

April 7, 1953

C. H. ARMSTRONG
COMBINATION CHILD'S CHAIR

2,633,899

Filed Sept. 9, 1947

3 Sheets-Sheet 1

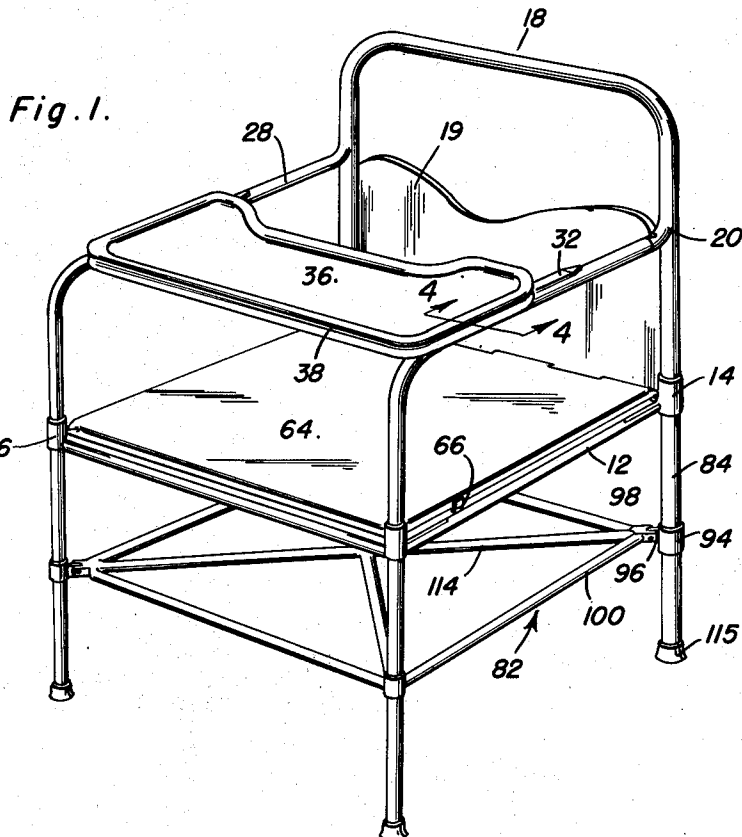


Fig. 2.

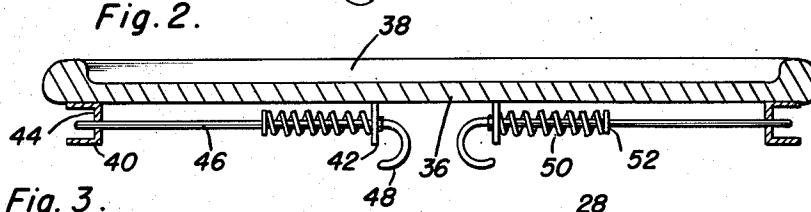
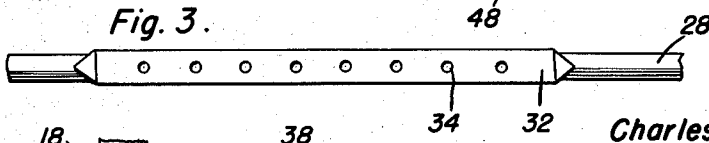


Fig. 3.



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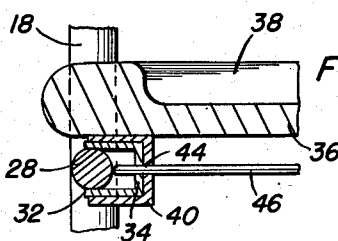


Fig. 4.

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Fig. 5.

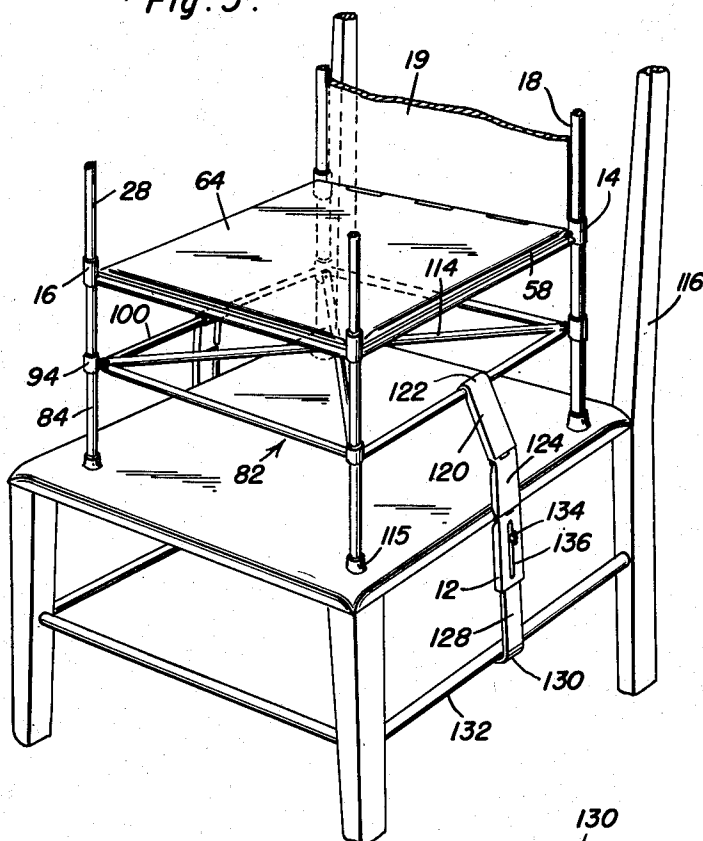


Fig. 6.

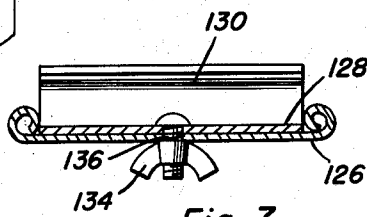
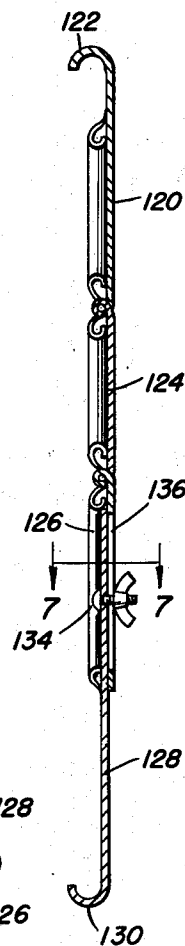
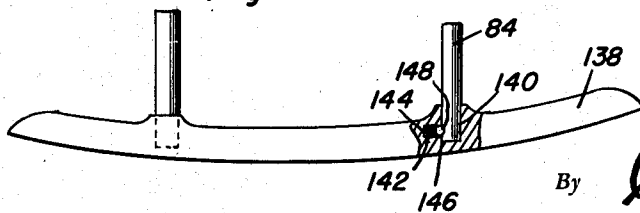


Fig. 7.

Fig. 8.



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Fig. 9.

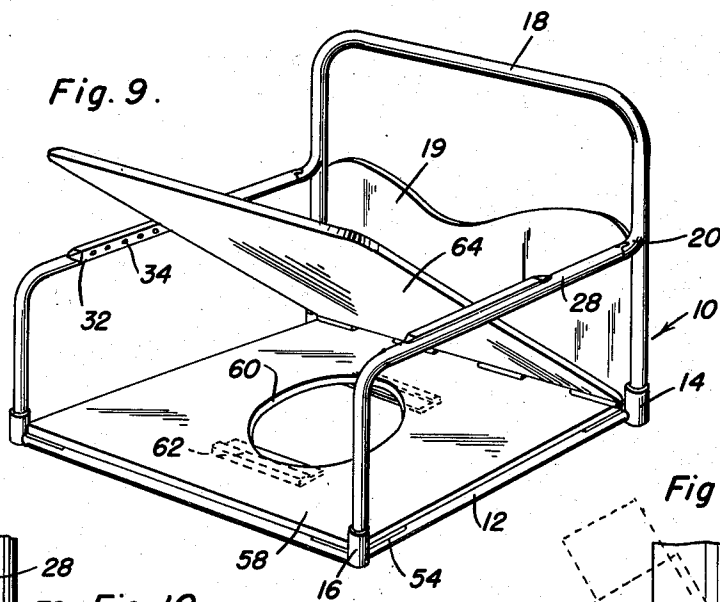


Fig. 10.

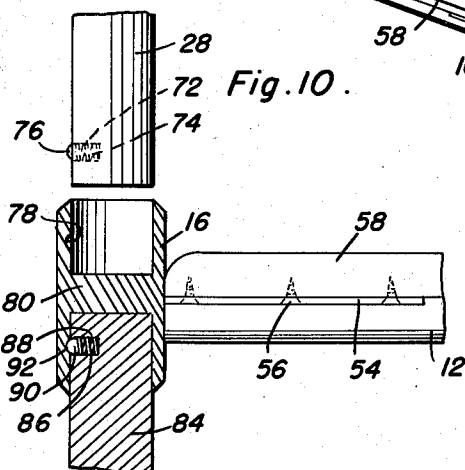


Fig. 11.

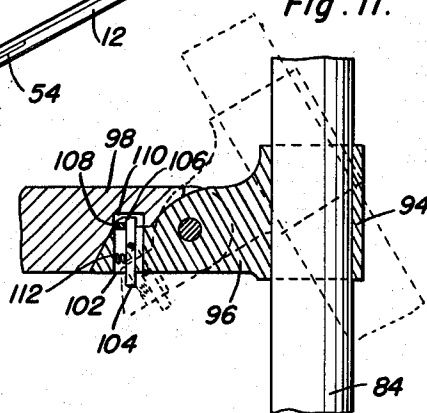


Fig. 12.

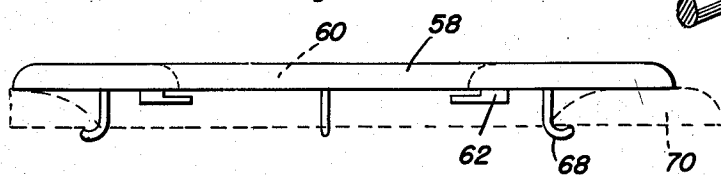
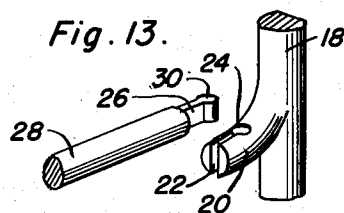


Fig. 13.



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UNITED STATES PATENT OFFICE

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COMBINATION CHILD'S CHAIR

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Application September 9, 1947, Serial No. 772,931

8 Claims. (Cl. 155-127)

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This invention relates to new and useful improvements in combination chairs for children and the primary object of the invention is to provide a chair so designed as to permit the same to be used as a high chair, toilet seat, rocker or play seat.

Another important object of the present invention is to provide a combination child's chair all parts of which are quickly and readily disassembled and folded into a compact article so as to permit convenient and easy carrying thereof while traveling or when not in use.

A further object of the present invention is to provide a combination child's chair including a seat frame, a base therefor and novel and improved means for lockably securing the base to the seat frame.

A still further aim of the present invention is to provide a combination chair for children that is simple and practical in construction, strong and reliable in use, light in weight, neat and attractive in appearance, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the combination chair constructed in accordance with the present invention;

Figure 2 is an enlarged longitudinal vertical sectional view taken substantially through the center of the tray used in conjunction with the present invention;

Figure 3 is a side elevational view of the guide member fixedly secured to the arm rest, and with parts of the arm rest broken away and shown in section;

Figure 4 is an enlarged longitudinal vertical sectional view taken substantially on the plane of section line 4-4 of Figure 1;

Figure 5 is a perspective view showing the present invention applied to a chair, and with parts of each broken away and shown in section;

Figure 6 is a longitudinal vertical sectional view of the fastening means for attaching the present invention to a chair;

Figure 7 is a transverse horizontal sectional view taken substantially on the plane of section line 7-7 of Figure 6;

Figure 8 is a fragmentary side elevational view showing the manner in which the rockers are applied to the base portion;

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Figure 9 is a perspective view of the upper portion of the present device removed from the base, and showing the outer seat in a partially raised position;

Figure 10 is an enlarged fragmentary side elevational view showing the manner in which the upper portion of the device is removably secured to the base;

Figure 11 is an enlarged fragmentary side elevational view showing the manner in which the base portion of the device is collapsible;

Figure 12 is a side elevational view of the base seat applied to a training seat (shown in dotted lines); and

Figure 13 is a fragmentary perspective view showing the manner in which the arm rests are applied to the back frame.

Referring now to the drawings in detail, wherein for the purpose of illustration, there is disclosed a preferred embodiment of the present invention, the numeral 10 represents the upper portion of a child's chair generally, comprising a substantially rectangular seat frame 12, preferably of tubular construction, having a pair of vertically disposed sleeves 14 fixedly secured to its rear corners, and a similar pair of vertically disposed sleeves 16 fixedly secured to its forward corners.

The numeral 18 represents a substantially U-shaped back frame having its terminal portions engaging the rear sleeves 14, and to this frame there is secured a back rest 19. The manner of locking the terminal portions of the frame 18 relative to the sleeves 14 will be more fully described later in the description.

Projecting outwardly and forwardly from substantially the center of each leg of frame 18 are arcuate extensions 20 having slots 22 in their outer ends terminating in substantially cylindrical grooves 24. Slots 22 engage extensions 26 projecting outwardly from one of the ends of a pair of substantially L-shaped arm rests 28 and grooves 24 engage the tongue or cylindrical lug 30 at the outer end of the extensions 26, as best shown in Figure 13 of the drawings. The opposite free ends of the arm rests 28 engage the forward sleeves 16, and are frictionally locked in position thereto in a similar manner as the terminals of the frame 18 are locked to sleeves 14, which will later be more fully described.

Rigidly secured to the arm rests 18 is a pair of opposed substantially channel-shaped guides 32 having a plurality of longitudinally spaced apertures 34. The numeral 36 represents a tray having a raised annular outer edge 38. Fixedly secured to the underside of the tray is a pair of

channel members 40 that slidably engage guides 32. Slidably mounted in ears 42 and in apertures 44 provided in the channel members 40 is a pair of locking pins 46 having their inner adjacent ends bent to form a finger gripping loop 48. Coil springs 50 embracing the pins 46 are biased between ears 42 and retaining plates 52 fixedly carried by the pins, for urging the outer ends of the pins through apertures 44 to selectively engage apertures 34 in the guides 32, as best shown in Figure 4 of the drawings.

Recessed in slots at the ends of the seat frame 12 are bracket arms 54 suitably secured to the sleeves 14 and 16. These arms are secured by fasteners or the like 56, to the underside of a base seat 58, for holding the seat in a fixed position relative to the seat frame. This seat is also provided with a central opening 60 with rounded edges to conform to the hind portion of an infant. A pair of spaced parallel guides 62 are preferably secured to the lower face of the base seat adjacent opening 60 and slidably engage the flanged portion of a receptacle (not shown) disposed beneath the opening.

Hinged at the rear edge of the base seat 58 is a second seat or closure 64 having a usual latch 66 at one edge for engaging one edge of the base seat 58, when the seat 64 is in a lowered position. This latch engages one leg of the frame 18 when the seat 64 is in a raised or unused position. Also projecting downwardly from the lower face of the base seat 58 is a plurality of resilient hooks 68 adjacent opening 60, that frictionally engage the edge of an opening provided in a training seat 70 shown in dotted lines in Figure 12.

Reference is now directed to Figure 10, wherein there is disclosed the manner in which the ends of the arm rests 28 are lockably secured to the sleeves 16, and the manner for also locking the ends of frame 18 to the sleeves 14. Although this figure illustrates more particularly the method of locking the ends of the arm rests to the sleeves 16, it is understood, that the same method will be employed for locking the ends of the back rest frame 18 to sleeves 14.

Mounted in bores 72 in one terminal portion of the arm rests 28 and in both terminals of the frame 18 are coil springs 74 which are secured to balls or spherical elements 76, a portion of which normally projects outwardly from bores 72. These balls frictionally engage recesses or detents 78 provided in the inner periphery of the upper portions of sleeves 14 and 16. It should be noted, that bearing plates 80 are fixedly secured in the center of the sleeves to limit the amount of the arm rests and frame 18 that are engaged in the sleeves.

The numeral 82 represents the base for the upper portion of the device generally. This base comprises pairs of legs 84 having bores 86 at their upper ends in which are loosely mounted coil springs 88 urging balls 90 for snap locking the legs in the detents 92 in the lower inner portions of the sleeves 14 and 16. Fixedly secured to substantially the center of legs 84 are sleeves 94 having outwardly projecting integral extensions 96 that are pivotally mounted between bifurcated extensions 98 projecting diagonally outward from the corners of a substantially rectangular bracing frame 100. Extensions 96 are provided with apertures 102 in which are pivotally mounted locking arms 104 having one of their terminal portions projecting outwardly from the lower portion of extension 96 to provide a finger engaging portion, and the upper terminals of the

arms 104 are turned outwardly to form hooks 106 that engage lips or shoulders 108 projecting into recesses 110 provided in extension 98. The recesses 110 register with the apertures 102 so that the extensions 96 and 98 may be engaged as shown in Figure 11. Coil springs 112 mounted in apertures 102 normally urge the arms 104 so that the hooks 106 may engage the lips 108. Obviously, by pulling the lower terminals of the arms 104 against the frame 112 to compress the springs, hooks 106 will disengage lips 108 and the legs may be folded diagonally inward, facilitating convenient packing of the base when not in use. It should be noted, that the bracing frame is provided with diagonal cross members 114 that prevent disarrangement of the bracing frame and the legs 84. Further, it should be noted that to the lower terminals of legs 84 are frictionally engaged rubber cups 115 that prevent sliding movement of the device on a floor surface or the like and also prevent marring of the surface on which the device is supported.

Reference is now directed to Figures 5, 6 and 7 wherein there is disclosed the manner for attaching the device to a supporting structure such as a chair 116. In this embodiment, the supporting or fastening member comprises an upper substantially channel-shaped member 120 terminating in a hook 122 at one end for engaging frame 100. The opposite end of the upper channel member 120 is hinged to an intermediate channel member 124 which in turn is hinged to a lower channel member 126. Slidably mounted in the lower channel member 124 is a plate 128 terminating at its lower end in a hook 130 for engaging a rung 132 of a chair 116. A bolt and wing nut 134 fixedly carried by the plate 128 is slidably mounted in a longitudinal slot 136 provided in the lower channel member for selective adjustment of the plate relative to said lower channel member 126. Preferably, the side edges of the channel members are rolled inwardly to prevent harmful edges protruding therefrom.

Reference is now directed to Figure 8, wherein there is disclosed the manner in which the device may be converted into a rocking seat. In this embodiment, the numeral 138 represents a rocker or arcuate runner having bores 140 that engage the lower terminal portions of pairs of legs 84, it being noted, that the cups 115 are first removed from the legs 84. Recesses 142 are provided in the rockers communicating with bores 140, and in which there are mounted coil springs 144 urging balls 146 that frictionally engage detents 148 provided in the lower terminals of the legs 84.

For use of the device as a high chair, the seat 64 is lowered and the base is applied to the chair 116 to support the same in an elevated position as shown in Figure 5. Also in this position, the seat 64 may be raised facilitating the use of the device as a toilet seat.

Obviously, as shown in Figure 1 the device is in position to be used as a play chair, and as shown in Figure 9 for use as a toilet seat which may be applied to a training seat or a commode seat.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the construction, operation and advantages of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

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It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A chair comprising a substantially rectangular seat frame, sleeves secured to the corners of said seat frame and including a forward pair of sleeves and a rear pair of sleeves, an inverted substantially U-shaped back frame having its ends received in said rear pair of sleeves, rigid horizontal extensions projecting laterally from and held stationary on the leg portions of said back frame and having vertical key slots therein, brace means carried by said extensions and the forward pair of sleeves for bracing the back frame to the seat frame, and means carried by said last mentioned means for retaining a child relative to said seat frame and said back frame, said brace means including a pair of L-shaped members and lugs on the longer legs of said L-shaped members received in said key slots.

2. A chair comprising a substantially rectangular seat frame, sleeves secured to the corners of said seat frame and including a forward pair of sleeves and a rear pair of sleeves, an inverted substantially U-shaped back frame having its ends received in said rear pair of sleeves, rigid horizontal extensions projecting laterally from and held stationary on the leg portions of said back frame, arm rests carried by said forward pair of sleeves, means detachably securing said arm rests to said extensions, means overlying and slidably carried by said arm rests for retaining a child relative to said back frame and said seat frame, and means for locking said last-mentioned means slidably adjusted on said arm rests.

3. A chair comprising a substantially rectangular seat frame, sleeves secured to the corners of said seat frame and including a forward pair of sleeves and a rear pair of sleeves, an inverted substantially U-shaped back frame having its ends received in said rear pair of sleeves, rigid horizontal extensions projecting laterally from and held stationary on the leg portions of said back frame, arm rests carried by said forward pair of sleeves, means detachably securing said arm rests to said extensions, means carried by said arm rests for retaining a child relative to said back frame and said seat frame, a pair of channel members fixed to said last-mentioned means and slidably received on said arm rests, and spring urged locking members slidably supported by said channel members, said arm rests having longitudinally spaced openings for selectively receiving said locking members.

4. A collapsible chair comprising a substantially rectangular seat frame, cylindrical members secured to the corners of said seat frame and including a forward pair of cylindrical members and a rear pair of cylindrical members, each of said cylindrical members having an upper recess and a lower recess, an inverted U-shaped back rest having its ends received in the upper recesses of said rear pair of cylindrical members, rigid horizontal extensions projecting laterally from and held stationary on the leg portions of said back frame and spaced above the rear cylindrical members, a pair of substantially L-shaped brace members having their shorter legs received in the upper recesses of said forward pair of cylindrical members, interlocking means

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between the longer legs of said brace members and said extensions, and a base including forward and rear pairs of uprights having upper ends received in the lower recesses of said forward and rear pairs of cylindrical members.

5. A collapsible chair comprising a substantially rectangular seat frame, cylindrical members secured to the corners of said seat frame and including a forward pair of cylindrical members and a rear pair of cylindrical members, each of said cylindrical members having an upper recess and a lower recess, an inverted U-shaped back rest having its ends received in the upper recesses of said rear pair of cylindrical members, rigid horizontal extensions projecting laterally from and held stationary on the leg portions of said back frame and spaced above the rear cylindrical members, a pair of substantially L-shaped brace members having their shorter legs received in the upper recesses of said forward pair of cylindrical members, interengaging means between the longer legs of said brace members and said extensions, a base including forward and rear pairs of uprights having upper ends received in the lower recesses of said forward and rear pairs of cylindrical members, means removably securing the upper ends of said uprights to the forward and rear pairs of cylindrical members, means for detachably securing the ends of said back frame to the rear pair of cylindrical members, and means for releasably securing the shorter legs of said brace members to the forward pairs of cylindrical members.

6. A collapsible chair comprising a substantially rectangular seat frame, cylindrical members secured to the corners of said seat frame and including a forward pair of cylindrical members and a rear pair of cylindrical members, each of said cylindrical members having an upper recess and a lower recess, an inverted U-shaped back rest having its ends received in the upper recesses of said rear pair of cylindrical members, extensions projecting laterally from the leg portions of said back frame and spaced above the rear cylindrical members, a pair of substantially L-shaped brace members having their shorter legs received in the upper recesses of said forward pair of cylindrical members, interlocking means between the longer legs of said brace members and said extensions, and a base including forward and rear pairs of uprights having upper ends received in the lower recesses of said forward and rear pairs of cylindrical members, said base including a substantially rectangular bracing frame, means pivotally securing the uprights to the corners of said bracing frame, and means for locking the uprights perpendicular to said bracing frame.

7. A seat comprising a substantially rectangular seat frame, forward and rear sleeves secured to the corners of said seat frame, a substantially rectangular bracing frame underlying said seat frame, uprights pivotally secured to the corners of said bracing frame, said uprights having upper ends releasably mounted in said sleeves, and means for locking the uprights perpendicular to said bracing frame.

8. A seat comprising a substantially rectangular seat frame, forward and rear sleeves secured to the corners of said seat frame, a substantially rectangular bracing frame underlying said seat frame, uprights pivotally secured to the corners of said bracing frame, said uprights having upper ends releasably mounted in the lower ends of said sleeves, a substantially U-shaped back frame hav-

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ing ends releasably mounted in the upper end of said rear sleeves, a pair of substantially L-shaped arm rests having forward ends releasably mounted in the upper ends of the forward sleeves and rear ends detachably secured to said back frame, and means for locking the up-rights perpendicular to said bracing frame.

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