Jan. 21, 1958 A. LEVINE 2,820,359

LATCHING AND LOCKING MEANS FOR LUGGAGE CASES AND LIKE RECEPTACLES

Filed Sept. 27, 1954 2 Sheets-Sheet 1

Fig. 1

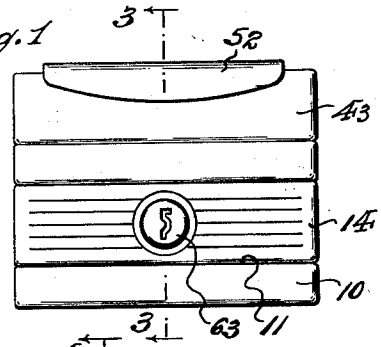
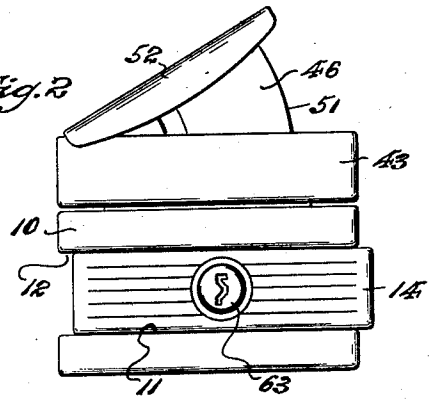


Fig. 2



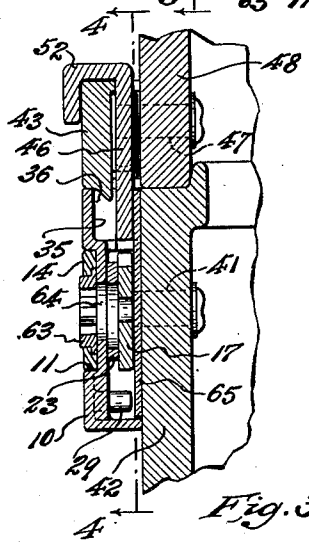


Fig. 3

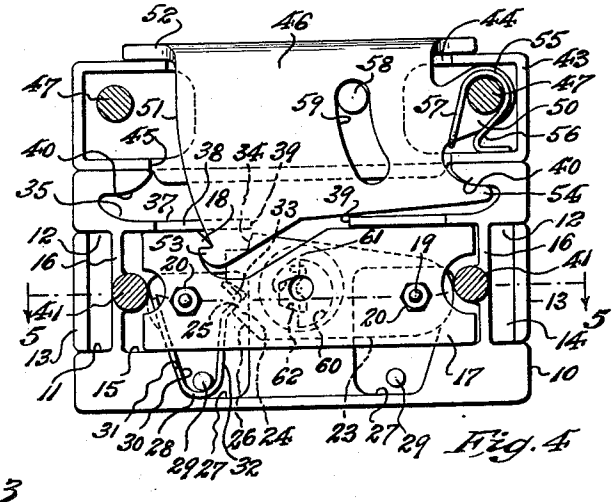


Fig. 4

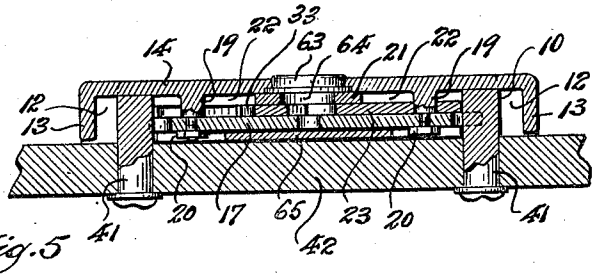


Fig. 5

INVENTOR.
Abraham Levine,
BY George D. Richards
Attorney

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LATCHING AND LOCKING MEANS FOR LUGGAGE CASES AND LIKE RECEPTACLES

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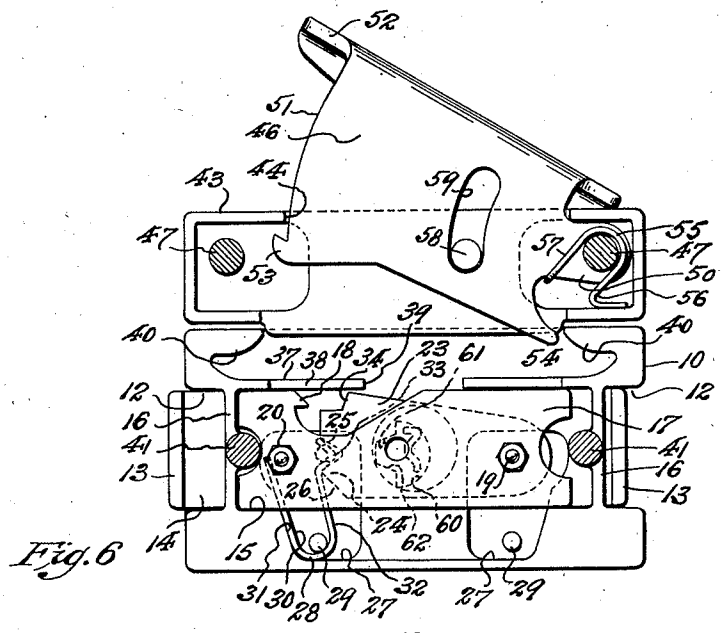


Fig. 6

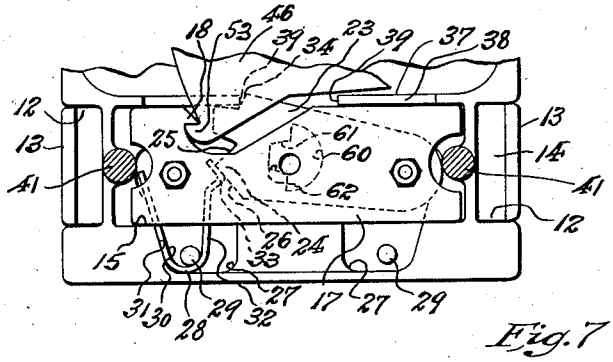


Fig. 7

INVENTOR.

Abraham Levine,

BY George D. Richards

Attorney

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LATCHING AND LOCKING MEANS FOR LUGGAGE CASES AND LIKE RECEPTACLES

Abraham Levine, Elizabeth, N. J.

Application September 27, 1954, Serial No. 458,432

4 Claims. (Cl. 70—69)

This invention relates to a novel construction of releasable latching and locking device for luggage cases and like receptacles of the type having a cover or lid hinged to a body section for closing the latter.

This invention has for an object to provide a compact, substantially flat latching and locking device of little outwardly projecting bulk, the upper member of which is adapted to be affixed to the front wall of the cover or lid of a luggage case or like receptacle, for cooperation with a lower member which is adapted to be affixed to the front wall of the body section of the luggage case or like receptacle; said upper member being provided with a pivoted latch plate, which is manipulatable to enter the lower member so as to be engaged by a spring pressed catch plate housed within the latter, said catch plate being provided, externally of said lower member, with a slide plate that is manipulatable to disengage the catch plate from the latch plate, whereby to release the latter.

The invention has for another object to provide the catch plate and its slide plate with key actuatable means, cooperative with the lower member of the latching and locking device, for locking the same against latch plate releasing manipulation.

The invention has for a further object to provide the pivoted latch plate of the upper member of the latching and locking device with means cooperative with camming means with which the lower member of the latching and locking device is provided, whereby manual movement of the latch plate toward latched relation to the catch plate will force the cover or lid of the luggage case or like receptacle into tightly closed relation to the body section thereof, especially when packed content of the luggage case or like receptacle tends to resist cover or lid closing movement.

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

Fig. 1 is a front face view of the latching and locking device of this invention, shown in its latched condition; and Fig. 2 is a similar view, showing the same in its released condtion.

Fig. 3 is a vertical cross-sectional view, taken on line 3—3 in Fig. 1, but drawn on an enlarged scale; Fig. 4 is a transverse longitudinal sectional view, taken on line 4—4 in Fig. 3, a rear face cover plate being removed; and Fig. 5 is a longitudinal sectional view, taken on line 5—5 in Fig. 4, with the rear face cover plate in place.

Fig. 6 is a view similar to that of Fig. 4, but showing the latching and locking device in its released condition.

Fig. 7 is a fragmentary view, similar to that of Fig. 4, but showing the key actuated locking means in locking condition for securing the catch plate and its slide plate against latch plate releasing manipulation.

Referring to the drawings, in which same reference characters are applied to indicate like or corresponding parts, the reference character 10 indicates a hollow rear-

wardly open lower member casing which is exteriorly formed to provide, in its front face, an outwardly and endwise open transverse slide plate guideway 11. The ends of the lower member casing 10 are indented to provide clearance spaces or ways 12 to accommodate respective inturned angular end portions 13 of a slide plate 14 which is slidably movable in said guideway 11. Said lower member casing 10 is interiorly formed to provide a longitudinal catch plate slideway 15, which is disposed in alignment with said external slide plate guideway 11, and which is closed at its ends by inset portions 16 of the side walls of said casing which define the interior ends of the aforesaid clearance spaces or ways 12.

Slidably supported by the internal slideway 15 is a catch plate 17, the upper marginal portion of which, adjacent to one end thereof, is cut away and shaped to provide a chamfered catch nosing 18. Extending inwardly from the slide plate 14 are longitudinally spaced shouldered coupling studs 19 to which respective end portions of the catch plate 17 are suitably secured, either detachably as by fastening nuts 20 (as shown), or fixedly as by a riveting connection (not shown), whereby longitudinal movement of the slide plate 14 is transmitted to the catch plate 17 and vice versa. The front wall 21 of the lower member casing 10 is pierced by openings 22 through which said coupling studs 19 extend, and by which movements thereof in company with the slide plate and catch plate are accommodated. A locking tumbler 23 is pivotally supported by one of the coupling studs 19 so as to be carried by the catch plate 17, intermediate the same and the front wall 21 of the casing 10. Said locking tumbler is disposed to extend along said catch plate 17 from the end portion thereof opposite to that in which the catch nosing 18 is formed. Formed in connection with the free end the locking tumbler 23 is a thrust spring engageable projection 24 having convergent upper and lower faces 25 and 26. Supported in one end of the slideway 15 and a cavity 27 extending downwardly therefrom is a U-shaped spring, the bight 28 of which is held against displacement by an anchor stud 29 which extends into said cavity 27. One arm 30 of said spring is backed by a shoulder 31, which is defined by an outer end wall of the slideway 15 and cavity extension 27, while the other arm 32 of said spring extends upwardly into the slideway 15, and terminates in an angular nosing 33 which normally engages against the upper face 25 of the projection 24 with which the free end of the locking tumbler 23 is provided. As thus arranged, the spring yieldably exerts longitudinal thrust against the catch plate and locking tumbler assembly, to thereby dispose the catch plate 17 in its operative latching position, as well as to exert retaining action upon the pivoted locking tumbler to hold the same in its non-locking position. The locking tumbler 23 is provided with an upwardly projecting locking tongue 34 disposed in rearwardly offset relation to its free end.

The upper interior of the lower casing member 10 is interiorly formed to provide an entrance way or chamber 35, which opens upwardly through the top edge thereof, whereby to provide a latch plate admission opening 36. Said entrance way or chamber 35 is separated from the catch plate slideway 15 by a longitudinal partition member 37, the same having an opening 38 for admission of a latch plate into the slideway 15 for engagement by the catch plate, as will presently be more particularly described. Said opening 38 is also shaped, intermediate its ends, to provide a laterally offset portion, an end of which forms a locking shoulder 39 which is engageable by the locking tongue 34 of the locking tumbler 23, when said locking tumbler is upswung to a locking position. Within the entrance way or chamber 35, in an upper

interior end portion thereof, so as to be disposed in extension from an adjacent end of the latch plate admission opening **36**, is formed a stationary cam shoulder **40**, the function of which will be hereinafter explained.

Formed in connection with the lower member casing **10**, to respectively project rearwardly from opposite end portions thereof, preferably contiguous to the side wall portions **16**, are fastener studs **41**. These fastener studs project exteriorly beyond the rear face of said casing **10**. Said fastener studs are adapted to be engaged through the front wall of a luggage case or like receptacle body **42**, and then riveted thereover or otherwise fastened to said wall, whereby to operatively affix said casing **10** to the luggage case or like receptacle body **42**, with the top edge of the former aligned with the top edge of the latter (see Fig. 3).

The upper member of the latching and locking device also comprises a hollow, rearwardly open casing **43**, which is provided in its top edge wall with a longitudinal opening **44** and in its bottom edge wall with a like longitudinal opening **45**, which openings accommodate the movements of a pivoted latch plate **46** which is housed by said casing **43**. Formed in connection with said upper member casing **43**, to respectively project rearwardly from opposite end portions thereof, are fastener studs **47**. These fastener studs project exteriorly beyond the rear face of the casing **43**, and are adapted to be engaged through the front wall of a luggage case or like receptacle cover or lid **48**, and then riveted thereover or otherwise fastened to said wall, whereby to operatively affix said upper member casing **43** to the luggage case or like receptacle cover or lid **48**, with the bottom edge of the former aligned with the bottom edge of the latter, and in position to oppose the top edge of the lower member casing **10** of the latching and locking device (see Fig. 3).

The latch plate **46** is pivotally mounted within the upper casing member **43** by means of the rearwardly projecting hinging ear **50** thereof, which is engaged over a stud **47** as a fulcrum, and so that its arcuate free end **51** is directed toward the end portion of the catch plate **17** of the lower member casing **10** in connection with which the catch nosing **18** is formed. The upper marginal portion of said latch plate projects outwardly through the opening **44** in the top edge wall of the casing **43**, and is suitably formed to provide an external finger or push piece **52** by which the latch plate can be manipulated. The lower free end portion of the latch plate **46** is formed to provide a forwardly projecting latch nosing **53** which, by downward or inward swinging of the latch plate, can be passed through the bottom edge opening **45** of the upper member casing **43**, and thence through the top edge opening **36** of the lower member casing **10**, into engagement with the catch nosing **18** of the catch plate **17** contained in said casing **10**. The lower rearward end portion of the latch plate **46** is formed to provide a suitably shaped, rearwardly projecting rigid lever arm **54**, which is adapted to engage the stationary cam shoulder **40** located within an end of the entrance way or chamber **35** of the lower member casing **10**, when the latch plate is down swung toward its latching position. The latch plate **46** is yieldably up swung to its released position by a spring member **55**, which is engaged around the stud **47** by which the latch plate is pivotally supported, one arm **56** of which is purchased against the bottom edge wall of the upper member casing **43**, and the other arm **57** of which engages the hinging ear **50** of the latch plate, so as to exert up swinging thrust upon said latch plate. Suitable means is provided to limit up swinging releasing movement of the latch plate **46**. One form of such means (as shown) comprises a stationary stop stud **58** fixed within the interior of the upper member casing **43** to engage in an arcuate limiting slot **59** with which the body of the latch plate is provided.

The locking tumbler **23** is key actuatable, and, to this

end, the same is provided intermediate its ends with a key reception opening **60**. The internal periphery of this opening **60** is shaped to provide a key engageable shoulder **61** to receive turning thrust of an inserted key in direction to up swing the locking tumbler to its locking position, and another key engageable shoulder **62** to receive turning thrust of an inserted key in direction to down swing the locking tumbler to its nonlocking or normal released position. Rotatably mounted in the external slide plate **14** is a slotted key barrel **63** through which a key (not shown) can be passed, and thence through an opening **64** in the front wall **21** of the lower member casing **10**, into operative engagement with the locking tumbler.

If desired, a rear face cover plate **65** can be provided intermediate the mechanism contained within the lower member casing **10** and the luggage case or like receptacle body **42** to which the latter is affixed.

In order that the lower member casing **10** and its contained structure can be used in connection with either a right or left swinging latch plate, the latch plate **17**, with its attached locking tumbler **23**, and the associated thrust spring **28** can be reversed. To permit this, the casing **10** is provided at each end with the cavities **27**, the spring retaining studs **29**, the locking shoulders **39**, and the cam shoulders **40**. As will be obvious, the mounting of the slide plate **14** is such that the same can be longitudinally moved in either direction, accordingly as the catch-plate and associated parts are arranged in one or a reversed position within the lower member casing **10**.

In operation, the latch plate **46** being out swung to released position (see Figs. 2 and 6), and the cover or lid **48** of the luggage case or like receptacle being swung down toward its closed relation to the body **42**, whereby to oppose the upper member casing **43** to the lower member casing **10**, the operator thereupon presses down said latch plate **46** to enter its operative end into the lower member casing **10**. The resultant in swinging movement of the latch plate **46** carries its rigid lever arm **54** into engagement with a cam shoulder **40**, thus exerting an upward pull upon the lower member casing **10** accompanied by a downward pull upon the upper member casing **43**, and thereby forcing these casings into meeting relation against any resistance to tight closing of the cover or lid **48** upon the body **42** of the luggage case or like receptacle, which may be caused by upward pressure of the packed content of the body **42** against the cover or lid **48**. While this occurs, the lower free end portion of the latch plate **46** enters through the opening **38** into slideway **15**, so that the latch nosing **53** encounters the catch nosing **18** of the catch plate **17**, and, in passing, pushes back the latter against the thrust of the spring **28**, until the latch nosing **53** is disposed beneath said catch nosing **18**, whereupon the spring **28** returns the catch plate **17** to normal position, wherein said catch nosing hooks over the latch nosing, thus locking the upper member casing and lower member casing together, and thereby securing the cover or lid **48** in closed relation to the body **42** of the luggage case or like receptacle.

To release the cover or lid **48** from secured relation to the body **42** of the luggage case or like receptacle, the operator pushes against an appropriate end of the slide plate **14**, thus imparting longitudinal movement to the catch plate **17** in direction to withdraw its catch nosing **18** from restraining engagement with the latch nosing **53**, whereupon the spring **55** out swings the latch plate **46** to its released position, thus disconnecting the upper member casing **43** from the lower member casing **10**, and thereby freeing the cover or lid **48** of the luggage case or like receptacle for opening movement relative to the body **42**.

When the upper member casing **43** is latched to the lower member casing **10**, if it is desired to lock the slide plate **14** and associated catch plate against latch plate releasing manipulation, a suitable key (not shown) is in-

serted through the key barrel 63 to engage the locking tumbler 23, and, by proper turning of the key, to upswing the latter so as to oppose its locking tongue 34 to a locking shoulder 39 (see Fig. 7). Under these conditions, the angular nosing 33 of the thrust spring 28 will engage the lower face 26 of the projection 24 of the locking tumbler, thus holding the locking tumbler in its aforesaid locking position. A reverse rotation of the key will return the locking tumbler to its initial non-locking or released position.

While the provision of the locking tumbler 23 will be found desirable in most cases, the same may be omitted in an embodiment of this invention desired to provide only latching effect.

Having now described my invention, I claim:

1. A latching device for a luggage case or like receptacle having a cover hinged to the body thereof comprising an upwardly open lower casing adapted to be mounted on the front wall of the receptacle body and a downwardly and upwardly open upper casing adapted to be mounted on the front wall of the receptacle cover in the plane of and in opposition to the lower casing, the outer face wall of the lower casing being indented by an outwardly and endwise open transverse guideway, a manipulatable external slide plate longitudinally movable in said guideway, a longitudinally movable catch plate disposed within the lower casing in parallel plane relation to said slide plate and connected with the latter so as to be actuatable thereby, said catch plate having an upwardly projecting catch nosing, spring means to yieldably move the catch plate to its latching position, a manipulatable latch plate disposed in parallel plane relation to the lower and upper casings and pivotally connected by an end thereof to and within the upper casing for vertical swinging movements through the latter into and out of the lower casing in the plane of the catch plate of the same, said latch plate having a latch nosing at its lower free end portion for latching engagement with the catch nosing of the catch plate, and spring means to yieldably upswing said latch plate to withdraw the same from the lower casing to its non-latching position.

2. A latching device according to claim 1 including a key actuatable locking tumbler pivotally mounted on the catch plate, said lower casing having means engageable by the locking tumbler, when it is moved to a locking position, inhibiting releasing actuation of said catch plate by the slide plate, key admission means carried by the slide plate through which a key can be entered for actuating engagement with the locking tumbler, and said catch plate controlling spring means and said locking tumbler having cooperative means to yieldably hold the latter in either its locking or non-locking position relative to the catch plate.

3. A latching device according to claim 1, wherein the latch plate and lower casing are provided with cooperative means operative to draw down the upper casing into close abutting relation to the lower casing when the latch plate is manually down swung into the latter for latching engagement with the catch plate thereof, said cooperative means comprising a stationary cam shoulder within the lower casing adjacent an end of its upper opening and in the plane of said latch plate, and the pivoted end of the latch plate having a rearwardly projecting rigid lever arm extending in the plane thereof and adapted to thrustingly engage and bear against said cam shoulder when the latch plate enters said lower casing into latched engagement with the catch plate therein.

4. A latching device according to claim 3, including a key actuatable locking tumbler pivotally mounted on the catch plate, said lower casing having means engageable by the locking tumbler,when it is moved to a locking position, inhibiting releasing actuation of said catch plate by the slide plate, key admission means carried by the slide plate through which a key can be entered for actuating engagement with the locking tumbler, and said catch plate controlling spring means and said locking tumbler having cooperative means to yieldably hold the latter in either its locking or non-locking position relative to the catch plate.

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