This invention relates generally to hinges but more particularly to a novel hinge construction for boxes and like containers made of plastic or like material.

It has as one of its objects to provide a hinge structure which is so designed and constructed as to enable the mating or complemental elements thereof to be molded integrally with the box-sections and readily assembled by a snap-like action.

Another object of the invention is to provide a molded interlocking hinge structure which requires but one mold to make both box-sections with the mating hinge elements thereon and which is therefore economical in construction.

Other features of the invention reside in the construction and arrangement of parts hereinafter described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a perspective rear view of a box in a partially open position showing one form of my hinge construction. Figure 2 is a plan view of one of the box-sections and its hinge elements with the mating box-section, in dotted lines, and in a fully open position. Figure 3 is a transverse section taken on line 3—3. Figure 2. Figure 4 is a cross section taken on line 4—4. Figure 5 is a fragmentary cross section taken on line 5—5. Figure 6 is a fragmentary plan view of a box-section, similar to Figure 2, but showing a modification of the invention. Figure 7 is a transverse section taken on line 7—7, Figure 6. Figures 8 and 9 are cross sections taken on the correspondingly-numbered lines in Figure 6.

Similar characters of reference indicate corresponding parts throughout the several views.

Referring now to the embodiment of my invention shown in Figures 1-5 inclusive, 10 and 11 indicate the body and cover of interchangeable box-sections made of a molded material, such as a plastic, and formed with the novel hinge members thereon, each box section being of the same construction and having its hinge members transversely aligned and complementally disposed for interlocking engagement with those of the companion section. Where the top and bottom sections of the box are of the same depth, but one mold is required for making the boxes, and to this end each section is provided along its rear wall 12 with complementary male and female hinge members 13, 14 which are disposed in suitable spaced relation to each other and from the ends of the box, as shown in Figures 2 and 3. These hinge members are molded integrally with the box-section, and the member 13 is in the form of an ear or lug projecting rearwardly from such section and having rounded or substantially semi-spherical bosses, teats or projections 15 on its opposite faces and in transverse axial alinement. As shown in Figure 5, the axis of these hinge-teats is substantially coincident with the joint line or inner end of the box-section to insure the proper closing of the box. The complementary hinge member 14 is bifurcated or in the form of laterally-spaced lugs to provide a space 16 to snugly receive the alined companion hinge member 13 of the complementary box-section. In their opposing faces these lugs have bearing grooves or recesses 17 which extend at substantially right angles to the plane of the box-section and with which the spherical teats 15 of the complementary box-section are adapted to register in opposed hinged relation. As shown in Figure 5, the groove in one of the lugs is closed at the top to provide an arcuate seat or shoulder 18 and open at its bottom, while the opposing groove in the companion lug is open at its top and closed at its bottom to provide a similar seat, whereby the spherical teats are adapted to bear against them to effectively maintain the box-sections in proper hinged relation and prevent their relative displacement axially of the resulting hinge connection as well as in planes intersecting the same. At their free ends the box-sections 10, 11 have knobs 19 which cooperate with the adjoining section-walls to yieldingly retain the box in its closed position.

In assembling the box-sections in hinged relation, the hinged end of one section is fitted by a snap-like action into the mating end of the companion section, the lugs of the hinge member 14 being initially yieldingly expanded, because of the resilience of the plastic material, by the teats 15 of the complementary hinge member 13 and thence contracted about the same to properly hold the sections in hinged relation. While the recesses 17 are comparatively shallow, they positively prevent relative lateral displacement of the box-sections and their hinge members. Furthermore, the closed ends of these recesses jointly define a socket in which the rounded teats fulcrum.

In the modified form of the invention shown in Figures 6-8 inclusive, each box section 20 is of identical construction, including a hinge member in the form of a lug 21 having bearing grooves or recesses 22 in its opposite faces and a comple-
mental hinge member in the form of spherical pivots or projections 23 in spaced relation axially of the hinge to receive the recessed lug 21 of the companion box-section therebetween, in the manner shown in Figure 6. It will be noted that the outer face of that end wall of the box-section bearing the hinge members is recessed at 24 and 28 to bring such complementary members and the corresponding ends of the box-sections in as close relation as possible and to reduce the resulting gap 26 in the open position of the box to a minimum.

I claim as my invention:

1. An integrally molded hinge for box-sections, each section having a single lug and a bifurcated lug projecting from one side thereof in transversely alined relation, one of said lugs having oppositely-facing pivot bosses formed thereon and the companion lug having complementary oppositely-facing overlapping recesses therein disposed at substantially right angles to the joint plane of the box, one of said recesses being open at its upper end, and terminating at its lower end in an upwardly-facing seat-forming abutment for one of the pivot-bosses and the other of said recesses being open at its lower end and terminating at its upper end in a downwardly-facing, seat forming abutment for the other of said pivot-bosses.

2. A hinge for molded boxes composed of symmetrical interchangeable body and cover sections meeting in abutting edgewise relation when closed, comprising complementary hinge members molded integrally with the box-sections for interlocking pivotal engagement about an axis in their edgewise meeting plane, one of the hinge members being in the form of axially-spaced ball-shaped elements and the complementary hinge member being in the form of a lug having like-spaced overlapping socket-forming recesses in its opposite faces and open at one end, one of the recesses terminating at its other end in a ball-element abutment seat facing in one direction and the companion recess terminating at its other end in a like seat facing in the opposite direction for engagement by the companion ball element.

3. A hinge for molded boxes composed of symmetrical interchangeable body and cover sections meeting in abutting edgewise relation when closed, comprising complementary hinge members molded integrally with the box-sections for interlocking pivotal engagement about an axis in their edgewise meeting plane, one of the hinge members being in the form of axially-spaced ball-shaped elements and the complementary hinge member being in the form of a lug having like-spaced overlapping socket-forming recesses in its opposite faces and open at one end, one of the recesses terminating at its other end in a ball-element abutment seat facing in one direction and the companion recess terminating at its other end in a like seat facing in the opposite direction for engagement by the companion ball element.

4. A hinge for molded boxes and the like, comprising complementary hinge members molded integrally with the box-sections in alining spaced relation, one of the hinge members on each box-section including oppositely-facing pivot elements and the other hinge member including complementary oppositely-facing, overlapping recesses open at one end to receive said pivot elements in snap-fit laterally yielding interlocking hinged relation thereto and terminating at their opposite ends in seat-forming abutments facing in opposite directions to jointly define a socket for said pivot elements.

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