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3,020,743

LUGGAGE LATCHING DEVICE

Filed Feb. 11, 1959

2 Sheets-Sheet 1

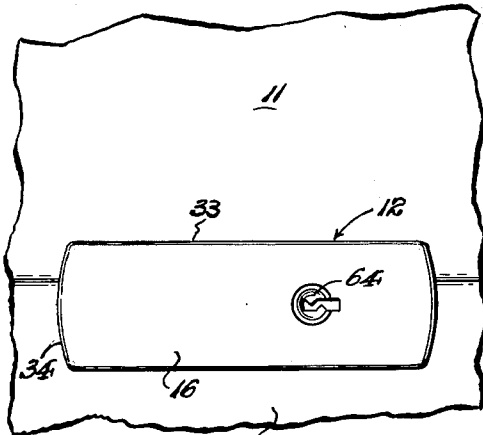


Fig. 1

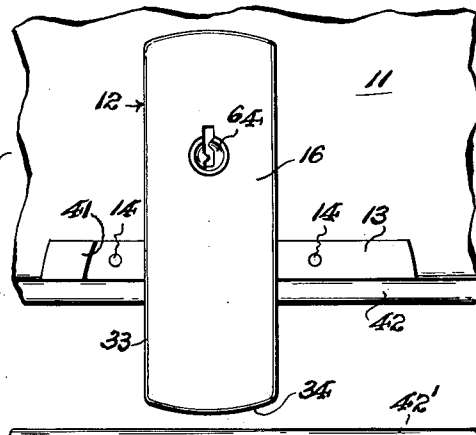


Fig. 2

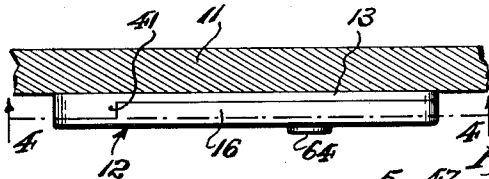


Fig. 3

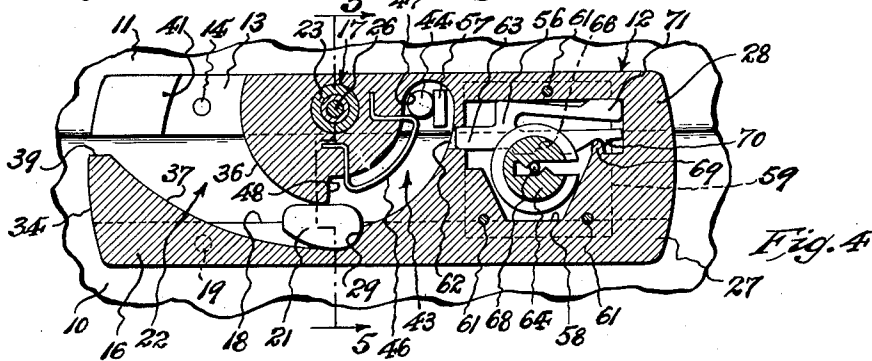


Fig. 4

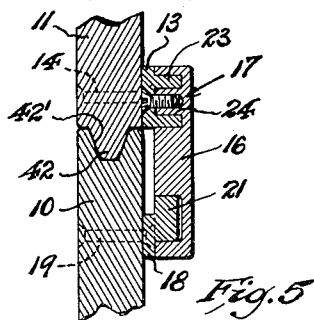


Fig. 5

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2 Sheets-Sheet 2

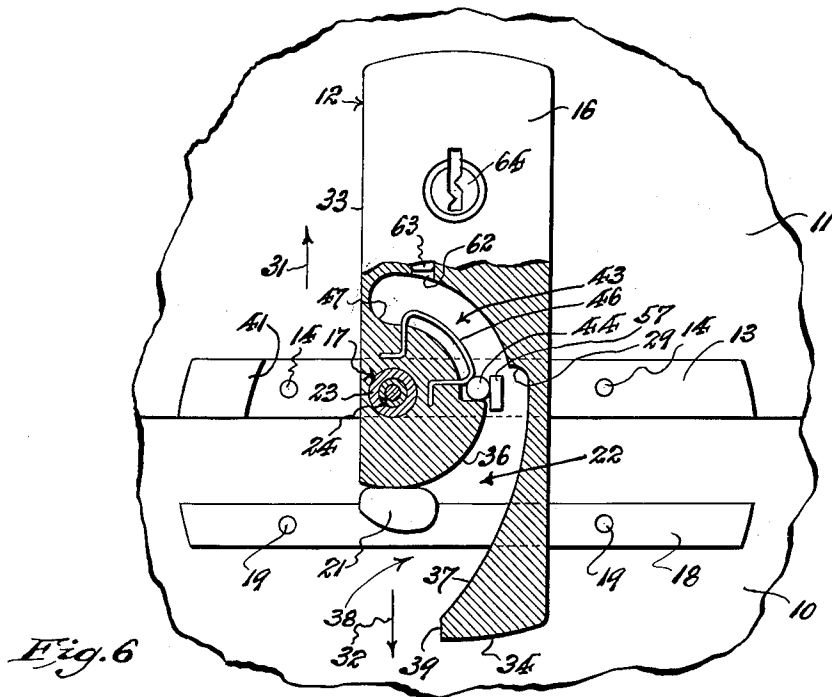


Fig. 6

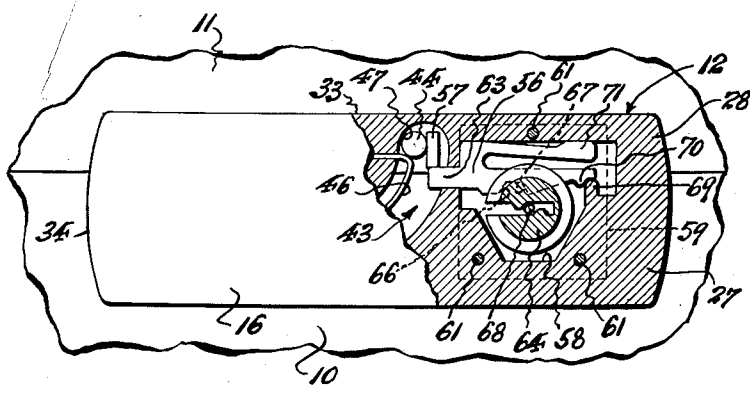


Fig. 7

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**LUGGAGE LATCHING DEVICE**

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This invention relates to a releasable latch and lock device for a luggage case or like container of the kind having a cover or lid hinged to a body section for closing the latter, and for other uses requiring means to releasably fasten separate parts one to another.

This invention has for an object to provide a latching device for releasably fastening together separable parts of a container or the like which comprises a pivot bar adapted to be attached to one of said separable parts adjacent an edge thereof, a body member which is pivotally mounted on the pivot bar, and a first latching member which is adapted to be secured to the part of the separable parts to be fastened to the part to which the pivot bar is attached. The mounting of the body on the pivot bar is in a manner to provide a scissoring movement of the body member upon and relative to the pivot bar by timing the body member between a first position, which corresponds to release of the separable parts and in which the body member is disposed transversely of the pivot bar, and a second position, which corresponds to fastening together of the separable parts and in which the body member is disposed toward alignment of the pivot bar and body member in parallel relation. The body member is proportioned so that, when it is disposed in the second or fastened position it projects laterally beyond the pivot bar, thus providing a portion of the body member which is disposed outwardly of the pivot bar with the body portion in the fastened position. For cooperation with the said first latching member, there is provided a second latching member and this second latching member is provided in connection with the mentioned portion of the body member which projects outwardly of the pivot bar. The arrangement and construction of the second latching member is such that it is adapted to engage in latching relationship the first latching member upon scissoring movement of the body member relative to the pivot bar from the said transverse released position to the said parallel fastened position.

The invention has for another object to provide as said second latching member, which is the latching member provided in connection with the body member, an arcuate passageway or groove disposed in the underside of the body member adjacent the pivot bar, and to provide as the first latching member an anchor bar having a lug adapted to ride in the arcuate passageway or groove of the second latching member upon rotated scissoring movement of the body member from the released to the fastened position. The passageway or groove extends from an open end or entranceway which is adapted to receive the lug when the body member is in the released position, to an inner end portion which is adapted to receive the lug when the body member is in the fastened position. The passageway or groove is adapted upon scissoring movement of the body member and pivot bar from the released position to the fastened position to guide the lug from the groove entranceway to groove inner end portion. Desirably, the radius of the groove outer side wall decreases from the groove entranceway to the groove inner end portion, being eccentric to the pivot point of the body member, and this construction facilitates fastening of separable parts together as it permits employment of the scissoring movement to draw the separable parts tightly together.

Another object of the invention is the provision of de-

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tection means for yieldingly restraining the scissoring movement of the body member to and from the release position and to and from the fastened position. Desirably, the detention means includes a pin which is affixed to the pivot bar and projects therefrom into an arcuate detent groove disposed in the body member. The detent groove is arranged to permit travel of the pin therein upon scissoring movement of the body member relative to the pivot bar, and a detent spring is provided to engage said pin at each end thereof for restraining movement of the body member from the released position thereof and the fastened position thereof respectively, as the case may be.

The invention has for a further object to provide the body member with key actuatable means which is engageable with stop means carried by the pivot bar on which the body member is pivotally mounted so as to prevent manipulated scissoring movement of the body member relative to the pivot bar, thereby locking the body member against unauthorized releasing manipulation.

The above and other objects will be understood from a reading of the following detailed description of the invention in reference to the accompanying drawings, in which:

FIG. 1 is a plan view of the latching device of the invention operatively mounted for securing separable parts together and shown in the latched position;

FIG. 2 is a plan view corresponding with the view of FIG. 1 and showing the latching device in unlocked position and the separable parts spaced from each other;

FIG. 3 is side elevation of the latching device as shown in FIG. 1;

FIG. 4 and FIG. 5 are sectional views taken, respectively, along line 4-4 in FIG. 3, and line 5-5 in FIG. 4; and

FIG. 6 and FIG. 7 are the same as FIG. 2 and FIG. 1 but show a portion of the latching device broken away.

Referring to the drawings, in the several figures, in which corresponding parts are referred to by like reference characters, a container, which can be a luggage case, comprises a body section 10 and a lid 11, and there is provided for releasably securing the body section and lid together a latching device 12. The latching device comprises a pivot bar 13, which is secured by rivets 14 to an edge portion of the lid 11, and a body member 16, which is pivotally mounted at pivot axis 17 to the pivot bar 13. Secured to the luggage case body section 10 by rivets 19 is an anchor bar 18 which has, as an integral part thereof, a latching member in the form of lug 21. The body member 16 is provided with a latching member, in the form of a passageway or groove 22, for cooperation, in a manner shortly to be described, with the latching lug 21, to secure the luggage case parts together.

The pivot mounting of the body member 16 on the pivot bar 13 can be best seen in FIG. 5. As is there shown, the pivot bar is provided with an outwardly extending collar 23 which is received in an annular recess 24 in the body member 16, and a screw 26 secures the collar in the recess for relative rotation. As is shown in FIG. 3, the screw 26 is countersunk into the pivot bar 13 and the head thereof abuts the adjacent surface of the luggage case lid 11, whereby disengagement of the screw is precluded by the assembly of the pivot bar on the lid by rivets 14.

The pivotal mounting of the body member 16 on the pivot bar 13 permits a scissoring movement of these parts whereby the body member is movable from a first position in which the body member is disposed transversely of the pivot bar, as is shown in FIG. 2 and FIG. 6, to a second position in which the body member is aligned with the pivot bar, as is shown in FIG. 1 and FIG. 4.

As will be described in more detail below, the said first position corresponds with the release of the separable parts of the luggage case, i.e. the body section 10 and lid 11, and the said second position corresponds with the fastened position of the luggage parts.

As can be best seen in FIG. 4, the body member 16 is proportioned so that with the body member in the fastened position, a portion 27 thereof extends laterally beyond the pivot bar 13 and another portion 28 thereof is disposed over the pivot bar 13. The passageway or groove 22, which is the latching member of the body member 16, is disposed in said portion 27 which extends outwardly of the pivot bar 13.

In the operation of the device, as thus far described, to dispose the luggage lid 11 in place on the luggage body section 10, the body member 16 is turned to the released position, as is shown in FIG. 2, and the luggage parts are then moved together, whereupon the lug 21 of anchor bar 18, mounted on the luggage body section 10, see FIG. 6, enters the passageway or groove 22. The body member 16 is then turned clockwise to the fastened position shown in FIG. 1. During this clockwise movement of the body member 16, the lug 21 of anchor bar 18 rides in the passageway or groove 22, and moves into abutting relation with the abutment 29, disposed at the inwardly positioned end of the groove, as the body member 16 reaches fastening position.

In order to disengage the luggage parts, the body member 16 is moved counterclockwise so as to dispose the lug 21 of anchor bar 18 to a position in the passageway or groove 22 such that it is aligned with the entranceway 38, whereupon the parts can be separated by an uplifting motion applied to the luggage case lid 11, as is indicated by the arrow 31 in FIG. 6, or alternatively by a downward motion of the luggage case body section, as is indicated by the arrow 32 in FIG. 6.

A preferred construction for the passageway or groove 22 is depicted in the drawings. As is there shown, the body member 16 is of generally rectangular shape defined in part by side portion 33 by which the body member 16 is pivoted to the bar 13 and curved end 34 which is disposed outwardly of the luggage part to which the body member 16 is secured with the body member in the release position. The passageway or groove 22 is defined by inner side wall or margin 36, which is of arcuate form and extends from side portion 33 inwardly into the body member concentric to the pivotal connection of the latter to the pivot bar 13, and outer side wall or margin 37, which is of arcuate form and extends from within the body member to adjacent the curved end 34 of the body member where it intersects a cutaway portion 39 at the curved end 34 and eccentric to the pivotal connection of the body member with the pivot bar 13. Thus, the passageway or groove 22 has an entranceway 38 which opens through the curved end 34 and side portion 33 of the body member. Accordingly, the body member is in the release position, wherein the luggage parts can be separated by an uplifting motion of the lid 11, notwithstanding the body member 16 has not been moved counterclockwise beyond the lug 21. This provides the advantage of permitting disengagement of the luggage parts with but limited turning of the body member 16. Desirably, the turning of the body member between the fastened and released positions is through an angle of about 90°.

As can be but seen in FIG. 3, the pivot bar 13 is provided at one end thereof with a lift 41 which is formed so as to close the entranceway 38 of the groove 22 when the body member is in the fastened position.

A further feature of the passageway or groove construction shown in the drawing is that the eccentric radius of the groove outer wall or margin 37 increases from abutment 29, or inner end portion, of the passageway or groove to the entranceway 38 thereof. Thus, as will be apparent from a consideration of FIG. 6, the

scissoring movement of the body member 16 relative to the pivot bar 13 can be employed to draw the container parts together from a near closed position to a fully or tight closed position. Commonly, luggage cases are filled so that it is difficult to move the lid 11 to the fully closed position indicated in FIG. 4 and FIG. 7 wherein the tongue 42 of the lid is received in the groove 42' of the luggage case body section 10. If, however, the lid can be moved to a near closed position such that the lug 21 is disposed in the entranceway 38 of passageway or groove 22, then the mechanical advantage or leverage obtainable by turning of the body member 16 on the pivot bar 13 can be employed to assist in moving the lid to the fully or tightly closed position, since due to the eccentric curvature of the passageway or groove outer wall 37, the lug will move along the groove 22 and draw the container or luggage case parts to the desired tightly closed position.

Desirably the locking device includes detention means for yieldingly restraining scissoring movement of the body member from the released position and from the fastened position. In the embodiment shown in the drawing, the latching device is provided with a detent groove 43, which is disposed in the body member 16, and a detent pin 44, which is affixed to the pivot bar 13 and projects into the detent groove 43. A detent spring 46 is secured to the body member 16 and terminates adjacent each end of the detent groove 43 whereby to provide recesses 47 and 48 at the ends of the detent groove. Due to the yielding characteristics of the detent spring, the detent pin is yieldingly retained in recess 48 when the body member 16 is in the release position (see FIG. 6), and the detent pin is yieldingly retained in recess 47 when the body member 16 is in the fastened position (see FIG. 7).

In most cases it is desirable to provide the device with a key actuatable locking means operative to lock the body member 16, when in its fastened position, against unauthorized releasing manipulation. For this purpose, there is provided in the body member 16 a lock bolt 56, means for shifting the lock bolt between a locked position (see FIG. 7) and an unlocked position (see FIG. 6), and a lock bolt engaging bar 57 integral with the pivot bar 13 and positioned to operatively engage the lock bolt when the lock bolt is in the locked position and to thereby then restrain turning or scissoring release movement of the body member and hence to thus restrain unfastening of the latching device.

The lock bolt 56 is slidably movable in a cavity 58 formed by a hollowed out portion of the body member 16 and an inlay plate 59 which is a closure for the cavity and is secured in place by rivets 61. The cavity 58 is provided with an opening 62 for the working end 63 of the lock bolt 56 and through which the lock bolt can be moved between the locked position in which it projects through the opening 62 and operatively engages the lock bolt engaging bar 57, and the unlocked position in which the working end 63 is withdrawn into the cavity 58. To permit shifting the lock bolt 56 between the locked and the unlocked position, there is provided a key barrel 64. The key barrel 64 is rotatably mounted in the body member 16 and is adapted to receive a key (not shown) which is suitable to engage the lock bolt and shift it between the locked and unlocked positions. For cooperation with the key, the lock bolt is provided with a forward key engageable shoulder 66, adapted to be engaged by the key and receive turning thrust therefrom whereby to advance the bolt to the locked position, and a rearward key engageable shoulder 67, adapted to be engaged by the key and receive turning thrust therefrom whereby to shift the bolt to the unlocked position. To yieldingly secure the lock bolt in either the locked or unlocked position, there is fixedly positioned in the cavity a positioning nosing 69 and the bolt is formed to provide a stop projection 70 for cooperation with the nosing 69 so as to yieldingly

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restrain the bolt 56 in either the locked or the unlocked position. In order to urge the lock bolt stop projection 70 into suitable engagement with the positioning nosing 69 and also to urge the key engaging shoulder 66 and 67 into a position suitable for engagement by a key a spring arm 71 is connected to the lock bolt and bears against the cavity wall and yieldingly urges the stop projection 70 and engaging shoulders 66 and 67 in a direction suitable to provide the desired engagements. An opening 68 in the inlay plate 59 is provided to facilitate accurately positioning a key in the key barrel 64.

Although provision of the locking means will be found desirable in most cases, said locking means may be omitted in an embodiment of this invention desired to provide only latching effect.

What is claimed is:

1. A luggage latching device for releasably fastening together separable parts of a container or the like comprising a longitudinal pivot bar adapted to be affixed to a marginal edge portion of one of said parts parallel thereto, a pivot member projecting outwardly from said pivot bar intermediate its ends, a substantially rectangular body member having the marginal portion of one of its long sides superposed upon the pivot bar and journaled on the pivot member so as to be rotatable with scissoring movement relative to said pivot bar, a longitudinal anchor bar adapted to be affixed to a marginal edge portion of the other of said separable parts in spaced apart parallel relation to the pivot bar for cooperation with the other long side of said body member, said long sides of the body member being coextensive with said pivot and anchor bars so as to span and overlie the same in concealing relation thereto in its latching position operative to hold the container parts closed together, a latching lug upstanding from said anchor bar intermediate its ends, said body member having latching means to cooperate with the latching lug of said anchor bar, said latching means comprising inner and outer margins forming a downwardly open arcuate passageway in the underside of the body member, the inner margin being concentric to the pivotal connection of said body member with the pivot bar and the outer margin being eccentric to said pivotal connection, said passageway having an inner end terminating adjacent to the pivotal connection of the body member with the pivot bar and an open outer end providing an entranceway through the juncture of an end and

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the first mentioned long side of the body member, all whereby, when the body member is turned to a release position to extend transverse to the pivot bar and anchor bar, the latching lug can be entered through said entranceway into the body member, and thereupon, when the body member is turned to be disposed parallel to the pivot bar and anchor bar in its latching position, said anchor lug will ride into the passageway to the inner end thereof so as to be engaged by the body member thereby to hold said separable parts of the container latched together in closed relation.

2. A latching device according to claim 1, wherein the pivot bar is provided with an outwardly projecting lift adapted to enter and close the entranceway of the body member passageway when the body member is disposed in its latching position.

3. A latching device according to claim 1, including detent means operative to yieldingly restrain movement of the body member from latching position to release position and vice versa.

4. A latching device according to claim 3, wherein said detent means comprises an upstanding detent pin affixed to the pivot bar, means defining a detent groove in the body member into which said detent pin projects for movement relative thereto upon rotated movement of the body member, and a detent spring supported by the body member in bordering relation to said detent groove, respective ends of said detent spring being respectively engageable by said detent pin to yieldably restrain movement of the body member from latching position to release position and vice versa.

5. A luggage latching device according to claim 1 including a key actuatable locking means operative to lock the body member against rotated movement from its latching position.

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