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2,728,378

HIGH CHAIR

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2 Sheets-Sheet 1

Fig. 1.

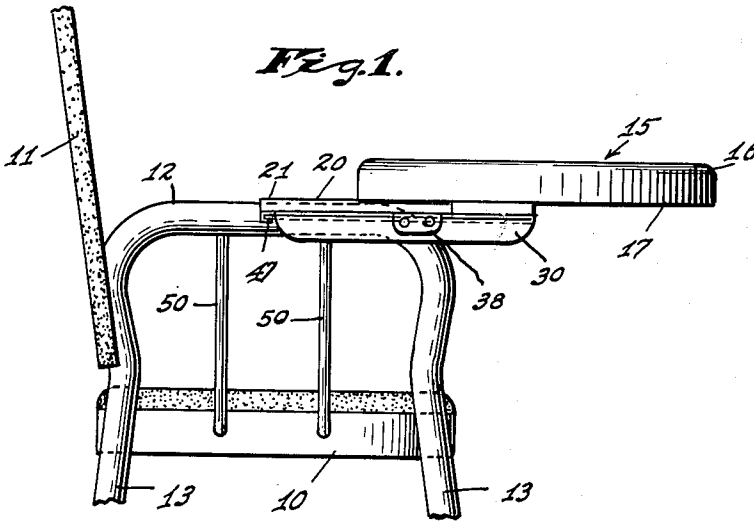


Fig. 2.

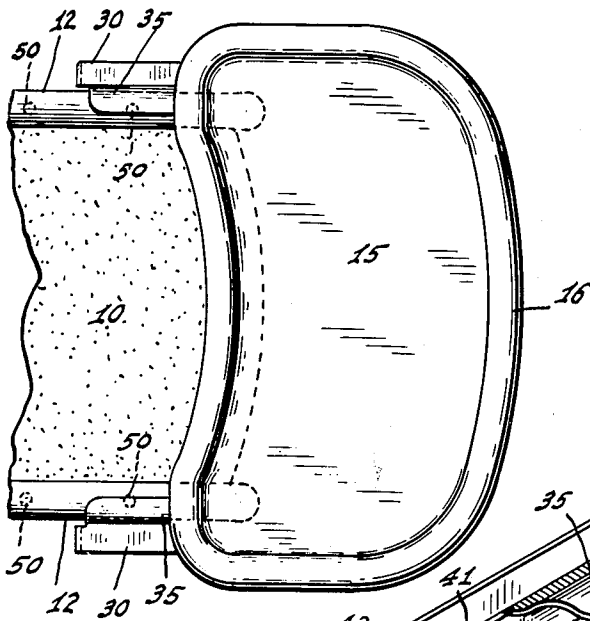
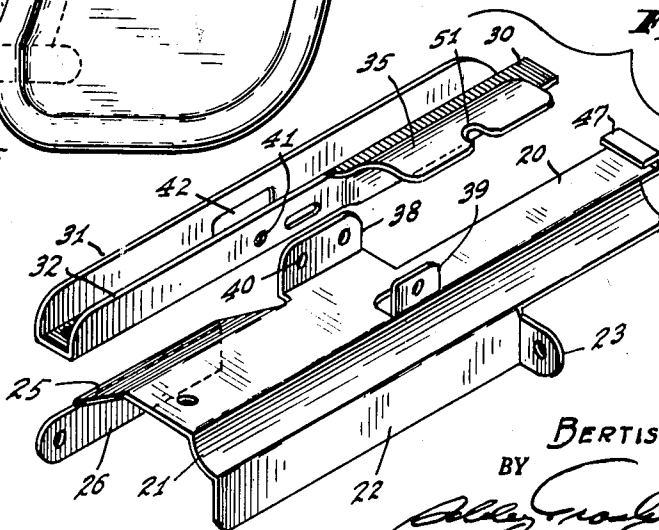


Fig. 7.



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HIGH CHAIR

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7 Claims. (Cl. 155—127)

It is an object of my invention to produce a child's chair having a tray which can readily be applied to or removed from the arms of the chair. A further object of the invention is to produce a tray which can be located on the arms in any of a plurality of positions of adjustment forwardly and rearwardly of the chair. A further object of the invention is to produce a tray mounting which will provide a strong and rigid support for the tray in different positions of tray-adjustment. Still another object of the invention is to produce a tray mounting which lends itself to manufacture from sheet-metal parts and which will be particularly suitable for use in supporting a tray from chair-arms formed of metal tubing.

In carrying out the invention in its preferred form, I employ a chair provided with horizontally extending arm-ports conveniently formed of metal tubing. The tray for application to the chair-arms is preferably formed as a sheet-metal stamping, and is provided at its ends with brackets adapted to rest on the horizontal arm-ports. A keeper is pivotally connected to each bracket on a vertical axis, each keeper having an arm-engaging portion remote from its axis of connection to the bracket. The arm-engaging portions of each bracket and its associated keeper complement each other when the keeper is in operative position to form a generally semicircular channel which opens inwardly to lie against the outer face of the adjacent chair-arm, the arm-engaging portion of the keeper extending downwardly and inwardly beneath the arm and the arm-engaging portion of the bracket extending upwardly and inwardly over the arm. Suitable spring means acting between each bracket and its associated keeper urges the keeper inwardly of the chair to bring the arm-engaging portion of the keeper into operative position. The chair and arm-engaging portions of the keeper have co-operating provisions interengageable to hold the tray in any of a plurality of fixed positions of fore-and-aft adjustment, the arrangement being such that those provisions can be disconnected by swinging the keepers outwardly of the chair in opposition to the aforesaid spring means.

In the accompanying drawings, which illustrate the invention:

Fig. 1 is a fragmental side elevation of a chair with the tray mounted thereon;

Fig. 2 is a fragmental plan view showing the chair and tray;

Fig. 3 is a fragmental underneath plan view on an enlarged scale showing the keeper in operative position;

Fig. 4 is a view similar to Fig. 3 showing the keeper in released position;

Fig. 5 is a fragmental view illustrating an intermediate position of fore-and-aft adjustment;

Fig. 6 is a fragmental vertical section; and

Fig. 7 is an exploded view showing a bracket and keeper in separated condition.

In the chair shown in the drawings, a seat 10 and back 11 are attached to and supported by two side members each comprising a length of metal tubing bent into a gen-

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eral U-shape to provide an intermediate, horizontally extending arm portion 12 and downwardly extending legs 13. The tray 15 shown is conveniently a sheet-metal stamping formed to provide an upwardly extending marginal bead 16 terminating in a downwardly projecting peripheral flange 17.

To support the tray from the arms 12, I secure to the tray a pair of similar brackets 20. Each of these brackets is conveniently formed of sheet metal and provided along one edge with a transversely curved flange 21 adapted to extend over and fit against the outer upper quadrant of the cross-sectional shape of the tube 12. For a portion of its length, the flange 21 has an upwardly extending continuation 22 terminating at one end in an out-bent ear 23 adapted to be secured to the tray-flange 17 at the rear of the tray, as by means of a rivet 24. The body of the bracket 20 and its associated flange 21 desirably extend rearwardly well past the ear 23.

Opposite the flange 21, the bracket 20 is provided with an extension 25 terminating in an up-bent ear 26 adapted to lie against and to be secured to the inner face of the flange 17 at the end of the tray. As shown, attachment of the ear 26 to the tray flange is effected by means of a rivet 27.

Associated with each bracket 20 is a keeper 30 conveniently formed of sheet metal and provided along its side edges with spaced flanges 31 and 32. The front end of the keeper is pivotally secured to the bracket, as by a rivet 34. Near its rear end, the keeper-flange 32 is provided with an extension 35 curved to conform to and fit against the outer lower quadrant of the chair-arm. The flange 21 of the bracket and the flange portion 35 of the keeper complement each other, when the keeper is in operative position, to define a generally semi-circular seat extending for approximately 180° of the circumference of the arm 12.

Rearwardly from the extension 25, each bracket 20 is provided with opposed, downwardly bent ears 38 and 39 between which the keeper 30 is loosely received. The ear 38 has an opening 40 therein, and in general alignment with such opening 40, the remote flange 32 of the keeper is provided with an opening 41 of similar size. Opposite the opening 41 in the flange 32, the keeper-flange 31 is provided with an elongated slot 42 having a width greater than the diameter of the openings 40 and 41. A headed pin 43 extending through the openings 40 and 41 and the slot 42 serves as a support for a compression spring 44 acting between the ear 38 and the arm engaging flange 32 of the keeper to oppose outward swinging movement of the rear end of the keeper. The slot 42 in the keeper-flange 31 is wide enough and long enough to avoid interference with the spring 44.

If desired, the ears 38 and 39 may be provided with aligned openings for receipt of a headed guide pin 46 serving to restrict downward movement of the rear end of the keeper and relieve the rivet 34 of bending strains and stresses. Further support for the rear end of the keeper may be provided by forming on the rear end of the bracket 20 a lip 47 shaped to embrace loosely the rear end of the keeper 30, the flanges 31 and 32 terminating short of the lip 47 so as not to interfere with movement of the keeper into and out of association with the lip.

As noted above, the keeper and the chair-arm are provided with interengaging provisions for retaining the tray in a fixed position fore-and-aft of the chair. The provisions shown provide three positions of adjustment of the tray. They comprise a pair of abutment rods 50 extending generally vertically between the arm 12 and seat 10 and spaced apart a distance sufficient to receive between them the flange-extension 35 of the keeper. Intermediate its length, such flange-extension 35 is provided

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with a notch 51 in which either of the rods 50 may be received.

To apply the tray to the chair, the hands are applied to the rear edge of the tray 20 with the fingers bent to engage the outer keeper-flange 31. With the aid of the fingers, the keepers are swung outwardly to the positions indicated in Fig. 4, whereupon the tray is applied to the chair with the curved flanges 21 of the brackets resting on the chair-arms. By moving the tray inwardly or outwardly on the arms 12, the notches 51 in the keepers can be brought into alignment with either the front or the rear rods 50, or the curved extension 35 of the keeper flange may be positioned in line with the space between the two rods 50; as indicated in Fig. 5. Upon releasing the pressure exerted by the fingers, the springs 44 urge the keepers inwardly, or to the positions indicated in Figs. 3 and 6, where the flange extensions 35 engage the arms. With release of the keepers, the tray will be firmly secured to the chair-arms. To remove the tray, it is necessary only to retract the keepers to a position shown in Fig. 4, whereupon the tray may be lifted upwardly or slid forwardly to clear the arms.

I claim as my invention:

1. In combination, a chair having parallel arms of circular cross-section, a tray, brackets secured to said tray and extending rearwardly therefrom, said brackets being spaced and shaped to fit simultaneously against the outer, upper quadrants of the cross-sectional shape of the arms to provide support for the tray and to locate it transversely of said arms, a keeper pivoted to each bracket on a vertical axis, each keeper having rearwardly of its axis an arm-engaging flange shaped to fit against the lower, outer quadrant of the cross-sectional shape of the arm, and spring means acting between each bracket and keeper and urging the said flange toward engagement with the adjacent arm.

2. The invention set forth in claim 1 with the addition of two abutments extending laterally of each arm in spaced relation therealong, said flange having a length permitting it to be received between said abutments to position said tray in an intermediate position along said arms, said flange being provided intermediate its length with a notch for alternative reception of said abutments to position said tray in one or the other of more extreme positions fore-and-aft adjustment.

3. In combination, a chair having arms, a tray, brackets on said tray, a keeper associated with each bracket and horizontally movable between operative and retracted positions, each keeper and its associated bracket having co-operating surfaces which when the keeper is in operative position complement each other to form an arm-receiving seat opening inwardly of the chair and extending in engagement with and at least partially over and partially beneath the received arm.

4. The invention of claim 3 with the addition that the

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seat-portion extending beneath the arm is on the keeper and the seat-portion extending over the arm is on the bracket.

5. In combination, a chair having arms, a tray, brackets on said tray, a keeper associated with each bracket and horizontally movable between operative and retracted positions, each keeper and its associated bracket having co-operating surfaces which when the keeper is in operative position form an arm-receiving seat opening inwardly of the chair and extending at least partially over and partially beneath the received arm, elongated abutments extending vertically from each arm in spaced relation therealong, means for securing the lower ends of such abutments in fixed position, said keeper having an arm-engaging flange having provisions co-operating with said abutments and operative to selectively position said tray along said arms.

6. In combination, a chair having arms, a seat, a tray, brackets on said tray, a keeper associated with each bracket and horizontally movable between operative and retracted positions, each keeper and its associated bracket having co-operating surfaces which when the keeper is in operative position form an arm-receiving seat opening inwardly of the chair and extending at least partially over and partially beneath the received arm, rods spaced along said arms and extending between said arms and the seat, said keeper having an arm-engaging flange having provisions co-operating with said rods and operative to selectively position said tray along said arms.

7. In combination, a chair having arms, a tray, brackets on said tray, a keeper associated with each bracket and horizontally movable between operative and retracted positions, each keeper and its associated bracket having co-operating surfaces which when the keeper is in operative position form an arm-receiving seat opening inwardly of the chair and extending at least partially over and partially beneath the received arm, abutments extending laterally of each arm in spaced relation therealong, said keeper having an arm-engaging flange having provisions co-operating with said abutments and operative to selectively position said tray along said arms, the movement of each of said keepers into said operative position being in a direction generally perpendicular to its associated chair-arm.

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