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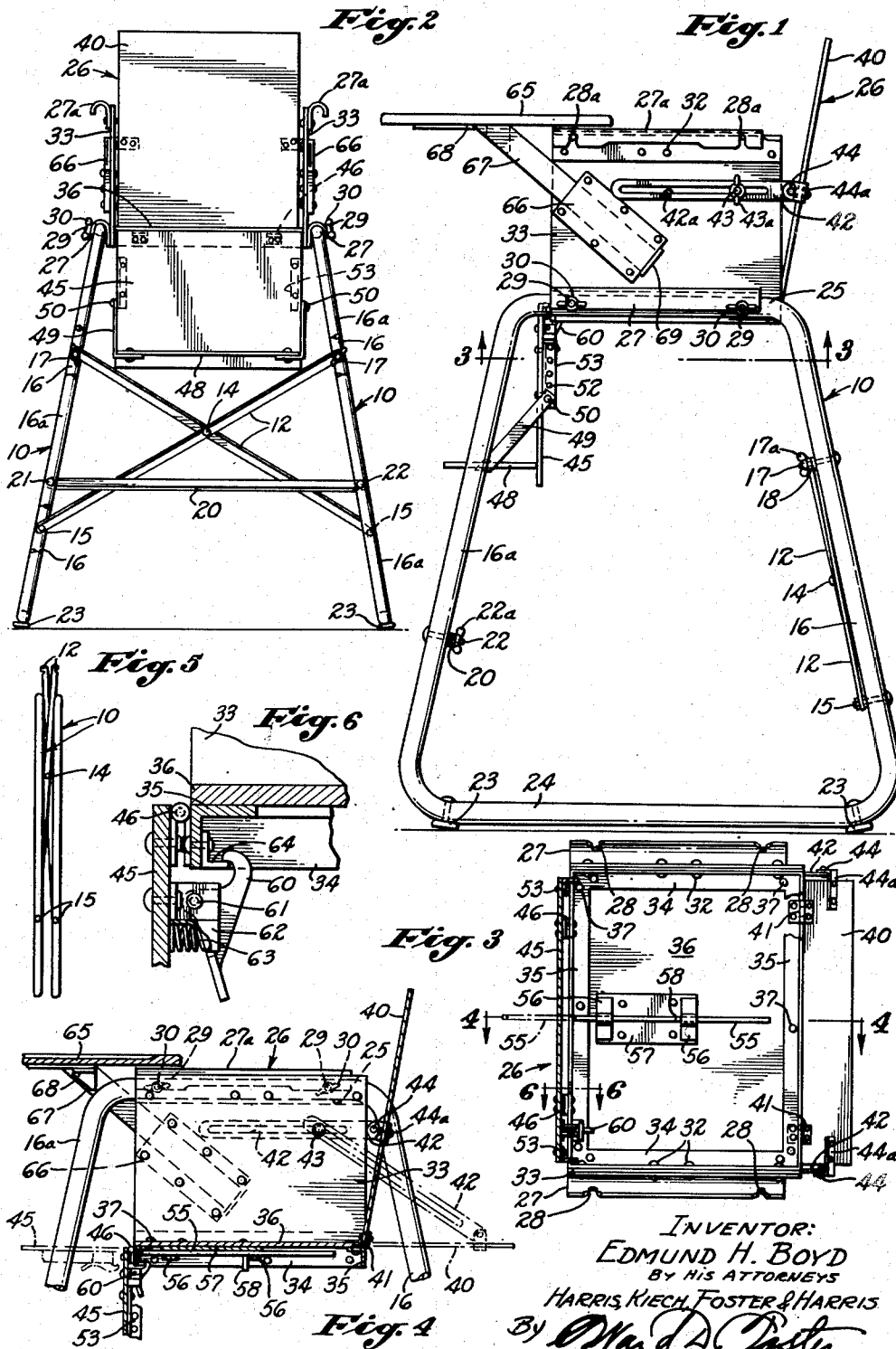
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CONVERTIBLE HIGH-LOW CHILD'S CHAIR AND SLEEPER

Filed July 22, 1950

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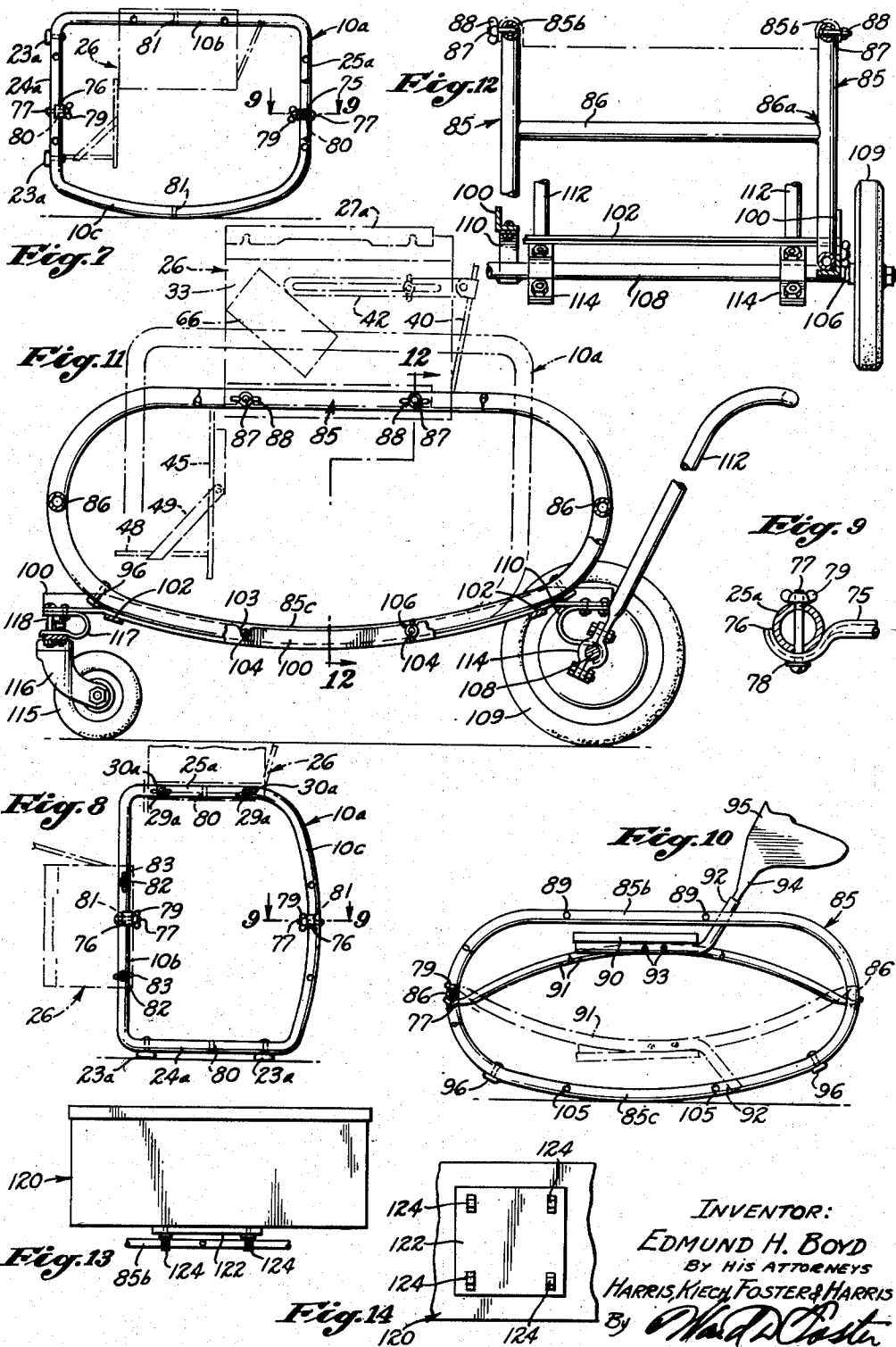
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CONVERTIBLE HIGH-LOW CHILD'S CHAIR AND SLEEPER

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6 Claims. (Cl. 155—38)

This invention relates to juvenile furniture as represented by high chairs, strollers, sleepers or bassinets, and the like. More particularly, the invention concerns combination structures which are easily convertible for different uses.

A particular object of this invention is to provide a novel, durable, high chair combination which may be easily converted.

Another object is to provide a high chair type of structure having a lower framework adapted to receive a seat structure in any one of several different positions.

A further object of the invention is to provide a convertible seat for a high chair which may be easily and quickly converted to provide a bassinet or sleeper type of arrangement.

It is also an object to provide a juvenile furniture device usable as a chair, sleeper, carriage, stroller, cradle, rocker, or the like, one form of frame being useful for all these arrangements.

Another object is to provide a convertible juvenile chair structure which may be largely collapsed, this including collapsing of a base or supporting unit in particular.

Other objects of the invention and the various features thereof will become apparent to those skilled in the art upon reference to the accompanying drawings wherein certain embodiments are illustrated.

In the drawings:

Fig. 1 is a side elevation of a chair of the present invention, wherein the seat unit thereof is disposed on the upper portion of a base unit in such relation as to provide a high chair;

Fig. 2 is chiefly a front elevation of the chair shown in Fig. 1, as seen from the left of Fig. 1, portions being broken away;

Fig. 3 is a bottom plan as indicated by the line 3—3 of Fig. 1;

Fig. 4 is a vertical, longitudinal section taken on the line 4—4 of Fig. 3 and indicating in broken lines an adjusted position of parts wherein the seat unit is converted into a sleeper arrangement;

Fig. 5 is an edge elevation showing the base unit in collapsed condition;

Fig. 6 is a fragmentary, vertical section taken on the line 6—6 of Fig. 3;

Fig. 7 is an elevation on a reduced scale of a modified form of frame member construction which is adapted for all of the purposes of serving as a chair base, serving as a rocker or cradle mounting, and also serving for use in a stroller, this frame member being shown in position to serve as a rocker or cradle mounting;

Fig. 8 is an elevation of the frame member of Fig. 7 in position to serve as a base unit for a chair;

Fig. 9 is a fragmentary, vertical, sectional detail on a large scale, showing means employed for mounting cross connecting bars as indicated by the lines 9—9 of Figs. 7 and 8, and also used to mount a rocking horse element as shown in Fig. 10;

Fig. 10 is an elevation on a scale similar to that of Figs. 7 and 8 of a modified frame structure constituting a base unit for a rocker, a rocking horse element being shown as mounted in operative position, an inoperative position thereof being indicated in broken lines, and parts being broken away at the left to reveal the mounting for a rocking horse element;

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Fig. 11 is a side elevation showing the rocker unit of Fig. 10 stripped of its rocking horse element and mounted on a carriage frame to form a carriage or stroller, the seat unit of Figs. 1 to 5 being indicated in broken lines;

Fig. 12 is a vertical cross section of the stroller of Fig. 11 taken from the line 12—12 of Fig. 11;

Fig. 13 illustrates how a cradle unit may be mounted upon frame members of Figs. 7 to 12 to provide either a rockable cradle structure with the frame members of Figs. 7 and 10, or to provide a carriage type of device when positioned longitudinally on the carriage of Figs. 11 and 12; and

Fig. 14 is a detail indicating the location of mounting means carried by the cradle unit of Fig. 13.

As best indicated in Figs. 1 and 2, the base unit of a high chair structure is composed of two spaced, vertical side frame members 10 of trapezoidal form constructed preferably of tubular metal. When disposed in operative position, as seen in Fig. 2, the top rails of the frame members 10 lean toward each other so that the vertical leg components of the frame members, as seen from the front or rear, extend outward and downward in much the same relationship as seen from the sides. A modified form of frame member 10a, which is illustrated in upright position in Fig. 8, also may be used in a pair to constitute the base unit of the chair structure, either the straight vertical rail 10b or the curved vertical rail 10c being used at the front of the chair, as may be preferred.

As illustrated in Figs. 1 and 2, the two spaced frame members 10 are provided with spacing and positioning means to retain them in assembled relationship, such spacing means being movable to provide for collapsing of the two frame members 10 into the compact shipping relationship indicated in Fig. 5. The indicated spacing means comprises crossed brace bars 12 connected together at their middle portions by a pivot pin 14, their lower ends being pivotally attached, as by bolts 15, to the rear, vertical legs 16 of the respective frame members 10. The upper ends of the two brace bars 12 are detachably secured to upper portions of the rear legs 16 as by means of bolts 17 having thumb nuts 17a which will be removed when the frame members 10 are to be collapsed. Otherwise, the detachable ends of the brace bars 12 may be notched or hooked so that they may engage over the bolts 17 and then be clamped in position against washers 18 bearing against the legs 16. Connecting the front legs 16a of the frame members 10 is a bottom space bar 20 which is relatively permanently pivotally attached to the front leg member 16a of one of the frame members 10 by a bolt or rivet 21, its other end being removably held by a bolt 22 and a thumb nut 22a in the same manner as described for the retention of the upper ends of the brace bars 12 by the bolts 17 and thumb nuts 17a. Thus, when the frame members 10 are assembled in the spaced relationship shown in Fig. 2, a rigid base unit is provided, and when the indicated ends of the bars 12 and 20 are released from their respective bolts and thumb nuts, they and their frame members 10 may be collapsed as in Fig. 5 for transport or storage. Desirably, appropriate feet 23, such as rubber buttons, may be used on the lower portions of the frame members 10, these being attached to bottom horizontal rail 24 connecting the rear legs 16 and the front legs 16a. Horizontal top rails 25 of the frame members 10 support a seat assembly generally indicated at 26, this being accomplished by means of elongated horizontally disposed channel-like hooks 27 having notches 28 (Fig. 3) adjacent their ends adapted to pass over bolts 29 receiving thumb nuts 30 which bind the hooks upon the rails 25 in which the bolts 29 are appropriately imbedded. The elongated hooks 27 are secured as by rivets 32 to the bottoms of respective side panels 33 of the seat assembly 26, these rivets 32 also passing through adjacent angle iron lengths 34 which cooperate with transverse angle iron lengths 35 to form a rectangular frame to which a seat member 36 is secured as by means of rivets 37. Thus, the elongated hooks 27, side panels 33, the rectangular frame produced by the angle iron lengths 34 and 35 and the seat mem-

ber 36 are rigidly secured together as a single unit. In order that the seat assembly 26 may be carried at a lower level than that indicated in Figs. 1 and 2, the upper, outer face portions of the side panels 33 are in turn provided with elongated horizontal hooks 27a, corresponding with the elongated hooks 27 and having notches 28a to engage over the bolts 29 and be bound by the thumb nuts 30. Such a lowered position of the seat assembly 26 is illustrated in Fig. 4.

At the rear of the seat assembly 26 there is provided a back rest in the form of a panel 40 whose lower edge is mounted at the rear of the seat member 36 by means of hinges 41 conveniently riveted or screwed to the horizontal web of the adjacent, transverse angle iron 35 as seen in Figs. 3 and 4. The inclination of the back rest panel 40 may be adjusted through the medium of slotted adjusting arms 42 whose forward portions are provided with slots 42a which receive bolts 43 fixed in the respective side panels 33 and provided with clamping nuts 43a. The rearward ends of the adjusting arms 42 are connected by pivot pins 44 to brackets 44a secured at the sides of the back panel 40. By these means, upon loosening of the clamping nuts 43a, the back panel 40 may be adjusted as desired through corresponding movement of the arms 42, the adjustment being maintained by tightening the nuts 43a.

At the forward edge of the seat member 36 there is provided a leg rest 45 in the form of a panel which depends as indicated in Figs. 1 and 2, and has its upper end hinged by hinges 46 to the vertical web of the transverse forward angle iron 35 secured on the under side of the seat member 36. Adjacent the lower end of the leg rest 45 there is provided a transverse foot rest 48 whose rear edge is adapted to bear against the lower forward face portion of the leg rest 45. The foot rest 48 is positioned by means of angularly disposed brackets 49 whose lower ends are riveted to the foot rest and whose upper ends are provided with pins 50 adapted to be received in any one of a plurality of positioning holes 52 formed in vertically extending brackets 53 riveted on the rear face of the leg rest 45 at the lateral edges thereof. Thus, by springing the brackets 49 slightly, the pins 50 may be withdrawn from their holes 52 and relocated.

In view of the hinges 41 mounting the back rest panel 40 and the hinges 46 mounting the leg rest 45, both of these members may be swung into horizontal alignment with the seat member 36 to assume positions as indicated in broken lines in Fig. 4, and constitute a sleeper. At the limit of rearward movement of the adjusting arms 42, the back panel 40 is aligned horizontally. For the purpose of maintaining the leg rest 45 in the indicated horizontal position, a throw bolt 55 (Figs. 3 and 4) is employed, this bolt being carried in guiding eyes 56 formed on a bracket plate 57 riveted to the underside of the seat member 36. A depending finger piece 58 provides for sliding the bolt 55. When the bolt is retracted into the full-line position of Figs. 3 and 4, the leg rest 45 assumes the depending position shown. When the bolt 55 is moved forward until the finger piece 58 strikes the forward guiding eye 56, the projection of the bolt to the dotted-line position serves to hold the leg rest 45 horizontally. For the purpose of retaining the leg rest 45 in depending position, a spring-pressed latch 60 is pivoted at 61 in a bracket 62 carrying a spring 63 which normally urges the latch 60 into engagement with an angular catch 64 riveted to the inner face of the vertical web of the adjacent forward angle iron 35.

In order that a food tray 65 may be mounted in operative position at the front of the seat assembly 26, as indicated in Figs. 1 and 4, a socket member 66 is secured at an angle as by rivets, to the outer face of each side panel 33, and each socket member 66 receives a rigid shank 67 which is secured to the underside of the tray 65 through the medium of any appropriate bracket means 68. The downward movement of the tray 65 may be limited by engagement of its inner portion with the upper sides of the upper elongated hooks 27a or by engagement of shank 67 with appropriate stop means 69 secured at the lower end of each socket 66. By means of sockets 66 and shank 67 the tray 65 may be readily installed and removed as desired.

In order that the frame members 10 may be susceptible of other uses than the supporting of the said members 26 in any of the indicated positions, each frame member may

be modified to form the frame member 10a indicated in Figs. 7 and 8. Here a top rail 25a corresponding with the top rail 25 of the frame members 10 is employed, but one of the vertical legs 10b is perpendicular to the horizontal top rail 25a and to the horizontal bottom rail 24a, and the vertical leg 10c opposite from the leg 10b is curved on an arc suitable to produce a rocker when the frame member 10a seen in Fig. 8 is turned through 90° into the position shown in Fig. 7. When frame members 10a are to be employed as standards for the seat assembly 26 to produce a high chair, they may carry the brace and space bars 12 and 20, or they may be separately connected by means of other crossbars 75 which may be flat, or may be tubular as indicated in Figs. 7 and 9, the ends thereof being flattened to provide end portions 76 which may be curved to form partially cylindrical seats as illustrated in Fig. 9. These crossbars 75 are bound to the respective rails or legs of the frame members (generally indicated at 25a in Fig. 9) by means of through bolts 77, appropriate washers 78, and thumb nuts 79, the bolts passing through the respective rails or legs. Thus, suitable holes will be provided approximately at the middle of the bottom and top rails 24a and 25a as indicated at 80, where two frame members 10a are to be used and a rocking structure is to be produced as in Fig. 7, and near the middle of the legs 10b and 10c, as indicated at 81, where the frame members 10a are to be employed as chair standards as in Fig. 8. In order that two frame members 10a may be used as chair standards, as indicated in Fig. 8, their bottom rails 24a are provided with appropriate feet, such as rubber pads indicated at 23a, to correspond with the feet 23 of Figs. 1 and 2. When the frame members 10a are employed as rockers as indicated in Fig. 7, the rubber pads 23a are relatively inconspicuous. For the purpose of mounting the seat assembly 26, as indicated in broken lines in Fig. 8, the top rail 25a of each frame member 10a is provided with bolts 29a and thumb nuts 30a corresponding with the bolts 29 and 30 of the form of Figs. 1, 2, and 3, such bolts and thumb nuts being disposed at opposite sides of the respective holes 80 which receive bolts 77 to secure the connecting bars 75 in bracing relation. Similarly, in order that the seat assembly 26 may be mounted upon the straight rails 10b of the frame members 10a to convert the device into a rocker, bolts 82 and thumb nuts 83 are provided on the straight rails 10b at opposite sides of the respective holes 81, in order that the seat assembly may be mounted as shown in broken lines in Fig. 7.

In Figs. 10, 11, and 12, there is shown a further modified form of rocker which comprises two spaced frame members 85 which are connected at their ends by rigidly mounted crossbars 86 which, as indicated in Fig. 12, may be welded in place at 86a, although these may be attached in the same manner as indicated in Fig. 9 by employing flattened end portions of the bars 86 and attachment bolts 77. As shown, this form of rocker frame 85 comprises a straight top rail 85b and a curved rocker rail 85c, these rails corresponding with the legs or rails 10b and 10c of the frame members 10a of Figs. 7 and 8. For this construction, the seat assembly 26 may be mounted, as indicated in broken lines in Fig. 11, by means of bolts 87 and thumb nuts 88, the bolts 87 being passed through appropriate holes 89 in the top rail 85b. The rocker arrangement of Figs. 10, 11, and 12 is also adapted to receive other seat means, such as the rocking horse attachment shown in Fig. 10, which comprises a flat seat 90 appropriately carried upon a pair of spaced arcuate spanning arms 91 extending from one end of the rocker frame structure to the other, the ends of these arms 91 being secured to the crossbars 86 as by means of bolts 77 in the same manner as illustrated in Fig. 9. In the particular form illustrated in Fig. 10 an angular neck member 92 is appropriately secured, as by screws or bolts 93, to the seat 90 and arms 91, this neck member 92 being also formed of tubular material and projecting upward to removably receive a reduced neck portion 94 of a hobbyhorse head 95. Bumpers 96 may be positioned at the rearward and forward ends of the bottom rails 85c of the frame members 85 to limit rocking movement if desired. The seat structure 90, 91, 92 may be detached from its full-line position and placed in an inoperative position as by inverting into the position indicated in broken lines, the ends thereof being again secured by the bolts 77.

Both types of rocking frame members 10a and 85 are adapted to be mounted upon a carriage frame as indicated in Figs. 11 and 12, so that, when the seat assembly 26 is placed thereon, the device as a whole will constitute a carriage or stroller. For this purpose, a carriage frame is formed from a pair of curved, spaced, longitudinal angle or channel members 100 which are connected near their opposite ends by rigid, transverse connecting bars 102. The outer upstanding webs of the members 100 are provided with notches 103 to receive bolts 104 which pass through holes 105 (Fig. 10) in the respective bottom rail 85c and receive binding thumb nuts 106, whereby the assembly of the two spaced frame members 85 is secured on the carriage. At one end of the carriage formed by the members 100 and connecting bars 102, an axle 108 carrying wheels 109 is positioned, the axle 108 being supported upon floating ends of U-springs 110 whose upper ends are secured to the undersides of the respective frame members 100. Any appropriate handle 112 has its lower ends (or end) secured by clamp means 114 to the axle 108. At the opposite end of this carriage structure, a caster wheel 115 is mounted in a bracket 116 which swings around a vertical axis in the outer end of another U-spring 117 fixed to the underside of each of the longitudinal frame members 100. Caster stems 118 may extend upward from the caster brackets 116 loosely through U-spring 17 and the horizontal webs of the members 100 to be thereby positioned.

If desired, the frame members 85 on the carriage of Fig. 11 may be replaced with frame members 10a when arranged as shown in Fig. 7; such a position of the frame members 10a is indicated in broken lines in Fig. 11.

It is also feasible to convert the rocking frame structure formed from two frame members 85, or the rocking frame structure of Fig. 7 formed of two frame members 10a, into a cradle having a cradle type basket 120 such as illustrated in Fig. 13. For this purpose a base board 122 on the underside of the bottom of the basket 120 may be provided at its corners with four swivel clamps 124 arranged as indicated in Fig. 14. By spacing the clamps 124 in all directions to equal the spacing between the parallel top rails 85b, or parallel top rails 10b of the structure arranged as in Fig. 7, basket 120 may be positioned either to extend longitudinally of the resultant framework, or to extend transversely thereof.

From the foregoing it will be apparent that I have presented a frame and seat structure wherein the frame may be positioned upright as in Figs. 1 and 8 to form a juvenile high chair, or may be positioned as shown in Fig. 7 to produce a rocker or cradle, or may be placed upon a carriage as in Fig. 11 to provide a stroller. Also, the seat assembly shown in Figs. 1 to 4 may be placed in elevated positions as in Figs. 1 and 11, or in a lowered position as in Figs. 4 and 7 or may be converted into a sleeper as indicated in broken lines in Fig. 4. Obviously this sleeper arrangement may be employed when the seat assembly is mounted on the carriage and frame structure of Fig. 11. To convert the seat assembly into a sleeper, it is necessary merely to loosen thumb nuts 43 to lower the back rest 40, and to release the latch 60 (Figs. 4 and 6), raise the leg rest 45 to the broken-line position and throw the bolt 55 (Figs. 3 and 4) to hold the leg rest 45 in horizontal alignment with the seat 36 and the back rest 40. To shift the seat assembly 26 from one position to another, loosening of thumb nuts 30, 83, 88, or the like permits the seat assembly 26 to be lifted and its position changed, and the assembly moved so that the elongated hooks 27 or 27a engage over the respective horizontal members of the frame structures in the various positions indicated.

Inasmuch as variations of the generic invention disclosed will no doubt become apparent to those skilled in this art, it is intended to protect all modifications that may fall within the scope of the patent claims.

I claim as my invention:

1. In combination in a furniture structure: a frame comprising two opposed supporting members each of which has a supporting rail providing carrying means; bracing means connecting said members in spaced relation; a seat unit comprising two side panels and a seat element between said panels; and upper and low-

er mounting means carried by the outer face of each of said panels and engaged selectively with the respective carrying means provided by said rails and mounting said seat unit selectively in elevated and lowered positions between said rails.

2. A combination as in claim 1 wherein said bracing means comprises: first means pivotally and permanently connecting said supporting members in collapsible relation, and second means pivotally connecting said supporting members, said second means being detachably connected at least to one of said supporting members, whereby said members may be collapsed upon such detachment of said second means.

3. In combination in a furniture structure: a pair of spaced, upright frame members having horizontal side rails at their tops providing seat-supporting means; a seat unit carried by said supporting means and comprising spaced side panels and a seat element carried by said side panels; engaging means carried by said side panels at different elevations and detachably engaging selectively with the side rails of said seat-supporting means to position said seat unit at different elevations; a leg rest movably connected with the forward edge of said seat element to hang down therefrom and to be raised into horizontal position in substantial alignment therewith; means to hold said leg rest in said horizontal position; a back rest movably connected with the rearward edge of said seat element to extend upward therefrom in back-supporting position and to be lowered into horizontal position in substantial alignment with said seat element, the upper portion of the space between said frame members being open to receive said back rest when lowered into horizontal position and when said seat unit is disposed at the lowermost of said elevations; and means forming a connection between said side panels and said back rest to maintain the positions of the latter.

4. In combination in a furniture structure: a pair of spaced, upright frame members having horizontal side rails at their tops providing seat-supporting means; a seat unit removably carried by said supporting means and comprising spaced side panels and a seat element carried by said side panels; engaging means carried by outer portions of said side panels in detachable engagement with said seat-supporting means; a leg rest movably connected with the forward edge of said seat element to hang down therefrom and adapted to be held in alignment with said seat element; a back rest movably connected with the rearward edge of said seat element and adapted to be held in alignment with said seat element; means for holding said leg rest and back rest in aligned positions with respect to said seat element.

5. In combination in a furniture structure: a frame including two opposed relatively movable frame members each of which has a supporting rail providing carrying means; bracing means connecting said supporting members in spaced collapsible relation; a seat unit including side members and a seat element connected to said side members; and upper and lower mounting means carried by the outer side of each of said side members engaged selectively with the respective carrying means provided by said supporting rails for mounting said seat unit selectively in elevated and lowered positions between said rails.

6. A combination as in claim 5 wherein said mounting means at each position is in the form of means engaging over a substantial proportion of the length of the respective supporting rail and maintaining said seat unit against tipping.

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