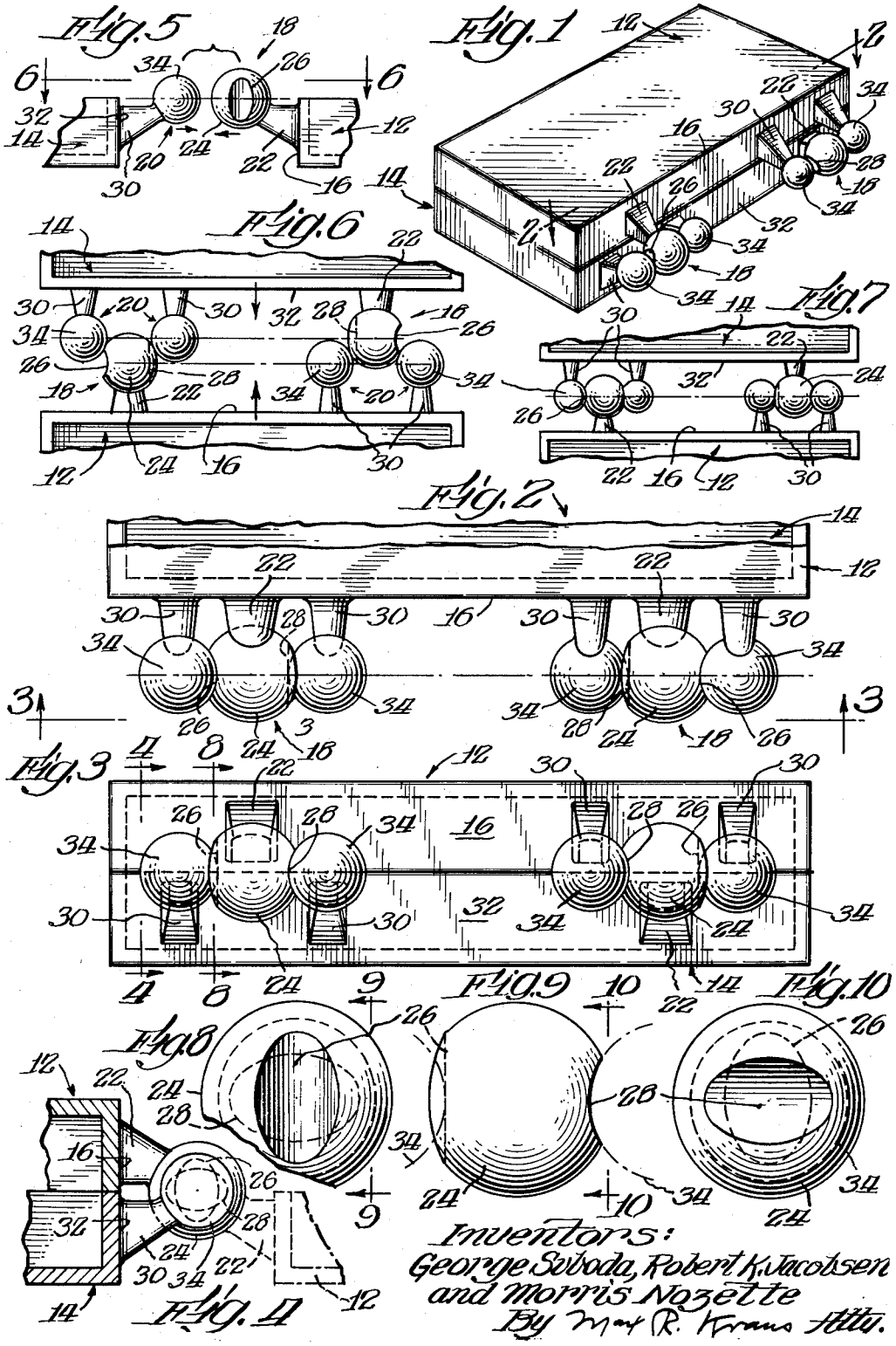
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HINGES

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HINGES

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This invention relates to improvements in hinges, and more particularly to hinges formed integrally with box sections and molded of plastic or the like material.

One of the objects of this invention is to provide molded hinge means formed integrally with the box sections, all molded of plastic material or the like.

Another object of this invention is to provide box sections having integrally formed hinge elements which may be readily snapped into interlocking relationship to form a hinge structure for the box.

Another object of this invention is to provide box sections with integrally molded hinge elements all molded from one mold.

Another object of this invention is to provide a structure of the foregoing character which is economical to produce and which is relatively simple and easy to interlock in hinging relationship, yet will provide a positive locked hinge structure when once interlocked.

Other objects will become apparent as this description progresses.

In the drawings:

FIG. 1 is a view of the box showing the hinge members interlocked.

FIG. 2 is an enlarged view taken on lines 2—2 of FIG. 1.

FIG. 3 is a view taken on lines 3—3 of FIG. 2.

FIG. 4 is a view partly in section taken on lines 4—4 of FIG. 3.

FIG. 5 is an exploded view of two of the mating hinge members.

FIG. 6 is a view taken on lines 6—6 of FIG. 5 before the hinge members are snapped into locking position.

FIG. 7 is a view similar to FIG. 6 with the hinge members locked in hinging relationship.

FIG. 8 is an enlarged view taken on lines 8—8 of FIG. 3.

FIG. 9 is a view taken on lines 9—9 of FIG. 8, and

FIG. 10 is a view taken on lines 10—10 of FIG. 9.

The box sections 12 and 14 are of identical construction and are of molded material such as plastic or the like. Since both box sections are identical the sections are all formed in an identical mold and each section may be either the top or bottom of the box. The hinge elements of one box section are arranged to engage the complemental hinge elements of the other box section in a positively locked hinging arrangement.

Section 12 has a rear wall 16 and extending from said rear wall adjacent one end is a hinge element generally indicated at 18. Adjacent the opposite end are two spaced hinge elements both indicated by the numeral 20.

The other box section 14 also has similar hinge elements, however, the hinge element 18 of box section 12 is arranged to engage the spaced hinge elements 20 of box section 14, and hinge elements 20 of box section 12 is arranged to engage hinge element 18 of box section 14. Thus, identical box sections 12 and 14 are hingedly interlocked at the rear ends. The front ends of the box sections may be provided with any suitable and well-known similar locking means for closing the two sections.

More specifically, the hinge element 18 includes a rearwardly extending portion 22 extending from the rear

wall 16 which terminates in a generally spherical or ball-shaped member 24. The spherical or ball-shaped member 24 is provided with grooves or recesses on its opposite sides, for example, it is provided with an outwardly facing concave recess or groove 26 extending vertically and parallel with the rear wall 16. The concave recess or groove 26 is continuous and uninterrupted throughout its length.

The opposite side of the spherical or ball-shaped member 24 is also provided with an inwardly facing concave recess or groove 28 which extends horizontally and which is positioned at right angles to the groove 26. The groove or recess 28 is likewise continuous and uninterrupted throughout its length. Thus each spherical or ball-shaped member 24, whether on box section 12 or 14 has an outwardly facing groove or recess 26 and an inwardly facing groove or recess 28, one groove being positioned at right angles to the other.

The hinge element generally indicated at 20 comprises two identically spaced members, each of which consists of a rearwardly extending portion 30 extending from the rear wall 32 of the section 14. Each extension 30 terminates in a generally spherical or ball-shaped member 34.

The spherical or ball-shaped member 24 of box section 12 is snapped into engagement with the spaced spherical or ball-shaped members 34 of box section 14, and the spherical or ball-shaped member 24 of box section 14 is snapped into engagement with the spaced spherical or ball-shaped members 34 of box section 12. Thus, each pair of spherical or ball-shaped members 34 of hinge element 20 is engaging the grooved concave recesses in the spherical member 24, the grooved recesses being positioned at right angles to each other so that irrespective of whether the box sections 12 and 14 are in closed position relative to each other, as in FIG. 1, or are open as when one section is hinged relative to the other, the hinging elements are always interlocked to provide a positive hinging relation.

The entire box section 12 or 14 is molded with the hinge elements molded integrally therewith. When the two box sections are of the same depth as shown in the drawings, one mold may be used for making both sections.

As shown, the axis of the bearing or engaging surfaces of the spherical shaped members 24 and 34 is substantially in line with the joint line of the box section to insure proper closing of the box.

It will be understood that various changes and modifications may be made from the foregoing without departing from the spirit and scope of the appended claims.

What is claimed is:

1. An integrally molded hinge for box sections, each section having a single ball-shaped member and a pair of spaced ball-shaped members projecting from one side thereof in transversely alined relation, said single ball-shaped member having oppositely facing recesses, one of said recesses extending at right angles to the other, each of said recesses receiving one of the ball-shaped companion members of the said pair of spaced ball-shaped members of the other box section.

2. An integrally molded hinge for box sections, each section having a pair of spaced spherical pivots and a lug member projecting from one side thereof in transversely alined relation, said lug having oppositely facing sockets, one of said sockets extending at right angles to the other, each said socket receiving one of the companion spherical pivots of the said pair of spaced spherical pivots.

3. A structure defined in claim 2 in which each of the sockets formed in the lug consists of a continuous groove.

4. An integrally molded hinge for box sections, each

section having a pair of spaced parti-spherical pivots and a lug member projecting from one side thereof in transversely alined relation, said lug having oppositely facing sockets, each socket comprising a continuous groove, with one groove disposed vertically and the other groove disposed horizontally, each said socket receiving one of the

companion parti-spherical pivots of the said pair of spaced parti-spherical pivots.

5. A structure defined in claim 4 in which the lug member is a generally spherical-shaped member with the sockets formed on the opposite sides thereof.

No references cited.