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M. H. MORRISON

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HINGE CONSTRUCTION FOR RECEPTACLES AND THE LIKE

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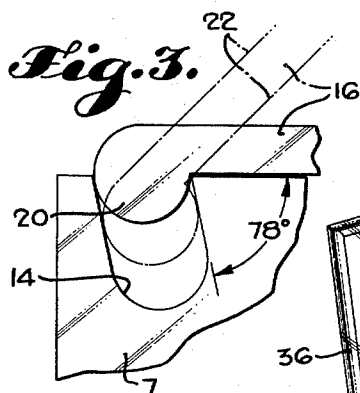
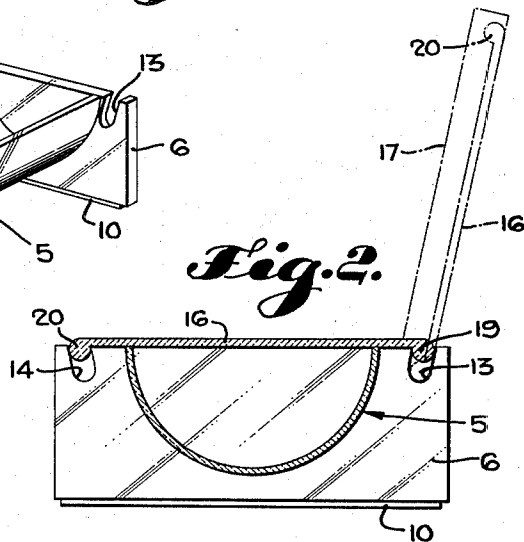
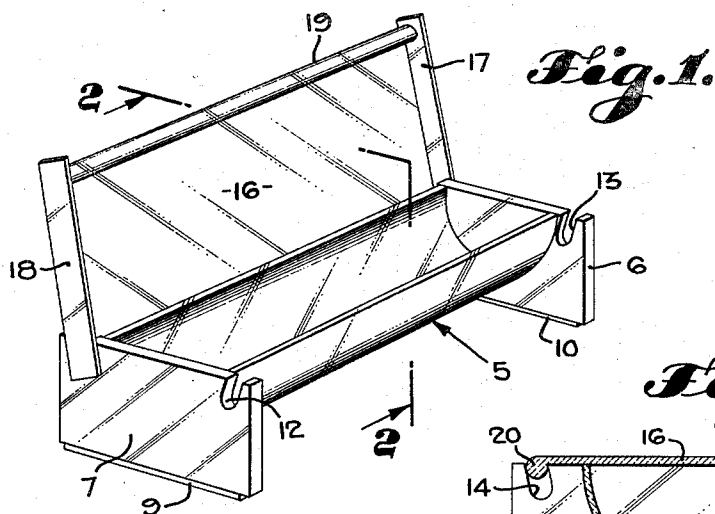
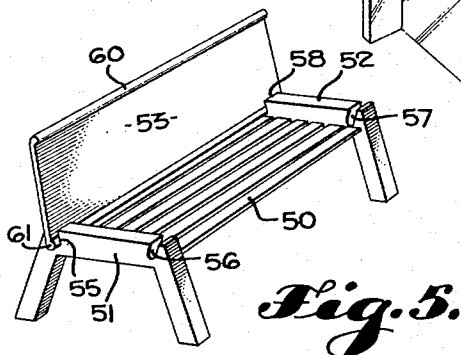
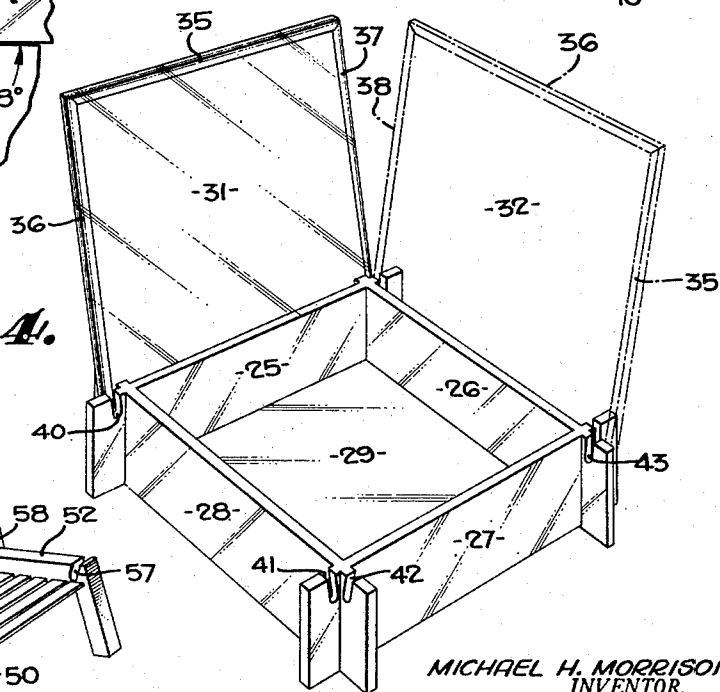


Fig. 4.



MICHAEL H. MORRISON,
INVENTOR.

BY *Carl R. Goslaw*
ATTORNEY

UNITED STATES PATENT OFFICE

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HINGE CONSTRUCTION FOR RECEPTACLES
AND THE LIKE

Michael H. Morrison, Los Angeles, Calif., assignor
to William Haines, Incorporated, Los Angeles,
Calif., a corporation of California

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This invention relates to hinge constructions, and particularly to a hinge or joint between two elements such as a box and its cover, a seat and its backrest, or a showcase and its lid.

Hinges are well known, molded hinges being disclosed in U. S. Patents No. 2,347,931 of May 12, 1944 and No. 2,442,873 of June 8, 1948, the present invention, however, being directed to a hinge which may or may not be molded. The principal feature of the hinge to be described hereinafter is its ability to permit the cover of a box, receptacle, or showcase to be opened from more than one side. That is, the type of hinge construction may be used on two or more edges of the cover, and thus, the cover can be raised from any edge, the opposite edge becoming a hinge automatically. The backrest of a bench or chair can thus be shifted without moving the seat itself.

The principal object of the invention, therefore, is to facilitate the opening of a box or the raising of a cover of any container or receptacle.

Another object of the invention is to provide an improved hinge or joint between a container and its cover.

A further object of the invention is to provide an improved box and cover.

A still further object of the invention is to provide an improved method of joining a cover to a container to permit the cover to be raised from more than one edge.

Although the novel features which are believed to be characteristic of this invention will be pointed out with particularity in the appended claims, the manner of its organization and the mode of its operation will be better understood by referring to the following description, read in conjunction with the accompanying drawings, forming a part hereof, in which:

Fig. 1 is a perspective view of a container such as a cigarette box, embodying the invention.

Fig. 2 is an end view of the box of Fig. 1 taken along the line 2—2 of Fig. 1.

Fig. 3 is a detail view of the hinge illustrating its operation.

Fig. 4 is a perspective view of a container having a cover which can open on all four edges thereof, and

Fig. 5 is a perspective view of a bench seat embodying the invention.

Referring now to the drawings, in which the same numerals identify like elements, and referring particularly to Figs. 1, 2, and 3, a trough or body 5 of cylindrical shape has end plates 6 and 7 abutting the end edges of the trough and which close the trough and provide legs for the con-

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tainer which may be used as a cigarette box. Although the trough 5 is shown cylindrical, it may be rectangular or any other desired shape. Furthermore, to add to its attractiveness, a luminous strip 9 and a luminous strip 10 of fluorescent material, may be attached to the bottom edges of the end plates 6 and 7 which will illuminate these plates in the dark.

Adjacent the upper four corners of the plates 6 and 7 are notches or sockets 12, 13, 14, and 15. These notches have parallel sides which make an angle to the upper edges of the plates of approximately 78° (see Fig. 3) or 12° from the vertical, the lower ends of the sides being closer to the center of the box than the upper ends of the sides. The bottoms of the sockets are circular, as shown in Figs. 2 and 3. The box is provided with a flat cover plate 16 having end pieces 17 and 18 adapted to cover the notches when the cover is in closed position. Although an angle of 78° is preferable for the sockets of a cigarette box of plastic material, this angle may vary with the nature of receptacle or article using the hinge and the material of the article.

At the side edges of the cover plate 16 are partial cylindrical knuckles 19 and 20 which may either be formed or molded with the cover 16 or attached or bonded thereto in any suitable manner. The diameter of these knuckles is slightly less than the distance between the parallel sides of the sockets and flush with the upper surface of the plate 16 (see Fig. 2) so that the knuckles may pass into the notches or sockets to the circular bottoms thereof and the top surface of the cover lie flat against the outer sides of the notches. That is, when the cover 16 is in the dotted line position in Fig. 2, the knuckle 19 will be at the bottom of notches 12 and 13 and the upper surface of the cover will lie against the right-hand sides of the notches. The cover will thus be held in the dotted line position shown in Fig. 2.

Now, when it is desired to open the cover 16 from right to left, the knuckle 19 is grasped and raised and knuckle 20 then moves into notches 14 and 15 as shown in Fig. 1. Thus, the lid 16 may be raised from either side edge, since the knuckles 19 and 20 may be lifted from their respective notches and the lid will remain open as shown in Figs. 1 and 2. The broken lines 22 show the action of the joint or hinge as a knuckle moves in and out of a notch. The end plates 17 and 18 maintain the cover 16 in its proper longitudinal position on the trough 5.

Referring now to Fig. 4, the container shown has four sides 25, 26, 27, and 28, the ends of

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which extend beyond the intersections of the sides. This container has a bottom 29. In all side extensions, notches or sockets similar to those shown in Figs. 1, 2, and 3 are placed, the bottoms of the notches being closer to the center vertical axis of the container than the tops of the notches. A cover plate shown in full lines at 31 and dotted lines at 32 has four knuckles 35, 36, 37, and 38 which function in respective notches. That is, knuckle 36 functions in notches 40 and 41 when knuckle 37 is raised, knuckle 35 in notches 42 and 43 when knuckle 38 is raised, and so on for all four knuckles. Thus, there is provided a container and cover therefor, which cover may be raised from any edge and be automatically hinged at the opposite edge.

In Fig. 5, the invention is shown embodied in a bench having a seat portion 50, U-shaped leg ends 51 and 52, and a back rest 53. Sockets 55, 56, 57, and 58, similar to the sockets just described for the containers, are cut in the horizontal portions of the leg ends 51 and 52 and the back 53 has knuckles 60 and 61 similar to knuckles 19 and 20. When the back 53 is as shown in Fig. 5, knuckle 61 is in notches 55 and 59, and, if the back rest is to be used on the right side of the bench, knuckle 60 will be inserted in notches 56 and 57 by raising knuckle 61. Thus, the back may be shifted to either side of the bench and if no back rest is desired, it may be lowered flat onto the bench and may be used as a seat.

Although the hinge or joint has been illustrated in use for containers and benches, it may be used for the covers, lids, or doors of many articles, and, although the cover is readily removable, it is nevertheless hinged to its container.

I claim:

1. A container having a body portion and a cover portion, said body portion having parallel sided sockets at the corners thereof, a pair of said sockets having coaxial axes and said cover portion having knuckles on at least two edges thereof and flush with the upper surface of said cover, the axes of said knuckles being parallel to the axes of respective pairs of said notches, a knuckle passing into its respective pair of sockets when the opposite knuckle is raised to bring portions of the upper surface of said cover in contact with one side of each of said sockets to hold said cover in open position.

2. A container in accordance with claim 1, in which the sides of said sockets are slanted downwardly toward the center axis of said container at an angle of approximately 78° to the horizontal.

3. A container in accordance with claim 1, in which the bottoms of said sockets are circular and of the same diameter as the distance between the sides of said sockets, and said knuckles are partially cylindrical with a diameter slightly less than the distance between the sides of said notches

4. A joint or hinge between a movable member

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having at least one flat side and a fixed member, a portion of said fixed member having a pair of parallel sides coaxial notches therein at an angle of substantially 12° to the vertical and a knuckle at the edge of said movable member, said knuckle being partially cylindrical and flush with the upper flat side of said movable member and of a diameter slightly less than the distance between the sides of said notches, said notches having a depth greater than the diameter of said knuckles, portions of the upper, flat side of said cover contacting one of the parallel sides of each of said notches when in one position, and said knuckle spanning the upper edges of said notches when in another position.

5. A joint in accordance with claim 4, in which two pairs of said notches are provided, said notches having circular bottoms of a diameter equal to the distance between the sides of said notches to accommodate a pair of said knuckles when in said first mentioned position.

6. A hinged article having a cover removable therefrom in either closed or open position, comprising a body portion having end sections in which are positioned parallel sided notches, the sides of said notches being slanted at an angle to the vertical, and a flat cover portion having partially cylindrical knuckles along at least one edge thereof, the knuckles being flush with one surface of the cover, portions of the surface of the cover being in contact with one side of each of said notches and said knuckles being positioned in the bottom of said notches when said cover is in open position and held therein by said knuckles and notches, said knuckles being removable from said notches and said cover being removable from said body portion when said cover is in said open position, said cover also being removable from said body portion and said knuckles from said notches when said cover is in closed position, said knuckles spanning the opening to said notches when said cover is in closed position.

7. A hinged article in accordance with claim 6, in which a similar pair of notches is positioned at each edge of said article and similar knuckles are provided at corresponding edges of said cover to permit said cover to be opened and held in a plurality of positions.

MICHAEL H. MORRISON.

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