

Feb. 21, 1933.

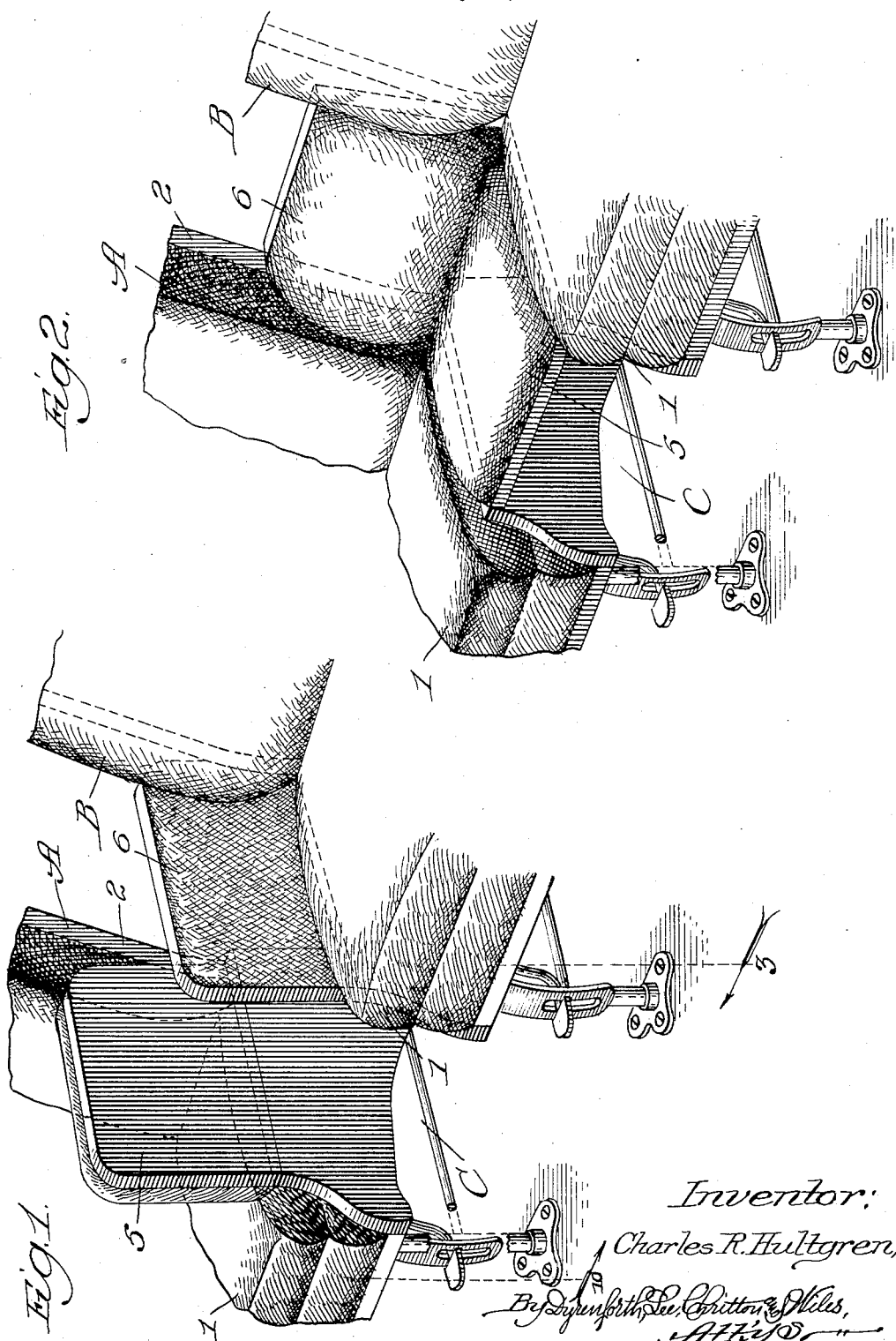
C. R. HULTGREN

1,898,448

CHAIR OR SEAT

Filed July 24, 1930

5 Sheets-Sheet 1



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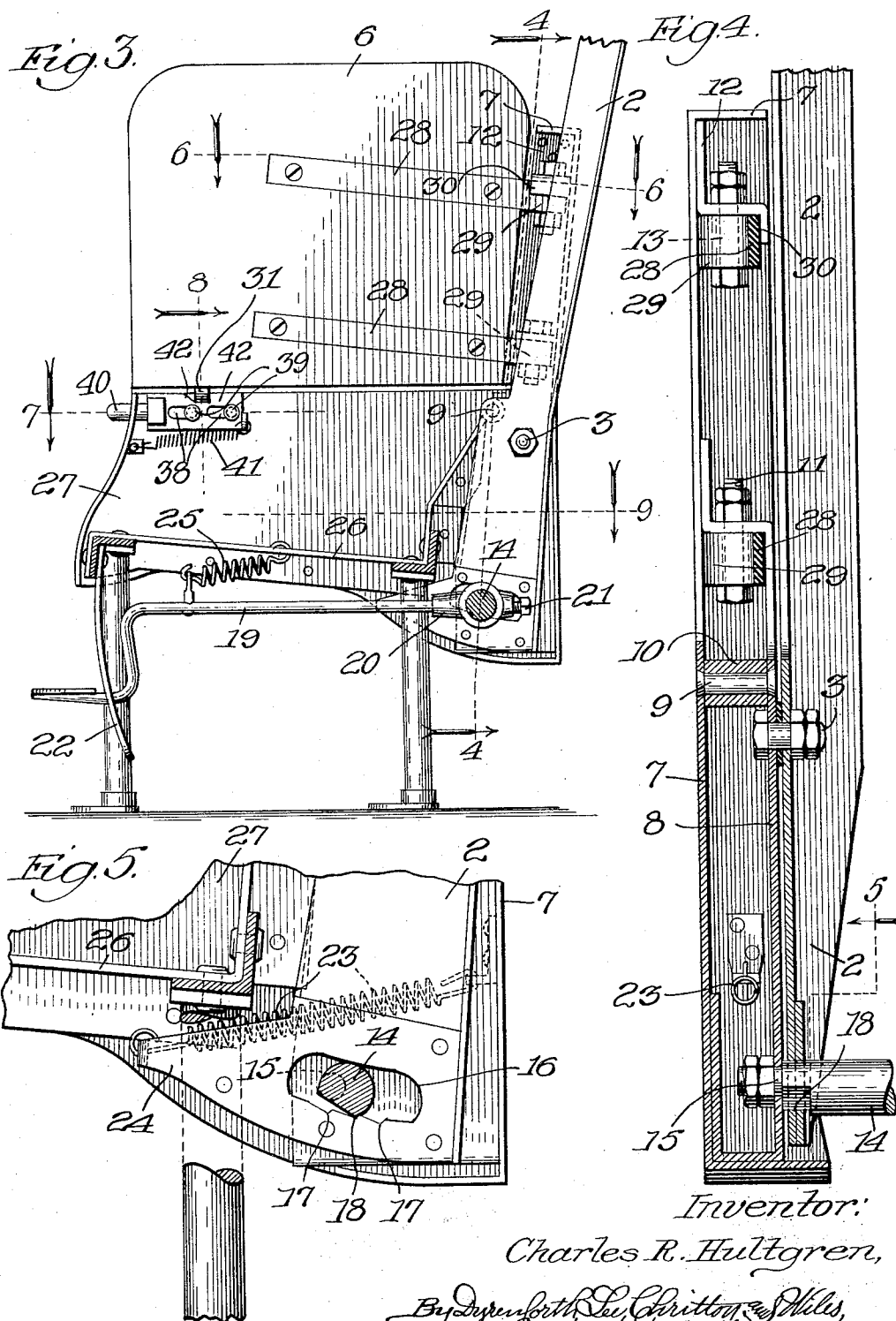
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CHAIR OR SEAT

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Fig. 7.

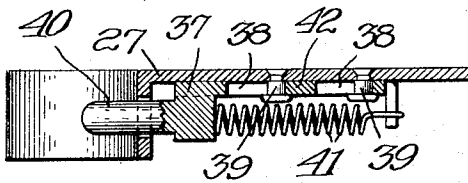


Fig. 8.

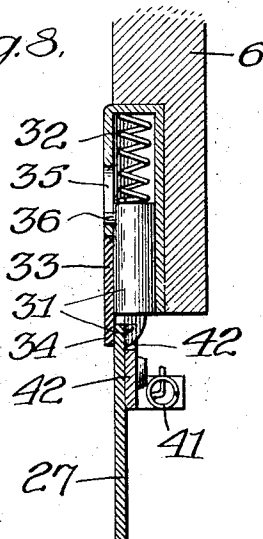


Fig. 6.

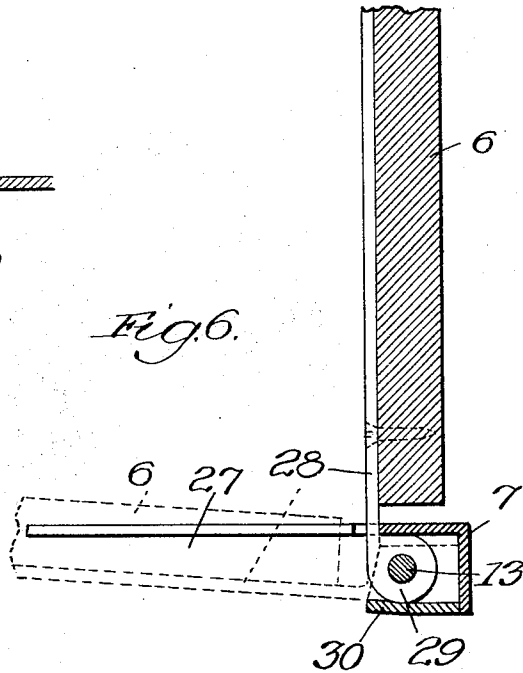
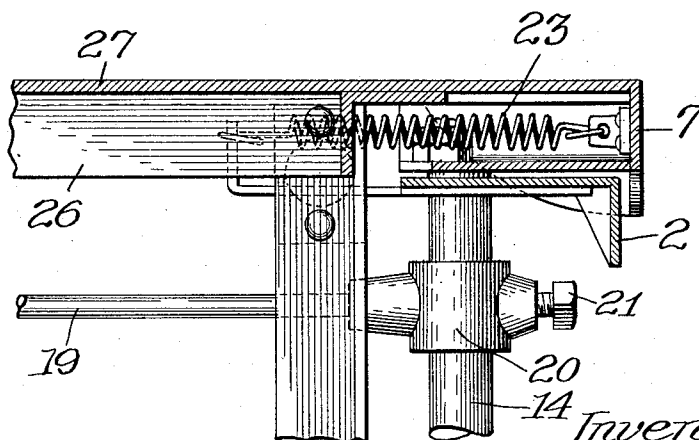


Fig. 9.



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CHAIR OR SEAT

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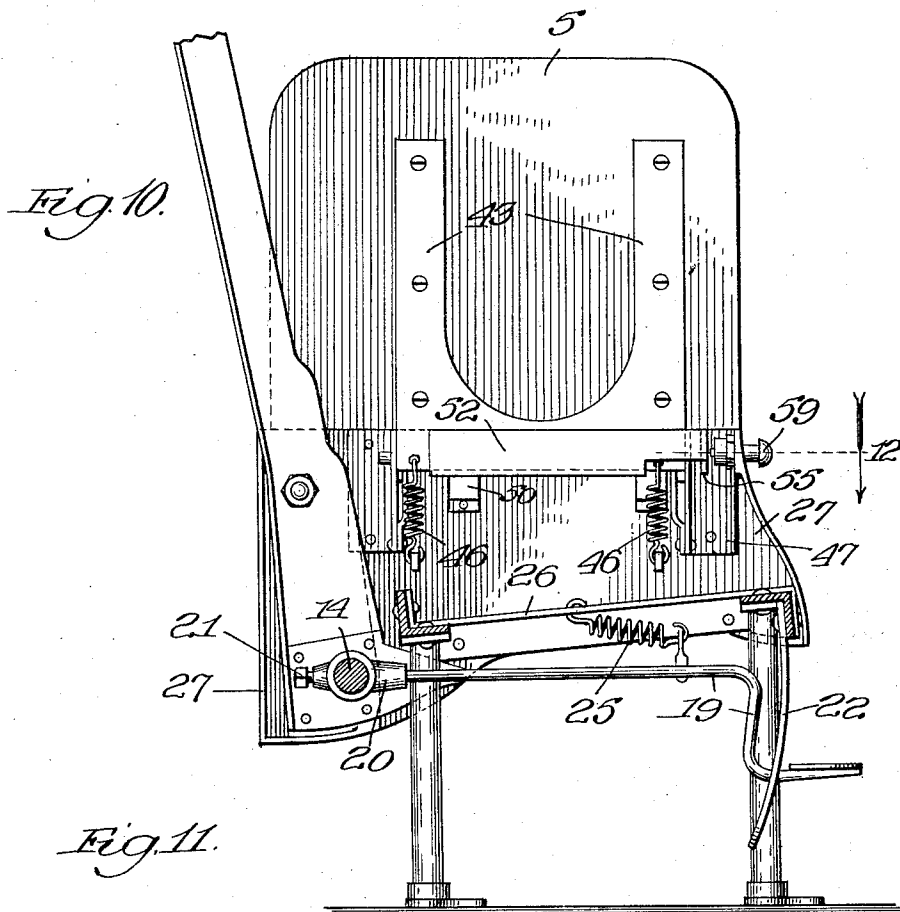
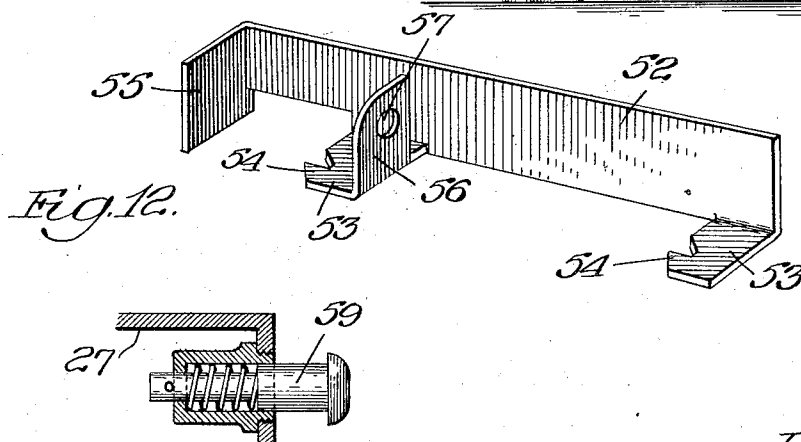


Fig. 11.



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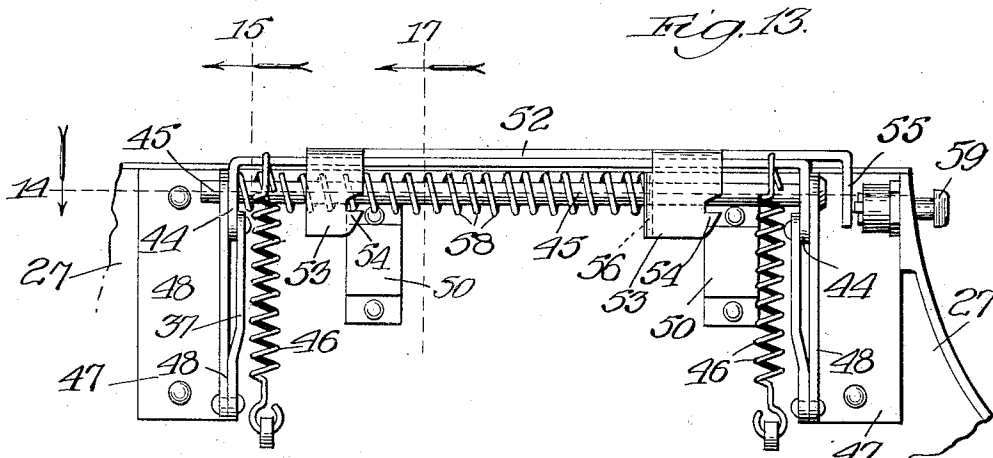
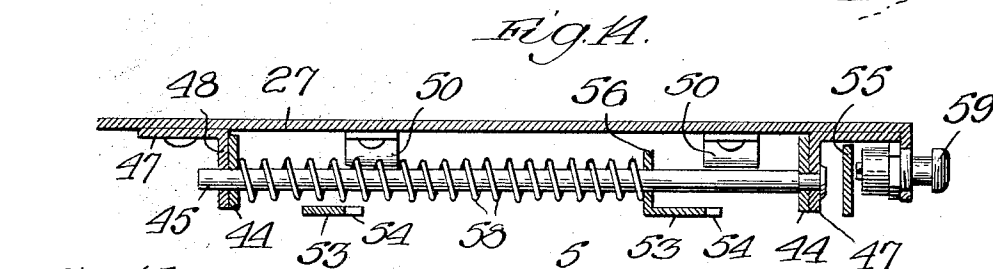
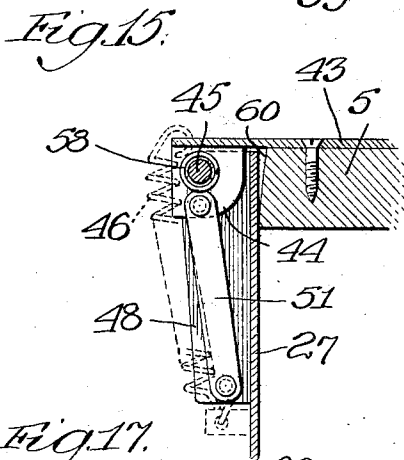
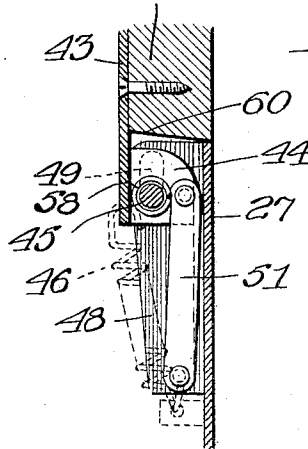
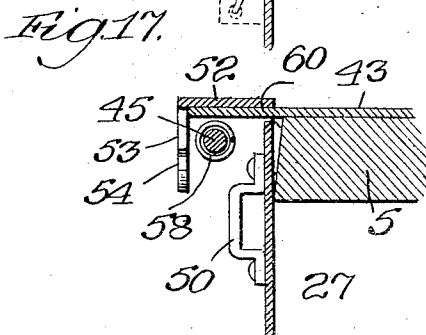
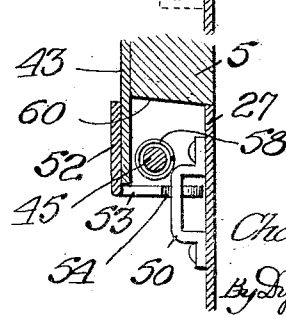
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CHAIR OR SEAT

Filed July 24, 1930

5 Sheets-Sheet 5



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UNITED STATES PATENT OFFICE

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CHAIR OR SEAT

Application filed July 24, 1930. Serial No. 470,515.

This invention relates particularly to a bar or seat adapted more especially for use in public conveyances, such as motor busses or the like.

5 The primary object is to provide chairs or settees with improved means for forming an aisle-chair. A further object is to provide a convertible aisle-chair of simple and staunch construction which may be operated with a modicum of effort and substantially without noise or rattling.

In the preferred embodiment of the invention, two chairs which are disposed on opposite sides of an aisle are equipped with arms which are adapted to be brought into cooperative relation to form an aisle-chair.

The invention is fully described in the following specification and shown in the accompanying drawings, in which—

20 Figure 1 is a broken perspective view of aligned chairs or seats, such as may be used in a motor bus; Fig. 2, a broken perspective view, illustrating the manner in which adjacent arms of seats bordering on an aisle are brought into cooperative relation to form an aisle seat; Fig. 3, a sectional view, the section being taken as indicated at line 3 of Fig. 1; Fig. 4, a sectional view, the section being taken as indicated at line 4 of Fig. 3; Fig. 5, an enlarged sectional detail view, the section being taken as indicated at line 5 of Fig. 4; Fig. 6, a detail sectional view, the section being taken as indicated at line 6 of Fig. 3; Fig. 7, an enlarged detail sectional view, the section being taken as indicated at line 8 of Fig. 3; Fig. 9, an enlarged detail sectional view, the section being taken as indicated at line 9 of Fig. 3; Fig. 10, a detail sectional view, the section being taken as indicated at line 10 of Fig. 1; Fig. 11, a perspective detail view of a latch bar which may be employed to maintain the arm-seat member in vertical position; Fig. 12, a detail sectional view, the section being taken as indicated at line 12 of Fig. 10; Fig. 13, an enlarged detail plan view of the latch mechanism employed with the arm-seat; Fig. 14,

a detail sectional view, the section being taken as indicated at line 14 of Fig. 13; Fig. 15, a detail sectional view showing the arm-seat in horizontal position, the section being taken as indicated at line 15 of Fig. 13; Fig. 16, a detail sectional view showing the arm-seat in vertical position, the section being taken at line 15 of Fig. 13; Fig. 17, a detail sectional view of the arm-seat in horizontal position, the section being taken as indicated at line 17 of Fig. 13; and Fig. 18, a detail sectional view of the arm-seat in vertical position, the section being taken at line 17 of Fig. 13.

In the construction illustrated, A and B designate chairs which are in alignment and which are separated by an aisle-spaced designated C.

The chairs A and B are of the same general construction. They are shown as comprising cushions 1 mounted on the base frames and adjustable backs 2 which are carried by the base frames. The backs are supported on pivots 3 and are equipped with adjusting devices, hereinafter described, which enable the backs to be adjusted rearwardly and forwardly, as desired.

The chairs A and B, which border on the aisle, are equipped, respectively, with arms 5 and 6 which are adapted to be brought into the relation shown in Fig. 2, to form an aisle-chair between the chairs A and B.

The arm 6 swings about a vertical axis and affords a back for the aisle-chair; and the arm 5 swings about a substantially horizontal axis and forms a seat for the aisle-chair.

The base frame carries rigidly mounted thereon side frame members 7 which are preferably formed of metal and are secured by bolts or other suitable means to the base frame. The side posts or frame members 7 are provided with spaced metal strips 8 which are secured thereto by spotwelding, bolts or other suitable means. As shown more clearly in Fig. 4, the parts 7 and 8 may be spaced apart by the rivet members 9 and spacer ring 10. Each of the strips 8 is preferably equipped near its upper end with a pivot pin 11. A short metal strip

12 may be similarly secured to the side frame 7 near its upper end. The member 12 also carries a pivot pin 13. As has already been pointed out, the pivot 13 connects the adjustable back 2 to frame member 7.

Rotatably secured in the lower end of the frame members 7 is a lock shaft 14 having an eccentric extension 15 journaled in an opening with which the member 7 is provided. Lock nuts may be employed to maintain the extension 15 within the opening. The lower enlarged end of the adjustable back 2 is preferably provided with an elongated slot 16 provided with notches 17. The lock shaft 14, at the point where it extends through the slot 16, is preferably cut away on one side to form an edge 18 adapted to engage the notches 17. An actuating treadle bar 19 may be connected to the lock shaft 14 by any suitable means. In the illustration given, the bar 19 is equipped with a collar 20 adapted to receive shaft 14 and which may be adjustably secured thereto by means of a set screw 21. If desired, a depending guard 22, equipped with a slot adapted to receive the bar 19 to prevent side movement thereof, may be employed.

Springs may be employed to maintain the back 2 and the treadle bar 19 in the desired position. In the illustration given, a long spring 23 connects an extension 24 at the lower end of the adjustable back member 2 to each side member 7. This spring urges adjustable back 2 toward a forward position. A relatively short spring 25 connects the bar 19 to the base plate 26 and draws the bar 19 upwardly.

The base frame also carries metal side members 27 below the arm members 5 and 6. Suitable mechanism for locking the arm members in vertical position may be carried by the side members 27.

The arm 6 is provided with a pair of metal straps 28 which are equipped at their inner ends with enlarged eccentric collars 29 adapted to receive pivot pins 11 and 13 carried by the metal strips 8 and 12 respectively. Each of the collars 29 is preferably provided with a cam surface adapted to engage the spring flange 30 of the metal strips 8 and 12.

Any suitable means may be employed for locking the arms 6 to the side member 27. As illustrated in Fig. 8, the arms 6 may be provided with a plunger 31 which is equipped with a cam surface and which is urged in a downward position by spring 32. The front face of arm 6 is preferably provided near its lower side with a metal plate or flange 33 which has a depending lip 34 which overlaps the side member 27. The plate 33 may be slotted at 35 to receive a pin 36 with which the plunger 31 is equipped.

In order to force the plunger member 31 out of engagement with the side member 27,

a sliding bar 37, as illustrated more clearly in Fig. 7, may be employed. The bar 37 may be provided with slots 38 adapted to receive studs 39 which are equipped with retaining heads. The bar 37 is preferably provided with a button extension 40 which passes through an opening in the front flange of side member 27. A spring 41 is employed to urge the slide bar 37 in a forward position. A slide bar 37 is provided with a cam edge 42 which is adapted to engage the plunger 31 and to force it out of engagement with the member 27.

The preferred construction, the side posts 7 are preferably secured at a slight rearwardly angle, as shown more clearly in Figs. 3 and 5. With the construction, the back 6, when it is swung back to form the back of an aisle-seat, is also inclined rearwardly.

The arm or arm-seat 5, which forms the seat of the aisle-seat, is illustrated more clearly in Fig. 10 and the following figures. In the illustration given, the arm 5 is provided with straps 43 which are provided at their lower ends with depending ears or grapples 44 preferably formed integrally with the straps 43. The ears or grapples 44 are perforated to receive a pivot bar 45. Springs 46 are connected to ears 44 and the side frame member 27 and draw the arm 5 toward vertical position.

The side member 27 is preferably provided with a plate 47 which is equipped with a pair of flange members 48 turned at right angles to plate 47. The flanges 48 are provided with slots 49 adapted to receive the pivot bar 45. The flanges lie adjacent the ears 44 of metal straps 43. Also secured to plate 47 are metal loops 50. A link member 51 is pivotally connected to the lower portion of each of the flanges 48 and to the ears 44 in the manner shown more clearly in Figures 15 and 16.

A locking bar 52, of the form illustrated in Fig. 11 may be employed, if desired, to lock the arm 5 to the side member 27. The bar 52 is preferably provided with a pair of depending flanges 53 equipped with notches 54. The front end of bar 52 may be turned at right angles to form a stop 55. The central flange 53 may be provided with a perforated flange 56 which is turned at right angles to flange 53 and which is adapted to receive through its opening 57 the pivot pin 45. As illustrated more clearly in Figures 14, 17 and 18, the notched flange 53 is adapted to engage the metal loop 50 when the arm 5 is raised to vertical position. A spring 58, which is carried by the pivot pin 45 engages the flange 56 of the locking bar 52 and urges it toward the metal loops 50. Preferably the lower portion of each flange 53 is provided with a cam sur-

face to enable it to readily engage the metal loops 50.

In order to release the notched flanges 53 from engagement with metal loops 50, a spring-pressed plunger 59 may be secured in the forward wall of side member 27 so as to engage, when pressed inwardly, the flange 55 of locking strip or bar 52.

In the operation of the apparatus, the adjustable back 2, which is normally held in locked position by the engagement of the edge 18 of the locking bar 14 with the notches 17 at the lower end of the adjustable back 2, may be released by depressing the treadle bar 19. As the bar 19 is moved downwardly, the eccentrically mounted lock bar 14 is turned so as to move the edge 18 out of engagement with the notches 17. When the lock bar 14 is not in engagement with the notches 17, the back 2 may be swung in a forward or rearward direction. When the desired angular position is reached, the back may be locked in that position by releasing the treadle bar 19. The spring 25 urges the lock bar 14 into engagement with the notches 17.

The arm 6, when swung outwardly toward the aisle, forms the back for the aisle-seat. When swung inwardly, the lower cam surface of the plunger 31 slides over the upper edge of member 27 and snaps into position behind the member 27. The lip 34 of plate 33, together with the plunger 31 holds the side arm 6 rigidly in position and prevents rattling. As an additional guard against looseness and rattling, the cam shoulders or collars 29 of the metal straps 28 engage the spring flanges 30 of the strips 8 and 12 and spring them slightly when the arm 6 is brought to locked position. To release the arm 6, the locking strip 37 is pressed so that the inclined or cam surface 42 strikes the plunger 31 and causes it to be retracted.

The arm seat 5 is normally urged toward vertical position by springs 46 and the slide bar 42, being urged by spring 58 on the pivot pin 45, is urged in a forward direction so that the notched flanges 53 engage the metal loops 50. To release the arm 5 from engagement with side member 27, the plunger 59 is pressed so as to engage lock bar 52 and thus to press the notched flanges 53 out of engagement with metal loops 50. The arm 5 may then be swung downwardly against the tension of springs 46 into a horizontal position. As the arm-seat 5 is lowered, the link arms 51 raise the ears 44, as shown in Fig. 15 and thus enables the lower portion of arm 5 to clear the top edge of side member 27. To permit the lower portion of arm 5 to clear the top edge of side member 27 more easily, the bottom edge of the arm 5 may be cut away along the inclined line 60.

In the operation of the arm-seat 5, it will be observed that when this member is lowered to horizontal position, the bottom surface of the member 5 bears against the outer wall of the side member 27, while the depending ears 44 serve as hooks or flanges lying adjacent the inner wall of side member 27. With this construction, the seat member 5 is well braced and affords a secure and sturdy seat.

The apparatus described is particularly adapted for use in motor busses and the like because of the tight construction which prevents rattling and which is able to endure a strain of constant and hard use.

The foregoing detailed description has been given for clearness of understanding only and no unnecessary limitations should be understood therefrom, but the appended claim should be construed as broadly as permissible in view of the prior art.

I claim:

In combination with the side frame of a chair, a convertible arm-seat adapted to assume vertical and horizontal positions, a pivot member connected to said arm-seat, retaining flanges on said side member provided with slots adapted to receive said pivot member, and link means pivotally connected to said side frame and said arm-seat and adapted to raise the lower portion of said arm-seat to clear said side frame when said arm-seat is passed from vertical to horizontal positions.

In testimony whereof, I hereunto set my hand this 21st day of July, 1930.

CHARLES R. HULTGREN.