April 15, 1958 H. W. GAUGLER 2,830,653

ADJUSTABLE FURNITURE SUPPORT HARDWARE

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FIG. 1

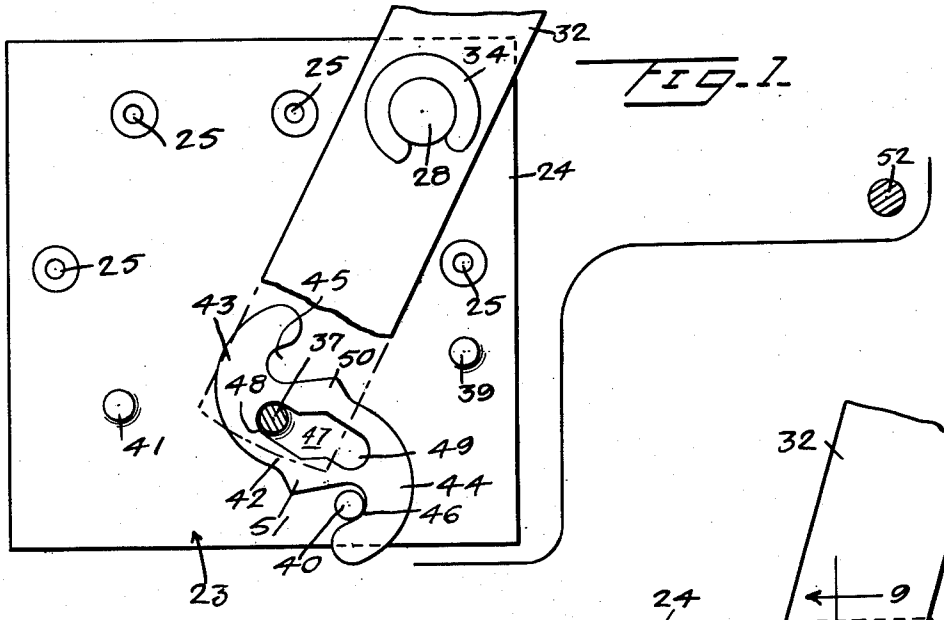


FIG. 5

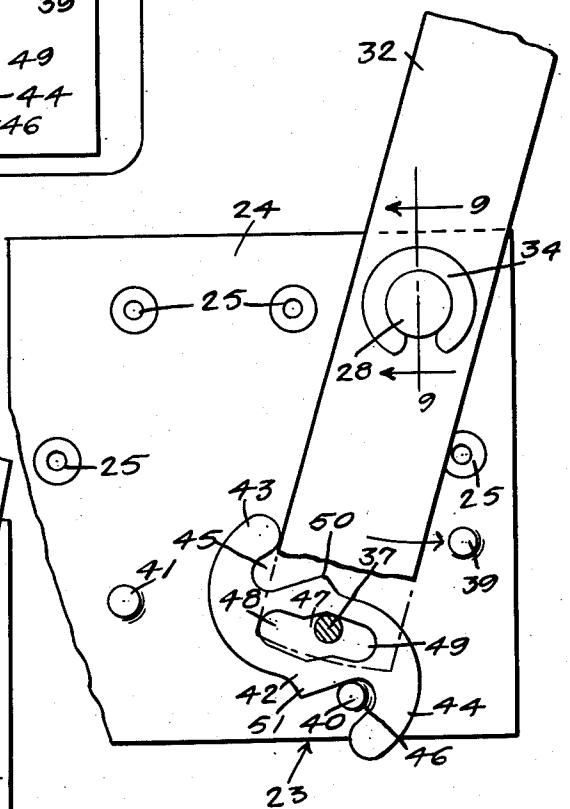
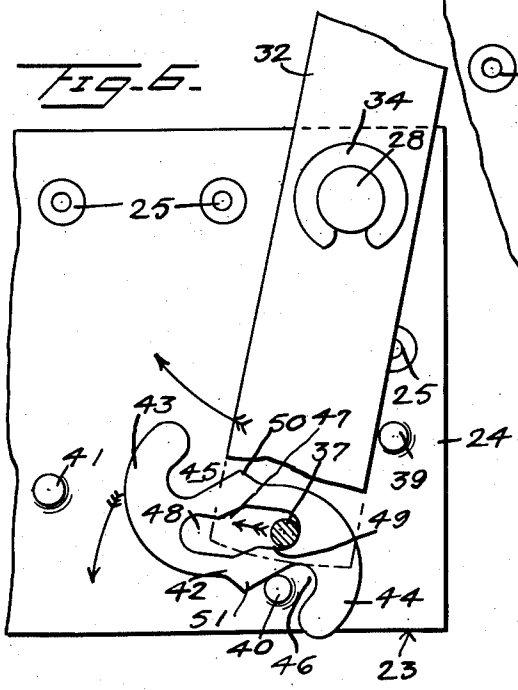


FIG. 6



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Fig. 7.

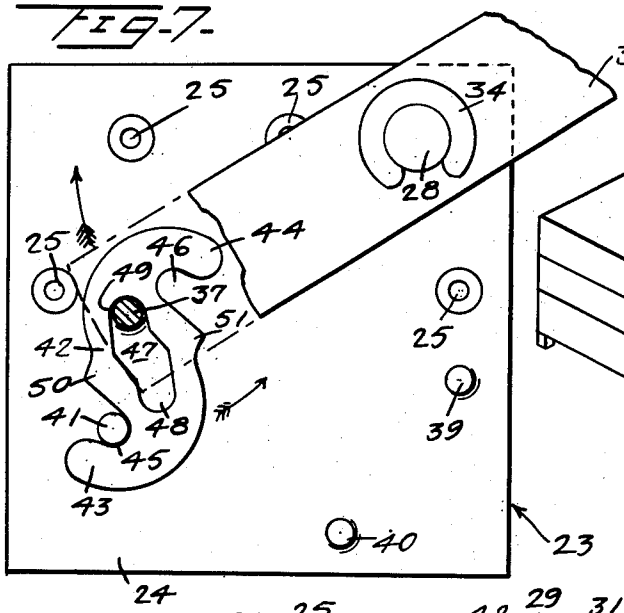


Fig. 8.

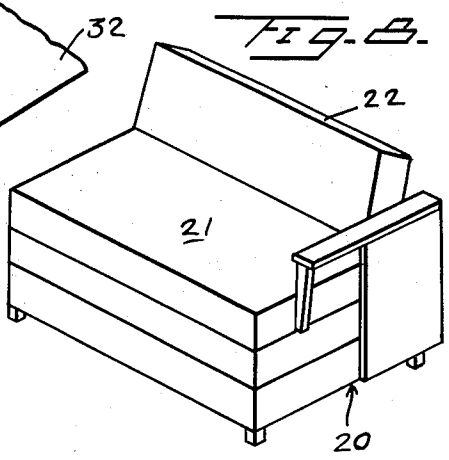


Fig. 2

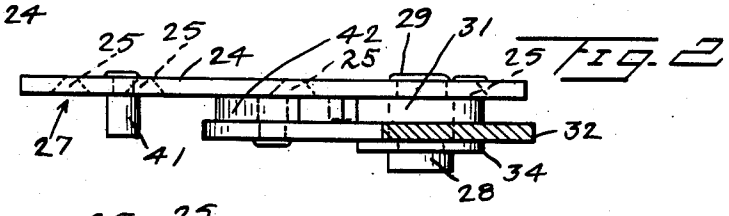


Fig. 3.

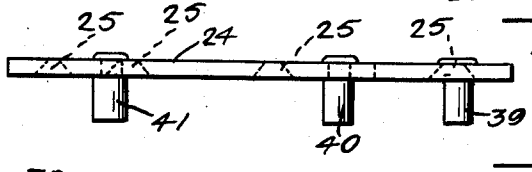


Fig. 4.

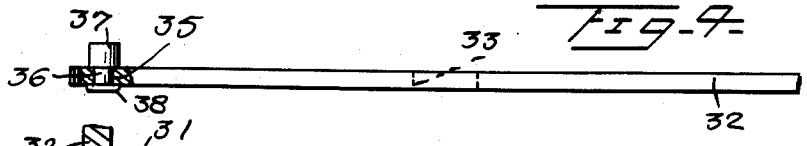
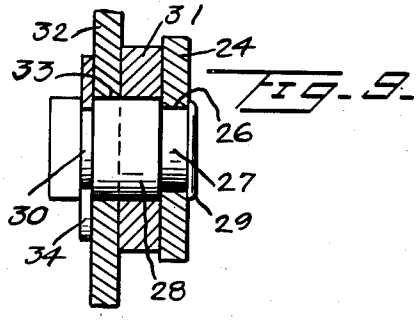


Fig. 9.



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ADJUSTABLE FURNITURE SUPPORT HARDWARE

Herman W. Gaugler, Miami, Fla.

Application December 11, 1956, Serial No. 627,655

3 Claims. (Cl. 155—161)

The present invention relates to adjustable furniture support hardware, and more particularly to hardware for supporting an adjustable back on chairs, sofas, and the like, in any one of several adjusted positions.

The primary object of the invention is to provide a furniture support which can be automatically latched in various positions by merely moving the back through specific movements.

Another object of the invention is to provide an adjustable support for the adjustable backs of furniture wherein the back can be adjusted for a normal upright position, and intermediate reclining position, and a level bed position.

A further object of the invention is to provide a support for adjustable backs of furniture which is inexpensive to manufacture, simple to use, and which positively locks the back in its adjusted position.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a fragmentary front elevation of the invention with parts broken away for clarity.

Figure 2 is a top plan view of the invention shown partly broken away and in section for clarity of illustration.

Figure 3 is a top plan view of the rear plate with the adjustable parts removed therefrom.

Figure 4 is a top plan view of the back support arm shown partly in cross-section and partly broken away for clarity of illustration.

Figure 5 is a view similar to Figure 1, illustrating a step in the adjustment of the back.

Figure 6 is a view similar to Figure 5, illustrating another step in the adjustment of the back.

Figure 7 is a view similar to Figure 5, illustrating still another step in the adjustment of the back.

Figure 8 is a perspective view of the article of furniture with which the invention is used.

Figure 9 is an enlarged fragmentary cross-section taken along the line 9—9 of Figure 5, looking in the direction of the arrows.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 20 indicates generally a chair or sofa having a horizontal seat 21 and a generally upright back 22. The back 22 is adjustable with relation to the seat 21 and can be lowered to a position level with the seat 21, and to a position midway between the level position and the upright position.

The invention illustrated generally at 23 comprises a rectangular flat plate 24 having a plurality of countersunk screw holes 25 formed therein and through which securing elements (not shown) are adapted to extend to secure the plate 24 to the side of the chair or sofa 20. The chair or sofa 20 is provided with an identical but reversed structure 23 at its opposite end as will be later described.

The plate 24 is provided with a bore 26 adjacent an upper corner thereof and through which extends a reduced end portion 27 of a pivot pin 28. The pivot pin 28 is riveted as at 29 so as to secure the pivot pin 28 to the plate 24, as best shown in Figure 9. The pivot pin 28 is provided with an annular groove 30 adjacent its outer end and has a spacing washer 31 mounted thereon in engagement with the forward face of the plate 24.

An elongated back support arm 32 is provided with a bore 33 by means of which the arm 32 is journalled on the pivot pin 28 in engagement with the spacing washer 31. A lock spring washer 34 snaps into the groove 30 to detachably secure the arm 32 in position on the pivot pin 28.

The arm 32 is provided with a bore 35 adjacent the lower terminal end thereof and through which the reduced end portion 36 of a stub pin 37 extends. The pin 37 is riveted as at 38 to secure the pin 37 within the bore 35 on the arm 32.

The plate 24 is provided with a stop pin 39 lying substantially below the pivot pin 28 in parallel relation thereto. A second pin 40 of the same size as the pin 39 similarly projects from the plate 24 at a position well below the pin 39. A pin 41 of a diameter slightly greater than the pins 39 and 40 is mounted on the plate 24 at a point spaced laterally from the pins 39 and 40 below the pin 39 and above the pin 40.

A generally S-shaped hook 42 has identical oppositely facing end portions 43 and 44 with each having a deep notch 45 and 46, respectively. The S-shaped hook 42 is provided with a central slot 47 having oppositely angularly offset end portions 48 and 49. The S-shaped hook 42 is provided with outwardly projecting cam portions 50 and 51 intermediate the opposite ends 43 and 44.

The pin 37 on the arm 32 extends inwardly toward the plate 24 and the S-shaped hook 42 is positioned against the arm 32 with the pin 37 projecting through the slot 47. The upper end of the arm 32 is secured to the back 22 in any suitable manner and then covered with upholstery so as to present a finished appearance.

The chair or sofa 20 is provided with a rest pin 52, as shown in Figure 1, positioned to be engaged by the arm 32 at its lowermost position so as to support the arm 32 and the back 22 at a position level with the seat 21 to form a bed. The pin 52 may be of any desired structural form and may be secured to the chair or sofa 20 by any suitable means.

In the use and operation of the invention, referring first to Figure 1, the arm 32 is arranged in a position with the back 22 in upright relation to the seat 21. The S-shaped hook has the notch 46 thereof in the end 44 engaged over the pin 40, and with the pin 37 engaging the end 48 of the slot 47, the arm 32 is restrained from movement about the pivot 28 in a clockwise direction, as viewed in Figure 1.

When it is desired to lower the back 22, the arm 32 is first rotated about the pivot 28 in a counter clockwise direction so that the pin 37 will move to a central position in the slot 47 and the S-shaped hook 42 will become balanced on the pin 37. Further movement of the arm 32 in a counter clockwise direction will move the pin 37 to the end 49 of the slot 47 so that the S-shaped hook 42 becomes unbalanced with the end 43 being heavier. Simultaneously with the overbalancing of the S-shaped hook 42, the arm 32 comes into contact with the pin 39 preventing further movement in a counter clockwise direction. Movement of the arm 32 about the pivot 28 is then reversed and the arm 32 is rotated in a counter clockwise direction.

As the arm 32 is rotated in a counter clockwise direction, the end 43 of the S-shaped hook 42 will swing downwardly disengaging the notch 46 from the pin 40 so that the arm 32 can be swung toward a reclining posi-

tion with the hook 42 suspended from the pin 37 thereon. By moving the arm 32 in a clockwise direction about its pivot 28, slowly, the notch 45 of the end 43 of the hook 42 will engage the pin 41, as illustrated in Figure 7, and lock the arm 32 against further movement in a clockwise direction.

When it is desired to disengage the S-shaped hook 42 from the pin 41 and lower the arm 32 to a horizontal position, the arm 32 is first rotated about its pivot 28 in a counter clockwise direction so that the notch 45 can disengage from the pin 41. Then by moving the arm 32 swiftly in a clockwise direction, the cam member 50 will be caused to strike the pin 41 with sufficient force to move the notch 45 away from the pin 41 while the hook 42 is being swung past the pin 41. Obviously, in moving from an erect position to a level position, if the arm 32 is moved swiftly, the hook 42 will not engage the pin 41, and hence the arm 32 can be swung directly from a position engaging the stop 39 to a position engaging the pin 52.

In moving the arm 32 from a reclining position to an upright position, the arm 32 is rotated counter clockwise about the pivot 28 swiftly so that the depending portion of the S-shaped hook 42 strikes the pin 40, and due to the inertia of the S-shaped hook 42 when the arm 32 strikes the stop pin 39, the S-shaped hook 42 will swing upwardly so that the slot 47 and its end portions 48 and 49 is substantially horizontal and the hook 42 will continue to move in the direction of the arc of the swing of the arm 32 until the end 48 of the slot 47 comes in contact with the pin 37. The arm 32 is then moved in a clockwise direction away from the stop pin 39 until the notch 46 engages the pin 40 returning to the position illustrated in Figure 1.

Having thus described the preferred embodiment of the invention, it should be understood that numerous

structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. A support for the adjustable backs of furniture comprising a generally rectangular plate arranged in upright relation, a pivot pin extending laterally from said plate, an upstanding arm journalled on said pivot pin, a pivot pin secured to the lower terminal end portion of said arm, an S-shaped hook having an elongated central slot therein with said slot engaged over the pivot pin on said arm for sliding and pivotal movement thereon, a stop pin secured to said plate for limiting the upward movement of the upper end of said arm, and a plurality of pins secured to said plate in spaced relation, said S-shaped hook successively engaging said last named pins to lock said arm in adjusted positions.

2. A device as claimed in claim 1 wherein said S-shaped hook is provided with oppositely extending cam portions for camming said S-shaped hook out of engagement with one of said plurality of pins when said S-shaped hook is moved rapidly past said pin.

3. A device as claimed in claim 1 wherein said elongated slot is provided with oppositely offset angular end portions.

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