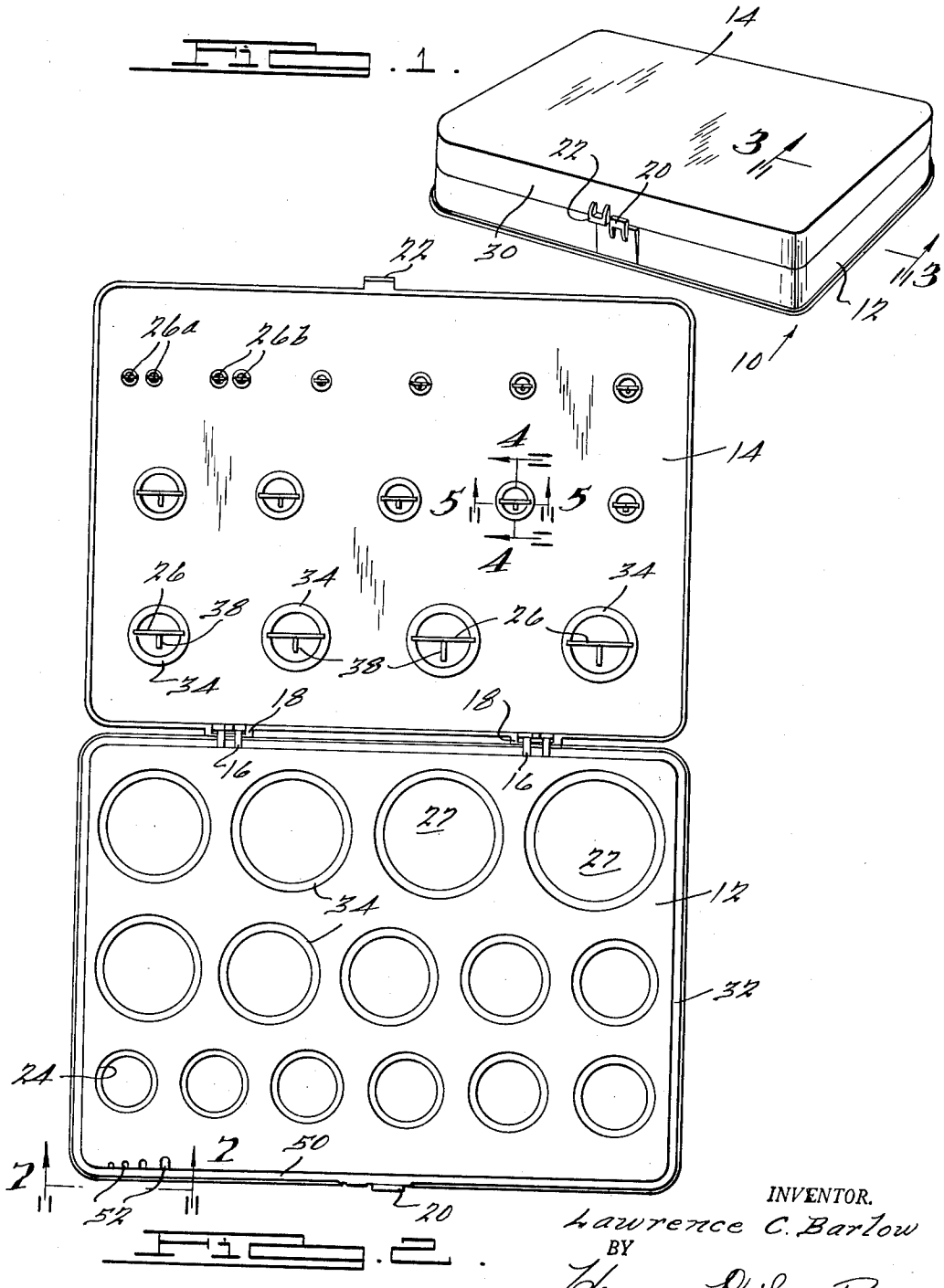
June 13, 1961 L. C. BARLOW 2,988,205

O-RING SERVICE KIT

Filed June 15, 1959

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

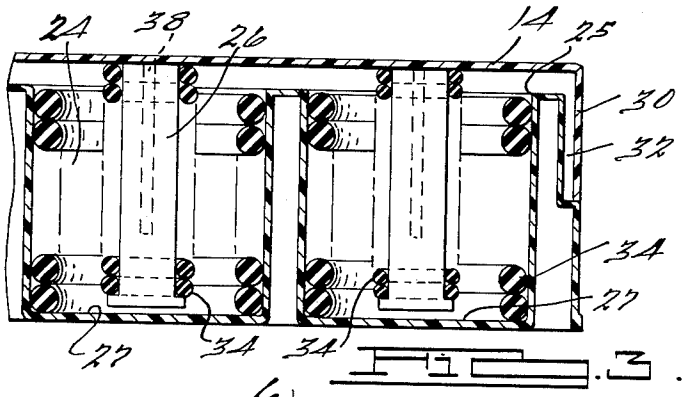


FIG. 3.

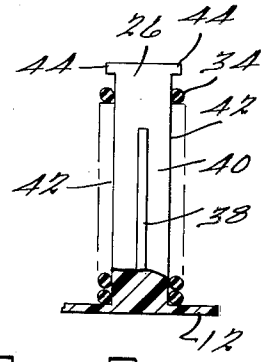


FIG. 5.

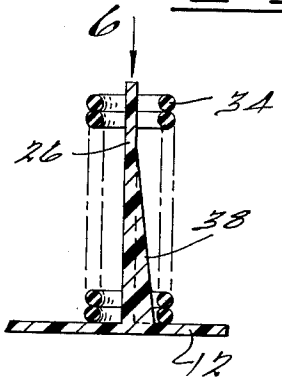


FIG. 4.

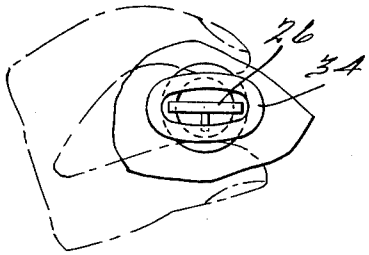


FIG. 6.

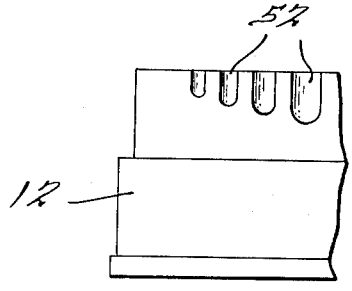


FIG. 7.

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O-RING SERVICE KIT

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3 Claims. (Cl. 206—16)

This invention relates generally to containers and more particularly to an O-ring service kit for storing a plurality of O-rings of different sizes.

An object of this invention is to provide an improved O-ring service kit which is compact, capable of storing and displaying a large number of O-rings of different sizes, and is economical to manufacture.

Further objects, features and advantages of this invention will become apparent from a consideration of the following description, the appended claims and the accompanying drawing in which:

FIGURE 1 is a perspective view of the service kit of this invention, shown in a closed condition;

FIG. 2 is a plan view of the service kit of this invention shown in an open condition;

FIG. 3 is an enlarged fragmentary sectional view looking substantially along the line 3—3 in FIG. 1;

FIGS 4 and 5 are enlarged transverse sectional views looking along the lines 4—4 and 5—5 in FIG. 2;

FIG. 6 is a view looking in the direction of the arrow indicated at 6 in FIG. 4, and illustrating the manner in which an O-ring is removed from the portion of the kit shown in FIG. 4; and

FIG. 7 is a fragmentary view looking substantially along the line 7—7 in FIG. 2.

With reference to the drawing, the service kit of this invention, indicated generally at 10, as illustrated in FIG. 1 as consisting of a container having a bottom portion 12 and top or cover portion 14 which is hingedly connected to the portion 12. The portions 12 and 14 may be formed of any suitable material but in a preferred embodiment are formed of molded plastic and have coacting hinge members 16 and 18, respectively, formed thereon which interfit to provide the desired hinge connection. Likewise, the portions 12 and 14 are formed with coacting latch members 20 and 22 which engage to releasably maintain the kit in a closed condition.

The lower portion 12 is formed with a plurality of cylindrical cavities 24 illustrated as being arranged in three rows and of various diameters. Each cavity 24 has its top end 25 disposed at the level of the top surface of the bottom portion 12 and has its bottom end 27 located at the bottom surface of the portion 12. The top portion 14 is provided with a plurality of posts 26, each of which is of a length corresponding substantially to the depth of each cavity 24, and which are illustrated as being arranged in three rows corresponding to the rows of cavities 24. It is to be understood that the cavities 24 and posts 26 may be arranged in any suitable pattern and are illustrated as being arranged in the three rows shown because this arrangement of rows provides a compact arrangement of the cavities 24 and posts 26.

With this arrangement, each cavity corresponds to a post 26, or in the case of the smaller posts indicated at 26*a* and 26*b*, to a pair of posts. Consequently, when the cover 14 is moved to a closed position in which a rim or depending flange 30 thereon extends into a boundary recess 32 in the lower portion 12, the posts 26 are moved to positions in which they project downwardly into the cavities 24, with the two cavities 26*a* extending downwardly into a single cavity 24 and the pair of posts 26*b* extending down into the adjacent cavity 24. This arrangement provide a kit 10 of a minimum thickness in which the cover

14 functions as a cover for the cavities 24 to prevent the O-rings 34 therein from falling out of the kit 10.

In the use of the kit 10, a plurality of O-rings 34 of the same size are stacked in each of the cavities 24 which are of a progressively increasing size corresponding to the size of the O-rings which it is desired to stock in the kit 10. Similarly, a stack of O-rings 34 is positioned on each of the posts 26 which has a reinforcing rib 38 formed along one side thereof. As shown in Figs. 2 and 5, each post 26 is of a flat plate construction having flat sides 40 and edges 42 which are spaced apart a distance slightly less than the diameter of the O-rings 34 which are to be stacked on the post 26. A projection 44 extends outwardly from the upper end of each edge 42 so as to increase the edge to edge dimension of the post 40 to a distance greater than the diameter of the O-rings 34 intended to be stacked on the post 26. Consequently, the projections 44 on each post 26 operate to maintain the stack of O-rings 34 on the post 40. As shown in FIG. 3, without the projections 44, the O-rings 34 would fall off the lower end of the post 26 when the upper portion 14 is inverted when the kit 10 is closed. In order to remove an O-ring 34 from its supporting post 26, the kit 10 is opened and the O-ring 34 to be removed is grasped as shown in FIG. 6 so that diametrically opposite portions thereof are moved toward each other. This action provides for a corresponding movement of the other diametrical portions spaced ninety degrees therefrom, outwardly so that the O-ring 34 is of somewhat elliptical shape illustrated in FIG. 6 and has a major axis which is parallel to and greater than the combined lengths of the major axis of the post 26 and the projections 44 thereon.

As a result, a stack of O-rings is readily maintained on each post 26 and individual O-rings 34 are readily removed from each post 26 by merely grasping the O-ring in a natural manner.

Along its top front edge 50, the lower portion 12 is formed with a plurality of inclined grooves 52 of different widths corresponding to the thicknesses of the O-rings normally in use. Consequently, the thickness of an O-ring is readily determined by inserting it into the groove 52 of the corresponding size.

From the above description, it is seen that this invention provides an O-ring service kit which is economical to produce by virtue of its molded plastic construction, is capable of storing a large number of O-rings 34, and of displaying these O-rings in readily accessible positions when the kit is opened. When the kit is closed the O-rings on the top portion 14 fit within the O-rings on the bottom portion 12 to provide a compact kit 10.

Although the invention has been described with respect to a preferred embodiment thereof, it is to be understood that is not to be so limited, since changes can be made therein which are within the scope of the invention as defined by the appended claims.

What is claimed is:

1. An O-ring service kit comprising a container having a bottom portion and a top portion hingedly-connected together for movement of the top portion to a position on top of the bottom portion in a closed condition of the container, said bottom portion having a plurality of cavities formed therein and arranged in a predetermined pattern, each cavity being of a shape to accommodate a stack of O-rings of the same size, a plurality of O-ring supporting posts, each of which has a pair of ends one of which is mounted on the cover, each of said posts being aligned with and projecting into one of said cavities in the closed condition of the container, each post having projection means on the other end extending transversely thereof, each projection means being of a length greater than the internal diameter of O-rings supported on said post.

2. An O-ring service kit comprising a container having a bottom portion and a top portion hingedly-connected together for movement of the top portion to a position on top of the bottom portion in a closed condition of the container, said bottom portion having a plurality of cavities formed therein and arranged in a predetermined pattern, each cavity being of a shape to accommodate a stack of circular O-rings of the same size, a plurality of O-ring supporting posts on the top portion, each post projecting into one of said cavities in the closed condition of the container, each post having one end secured to the top portion and being of a shape in cross section such that it has a major axis which is slightly smaller than the inner diameter of circular O-rings to be supported thereon, and projection means on the opposite end of each post extending outwardly from opposite ends of said major axis a distance such that at said opposite end the major axis of said post is of a length greater than the inner diameter of said O-rings on said post so that they cannot be moved past said projections when the O-rings are of a circular shape but can be removed from the post when they are distorted to an non-circular shape having a major axis longer than the major axis of the post at said opposite end thereof.

3. In an O-ring service kit, a plurality of posts for supporting O-rings of a plurality of sizes, each post having a supported end and a free end and being of a shape in cross section such that it has a major axis which is slightly smaller than the inner diameter of circular deformable O-rings to be supported thereon, and narrow projections on the free end of each post extending outwardly from opposite ends of said major axis a distance such that at said free end the post has a major axis which is of a length greater than the inner diameter of the circular O-rings on said post so that they are not movable past said projections when they are of a circular shape but can be removed when they are distorted to an non-circular shape having a major axis longer than said major axis at said free end of the post.

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