United States Patent

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[54] **CARRYING CASE LATCH STRUCTURE**
9 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **190/49**
[51] **Int. Cl.** **E05b 65/52**
[50] **Field of Search** ..... 190/49, 50, 28; 70/69, 70, 71, 72, 75, (Inquired)

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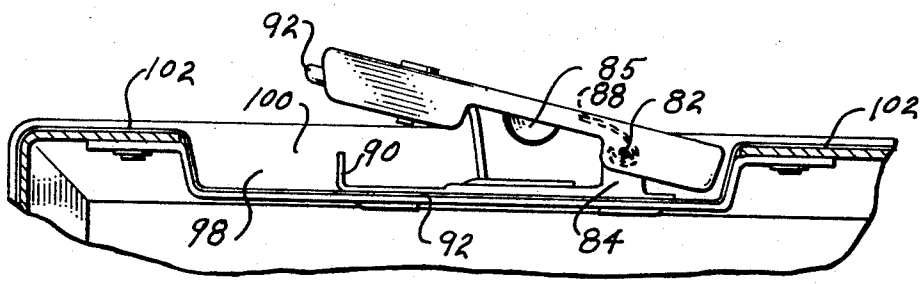
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Attorneys—Hobbs and Green and Kemon, Palmer and Estabrook

ABSTRACT: A carrying case having two spaced latches recessed in a frame member. The operating member of the latch is disposed in a recess where it will not accidentally be operated, but it can easily be operated by inserting a finger in the recess. The upper surface of the latch mechanism is on a plane substantially the same as the plane of the surrounding case surface when the case is in its locked condition.



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SHEET 1 OF 2

Fig. 1

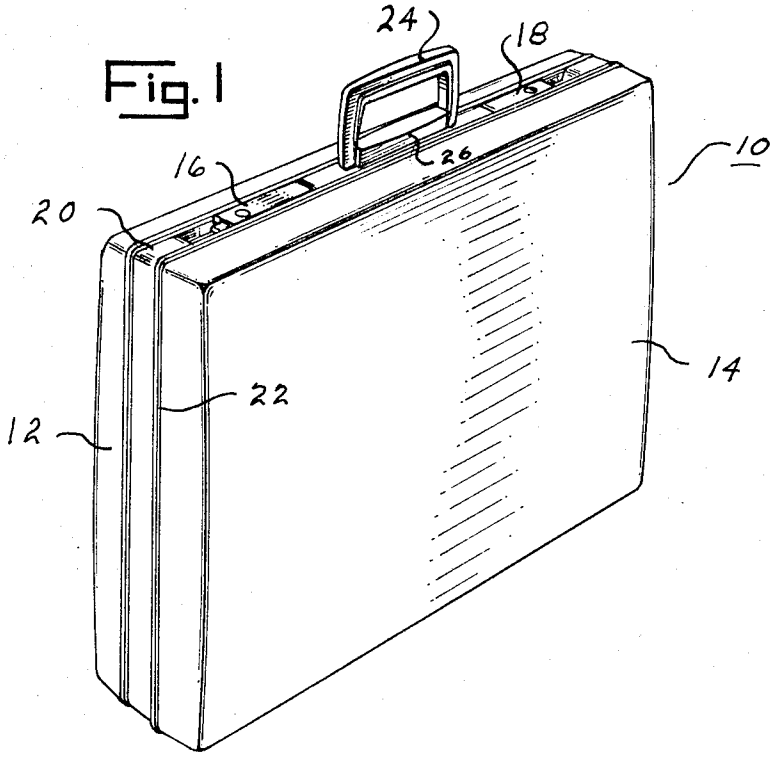
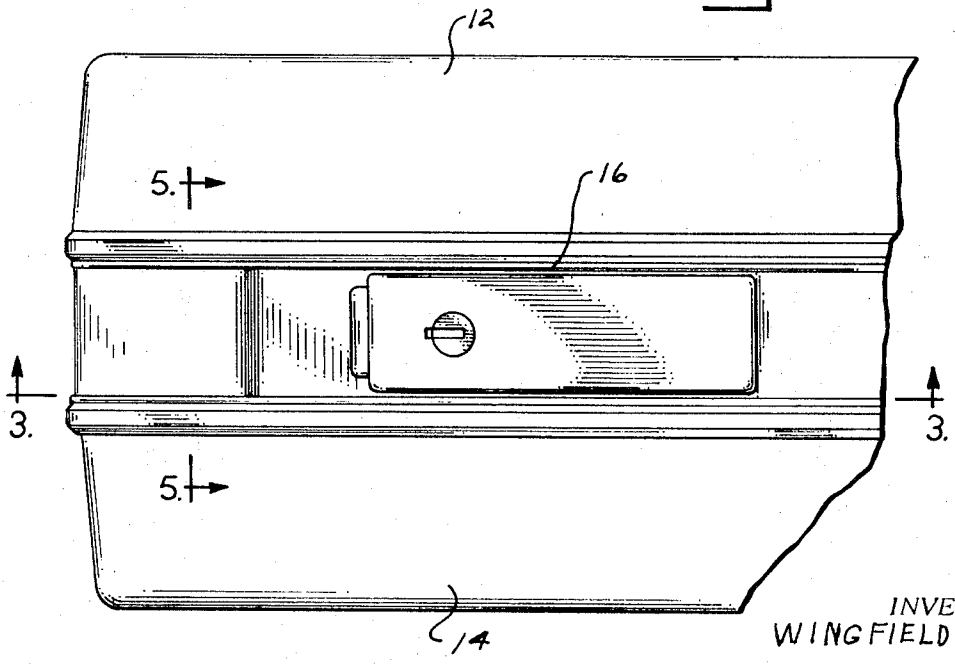


Fig. 2



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Fig. 3

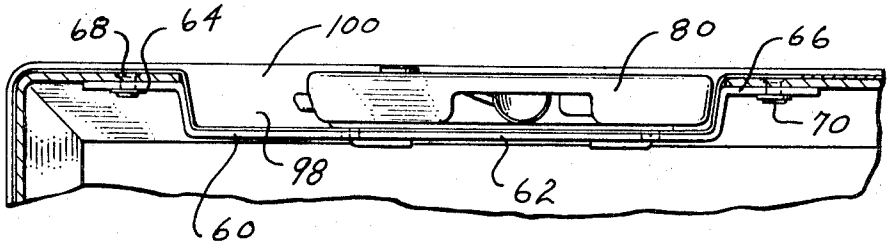


Fig. 4

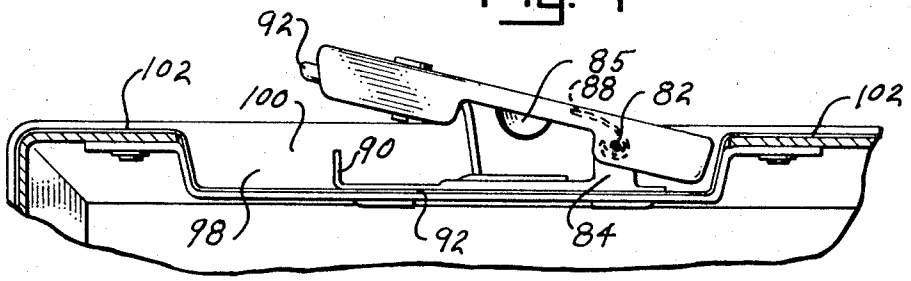
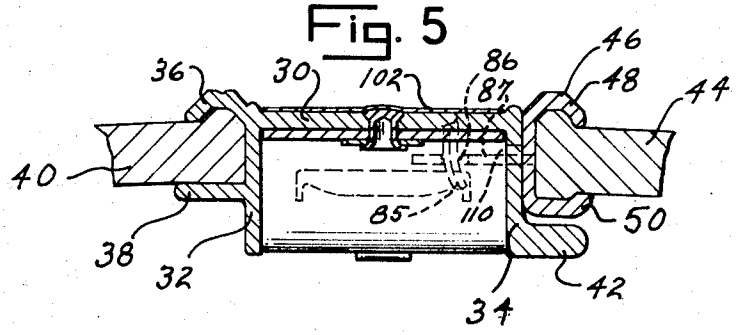


Fig. 5



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CARRYING CASE LATCH STRUCTURE

One type of carrying case which is now being extensively used consists of two vertical sections of ridged construction connected together by a hinge means along the lower edge. The two sections meet near the center of the top and a pair of spaced latches retain the sections together when the case is closed. A handle usually attached to one section is disposed between the latches and is adapted to carry the case in vertical position while the two latches secure the two sections together and hold the case in its closed and locked position. In the past a variety of different types of latches have been used, and they have been installed on the cases in a number of different ways; however, in most of these prior installations, a button, lever or bar protruding above the surrounding case structure has been used to manipulate the latch to unlock and possibly lock the latch after the two sections have been brought together when the case is being closed. These protruding buttons, levers and bars often are easily bumped and/or pressed accidentally causing the latch to release, thus partially or fully unlocking the case, occasionally without the knowledge of the carrier, so that the contents of the case may accidentally be spilled and/or lost. Further, aside from the frequent unattractiveness of the latch, usually the direction to which the button, lever or bar must be pushed in order to open the case is not readily apparent from a visual examination of the latch, thus frequently causing one to fumble with the latch before it can be released. It is therefore one of the principal objects of the present invention to provide a latch for a carrying case of the aforementioned type, which is recessed in the surrounding case construction but which can readily and easily be manipulated to release the latch when the case is to be opening.

Another object of the invention is to provide a recessed latch structure for a carrying case which is so constructed and designed that it is readily apparent by a mere glance how the manipulating means must be operated in order to release the latch and in which the manipulating means is protected by the surrounding case structure from accidental operation.

Still another object of the invention is a carrying case frame and latch structure in which the latch is fully recessed within the adjacent frame and which is simple and sturdy in construction and relatively easy to fabricate and assemble.

A further object is to provide a recessed latch structure which is released by the movement of a bar means longitudinally within a recess at the and of the latch to cause the latch to pivot outwardly and which is latched by merely pressing the pivoted latch inwardly into a recess therefor in the adjacent frame structure.

Additional objects and advantages of the invention will become apparent from the following description and accompanying drawings, wherein:

FIG. 1 is a perspective view of a carrying case having the present latch and frame structure embodied therein;

FIG. 2 is an enlarged fragmentary top plan view of one of the latch structures shown in FIG. 1;

FIG. 3 is a vertical cross-sectional view of the latch and frame structure shown in the preceeding drawings, the section being taken on line 3–3 of FIG. 2, showing the latch in its locked position;

FIG. 4 is a cross-sectional view similar to the view shown in FIG. 3 illustrating the latch in its unlocked position; and

FIG. 5 is an enlarged vertical cross-sectional view of the present latch structure, the section being taken on line 5–5 of FIG. 2.

Referring more specifically to the drawings and to FIG. 1 in particular, numeral 10 designates generally a carrying case having the present lock structure incorporated therein. The case consists of two sections indicated by numerals 12 and 14 which are pivoted to one another by a hinge means (not shown) on the underside of the case. The two sections are latched together when the case is closed by the present latch structures indicated generally by numerals 16 and 18 recessed in the frame structure 20 forming a part of case section 12 and the overall latch structure. The two sections are parted along the bead, indicated by numeral 22, which would normally form the upper edge of the section when the case is opened and the two sections laid down flat. Two latches 16 and 18 are spaced from one another equally on either side of the center and a handle 24 is pivotally secured to case section 12 at the center between the two latch structures by a bar 26 which may be secured to the frame 20 by rivits, lugs or other suitable securing means.

The frame structure of case section 12 consists of an outer flat member or strip 30 with two inwardly extending flanges 32 and 34 formed integrally with member 30. Extending outwardly toward the section 12 are two spaced beads 36 and 38 which receive the edge of the upper panel 40 of the case. When the panel is inserted in the groove defined by the two beads 36 and 38, the two beads are pressed inwardly to attach the frame structure firmly to the panel. The frame 20 includes an outwardly extending flange 42 which assists in aligning the edge of case section 14 when the case is closed. As seen in FIG. 5, the case section 14 includes an upper panel 44 having a molding 46 extending around the edge thereof and secured to the panel by beads 48 and 50 which clamp the edge of panel 44 to secure the molding 46 rigidly thereto.

A section of the upper member 30 is removed to provide a slot for receiving the latch assembly 60 which consists generally of a bar 62 having laterally projecting lugs 64 and 66 secured to the underside of member 30 by rivits 68 and 70, respectively. The latch proper indicated generally by numeral 80 is pivoted on pin 82 supported by an upwardly extending member 84 secured to bar 62. The pivoted part 80 contains a tongue 85 which slips through a slot 86 in an inwardly extending tongue 87 attached to the adjacent part of molding 46. A spring 88 urges pivoted part 80 upwardly from the position shown in FIG. 3 to the position shown in FIG. 4, and the part is held in its latched position by a bolt or lug which engages member 90 secured to and forming a part of base member 92. Since the details of the internal mechanism of the latch proper do not form a part of the present invention, the internal mechanism of the latch will not be further described herein. The pivoted part 80 is released from its latched position by a bar 92 extending outwardly to the left as viewed in FIGS. 3 and 4 from the pivoted part, into recess portions 98 of main recess 100.

When latch assembly 60 has been secured to the underside of frame member 30, recess 100 is enclosed along the side by frame members 32 and 34 and along the bottom by bar 60. The frame and latch structure of the case is normally covered with a suitable material such as fabric or plastic, indicated generally by numeral 102; however, the frame and latch structure can be left in its normal metallic condition. The frame structure 20 normally extends completely around the case, and member 30 is normally on a plane substantially the same as the plane of the two panels 40 and 44, with beads 36 and 48 of the two frame members 20 and 46 forming an outline for the frame structure to give the structure a finished appearance.

In the operation of the foregoing latch structure, the case is closed by pressing the two sections 12 and 14 together, thereby causing tongue 87 to extend inwardly through slot 110 in member 34. Pivoted part 80 is then merely pushed downwardly causing tongue 85 to slip through slot 86 in tongue 87, thereby locking the two tongues together and holding the two sections of the case together. As the pivoted part is pressed inwardly to the positions shown in FIG. 3, the bar latches in a slotted member 90 to retain the pivoted part in its horizontal and latched position, as illustrated in FIGS. 3 and 5. When the case is to be opened, the operator merely places his finger in recess 98 at the end of pivoted parts of latches 16 and 18 and presses operating bar 92 inwardly, thus disengaging the latch bolt from member 90 and permitting spring 88 to pivot part 80 upwardly from the position in FIG. 3 to the position shown in FIG. 4. This releases the two tongues 85 and 87, thus permitting the two sections to be separated and the case opened.

It is seen from the foregoing that the latch parts are fully recessed in recess **100** and operating bar **92** is contained in the end of recess **100** where it is fully protected from accidental operation. However, the bar is readily accessible for operation by a finger inserted in slot **100** at the end of pivoted part **80**. Since the finger can only be moved in one direction to release the latch, the natural operation is to press bar **92** inwardly when the latch is to be release, thus no fumbling or instructions are required in order to learn how the case is to be opened.

While only one embodiment of the present carrying case latch structure has been described in detail herein, various changes and modifications may be made without departing from the scope of the invention.

I claim:

1. A frame and latch structure for a carrying case having two sections pivotally connected to one another along one edge, said structure comprising a longitudinal frame member having a slot therein, and a latch assembly including a bar having ends secured to said frame member at opposite ends of said slot and being offset inwardly equally at each end to form a rectangularly shaped recess with said frame member, a pivoted locking part disposed in said recess and seating in said recess when in its locked position, a longitudinally movable barlike member disposed in one end of said locking part and spaced from the adjacent end of said recess for releasing said locking part, and a spring means for unlocking said section.

2. A frame and latch structure as defined in claim **1** in which said longitudinal frame member includes two spaced inwardly extending members joined integrally to said longitudinal member and forming the sides of said recess.

3. A frame and latch structure as defined in claim **2** in which said said pivoted locking part is disposed adjacent to one end of said slot and is spaced from the other end of said slot to provide a recess for operating said barlike number

4. A frame and latch structure as defined in claim **1** in which said longitudinal frame member includes two laterally extending beads for clamping said frame member to the respective section of said case.

5. A frame and latch structure as defined in claim **1** in which said longitudinal frame member is constructed of extruded aluminum.

6. A frame and latch structure as defined in claim **5** in which said longitudinal frame member is substantially covered by a layer of material blending with the outer surface of the carrying case sections.

7. A frame and latch structure as defined in claim **1** in which said barlike member is movable toward said pivoted part for unlocking the latch.

8. A frame and latch structure as defined in claim **1** in which said pivoted locking part is disposed adjacent to one end of said slot and is spaced from the other end of said slot to provide a recess for operating said barlike member.

9. A frame and latch structure as defined in claim **1** in which the upper surface of said locking part is on a plane substantially the same as the plane as the outside surface of said frame member when the locking part is in its locked position.