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BAG FRAME CATCH LOCK

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Fig. 1.

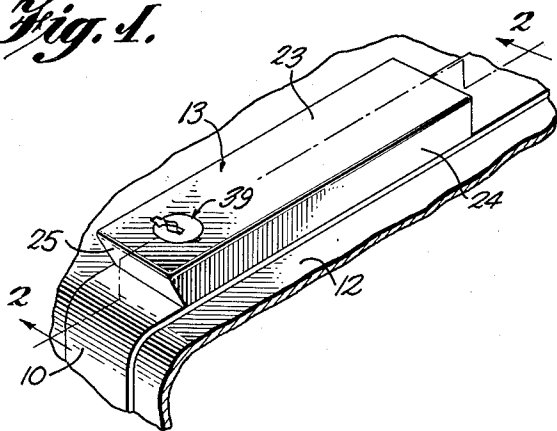


Fig. 4.

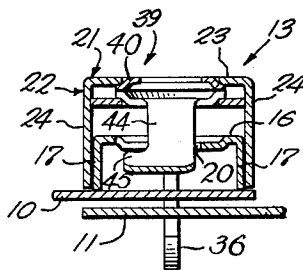


Fig. 2.

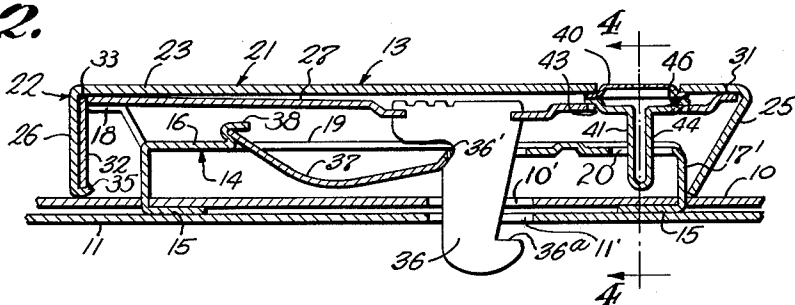


Fig. 3.

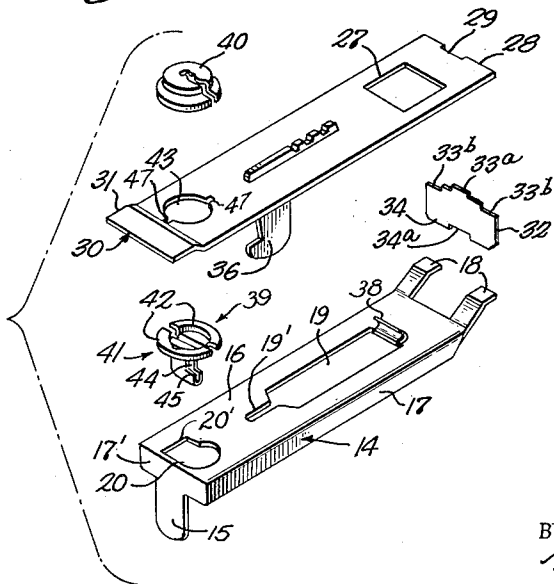
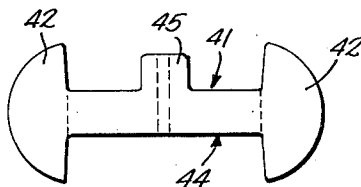


Fig. 5.



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BAG FRAME CATCH LOCK

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4 Claims. (Cl. 70—71)

The present invention relates in general to combined side catches and locks for the frames of travelling bags and similar articles of luggage, with special reference to bags having a pair of hinged channel frames.

Side catch locks of the types heretofore available on the commercial market for use with luggage having a pair of hinged channel frames to be secured together in confronting relation have generally been of rather complex construction and do not lend themselves readily to ease or economy of manufacture. Many of such locks require a spring loaded mechanism to open the catch, which is by its nature highly susceptible to jamming when the luggage is overpacked, which renders the lock subject to opening under the influence of a slight blow or jar, and which requires frequent servicing to keep the mechanism in proper working order. Further, the lock components of such devices which receive the key and secure the catch usually are provided on the stationary portion of the device necessitating removal of the key before the movable portion carrying the catch can be shifted to unlocking position.

An object of the present invention is the provision of a novel catch and lock mechanism for use with luggage which obviates the above-mentioned disadvantages.

Another object of the present invention is the provision of a novel catch and lock mechanism for use with hinged luggage frames, in which the movable parts have the appearance of substantial mass and depth, but wherein substantially all parts are composed of sheet metal shaped by ordinary stamping processes to insure uniformity and economy of manufacture.

Another object of the present invention is the provision of a novel catch lock mechanism for luggage frames, which is highly dependable over a long period of use and which is provided with a simplified lock mechanism providing a structure of fewer parts, which may be assembled more quickly, and which consequently can be produced at lower cost.

Other objects, advantages and capabilities of the invention will become apparent from the following detailed description, taken in conjunction with the accompanying drawing, showing only a preferred embodiment of the invention.

In the drawing:

FIGURE 1 is a fragmentary perspective view of a bag frame equipped with a catch lock mechanism embodying the present invention;

FIGURE 2 is a longitudinal section view of the catch lock mechanism, taken along the lines 2—2 of FIGURE 1, and illustrating the same in closed condition;

FIGURE 3 is an exploded perspective view of the catch lock mechanism, excluding the catch plate cover;

FIGURE 4 is a vertical transverse section view taken along the line 4—4 of FIGURE 2; and

FIGURE 5 is a plan view of a blank from which the bolt member for the catch lock mechanism may be formed.

Referring to the drawing, wherein like reference characters designate corresponding parts throughout the several figures, the reference characters 10 and 11 designate the two channel-shaped frame members of a suitcase 12 or the like, which are hinged together at their ends in the usual manner. The combined side catch means and

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lock are generally indicated by the reference character 13, and comprise an elongated base plate member 14 stamped from sheet metal and having a pair of clinching lugs 15 depending from its opposite ends. The lugs 15 are adapted to be passed through registering apertures in the outermost channel frame member 10 and clinched over the underside of the channel frame member 10 to secure the base plate member 14 to one of the frame members. The base plate member 14 is formed with a top panel 16 bounded by downwardly depending side flanges 17 and an end flange 17' adapted to rest endwise on the outermost frame member 10. The top panel 16 is provided with a pair of laterally spaced, rearwardly projecting ears 18 at the end thereof opposite the end flange 17', which ears terminate in portions which are offset upwardly relative to the plane of the top panel 16 and lie in a plane substantially parallel thereto. The top panel is also provided with an elongated central aperture 19 having an extension 19' projecting toward the end of the base plate member 14 having the flange 17' and a keeper aperture 20 disposed immediately adjacent the end flange 17'.

The base plate member 14 serves as the support for the movable catch plate assembly 21 which comprises a catch plate cover 22 preferably formed of sheet metal having a top wall 23 bounded laterally by side walls 24 and by a free end wall 25 and a hinged end wall 26. The side walls 24 and end walls 25, 26 are of sufficient height to give the cover 22 the appearance of a block of considerable mass and are spaced transversely a sufficient distance to overlap the side flanges 17 of the base plate member 14 and receive the same in completely nested relation therein.

A catch plate 27 is disposed in nested relation within the catch plate cover 22 and is carried thereby. The catch plate 27 is a substantially flat plate member designed to be disposed close to the top wall 23 of the cover 22, one end 28 of the catch plate 27 having a central notch 29 therein and being designed to abut against the upper rear corner of the cover 22 at the juncture of the top wall 23 and hinged end wall 26, and the other end 30 of the catch plate 27 having an upwardly offset formation 31 adapted to butt against the underside of the top wall 23 at the free end thereof. The free end wall 25 of the cover 22 is bent to assume an acute angle with the top wall 23 and thereby restrain the adjacent end of the catch plate 27 within the cover 22, and the notched end 28 of the catch plate 27 is restrained in nested relation within the cover 22 against the top wall 23 by means of a spacer member 32 having an upper edge 33 provided with a central tongue 33a designed to fit into the notch 29 flanked by surfaces 33b adapted to bear against the under surfaces of the upwardly offset portions of ears 18 and hold the same against the catch plate 27. The opposite or lower edge 34 of the spacer member 32 is provided with a notch 34a to receive a lug 35 at the lower end of the hinged end wall 27 and be bent under the spacer member 32 to restrain the parts in assembled relation.

A catch tongue 36 is fixed to the catch plate 27 in downwardly projecting relation to extend through the extension 19' of the aperture 19 in the top panel 16 of the catch housing 14 and be selectively projected through the aligned apertures 10', 11' of the bag frames 10, 11 on pivotal movement of the catch plate assembly 21 about the hinged connection formed by the ears 18 of the base plate member 14. A bowed leaf spring 37 having one end seated in a notch 36' at the back of the tongue 36 and the other end restrained by a lug 38 struck up from the top panel 16 and bounding the rearmost end of the aperture 19 is provided to resiliently urge the catch plate 27 upwardly and downwardly respectively when

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the end of the spring 37 seated in the notch 36' is disposed above and below a position substantially midway between the upper and lower limits of its travel. The shoulder 36a on the tongue 36 engages a limit stop formed by a depression formed on the top panel 16 bounding the aperture extension 19' to limit the upward travel of the catch plate assembly 21. Downward travel is limited by abutment of the catch plate 27 with the top panel 16 of the base plate member 14.

A lock mechanism, generally indicated at 39, is provided in the hinged catch plate assembly 21 and is of a particularly simple and inexpensive construction. This lock mechanism is covered by the usual rotatable key barrel 40 having a slot through which the key bit may be projected mounted in the cover 22 to rotate in the usual circular opening in the top wall 23 provided therefor, and comprises a unitary, one-piece rotatable bolt member 41. This bolt member 41 may be stamped from a piece of sheet metal to form a substantially circular head or flange 42 disposed to rotate about its center in a circular aperture 43 in the catch plate 27, below which depends a U-shaped bolt portion 44 designed to receive the end of the operating bit of a key and having a laterally extending projection or nose 45 forming the operating bolt of the lock mechanism. This bolt member 41 may be formed by bending a suitably shaped sheet metal blank having the general configuration illustrated in FIGURE 5 to shape the depending bolt portion 44 into an upwardly opening channel, and then dishing the terminal substantially semi-circular portions of the blank to provide the circular head or flange 42. An outwardly projecting detent 46 is formed at one circumferential point along the periphery of the circular head 42 to project slightly into one of two diametrically opposed notches 47 in the bounding walls of the aperture 43 to releasably restrain the bolt member 41 at the locking or unlocking angular portions to which it may be adjusted. The keeper aperture 20 in the top panel 16 of the base plate member 14 is formed with a radially enlarged sector 20' at a position to permit passage of the nose 45 of the bolt portion 44 when the bolt member occupies the unlocking position, the bolt nose 45 being disposed in underlapping relation to portions of the base plate top panel 16 at the other angular positions of the bolt member 41 to restrain the catch plate assembly 21 in locked relation with the base plate member 14.

In the use and operation of this catch lock mechanism, when the catch plate assembly 21 is swung to open position, the lower end of the catch tongue 36 terminates above the plane of the lowermost hinged panel member 11 so that the channel members 10 and 11 may be swung laterally relative to each other. The catch plate assembly 21 is resiliently held in this open position by the bowed leaf spring 37 until manually shifted therefrom.

Upon manual forcing of the catch plate assembly 21 to the closed position, the manual closing force is resiliently resisted by the bowed leaf spring 37 until the outer end of the leaf spring seated in the notch 36' passes through a point substantially midway between its limits of travel, after which a downward resilient bias is exerted on the catch tongue 36 and catch plate assembly 21 to bring the latter into closed relation with the base plate member 14. In this position, the catch tongue 36 is projected through the aligned apertures 10', 11' of the hinged channel members 10 and 11 when the latter are in aligned relation, and the bolt portion 44 of the lock mechanism 39 is projected through the keeper aperture 20 to a position where the bolt portion nose 45 lies below the plane of the base plate top panel 16. Upon insertion of the operating bit of a key through the rotatable key barrel 40 to seat the end of the key bit in the bolt portion 44 of the bolt member 41, and rotation of the key through approximately 180°, the bolt member 41 and its locking nose 45 will be rotated to a position underlying portions of the base plate top panel 16 bounding the

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keeper aperture 20 to restrain the parts in locked condition.

While but one particular embodiment of the invention has been particularly shown and described, it is apparent that various modifications may be made in the invention without departing from the spirit and scope thereof, and it is desired, therefore, that only such limitations shall be placed thereon as are set forth in the appended claims.

What is claimed is:

1. A rotatable key lock bolt member for interlocking two separable catch members including a first catch member having a circular opening therein and a second catch member having a keeper aperture of a selected normal diameter including a radially enlarged sector at a selected unlocking angular position therealong, said bolt member being formed of an integral stamping of sheet metal and comprising an enlarged head portion at the top thereof of circular peripheral configuration formed by a pair of diametrically opposed, spaced circular segments adapted to be supported in the circular opening of said first catch member for rotation about the center axis of said circular opening, and a depending bolt portion of upwardly opening channel-shaped configuration defining a channel having parallel sides elongated diametrically of the head portion and integrally joined at their upper ends to said segments for receiving and embracing the free end portion of a key bit to effect turning of the bolt member about said center axis responsive to rotation of the key, said channel including a web at the bottom thereof defining a stop for limiting axial insertion of the key, and said bolt portion having a constricted region immediately below said head portion dimensioned to be rotatably accommodated within the normal diameter portion of said keeper aperture and a laterally projecting locking nose below said constricted region and adjacent said web of said channel having a length to pass through said keeper aperture when aligned with said radially enlarged sector thereof upon relative movement of the bolt member axially of the keeper aperture and underlap portions of the second catch member bounding the normal diameter portions of said keeper aperture when the nose member is rotated out of registry with said radially enlarged sector to interlock said catch members against withdrawal from each other.

2. In a catch and lock mechanism for a hinged pair of bag frames having aligned latch apertures including a base plate member to be secured to one of the bag frames and an elongated catch plate member hingedly coupled at one end of said base plate member for movement between an open and a closed position relative thereto, said catch plate member having a catch tongue depending therefrom extending through said base plate member to be selectively projected through said bag frame apertures and having a circular opening adjacent the end thereof remote from the hinged end, said base plate member having a keeper aperture aligned with said circular opening including a radially enlarged sector at a selected unlocking angular position; the improvement comprising a rotatable key lock bolt member formed of an integral stamping of sheet metal having an enlarged head of circular disc-like configuration seated in the circular opening of said catch plate member for rotation about the center axis of said circular opening and an integral dependant bolt portion of upwardly opening channel-shaped configuration depending from said body portion and defining a channel having parallel sides for receiving and embracing the free end portion of a key bit to effect turning of the bolt member about said center axis between angularly spaced locking and unlocking positions responsive to rotation of the key, said dependant bolt portion having a laterally projecting nose at the lower end thereof adjacent the web of said channel to pass through said keeper aperture when aligned with the radially enlarged sector thereof and underlie portions of the base plate member angularly spaced from said unlocking position,

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and said bolt portion having a constricted portion above said nose dimensioned to be accommodated for rotation in said keeper aperture.

3. In a catch and lock mechanism for a hinged pair of bag frames having aligned latch apertures including a base plate member to be secured to one of the bag frames and an elongated catch plate member hingedly coupled at one end of said base plate member for movement between an open and a closed position relative thereto, said catch plate member having a catch tongue depending therefrom extending through said base plate member to be selectively projected through said bag frame apertures and having a circular opening adjacent the end thereof remote from the hinged end, said base plate member having a keeper aperture aligned with said circular opening including a radially enlarged sector at a selected unlocking angular position and a smaller diameter sector angularly spaced therefrom; the improvement comprising a rotatable key lock bolt member formed of an integral stamping of sheet metal having a top flange of circular peripheral configuration rotatably seated in the circular opening of said catch plate member for rotation about the center axis of said circular opening and an integral depending channel portion having vertical parallel channel sides joined at their upper ends to said flange portion for receiving and embracing the free end portion of a key bit to effect turning of the bolt member about said center axis between locking and unlocking positions responsive to rotation of the key, said depending channel portion having a constricted region immediately below said flange portion dimensioned to be rotatably accommodated within the smaller diameter sector of said keeper aperture so that the bolt member can be rotated about said center axis from an unlocking position to a locking position, and said channel portion having a locking nose at the lower end thereof projecting laterally to a position underlying portions of the base plate member bounding said smaller diameter sector of said keeper aperture when the catch plate member occupies a closed position relative to the base plate member, said radially enlarged sector of said keeper aperture being sized to accommodate passage of said locking nose therethrough when said bolt member is in unlocking position.

4. A combined catch and lock for a hinged pair of bag frames having aligned latch apertures comprising an elongated

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gated base plate member formed of sheet metal adapted to be secured to one of said bag frame members, said base plate member having a central opening therein and a keeper aperture adjacent one end thereof having a radially enlarged sector in a selected circumferential zone thereof defining an unlocking position, a catch plate assembly intercoupled with said base plate member for vertical pivotal movement about one end thereof comprising a catch plate cover member in the form of a downwardly opening casing of sheet metal and a catch plate of substantially the length of said cover member carried in nested relation in the cover member, means hingedly connecting said catch plate assembly to said base plate member at one end thereof, a catch tongue depending from said catch plate extending through said opening in said base plate member to be selectively projected through said bag frame apertures, a rotatable key lock bolt member formed of an integral stamping of sheet metal having a head portion of circular peripheral configuration formed by a pair of spaced, substantially semi-circular segments supported in said catch plate for rotation about a center axis normal to said catch plate and a depending bolt portion of upwardly opening channel-shaped configuration defining a channel having parallel sides elongated diametrically of the head portion and joined at their upper ends to said segments for receiving and embracing the free end portion of a key bit to effect turning of the bolt member about said center axis responsive to rotation of the key, said depending bolt portion having a constricted region adjacent said head portion to fit within the smaller diameter of said keeper aperture and a laterally projecting nose below said constricted region to pass through the radially enlarged sector of said keeper aperture when aligned therewith upon movement of said catch plate assembly about its pivotal connection and underlap portions of the base plate member bounding the smaller diameter portion of said keeper aperture when rotated out of registry with said radially enlarged sector to lock said catch plate assembly against opening movement relative to said base plate member.

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