

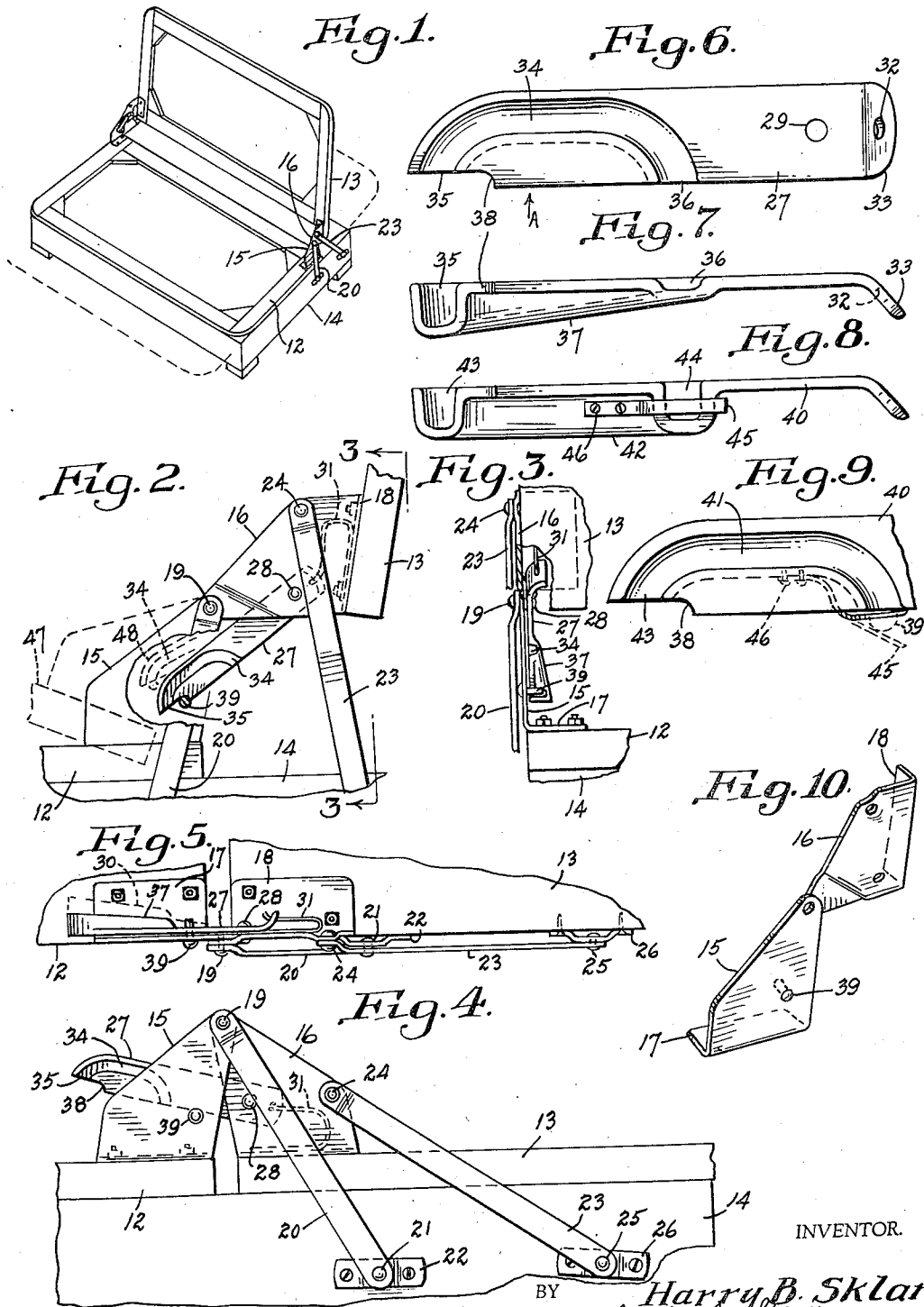
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SUPPORT FOR RELATIVELY MOVABLE PARTS

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SUPPORT FOR RELATIVELY MOVABLE PARTS

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My invention relates to a support for relatively movable parts. The primarily intended use of the present support is for a bed davenport, but the present hardware may be used to support one movable part relatively to another on many other articles.

My invention has for its object to provide such a support that is positive in operation, convenient in use, easily installed in a working position, economical of manufacture, relatively simple and of general superiority and serviceability.

The invention also comprises novel details of construction and novel combinations and arrangements of parts, which will more fully appear in the course of the following description. However, the drawing merely shows and the following description merely describes one embodiment of the present invention, which is given by way of illustration or example only.

In the drawing, like reference characters designate similar parts in the several views.

Figure 1 is a perspective view of parts of a frame for a bed davenport to which have been applied an embodiment of my present invention.

Figure 2 is an enlarged, partly broken, side elevation illustrating my support in one of its operative positions.

Figure 3 is a view partly in section looking in the direction of the arrows 2-3 of Figure 2.

Figure 4 is a side elevational view of my support in another position than that shown in Figure 2.

Figure 5 is a plan view of the position shown in Figure 4.

Figure 6 is an enlarged face view of a latch member comprised in my invention.

Figure 7 is a view looking in the direction of the arrow A of Figure 6.

Figure 8 is a view similar to Figure 7 except that Figure 8 shows a modified construction.

Figure 9 is a broken side elevation of the modified construction shown in Figure 8.

Figure 10 is a perspective view of relatively movable bracket plates comprised in my invention.

Referring more in detail to the drawing, the reference number 12 generally indicates the frame of a seat member of a bed davenport or of a member of some other article to which my invention is applied. The reference number 13 generally designates the frame for a back member for said bed davenport.

The frame of the bed davenport is generally indicated at 14. The seat frame 12 is slidable and pivoted on the top of the body frame 14.

Bracket plates 15 and 16 are respectively bolted upon the seat member 12 and back member 13 through the intermediary of their respective flanges 17 and 18. The bracket plates are pivoted to each other by a rivet 19. A brace 20 is also pivoted to the bracket plates by means of the rivet 19. The opposite end of the brace 20 is pivoted on the frame 14 by means of a rivet 21. A plate 22 mounts the rivet 21 on the frame 14.

A brace 23 is pivotally mounted upon an opposite portion of the bracket plate 16 by a rivet 24. The opposite end of the brace 23 is pivoted on a rivet 25 which in turn is mounted on a plate 26 on the frame 14.

A latch member 27 is pivoted on the bracket plate 16 by means of a rivet 28. The rivet 28 extends through an oversize opening 29 in the latch 27. The oversize opening 29 permits lateral rocking of the latch 27, as indicated by the broken line 30 in Figure 5. A spring 31 tends to prevent said lateral movement of the latch 27. The spring 31 extends through an opening 32 on a bent end 33 of the latch 27.

The form of latch shown in Figures 2 to 7 has a groove 34 that provides a by-pass from inlet mouth 35 to an outlet 36. It will be noted in Figures 3, 5, and 7 that the groove 34 becomes shallower continually from the inlet mouth 35 to the outlet 36. This incline for the groove 34 provides an inclined outer surface 37. A notch 38 is provided on the latch 27 adjacent to the mouth 35, and between the mouth 35 and the outlet 36.

A pin 39, arranged on the plate 15 fits in the notch 38 when the back 13 is in a raised position, perhaps best shown in Figure 2.

In the modified construction shown in Figures 8 and 9, a latch 40 is provided with a groove 41 that is substantially the same depth from end to end, as suggested by the outer face 42 which provides the groove 41. A mouth 43 and outlet 44 are provided for the groove 41. At the outlet 44 a flat spring 45 normally closes such outlet. The spring 45 is bolted to the latch 40 as suggested at 46.

In the operation of my support, the back 13 is lifted up, whereby the lower edge of the latch 27 slides along the pin 39 until such pin is engaged by the notch 38. The back 13 is thereby maintained in its raised position. Since the pin 39 is longer than the depth of the outlet 36 and since the spring 31 tends to maintain the latch 27 in close proximity to the plate 15, the pin 39

does not enter the outlet 36 as the lower edge of the latch 27 slides along the pin 39, as stated.

When it is desired to lower the back 13, the seat 12 is raised as suggested by the broken lines 47 in Figure 2. This lifts the latch 27 and draws the pin 39 forward into the mouth 35 of the groove 34, as indicated by broken lines 48 of Figure 2. The brace 23 prevents the back 13 from being raised sufficiently for the mouth 35 to receive the pin 39, unless the seat 12 is raised as indicated. When the pin 39 is received by the mouth 35, as the back 13 is lowered, the pin 39 rides along the groove 34, toward the upper right hand corner of Figure 2. However, due to the lateral movability of the latch 27, the pin is permitted to escape from the outlet 36 when the latch 27 is moved to the broken line position 30 of Figure 5. The lower edge of latch 27 then rides along the pin 39 until the seat 12 and back 13 are in horizontal positions, as shown in Figure 4. The spring 31 returns the latch 27 to its full line position 37 in Figure 5, after the pin 39 has left the mouth 36 of the groove 34.

In the use of the modified construction, the spring 45 prevents the pin 39 from entering the outlet 44 while the back 13 is being raised. The mouth 43 is of sufficient size to receive the pin 39. When the pin 39 leaves the mouth 44, after traveling through the groove 41, the pin 39 pushes the spring 45 aside as indicated in broken lines 45 in Figure 9, thus permitting the latch 40 to disengage from the pin 39. It will be noted that there is no lateral tipping of the latch 40 in the modified construction shown in Figures 8 and 9.

While I have illustrated and described what I now regard as the preferred embodiments of my invention, the constructions are, of course, subject to modifications without departing from the spirit and scope of my invention. I, therefore, do not wish to restrict myself to the particular forms of construction illustrated and described, but desire to avail myself of all modifications that may fall within the scope of the appended claims.

I claim:

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A releasable latch for relatively movable parts, comprising a latch piece projecting laterally from one of said parts, a latch member pivotally swingable and laterally yieldable relative to the other part and having means engageable by said latch piece in the locking position of the latch member, spring means controlling swinging and yielding movements of said latch member, said latch member having a laterally opening groove for by-passing the latch piece relative to said engageable means, the said groove being of a depth at one end receiving the latch piece, and being of a lesser depth at its other end preventing entrance of the latch piece in the normal swinging position of the latch member.

2. In a releasable latch of the character set forth, a swingable and laterally yieldable one-piece latch member having a laterally opening by-passing groove of varying depth, the entrance end thereof being of maximum depth and the exit end being of minimum depth, said member having means forming a locking shoulder intermediate the ends of said groove and facing the entrance end thereof, spring means engaging said member and controlling its swinging and yielding movements, and a latch piece for engagement with said shoulder and for passage

through said groove in one direction, having an effective length to enter the entrance end of the groove and to be excluded from entering the exit end of the groove.

3. A releasable latch for relatively movable parts, comprising a latch member pivotally and laterally movable relative to one of the parts and having a locking shoulder, pin means on the other part for engagement with said shoulder to lock the latch member, and thereby the part upon which the latch member is mounted, the latch member having a groove to receive and by-pass the pin means relative to said shoulder to an unlocking position of the latch member, the inlet end of the groove being of a depth not less than the length of the pin means, the outlet end of the groove being of substantially less depth than the said inlet end to thus cause lateral motion of the latch member during movement of the pin through and from the groove, and spring means controlling lateral and pivotal movements of the latch member.

4. A support for relatively movable parts, comprising a latch member swingably and laterally shiftably mounted upon one of the parts and having a locking projection, pin means mounted on the other part for engagement with said projection to lock the latch member, and thereby the part upon which the latch member is mounted, the latch member having an inclined groove for the pin, to by-pass the pin in one direction with respect to the said projection, the inlet end of the groove being of a depth not less than the length of the pin and the outlet end of the groove of substantially less depth than the length of the pin, to thus prevent movement of the pin in the opposite direction thru the groove when the latch member is being moved to a locking position with respect to the pin, and spring means for controlling and moving said latch member.

5. A support for relatively movable parts, comprising a latch member movably mounted pivotally and laterally relative to one of the parts, means forming a locking shoulder, pin means mounted on the other part for engaging said shoulder to lock the latch member, and thereby the part upon which the latch member is mounted, the latch member having a laterally opening groove of lengthwise varying depth to by-pass the pin relative to said shoulder in one direction, and spring means controlling movement of the latch member and positioning the same relative to the pin to prevent the latter from moving into and through the groove in the opposite direction.

6. In a latch for two relatively movable members, the combination of latch engaging means on one of the members, and pivoted latching means on the other member, said latching means comprising a seat for said latch engaging means to restrain movement of the movable members in one direction and a guideway for by-passing around said seat having an entrance on one side of said seat and an exit on the other side of said seat, said guideway being of gradually decreased depth from the entrance to the exit.

7. In a latch for two relatively movable members, the combination of latch engaging means on one of the members, and latching means on the other member, said latching means comprising a seat for said latch engaging means to restrain movement of the movable members in one direction and a guideway for by-passing around

said seat having an entrance on one side of said seat and an exit on the other side of said seat, said exit being of comparatively shallow depth to refuse passage of said latch engaging means when said latching means is in its unlatched position.

8. In a latch for two relatively movable members, the combination of latch engaging means on one member and latching means on the other member, said latching means comprising a seat 10

for said latch engaging means to restrain movement of the movable members in one direction and unlatching means including a guide for bypassing around said seat having an entrance port of a depth to receive said latch engaging means on one side of said seat and an exit port of reduced depth to refuse entrance of said latch engaging means on the other side of said seat.

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