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J. W. WELLS ETAL

3,330,596

COMBINATION CHAIR FOR CHILDREN

Filed April 27, 1966

2 Sheets-Sheet 1

Fig. 1

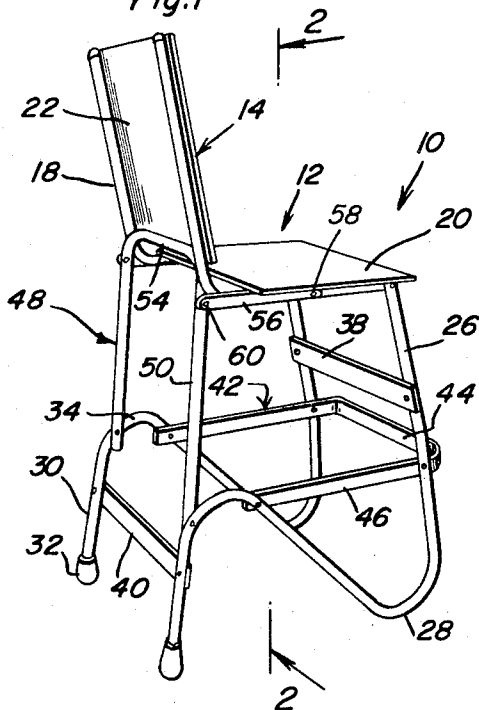


Fig. 3

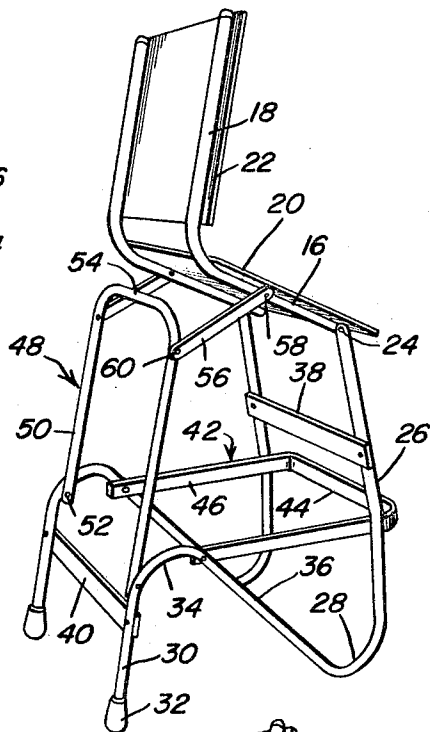


Fig. 5

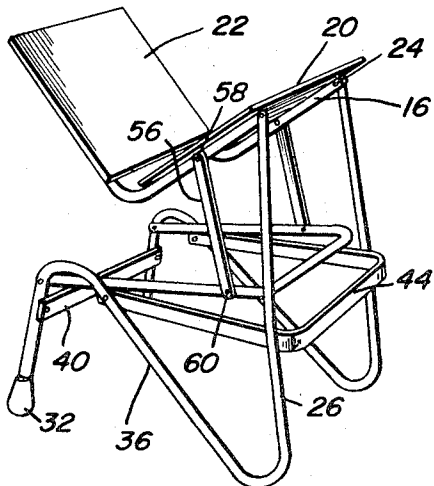
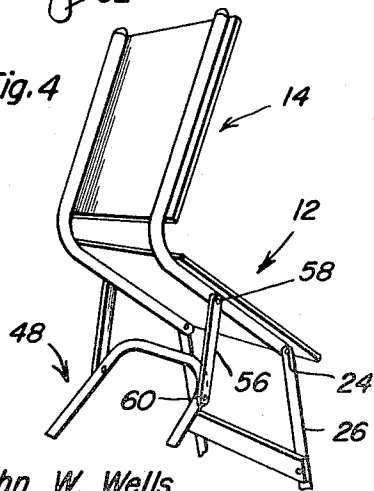


Fig. 4



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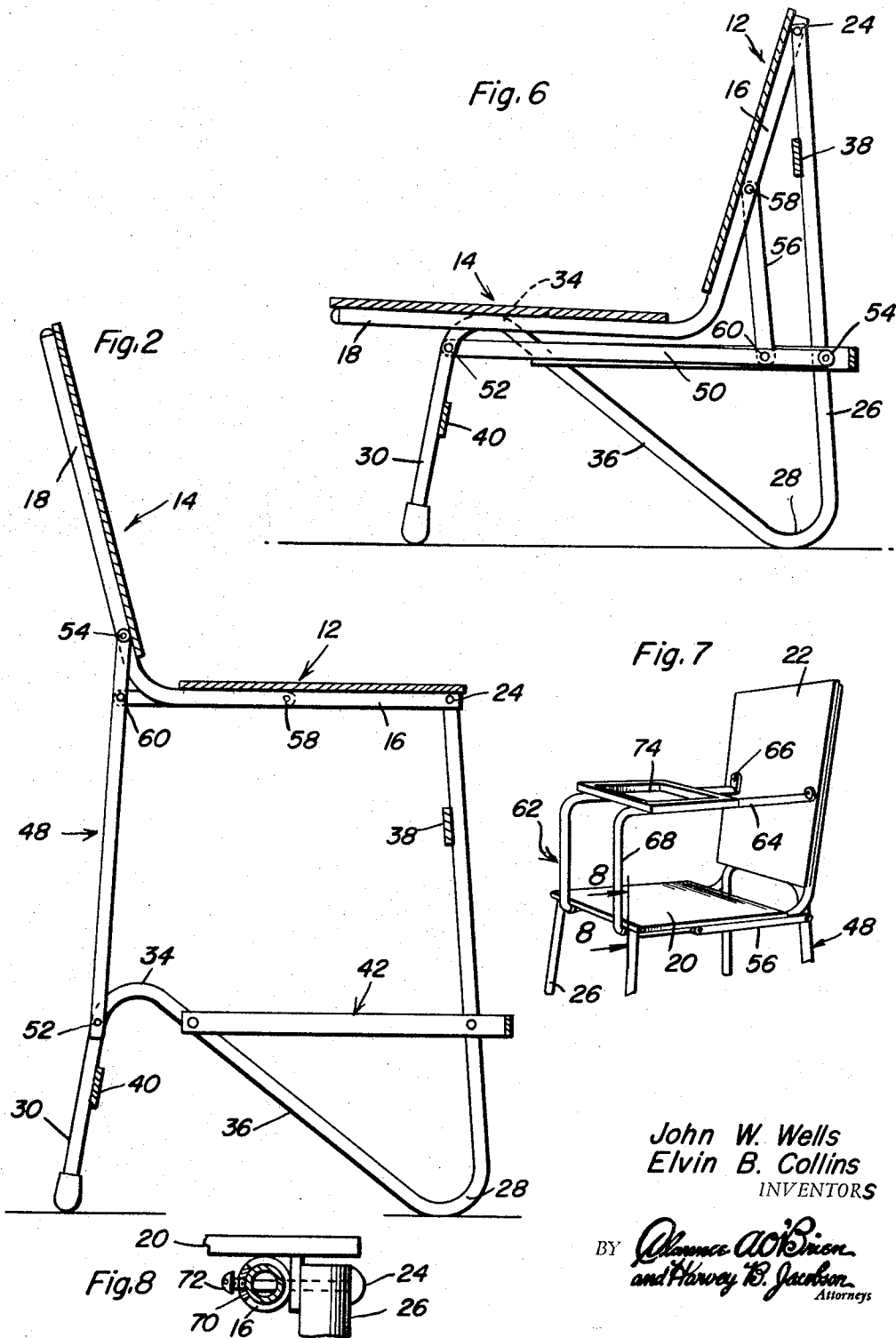
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COMBINATION CHAIR FOR CHILDREN

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ABSTRACT OF THE DISCLOSURE

A chair of tubular construction which, through an arrangement of pivotal connections, converts between a relatively tall youth or high chair and a compact or low play chair.

The present invention is generally concerned with chairs, and more particularly relates to a combination chair for children.

It is a primary object of the instant invention to provide a combination chair which quickly and easily converts from a relatively tall youth chair to a compact low play chair.

In conjunction with the above object, it is also a significant object of the instant invention to provide a combination chair which converts from a youth chair to a play chair without the necessity of adding or removing parts.

Further, it is a significant object of the instant invention to provide a combination convertible chair which provides a sturdy non-collapsible unit in either of its alternate positions.

Likewise, it is significant that the convertible chair of the instant invention is of a lightweight and easily manipulated construction.

Further, it is an object of the instant invention to provide a convertible chair which, when in its youth chair position, can, by a single attachment, be further converted into a high chair of the type wherein a tray is positioned thereacross.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of the chair of the instant invention in a first or youth chair forming position;

FIGURE 2 is an enlarged vertical cross-sectional view through the chair positioned as in FIGURE 1;

FIGURES 3, 4 and 5 illustrate positions in converting the chair to its second or play chair position;

FIGURE 6 is a vertical cross-sectional view of the chair in its play chair position or second position;

FIGURE 7 is a partial perspective view illustrating the use of a tray in conjunction with the youth chair so as to form a high chair; and

FIGURE 8 is an enlarged detail view taken substantially on a plane passing along line 8-8 of FIGURE 7.

Referring now more specifically to the drawings, reference numeral 10 is used to generally designate the combination or convertible chair comprising the instant invention. This chair 10 includes a pair of angularly related portions 12 and 14 which alternatively function as a seat and backrest when the chair is alternately used as either a youth chair as shown in FIGURE 1 or a play chair as shown in FIGURE 6. The portions 12 and 14 are angularly related to each other at an angle slightly greater than 90 degrees so as to provide for a comfortable slightly rear inclination to the backrest forming portion. Further,

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it will be noted that these portions 12 and 14 are formed by a pair of elongated tubular steel members, preferably chrome plated, orientated in spaced parallel relation to each other and angularly bent so as to form seat and backrest sections 16 and 18, these sections being rigidly interconnected by flat rigid wood or plastic panels 20 and 22 secured to the rod or member sections 16 and 18 and projecting laterally beyond both sides thereof, these panels 20 and 22 forming the actual seat and backrest.

Referring specifically to the youth chair form of the chair 10 illustrated in FIGURES 1 and 2, it will be noted that the portion 12 forms the seat portion while the portion 14 forms the backrest portion. In order to provide for the convertibility of the chair 10, the forward ends of the tubular sections 16 are pivotally secured, as at 24, to the inner sides of a pair of substantially vertical tubular front legs 26 which in turn terminate in reversely curved portions 28 forming floor engaging feet. Rear legs 30, having cushioned lower ends 32, are located substantially in the plane of the backrest section 14 and terminate in curved upper portions 34 located substantially below the seat portion 12 and integrally connected to the front feet forming portions 28 by, in each instance, an elongated diagonally extending brace portion 36. While the front and rear legs 26 and 30 have been defined as being substantially vertical, as will be appreciated from FIGURE 2, these legs in fact diverge slightly outwardly from each other so as to provide a relatively wide stable base for the chair 10 in either of its positions.

The front legs 26 are rigidly interconnected by an elongated flat rigid strap brace 38 while the rear legs 30 are similarly interconnected by a rigid strap base 40. Further, a U-shaped rigid bracing strap 42 is also provided, the bight portion 44 thereof being located forward of the front legs 26 so as to act in the manner of a footrest, while the two arms thereof project rearwardly and are rigidly fixed to the inner sides of the front legs 26 and the diagonal bracing portions 36 at approximately the uppermost points thereof adjacent the reversely bent or curved portions 34 at the upper ends of the rear legs 30.

An inverted U-shaped tubular steel back brace 48 is also provided, this back brace 48, in the position of the chair illustrated in FIGURES 1 and 2, being substantially coplanar with the rear legs 30 and projecting vertically thereabove. The back brace 48 has the lower ends of the arms 50 thereof pivotally secured, as at 52, to the inner sides of the legs 30 adjacent the upper ends thereof, while the bight portion 54 thereof engages against the rear surface of the backrest forming panel 22 between the tubular backrest section 18.

Finally, a pair of elongated strap-like rigid links 56 are orientated parallel and juxtaposed to the tubular sections 16, the forward ends of the links 56 being pivotally secured, as at 58, to the outer side of the sections 16 at a point slightly less than midway along the length thereof. The opposite end of each of the links 56 is similarly pivotally engaged, as at 60, with the upper ends of the back brace arms 50 just below the bight portion thereof. With the links 56 orientated in this manner, it will be appreciated that they engage beneath the laterally projecting ends of the seat forming panel 20, thereby stabilizing the chair in the position shown in FIGURES 1 and 2, with this stabilization being additionally increased by the engagement of the bight portion 54 of the back brace 48 against the backrest forming panel 22.

With reference to FIGURES 3-6, it will be noted that, in converting the chair 10 from the youth chair of FIGURE 1 to the play chair of FIGURE 6, first the integrally combined seat and backrest forming portions 12 and 14 are pivoted upwardly and forwardly about points 24, next the back brace 48 is pivoted forwardly and downwardly about the points 52, the pivotally mounted links

56 allowing this movement. Finally, in conjunction with the continuing movement of the back brace 48, the combination seat and backrest forming portions 12 and 14 are swung rearwardly and downwardly about the points 24 until the backrest forming panel 22, or at least the laterally projecting side portions thereof, engage with the reversely curved portions 34 located at the upper end of the rear legs 30. At this point, the back brace is orientated substantially coplanar with the U-shaped brace 42 and concealed therein. The chair 10, in the second position, presents a highly stable unit, with the upper ends of the rigid front legs 26 engaging and supporting what now constitutes the upper end of the backrest portion 12, and with the arcuate upper ends 34 of the rear legs 30 being engaged beneath and directly supporting the section 14 which now constitutes the seat.

With specific reference to FIGURES 7 and 8, it will be noted that the youth chair position of the chair 10 can be easily adapted for use as a conventional high chair. This is achieved by providing elongated tubular supports 62 having horizontally extending sections 64 releasably engaged, in any suitable manner such as by screws 66, to the backrest, and vertical portions 68 integral with the forward ends of the portions 64 and terminating, at their lower ends, in reversely bent end portions 70 telescopically received within the open forward ends of the sections 16 wherein, through suitable set-screw means 72, these end portions 70 can be releasably fixed. Finally, a tray 74 is fixed to and across the horizontal portions 64. Removal of the high chair forming attachment can be easily effected by merely releasing the screws 66 and 72 and pulling the reversely bent ends 70 out of the forward ends of the tubular steel sections 16.

From the foregoing, it will be appreciated that a highly novel convertible children's chair has been devised, this chair combining simplicity and stability in a highly unique manner.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

We claim:

1. A convertible chair comprising first and second interconnected angularly related seat and backrest forming portions each of a predetermined outer end to inner end length, vertically projecting front leg means, means pivotally securing the upper end of the front leg means to the first portion adjacent the outer end thereof, vertically projecting rear leg means substantially shorter than said front leg means, an elongated back brace, said back brace having one end thereof pivotally secured to the rear leg means adjacent the upper end thereof and rigid link means pivotally engaged at one end with the first portion at an intermediate point inward of the pivotally secured upper end of the front leg means and at the other end with the back brace adjacent the second end thereof.

2. A convertible chair comprising a pair of integral generally right angularly related first and second planar portions each of a predetermined outer end to inner end length, front and rear generally vertical rigid leg means, said front leg means being of a height generally equal to the combined height of said rear leg means and said first portion, means pivotally securing said pair of portions to said leg means for movement between a first position wherein said first portion projects substantially horizontally rearward from the upper end of said front leg means and the second position wherein said first portion

vertically from the rear edge of the first portion, and a second position wherein substantially the full length of the first portion depends generally vertically from the upper end of the front leg means and the second portion extends substantially horizontally rearwardly from the lower edge of the first portion in generally the plane of the upper end of the rear leg means.

3. The structure of claim 1 wherein, in a first position, the second end of the back brace engages against the rear surface of the backrest portion, and the link means engages against the undersurface of the seat portion.

4. The structure of claim 3 wherein, in a second position, the rear surface of the backrest portion rests on the upper end of the rear leg means and is substantially horizontally orientated to form a seat.

5. The structure of claim 4 wherein said front leg means, rear leg means, and back brace each consists of a pair of rigid tubular members with cross members therebetween, said first and second portions comprising a pair of parallel elongated tubular members, each angularly bent so as to provide angularly related sections, and a pair of flat panels extending between and secured to the corresponding sections of each of the angularly bent members.

6. The structure of claim 3 including an attachment consisting of a pair of parallel spaced right angularly bent support members, one end of said members being secured to the backrest portion at an intermediate point along the length thereof, the other end of said members being secured to the forward end of the seat portion, said bent support members including a first section extending forwardly from the first end thereof in spaced relation above the seat portion, and a second section depending vertically from the forward end thereof to the secured other end thereof, and a tray extending between and secured to the support member first sections.

7. The structure of claim 1 wherein the upper end of said front leg means is pivotally secured directly to said first portion.

8. The structure of claim 2 wherein said means pivotally securing said pairs of portions to said leg means includes a pivotal connection directly engaging the upper end of said front leg means with said first portion adjacent the outer end thereof, elongated back brace means pivotally secured to said rear leg means adjacent the upper end thereof, and rigid link means pivotally engaged at one end with the first portion at a point inward of said pivotal connection between the upper end of the front leg means and the first portion, and at the other end with the back brace means in spaced relation to the point of pivotal engagement between the back brace means and said rear leg means.

9. The structure of claim 8 wherein, in said first position, the back brace means engages against the rear surface of said second portion, and the link means engages against the undersurface of said first portion.

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