Oct. 6, 1964 T. F. KELLEY 3,151,899

LATCH FOR CONTAINER

Filed June 23, 1961

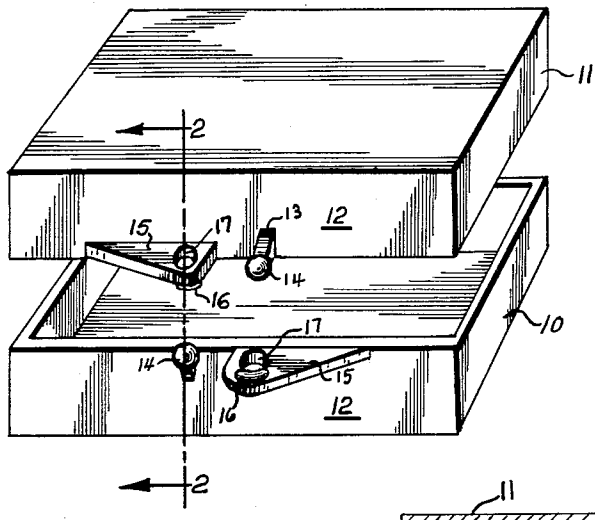


Fig. I

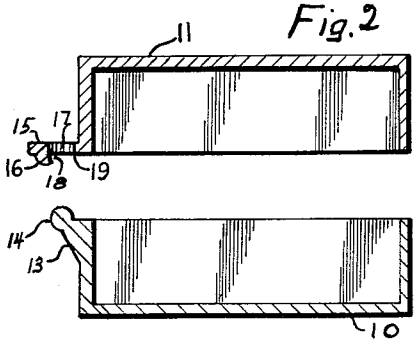


Fig. 2

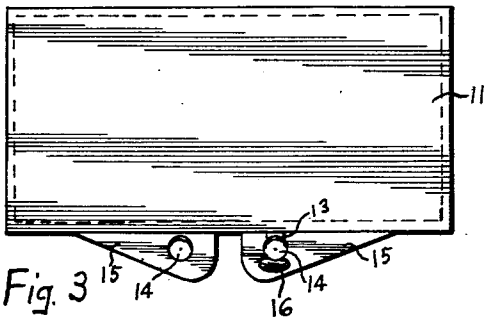


Fig. 3

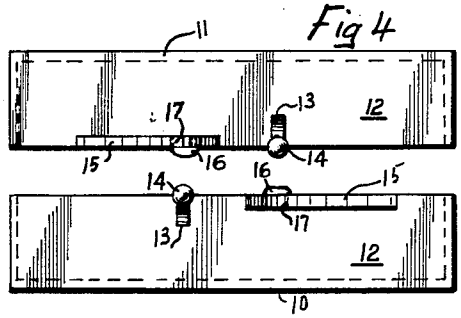


Fig 4

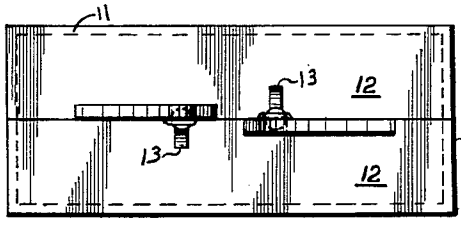


Fig. 5

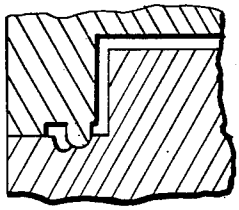


Fig. 6

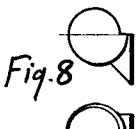


Fig. 8

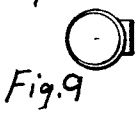


Fig. 9

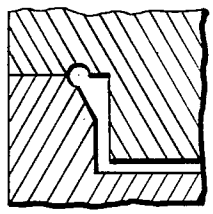


Fig. 7

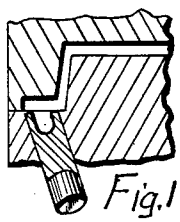


Fig. 10

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1

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LATCH FOR CONTAINER

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1 Claim. (Cl. 292—17)

This invention relates to latching means for a box and cover and more specifically to latching means that may be moulded integrally with box-sections and has for one of its objects to provide an improved latch of this type that may be moulded by means of a simple constructed mould having no moving parts to finish the undercut portion of the latch that provides friction means to hold the box-sections closed.

A further object is to provide a latch of this type that automatically increases its resistance to disengagement my forces applied other than those that are properly applied directly to the latch.

A further object is to provide a latch of this type moulded integrally with box-sections to provide a box and cover having latching means, said box comprising two identical parts that may be moulded with a single cavity mould.

A further object is to provide a latch of this type to hold the box-sections more securely against their relative lateral movement.

A further object is to provide a latch of this type having friction holding surface of more than one angle to present a variation of friction pressures to its disengagement to hold box-sections tightly closed.

A further object is to provide a latch of this type having relative large bearing surface as holding means to prevent fast wear.

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

In the accompanying drawings:

FIG. 1 is a perspective view of two identical box-sections shown with hinges removed and in detached but aligned position showing my improved latch structure. FIG. 2 is a sectional view taken on line 2—2 of FIG. 1. FIG. 3 is a top view of FIG. 1. FIG. 4 is a front view of FIG. 3. FIG. 5 is a front view of FIG. 3 showing the box-sections closed in proper latched relation. FIG. 6 is a fragmentary detail view taken crosswise of box-section along the center of the hole of the flat lug indicating diagrammatically an arrangement of dies suitable for injection moulding of this portion of the latching means and FIG. 7 is a similar view taken along the center of the spherical member of the other lug. FIG. 8 is a side view of a modified form of the spherical member suitable for my improved latch. FIG. 9 is a top view of FIG. 8 and FIG. 10 is a fragmentary detail view of an arrangement of dies to indicate prior method of producing the undercut portion of latching means used in box-sections to provide only one angle for friction holding means, by a retractable member of the die.

Referring now to the embodiment of my invention shown in FIGS. 1–5 inclusive and FIGS. 8 and 9, 10 and 11 indicates the body and cover of interchangeable box-sections that may be moulded of a plastic material and formed with complementary male and female latch elements along the upper edge of their front walls so that their mating friction bearing surfaces are in suitable space

2

relation to each other and from the ends of the box-sections and being of a size and shape so as to yieldingly receive each other in an interlocking snap like action to hold the box-sections in proper closed relation.

Attached to one side of the center of the front wall 12 of each box-section is a lug 13 having on its end a spherical member 14 with its upper portion extending above the upper edge of the box-section and on the other side of the center of the wall a substantially flat lug 15 extending from the upper edge of the wall out a distance and having thereon a boss 16 projection from the front upper surface of the lug a distance to extend slightly over the hole 17 which extends through the lug substantially in lateral alignment with the spherical member so that when the box-sections are rotated on their hinges the boss 16 will present a yielding resistance to the front portion of the mating spherical member as the box-sections are closed.

It may be seen that the inner spherical surface 18 of the boss 16 conforms to the lower portion of the spherical member 14 and that this curved surface may present its greatest resistance to the latches disengagement at that position where the box-sections are completely closed and that by the direct forcing of the latch with the fingers the lug 15 and the front walls will spring in a direction to allow comparatively easy disengagement of latch whereas other forces applied to spring the box open will tend to spring the lug and wall in the opposite direction to more tightly bind the latch. Referring now to FIGS. 8 and 9 that show a modification of the spherical element suitable for my latching means and which lends for simple die construction, this element consists of two semispherical portions with the smaller size positioned at the top with its front portion in line with front portion of the large semispherical element and will allow for clearance at the point 19 shown in FIG. 2.

I do not wish to limit the use of this latch to boxes.

I claim as my invention:

An integrally moulded latch for box-sections, each section having two lugs projecting from one side thereof in transversely aligned relation, one of the said lugs having formed thereon a part spherical member extending beyond the adjacent edge of the box-sections and the other of said two lugs being substantially flat and extending from said adjacent edge of the box-sections out a distance and having a complemental hole extending through it at substantially right angles to the joint plane of the box-sections and being of a size to freely receive the upper portion of the said spherical member, the hole and spherical member being substantially an equal distance from the ends of the box-sections and said flat lug having formed thereon a boss extending toward the opposing spherical member over a portion of the front edge of the hole to bear against the mating spherical member to yieldingly restrain the box-sections in a closed position.

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