

Sept. 10, 1968

H. BLOSS

3,400,562

LATCHING DEVICE

Filed Dec. 21, 1965

2 Sheets-Sheet 1

Fig. 2.

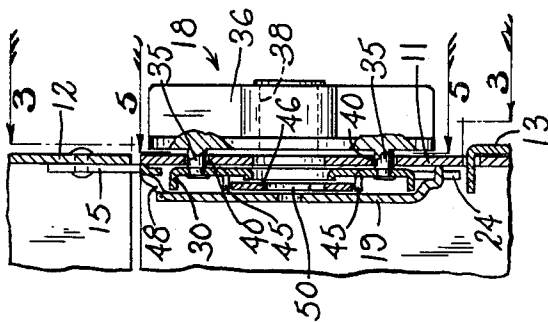


Fig. 1.

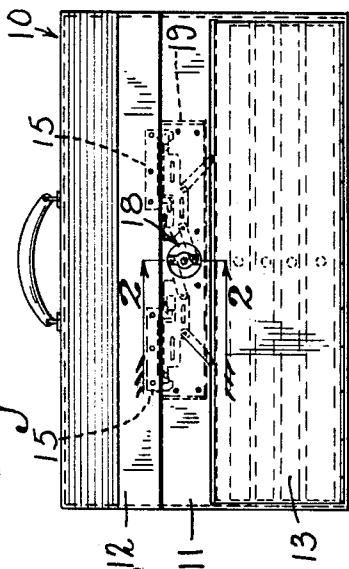
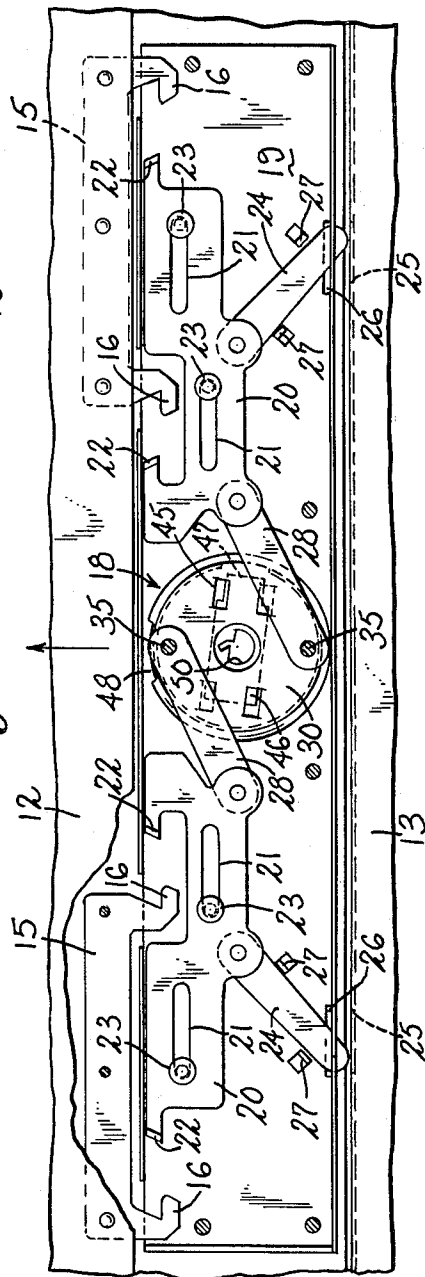


Fig. 3.



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Fig. 4.

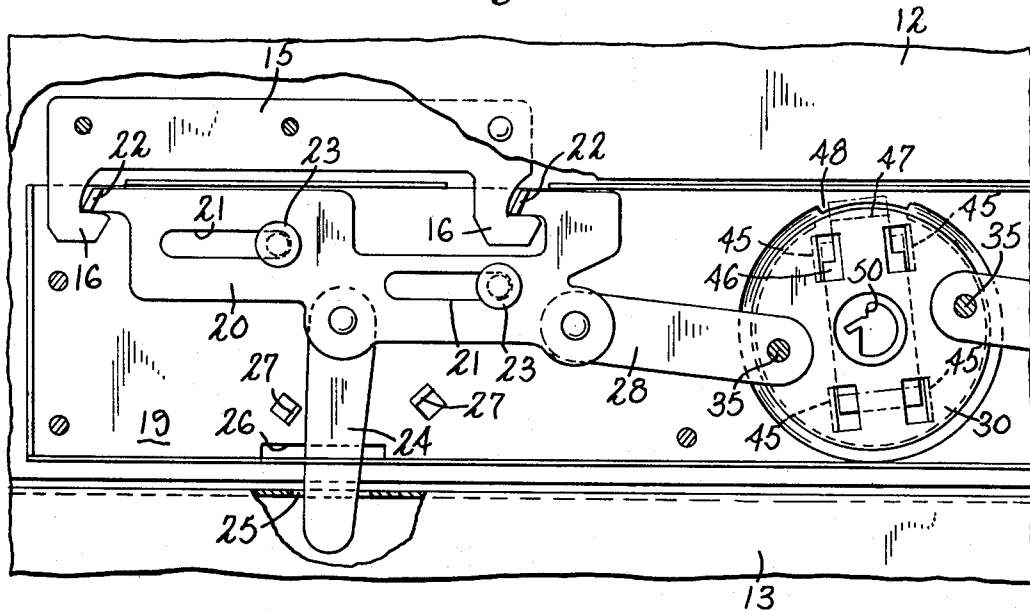
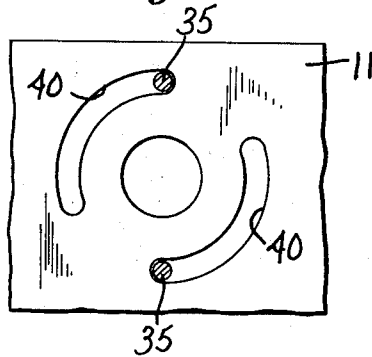


Fig. 5.



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**LATCHING DEVICE**

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7 Claims. (Cl. 70—70)

**ABSTRACT OF THE DISCLOSURE**

A double latching mechanism for simultaneously securing two covers of a carrying case to a fixed portion of the case. In particular, this invention comprises a fixed location side member positioned between two movable cover members, said cover members each having keeper means for mating with portions of said latching device, said device comprising in combination, a base plate adapted to be secured to the side member, a pair of slides mounted on said base plate for linear movement thereon and having means for engaging the keeper means of one of the covers, a rotatable member mounted for rotation on said plate and positioned thereon intermediate said pair of slides, a pair of links pivotally coupled to said rotatable member, one of said links pivotally coupled to each of said slides, latch members pivotally coupled to said slides and adapted to engage keeper means on the other of said covers, and limit means for permitting said rotatable member to rotate past dead center, but restraining said rotatable member from rotating completely around, so that the slides are positioned while in the locking position.

The present invention relates to a latching means and more particularly to a double latching mechanism suitable for simultaneously securing two covers of a carrying case or the like to the fixed portion of the case.

Double latching mechanisms heretofore available on the commercial market are rather complex in construction and do not lend themselves readily to ease or economy of manufacture. Additionally, double latching mechanisms of the prior art have not provided means for insuring that, when closed, the latching mechanism will maintain a closed position regardless of whether or not the locking means used with the latching mechanism is in a closed position. Furthermore, many of such latching mechanisms do not provide means for independently holding the covers closed without the necessity of locking the latching mechanism in place.

In view of the foregoing, applicant has provided a new and improved double cover latching mechanism which may be economically manufactured and which insures that the case covers will remain closed under vibration conditions without closing the lock portion of the latching mechanism.

Accordingly, it is an object of this invention to provide a new and improved latching mechanism.

Another object of this invention is to provide a new and improved latching mechanism wherein the latching mechanism will, by itself while in an unlocked but closed position, maintain the covers closed under vibration conditions.

A further object of the invention is to provide a new and improved latching mechanism which includes a simple and economical locking means.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth and the scope of the invention will be indicated in the claims.

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For a fuller understanding of the nature and objects of the invention, reference is had to the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a front elevational view of a carrying case equipped with a double cover latching mechanism embodying the present invention;

FIG. 2 is a sectional view taken along line 2—2 of FIG. 1;

FIG. 3 is a sectional view taken along line 3—3 of FIG. 2 showing the latching mechanism in an open position;

FIG. 4 is a view similar to FIG. 3 showing the latching mechanism in a closed position; and

FIG. 5 is a sectional view taken along line 5—5 of FIG. 2.

Referring to the drawings, wherein like reference characters designate corresponding parts throughout the several figures, the reference numeral 10 designates a carrying case, suitcase or the like, having a side rigid frame portion 11 and two movable covers 12 and 13. The covers 12 and 13 are preferably of a rigid material and are hinged to the case 10. There is shown attached to the top cover 12 a pair of keeper members 15 having prongs 16 extending horizontally therefrom for mating with the latching mechanism generally shown at 18.

The latching mechanism 18 comprises a base plate 19 having a pair of slides 20 mounted for slidably motion thereon. The slides 20 have guide slots 21 cut out therefrom and prongs 22 extending therefrom to engage the prongs 16 of the keepers 15. A pair of pins 23 is provided to insure that each of the slides 20 only move in a horizontal direction. The pins 23 are mounted on base plate 19 and extend through the guide slots 21. There is also shown a pair of latching members 24 which are pivotally coupled to each of the slides 20 so that as the slides are moved horizontally the latching members may enter receiving keepers 25 formed in the bottom cover 13. The latching members 24 are guided in slots 26 formed in the base plate 19 and are positioned as shown in FIGS. 3 and 4 by the action of the members 24 against the flanges 27 formed from the base plate 19. There are further provided two links 28 pivotally coupled at one end to the slides 20 and at their other end to a rotatable member 30 which is mounted in the base plate 19. As such, the rotatable member 30 with the links 28 make up a toggle mechanism to position slides 20 and latching member 24.

The member 30 is provided at the pivotal connection between it and links 28 with pins 35 which extend therefrom. The pins 35 are mounted in a knob means 36 having a cut-out 38 therein for permitting a key to enter therein. By turning the knob 36, the rotatable member is actuated in either of two directions such that the slides 20 and latching members 24 are positioned within or without their respective keepers. The extent of movement of rotatable member 30 is limited by two curvilinear slots 40 defined in the portion 11 of the case 10. The slots 40 are positioned between the knob 36 and the base plate 19 and limit the movement of the rotatable member so that it is not permitted to rotate completely around or 360°. These slots are defined such that the rotatable member is permitted to rotate the toggle links past dead center or more than 90° but less than 180°. Thus, as the rotatable member 30 moves link 28 to position the slide 20 so that the slide prongs 22 engage the prongs 16 of the keeper 15, the prongs 22 will first overlie the prongs 16 as the rotatable member is turned and will then, as the rotatable member goes past dead center, move back toward the center or in the reverse direction. Because links 28 are off dead center, in opening the latching mechanism 18 the slides 20 will first move into closer engagement with the prongs 16 of the keepers 15 and will then be drawn toward the

center so that the top cover may be opened. In view of this, any slight jiggling movement of the lock will not be able to open the latching mechanism since, to open the latching mechanism the slides must first come into closer contact with the keepers before beginning to completely open. In order to lock the rotatable member 30 in place, there is provided a plurality of flanged guides 45 formed therefrom for guiding a locking bar 46 having a narrow tip 47. The tip 47 is positionable in a keeper 48 mounted on the base plate 19. The locking bar 46 is moved into the keeper 48 by the action of a key against a cam 50 formed in the locking bar 46. Thus, to close the two covers the knob 36 is rotated so that the slides 20 and the latching members 24 engage keepers 15 and 25 respectively when the toggle mechanism, comprising the rotatable member 30 and links 28, is positioned such that it is off dead center. The locking bar may then be raised by inserting a key through opening 38 to raise the locking bar into engagement with the keeper 48.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and since certain changes may be made in the above construction without departing from the spirit and scope of the invention, it is intended that all matter contained in the foregoing description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claims are intended to cover all of the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

What is claimed is:

1. A latching device for use with a carrying case or the like, having a fixed location side member positioned between two movable cover members, said cover members each having keeper means for mating with portions of said latching device, said device comprising in combination, a base plate adapted to be secured to the side member, a pair of slides mounted on said base plate for linear movement thereon and having means for engaging the keeper means of one of the covers, a rotatable member mounted for rotation on said plate and positioned thereon intermediate said pair of slides, a pair of links pivotally coupled to said rotatable member, one of said links pivotally coupled to each of said slides, latch members pivotally coupled to said slides and adapted to engage keeper means on the other of said covers, and limit means for permitting said rotatable member to rotate past 90°, but restraining said rotatable member from rotating 180°, so that the slides are positioned while in the locking position, said slides having a pair of guide slots formed therein and prongs for engaging the keeper, and pins mounted in said base plate and positioned in said guide slots to prevent nonlinear movement of said slides.

2. A latching device in accordance with claim 1, wherein means are formed from the base plate to limit and

position the latch members with respect to the keepers.

3. A latching device in accordance with claim 1, wherein said limit means includes pins coupled to said links and said rotatable member and including knob means positioned on the outside of the side member and coupled to the pins for turning the rotatable member.

4. A latching device in accordance with claim 3, wherein said limit means includes limit guides positioned between the knob means and the rotatable member, said guides having a pair of curvilinear slots therein for permitting the pins to pass therethrough.

5. A latching device in accordance with claim 4, said limit guides having a configuration such that the pins are prevented from rotating more than 180° but permitted to rotate more than 90°.

6. A latching device for use with a carrying case or the like, having a fixed location side member positioned between two movable cover members, said cover members having keeper means for mating with portions of said latching device, said device comprising in combination, a base plate adapted to be secured to the side member, a pair of slides mounted on said base plate for limited movement thereon and having means for gaging the keeper means of one of the covers, a rotatable member mounted for rotation on said plate and positioned thereon intermediate said pair of slides, a pair of links pivotally coupled to said rotatable member, one of said links pivotally coupled to each of said slides, latch members pivotally coupled to said slides and adapted to engage keeper means on the other of said covers, limit means for permitting said rotatable member to rotate past dead center, but restraining said rotatable member from rotating completely around, so that the slides are positioned while in the locking position, said rotatable member including a locking bar guide means formed from said rotatable member and including the locking keeper positioned on said base plate, and a locking bar, said locking bar guided by said rotatable member guide means and positioned such that it may enter said locking keeper.

7. A latching device in accordance with claim 6, wherein said slide has a cam for receiving a key to position the slide in one of two positions.

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