This invention relates to a trunk hinge and latch, and it concerns more particularly a combined hinge and latch for trunks, storage cases, and the like.

An object of the invention is to provide a combined hinge and latch, applicable to adjoining, vertically extending exterior surfaces of a trunk and its lid, respectively, adjacent opposing corners thereof, and adapted to removable and pivotally connect the lid to the trunk, for universal pivotal movement relative thereto, whereby the trunk is adapted to be opened from either side or end.

Another object of the invention is to provide a trunk hinge and latch as described which is of simple, rugged construction, may be fabricated inexpensively, and is efficient in operation reproducible in manufacture.

The invention is particularly applicable to trunks which are carried on the tops of automobiles, for example. When so used, the combined hinge and latch of the invention permits a trunk carried on the top of an automobile to be opened from either side of the automobile.

The invention will be readily understood by referring to the following description and the accompanying drawings, in which:

FIGURE 1 is a fragmentary perspective view showing adjoining, vertically extending exterior surfaces of a trunk and its lid, respectively, adjacent opposing corners thereof, having applied thereto a combined hinge and latch embodying the invention, and showing the lid in its closed position;

FIGURE 2 is a top plan view of a trunk and its lid, showing combined hinge and latch units embodying the invention applied to adjoining, vertically extending exterior surfaces of the trunk and the lid, respectively, adjacent each of the opposing corners thereof, and showing the lid in its closed position;

FIGURE 3 is a fragmentary sectional elevational view taken on the line 3—3 of FIGURE 2;

FIGURE 4 is a view similar to FIGURE 3, showing a modified form of the invention; and

FIGURE 5 is an end elevational view.

Referring to the drawing, the numeral 1 designates generally a trunk or case, which is preferably rectangular, and the numeral 2 indicates a lid thereof.

Combined hinge and latch units embodying the invention, as hereinafter described, which are indicated generally by the numerals 3, are applied to adjoining, vertically extending exterior surfaces of the trunk 1 and the lid 2, respectively, adjacent the opposing corners thereof.

Each of the combined hinge and latch units 3 includes a first angularly bent plate 4, which is conformable to a corner portion of the lid 2 and is secured to the adjacent side and end thereof by rivets 5. An integral ball 6 is formed on one end of a shank 7, which is connected at its opposite end to the angularly bent plate 4, centrally therefrom and is normally inclined outwardly and downwardly therefrom, bisecting the angle between the adjacent side and end of the lid 2.

A second angularly bent plate 8, which is conformable to a corner portion of the trunk 1, is secured to the adjacent side and end thereof, immediately below the angularly bent plate 4, in the closed position of the lid 2, by rivets 9.

The plate 8 has cut out central portions forming a pair of vertically disposed integral ears 10, which extend horizontally outwardly from the plate 8, below the shank 7 and on opposite sides thereof, in spaced apart, parallel relation to each other.

An outwardly turned integral lip 11, which is formed on the upper portion of the plate 8, has an arcuate outer edge which is conformable to the surface of the ball 6. The arcuate edge of the lip 11 is of smaller radius than the ball 6, and is engageable with the upper surface of the ball 6, inwardly thereof, adjacent one side of the shank 7.

A vertically disposed metal strip 12, which extends between the ears 10, is hinged at its lower end by an outwardly turned integral tab 13 formed on the lower portion of the plate 8, below and between the ears 10, and has a concave upper end portion 14, which is engageable with the outer surface of the ball 6, opposite the lip 11, and coacts with the lip 11 to form a socket for the ball 6.

The ball 6, together with the socket therefor formed by the outwardly turned integral lip 11 of the plate 8 and the concave upper end portion 14 of the strip 12, comprise a ball and socket joint whereby the lid 2 is connected to the trunk 1 for universal pivotal movement relative thereto.

An integral projection 15 extends outwardly from the plate 8, above the tab 13 and below and between the ears 10, for abutment against the strip 12, above its hinged lower end, to thereby limit pivotal movement of the strip 12 in the direction of the ball 6.

A metal strip 16, which is normally disposed vertically, between the ears 10, and depends therefrom, exteriorly of the strip 12 and in juxtaposed relation thereto, has an integral projection 17 which normally extends outwardly therefrom, adjacent its upper end. The projection 17 has an opening therein through which a pivot pin 18 is passed. The ends of the pivot pin 18, which extend beyond opposite sides of the projection 17, are received in openings therefor in the ears 10, whereby the strip 16 is movable pivotally about the pivot pin 18.

As shown in FIGURE 3, the strip 16 comprises a latch which, in one position thereof, shown in solid lines, bears against the strip 12 whereby the concave end portion 14 thereof is prevented from being displaced outwardly from the ball 6, by pivotal movement of the strip 12 about its hinged lower end. In another position thereof, shown in dotted lines, the strip 16 is swung outwardly about the pivot pin 18, whereby it is disengaged from the strip 12, which is then movable pivotally about its hinged lower end whereby the ball 6 is released from its socket.

As indicated by the dotted lines of FIGURE 5, the trunk 1 is adapted to be opened from either side or end upon releasing the latches 16 on one side or end thereof.

FIGURE 4 shows a modified form of the invention in which the ears 10 have extensions 19 which extend outwardly beyond the ball 16 and have openings therein for insertion of a padlock 20, shown in dotted lines, whereby pivotal movement of the latch 16 about the pivot pin 18, to thereby release the ball 6 from its socket, is prevented.

The invention may be modified in various ways without departing from the spirit and scope thereof.

What is claimed is:

1. In combination with a substantially rectangular trunk having a lid thereof, a plurality of combined hinges and latches each comprising a pair of complementary unitary structures including a pair of angularly bent plates conformable to adjoining, vertically extending exterior surfaces of the trunk and the lid, respectively, and having means whereby they are secured thereto adjacent opposing corners thereof, an integral ball having means connecting it to one of the plates, in spaced apart relation thereto, and in close proximity to the other of the plates, a pair of vertically disposed integral
ears extending horizontally outwardly from the other of the plates, centrally thereof, in parallel, spaced apart relation to each other, an outwardly turned integral lip on the other of the plates, opposite the ball, having an arcuate outer edge conformable to the surface of the ball and engageable therewith, a first strip extending between the ears of the other of the plates and having hinge means whereby one of its ends is pivotally connected to the other of the plates and a concave surface on its opposite end conformable to the surface of the ball and coacting with the outwardly turned lip to form a socket therefor, a second strip having laterally offset hinge means whereby it is pivotally connected between the ears and normally depends therefrom, exteriorly of the first strip, the second strip bearing against the first strip, in one position thereof, whereby the concave end portion of the first strip is releasably secured against outward displacement relative to the ball, and an outwardly extending integral projection on the other of the plates for abutment against the first strip to limit pivotal movement thereof in the direction of the ball.

2. The structure of claim 1, the ears having extensions which normally extend outwardly beyond the second strip and have openings therein for insertion of a lock, whereby movement of the second strip about its pivot, to thereby space it apart from the first strip sufficiently to permit outward displacement of the concave end portion of the first strip relative to the ball, whereby the ball is adapted to be released from its socket, is prevented.

References Cited in the file of this patent

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