

PATENT SPECIFICATION

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(54) LUGGAGE LATCH MECHANISM

(71) We, SAMSONITE CORPORATION, a corporation of the State of Colorado, United States of America of 11200 East Forty-Fifth Avenue, Denver, Colorado 80239, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates generally to a luggage latch mechanism and a luggage case including such latch mechanism.

In the packing of luggage, valises, attache cases or the like, the materials are placed therein in such an arrangement that there is a "top" and "bottom", and it is desirable that when the luggage is opened the "top" will be in the desired position. In this manner, retrieval of the contained materials is aided with a minimum of damage and confusion. The wrong-side up problem is frequently found with valises or attache cases which are typically constructed of symmetrical halves, making it difficult to tell the top from the bottom. An excellent means for solving this problem is that disclosed in U.S. patent specification 3,828,899. As described in that patent specification, an L-shaped member is pivotal under the action of gravity to cause a hook-end to lock the luggage case latching mechanism and prevent its opening when the case is upside-down. On the other hand, when properly oriented, the luggage case latch mechanism may be operated as in conventional luggage cases, since gravity moves the hook-end of the L-shaped member into an out-of-the-way position.

According to the present invention there is provided a latch mechanism for releasably securing first and second luggage case sections to one another, comprising a drive plate having a hooklike clasp mounted, in use, on the second case section for receipt within an opening in the first case section

when the two sections are closed on one another, the drive plate and the clasp being selectively movable with respect to the second case section from a first position of locking engagement of the clasp to a second position of disengagement of the clasp and a gravity operated member pivotally mounted on the second case section and rotatable under the action of gravity from a position obstructing movement of the drive plate with respect to the first case section to a position lying outside the path of movement of the drive plate.

The present invention also provides a latch mechanism for a luggage case having first and second case sections closable upon each other, said mechanism being releasable by moving a drive plate, comprising a detent rotatably mounted, in use, on the first case section to move under the influence of gravity alone from a first position preventing said drive plate movement to a second position out of the path of movement of the drive plate.

The invention will now be described by way of example with reference to the accompanying drawings in which:—

Figure 1 depicts a luggage case embodying the invention oriented with the right side up.

Figure 2 is a front elevational, partially sectional view of the luggage case of Figure 1.

Figure 3 is a top plan, sectional view taken along the line 3-3 of Figure 2.

Figure 4 is a view similar to Figure 3, partially fragmentary, showing the case parts in latched closed position.

Figure 5 is an end elevational sectional view taken along the line 5-5 of Figure 2, showing the case right-side-up, permitting unlatching.

Figure 6 is a view similar to Figure 5, with the case in vertical position and still in condition permitting opening.

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Figure 7 is a still further view similar to Figure 5 with the case upside-down and locked.

A luggage case of the kind frequently referred to as an attache case, is enumerated generally as 10. Although the present invention can be advantageous for use with any kind of luggage case, it will find its most common utility with an attache case or such a luggage case in which business papers are carried.

As shown in Figure 1, the luggage case 10 includes a pair of substantially identically appearing case sections 11 and 12, pivotally connected together along a common edge 13. In the usual situation, a pair of case section edges 14 and 15 of the respective sections 11 and 12 are secured together by a latch mechanism to be described later herein. Actuation of finger-operated members 16 and 17 releases the latch mechanism, allowing the case sections to be separated, as shown in dashed lines in Figure 1. That is, to open the luggage case when it is closed and fully latched, each of the members 16 and 17 must be moved in a direction toward the closer end wall before the case sections may be separated from one another. Moreover, as will be described, the latch mechanism can be opened only when the luggage case either has the section 11 in the upper position as in Figure 1, with the part 12 thereunder, or has both of the sections 11 and 12 with their major planes in an upright position. Any other orientation, such as with the case part 12 in the upper position, will cause the latch mechanism to be locked preventing the case from being opened.

Turning now to Figure 2, it is seen that the luggage case includes two sets of latching mechanisms, one at the right and one at the left, which are individually operable by manipulation of the members 16 and 17 respectively. However, since the construction is the same for each of the latch mechanisms, except that the parts have a mirror image relationship to corresponding parts in the other set, only the mechanism associated with the member 16 will be described in detail.

As can be best seen by reference to both Figures 3 and 5, the top edge wall of the case section 12 includes a channel 18 formed therein which extends throughout the entire length of the luggage. A generally flat, sheetlike, drive plate 19 is accommodated within the channel 18 and extends from a point just inwardly of one arm of the case handle 20 to an outer limit slightly inwardly of case section end wall 21. The outer terminus of the drive plate 19 has the finger-operated actuator member 16 affixed, the latter member constructed with a surface against which finger pressure can be applied to move the drive plate toward the end wall 21.

A compression coil spring 22 coacts with the drive plate 19 and channel walls 18 to resiliently urge the drive plate 19 towards the center of the case section top wall or away from the end wall 21. The drive plate inner end is shaped to form an upstanding portion 23 extending away from the channel bottom wall generally transversely of the direction of translatory motion of the drive plate along the channel. In a way that will be more particularly described later, the upstanding member serves as a stop or member that can be engaged to prevent movement of the drive plate. As shown a hook-like clasp 24 is secured to the drive plate 19 just outwardly of the coil spring 22 and substantially inwardly of the member 16. The clasp 24 extends transversely from the drive plate toward the case section 11 and when the two case sections are closed on one another the clasp 24 is received within an opening in section 11 (see Figure 4) releasably engaging adjacent wall portions. Movement of the drive plate 19 towards the closer case section end wall releases the clasp 24 from engagement with the case section 11 and the inherent spring qualities of the clasp member 25 causes the two sections to separate automatically (Figure 4).

Simultaneous reference to Figures 2 and 3 should now be made for the ensuing description of the gravity operated latch locking mechanism enumerated generally as 26. A bifurcated support or stanchion is secured to a side wall 28 of the channel 18 and includes a pair of posts 29 and 30 spaced from one another longitudinally along the channel.

A detent 31, having a pair of equilength arms extending at right angles to one another (Figures 5-7) is rotatably mounted to the stanchion posts 29 and 30 by a pin 32. More particularly, the pin 32 passes through an opening at the point of juncture of the detent arms and extends from both sides generally normally to the plane formed by the arms. Preferably, the pin 32 is secured to the detent 31 and is pivotally mounted to the stanchion posts 29 and 30.

In operation, assuming the luggage case to be resting on a generally horizontal surface with the case section 12 lowermost as shown in Figures 1 and 5, the case is in the "right-side-up" position and the detent arms are in non-obstructing relation to the drive plate stop 23, allowing release of the case latch mechanism. Specifically, one of the arms bears against the channel side wall, which leaves sufficient space between the detent arms for the stop 23 to pass.

Resting the luggage case on its lower or bottom surface (Figure 6) with both case sections extending vertically upwards still permits the case to be opened, since although the detent arm may move away from contact with the channel wall a slight

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amount, it is not enough to cause engagement with the drive plate stop 23 when release actuation is attempted.

Inverting the luggage case to the "upside-down" position shown in Figure 7 with case section 11 lowermost, causes the detent arm which had previously been in contact with the channel side wall to fall away from that wall under the influence of gravity into the path of the stop 23 when the drive plate 19 is actuated in attempted release. Now, when the member 16 is pressed, the detent arm engages the stop 23 preventing the drive plate 19 from moving enough to release the two case sections. It is important to note that at this time the other detent arm contacts a cover plate 33 arranged over the channel and in that way prevents the detent from rotating too far and insures that the detent is held in locking mode.

Although not an essential part of the present invention, it is contemplated that the attache case may contain other conventional features such as having a combination lock 34 which is cooperatively interconnected with the latching mechanism. A handle 20 may also be connected to the case top wall in any suitable manner or may be mounted directly into the channel by a suitable fitting as shown in Figure 3.

WHAT WE CLAIM IS:-

1. A latch mechanism for releasably securing first and second luggage case sections to one another, comprising a drive plate having a hooklike clasp mounted, in use, on the second case section for receipt within an opening in the first case section when the two sections are closed on one another, the drive plate and the clasp being selectively movable with respect to the second case section from a first position of locking engagement of the clasp to a second position of disengagement of the clasp and a gravity operated member pivotally mounted on the second case section and rotatable under the action of gravity from a position

obstructing movement of the drive plate with respect to the first case section to a position lying outside the path of movement of the drive plate.

2. A latch mechanism as in claim 1, in which the drive plate includes a stop member extending transversely of the direction of movement of the plate and the gravity operated member is rotatable to engage the stop member preventing movement of the drive plate in a direction to release the latch mechanism.

3. A latch mechanism for a luggage case having first and second case sections closable upon each other, said mechanism being releasable by moving a drive plate, comprising a detent rotatably mounted, in use, on the first case section to move under the influence of gravity alone from a first position preventing said drive plate movement to a second position out of the path of movement of the drive plate.

4. A luggage case including a latch mechanism according to claim 3.

5. A luggage case according to claim 4, in which the drive plate and detent are enclosed within a closed channel carried by the first case section, walls defining the channel forming limits for rotative movement of the detent.

6. A luggage case according to claims 4 or 5, in which the detent is L-shaped and mounted for rotation about an axis located at the common point of detent legs.

7. A latch mechanism for a luggage case substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

8. A luggage case substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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obstructing movement of the drive plate with respect to the first case section to a position lying outside the path of movement of the drive plate. 50

2. A latch mechanism as in claim 1, in which the drive plate includes a stop member extending transversely of the direction of movement of the plate and the gravity operated member is rotatable to engage the stop member preventing movement of the drive plate in a direction to release the latch mechanism. 55

3. A latch mechanism for a luggage case having first and second case sections closable upon each other, said mechanism being releasable by moving a drive plate, comprising a detent rotatably mounted, in use, on the first case section to move under the influence of gravity alone from a first position preventing said drive plate movement to a second position out of the path of movement of the drive plate. 60

4. A luggage case including a latch mechanism according to claim 3. 65

5. A luggage case according to claim 4, in which the drive plate and detent are enclosed within a closed channel carried by the first case section, walls defining the channel forming limits for rotative movement of the detent. 70

6. A luggage case according to claims 4 or 5, in which the detent is L-shaped and mounted for rotation about an axis located at the common point of detent legs. 75

7. A latch mechanism for a luggage case substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings. 80

8. A luggage case substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings. 85

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