June 7, 1966 E. SUURONEN 3,255,344

MULTIPLE USE CHAIR

Filed Feb. 18, 1965 2 Sheets-Sheet 1

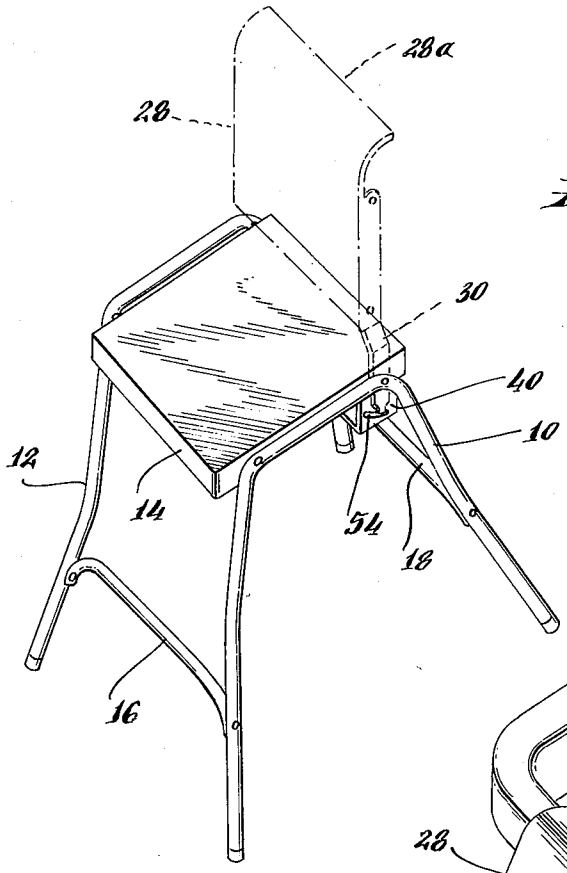


Fig. 2.

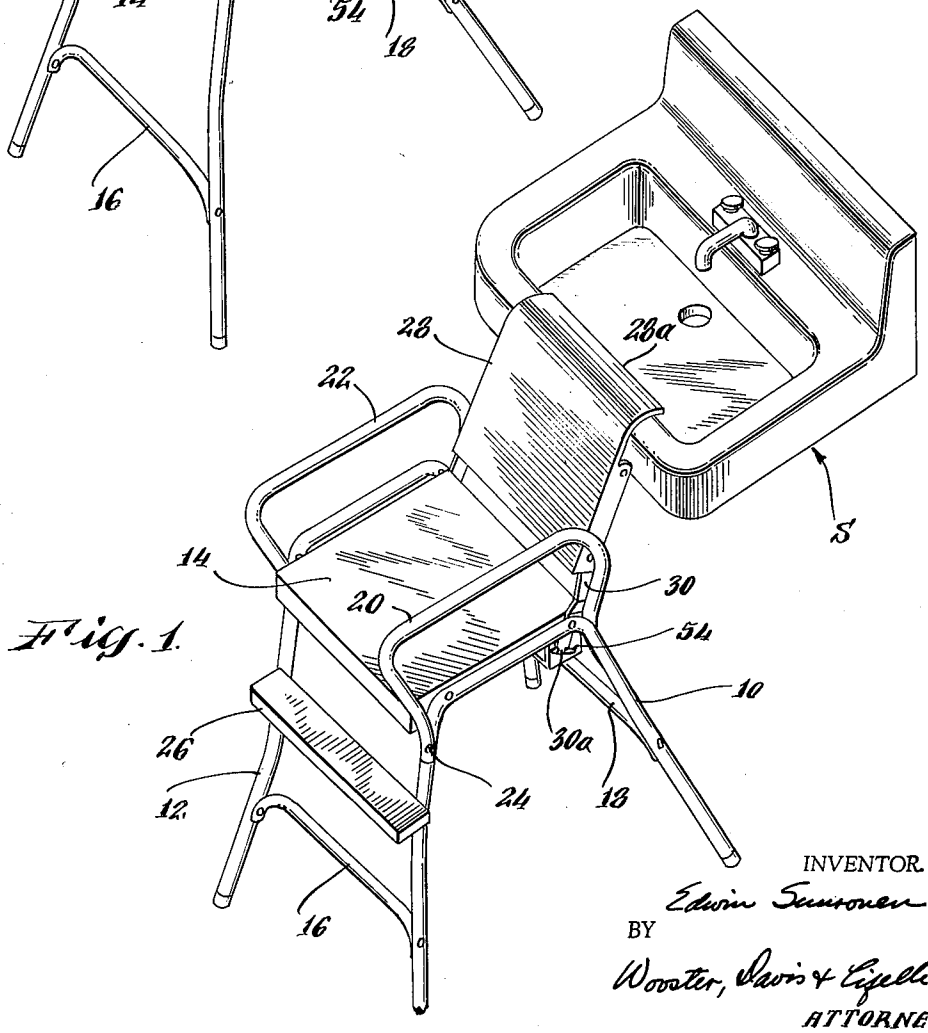


Fig. 1.

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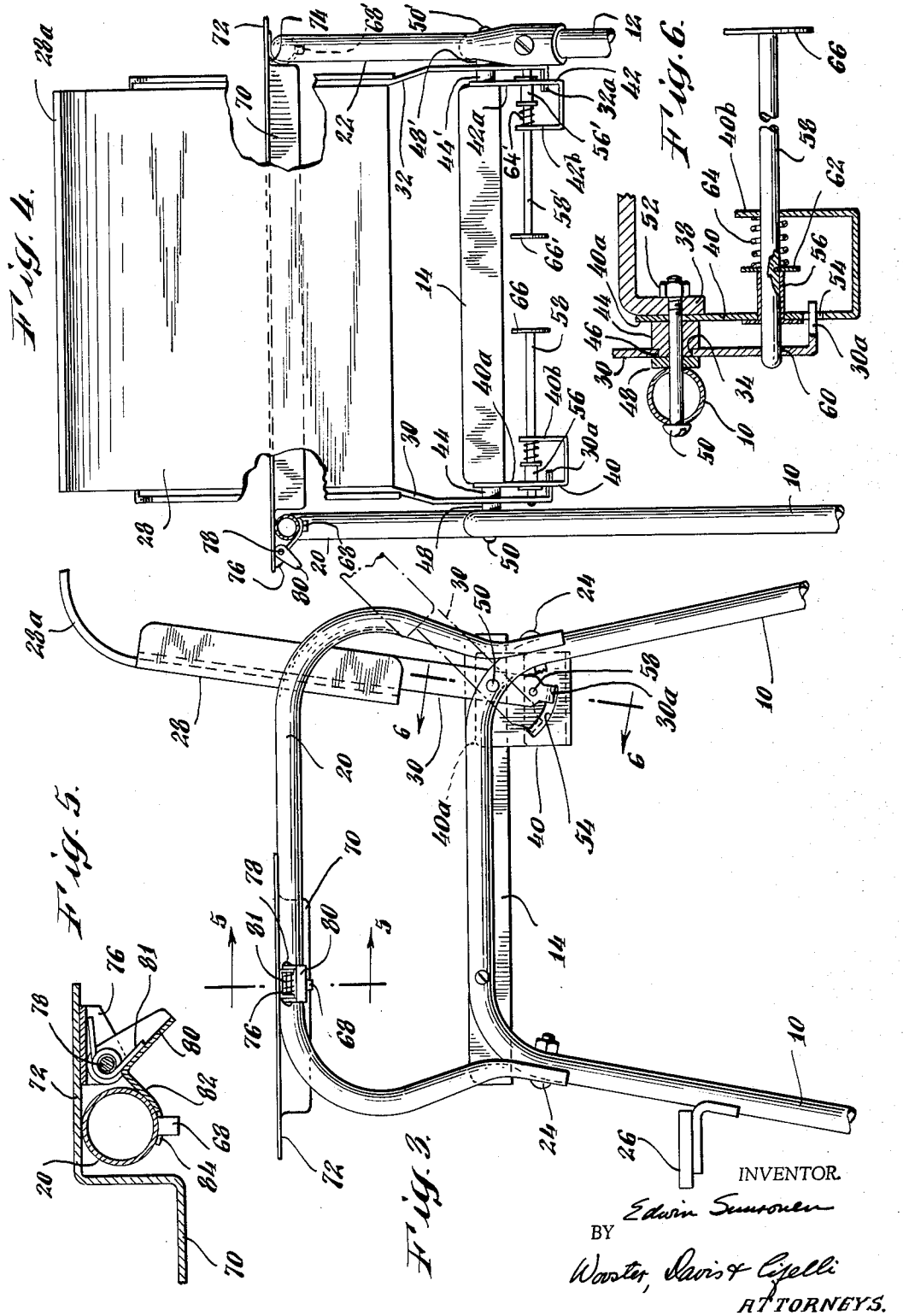


Fig. 4.

Fig. 6.

Fig. 5.

Fig. 3.

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United States Patent Office

3,255,344

Patented June 7, 1966

3,255,344

MULTIPLE USE CHAIR

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Filed Feb. 18, 1965, Ser. No. 433,718

9 Claims. (Cl. 297—182)

This invention relates to a multiple use chair and, more particularly, to a child's high chair designed for a variety of uses.

One of the many problems confronting mothers with small children is that of washing the child's hair without allowing soap or detergent to enter the child's eyes. This is particularly difficult when the child must bend forward over a basin in order that the hair may be washed and the usual high chair does not provide a head support to allow rearward reclining. In fact, the average child's high chair is strictly limited in the uses to which it may be put and, therefore, the useful life of such a chair is much shorter than its physical life. Once a child has outgrown the chair, its service life is over and it must be disposed of, or relegated to storage until such time as it may be used again. Even though the "use factor" of a high chair is small, one will often find homes that have both a kitchen stool and a high chair. Since these articles have a number of common features, it would be desirable to eliminate the necessity of having both—thereby avoiding the wastefulness inherent in duplication.

It would also be desirable to simplify certain features of a high chair and thus achieve reduction in cost and simpler operation. For example, most high chairs either have pivoted feeding trays which are always attached to the chairs or they have clamp-on types which require two separate clamps to secure each tray. A simplified removable tray structure would thus be of commercial value.

Accordingly, it is the primary object of this invention to provide a multiple use child's high chair. Other objects are to provide such a high chair which is particularly adapted to support a child in a convenient position to assist in washing the child's hair; to provide such a chair which has a reclining back; to provide such a chair which may be easily converted to a kitchen stool, either with or without a back; and to provide such a chair which has an easily detachable feeding tray.

The manner in which the foregoing objects are achieved will be more apparent from the following description, the appended claims, and the figures of the attached drawings wherein:

FIG. 1 illustrates a high chair in accordance with the invention, shown in position for washing a child's hair;

FIG. 2 illustrates the high chair of FIG. 1 with the arms removed to form a kitchen stool, the back being shown in broken lines;

FIG. 3 is an enlarged side view of a portion of the chair of FIGS. 1 and 2, illustrating its mechanical construction;

FIG. 4 is a back view of the chair of FIG. 3, portions being broken away to illustrate its construction;

FIG. 5 is an enlarged cross-section taken along the line 5—5 of FIG. 3; and

FIG. 6 is an enlarged cross-section taken along the line 6—6 of FIG. 3.

The objects of this invention are achieved by means of a high chair having a reclining back with a curved top portion, both the back and the arms of the chair being removable for converting it to use as a kitchen stool.

In FIG. 1 there is illustrated a high chair positioned for washing a child's hair at sink S. The chair includes a tubular left side frame **10** and a tubular right side frame **12**, each of the side frames being roughly in the form of an inverted U, the horizontal portion supporting a seat **14** therebetween. The legs are formed by the vertical portions of the side frames and are stabilized by a front stretcher **16** and a rear stretcher **18**. As the stretchers are permanently secured to the legs, they may be affixed by means of bolts, welding, or other suitable means. Detachably mounted on the top of side frame **10** is a left arm **20**, and a right arm **22** is similarly mounted on right side frame **12**. The right and left arms are secured to the leg portions of the corresponding side frames by means of bolts **24** which extend through the leg portions. A removable foot rest **26** is also mounted between the front legs of the chair by any of the means which are well-known to the prior art. Pivotally secured at the juncture between seat **14** and the rear legs formed by left side frame **10** and right side frame **12** is a reclining backrest **28** having an outwardly curved neck rest portion **28***a* along its upper edge.

The structural details of the invention and, particularly the reclining mechanism of the backrest **28** will be most clearly apparent from FIGS. 3, 4 and 6. From these illustrations it will be noted that backrest **28** is provided with a downwardly depending left mounting bracket **30** and a downwardly depending right mounting bracket **32**. Each mounting bracket defines a circular pivot opening **34** and is turned inwardly at its lower end to form a stud **30***a*, **32***a*. Although the seat may be formed in a number of ways it is shown in the drawings as of metal and including a depending side rim **38**. Mounted against the side rim **38** at the left side of seat **14** is the elongated arm **40***a* of a U-shaped left locking bracket **40**. The bracket is positioned so that the shorter arm **40***b* is positioned beneath seat **14**. A similar but reversed right locking bracket **42** is secured to the opposite side of seat **14** by its longer arm **42***a*, its shorter arm **42***b* being positioned beneath seat **14**. A cylinderical spacer **44** separates left locking bracket **40** from mounting bracket **30** and, at its outer end, spacer **44** is turned down to provide a bearing surface **46** mounted within pivot opening **34**. The length of bearing surface **46** is slightly longer than the thickness of mounting bracket **30** and a retainer **48** separates the spacer **44** from the side frame **10** and maintains pivot opening **34** in bearing engagement with bearing surface **46**. A bolt **50** passes through aligned openings in each of the side frame **10**, retainer **48**, spacer **44**, left locking bracket **40** and side rim **38** and these elements are clamped tightly together by means of nut **52**. As the mechanical details of the right side of the back pivoting arrangement are similar to those of the left side, although reversed, they will not be described in detail. However, similar elements, where visible, are given similar reference numerals but with a prime (') attached. The arm **40***a* of left locking bracket **40** defines an arcuate slot **54** into which stud **30***a* extends. Left locking bracket **40** includes an opening positioned between slot **54** and bolt **50** in which is mounted an inwardly extending cylindrical sleeve **56**. A spring-loaded rod **58** passes through sleeve **56**, its outer end being disposed for engagement with a hole **60** in left mounting bracket **30**. Rod **58** is grooved to support a C-washer **62** at a fixed axial location thereon. This location is such that, when the end of rod **58** extends through hole **60** as illustrated in FIG. 6, washer **62** is positioned against the inner end of sleeve **56**. A compression spring **64**, mounted between inner arm **40***b* of locking bracket **40** and washer **62**, assures that the end of rod **58** remains within the hole **60**. From FIG. 4 it will be noted that the locking rods **58**, **58'** of the left and right locking brackets extend inwardly towards one another and that each terminate in a disc-like head portion **66** (**66'**). These portions are disposed far enough apart that they may both be engaged by one hand of an adult but not that of a child.

It has been previously explained that the bracket **28** includes a curved neck rest portion **28***a* along its upper

edge. This curved portion is designed to engage the rim of a sink S, as shown in FIG. 1, by reclining the back. In this position it is a relatively simple matter for a mother to wash a child's hair in the sink, the head being laid backward in the manner most likely to prevent soap or detergent from reaching the child's eyes. The seat is reclined by grapsing the heads 66, 66' between the thumb and fingers of one hand and squeezing. This forces rods 58, 58' inwardly against the tension of springs 64, 64' and disengages their ends from the holes 60 in left mounting bracket 30 and the corresponding hole in right mounting bracket 32. When the rods are disengaged, the back is lowered by the free hand until the curved portion 28*a* rests against the edge of the sink. It will also be observed that the slot 54 serves as a limit stop in that the arcuate travel of stud 30*a*, (32*a*) is limited thereby. Thus, it is impossible to injure the child by accidentally dropping the back. Slot 54 also permits the angle of recline to be limited in order to prevent overturning of the chair when the child's weight is on the reclined back rest.

The means for attaching a feeding tray to the chair of this invention is illustrated most clearly in FIGS. 3, 4, and 5. From these figures it will be noted that each of left arms 20 and right arms 22 is provided with a short downwardly depending stud 68, 68'. A feeding tray 70 is of a size to fit between arms 20 and 22 and includes a side rim 72 which extends outwardly over the top of each arm. The undersurface of rim 72 at the right end of tray 70 carries an outwardly directed hook 74 which defines an opening for engaging stud 68' on arm 22. Mounted on the undersurface of rim 72 at the left end of tray 70 is a spring clip including a main body 76 which is secured to rim 72 and carries a pivot pin 78 upon which is pivotally mounted an L-shaped clamping member including a finger grip portion 80 and a curved, arm-engaging, portion 82 which defines a slot 84 having a width greater than that of stud 68. It will thus be seen that, in order to securely attach the feeding tray, it is merely necessary to engage the hook 74 with the stud 68' in right arm 22, and the left end of tray 70 being in a raised position while this is being done. The tray is then lowered and pivoted about the arm 22, the spring clip being squeezed against the force of spring 81 until the curved portion 82 clears the left arm 20. When the tray is in position, the spring clip is released, causing it to engage the stud 68. The tray is thus secured against forward, backward and vertical motion.

In order to convert the high chair to a kitchen stool having a backrest, it is merely necessary to remove the bolts 24 securing the left arm 20 and the right arm 22 and to remove the foot rest 26. The chair will then present the appearance shown in FIG. 2. The backrest 28 is indicated in broken lines as it, too, is removable. The backrest is removed by loosening bolt 50 (50') and removing nut 52 (FIG. 6). This allows the bolt to be withdrawn and the retainer 48 to be removed. With the rod 58 (58') retracted, the left mounting bracket 30 and the right mounting bracket 32 may each be released by slightly springing them to disengage the studs 30*a*, 32*a* from the slots 54. When the back has been removed, the bolt 50, retainer 48, spacer 44, and bolt 50 may be replaced. In this manner a very useful backless kitchen stool is obtained.

It will now be apparent to those skilled in the art that all the objectives set forth above have been achieved by means of the invention herein described. It will also be apparent that a number of variations and modifications may be made in this invention without departing from its spirit and scope. For example, in the foregoing description, the curved neck rest portion 28*a* is shown and described as being integral with backrest 28. The curved portion 28*a* could also be separately formed and either hinged or detachably secured to the top of the backrest.

Other modifications will also suggest themselves readily to those skilled in the art to which the invention pertains. Accordingly, the foregoing description is to be construed as illustrative only, rather than limiting. This invention is limited only by the scope of the following claims.

What is claimed is:

1. A child's high chair comprising: a plurality of legs; a seat supported by said legs; first and second arms positioned above and on opposite sides of said seat to enclose a seated child therebetween; a reclining backrest pivotally mounted relative to said seat and including a backwardly curved upper portion positioned to simultaneously support the neck and head of a child and rest on the edge of a sink; and adjusting means for selectively positioning said backrest between a substantially upright position and a reclined position.

2. The chair of claim 1 wherein said arms are removable.

3. The chair of claim 1 wherein said backrest is removable.

4. A child's high chair comprising: a plurality of legs; a seat supported by said legs; first and second arms positioned above and on opposite sides of said seat to enclose a seated chlid therebetween; a reclining backrest pivotally relative to said seat and including first and second spaced mounting brackets depending downwardly therefrom, said mounting brackets being positioned on opposite sides of said seat and pivotally mounted thereon, the lower ends of said brackets extending below said seat and defining aligned openings therein; a first locking bracket positioned adjacent the lower end of said first mounting bracket; a second locking bracket positioned adjacent the lower end of said second mounting bracket; spring-loaded manually operated first locking rod means retained in said first locking bracket for movement into and out of the opening in said first mounting bracket when said backrest is in its upright position; spring-loaded manually operated second locking rod means retained in said second locking bracket for movement into and out of the opening in said second mounting bracket when said backrest is in its upright position; and limit means for limiting the pivotal movement of said backrest to its reclined position.

5. The chair of claim 4 wherein said limit means comprises an arcuate slot defined by at least one of said locking brackets and a stud on the corresponding mounting bracket extending into said slot.

6. The chair of claim 4 wherein each of said first and second locking rod means extends inwardly of said chair and includes finger grip portions spaced for one-handed simultaneous retraction of both of said locking rod means from said openings.

7. The chair of claim 4 wherein each of said locking brackets is a substantially U-shaped strap having first and second spaced arms, said arms defining aligned locking rod openings therein, and a coil spring positioned between said arms and encircling said locking rod means to resiliently urge said locking rod means outwardly toward said mounting bracket.

8. A child's high chair comprising: a plurality of legs; a seat supported by said legs; first and second arms positioned above and on opposite sides of said seat to enclose a seated child therebetween; a downwardly extending stud depending from each of said arms; a detachable feeding tray positionable between said arms and including a rim portion extendable over each of said arms; a fixed hook member on the underside of said rim portion engageable with one of said arms and defining a first recess for receiving one of said studs; a manually operable spring clip member on the underside of said rim portion to engage the other of said arms and defining a second recess for receiving the other of said studs; a reclining backrest pivotally mounted relative to said seat; and adjusting means for selectively positioning said back-

rest between a substantially upright position and a reclined position.

9. A chlid's high chair comprising: a plurality of legs; a seat supported by said legs; first and second removeable arms positioned above and on opposite sides of said seat to enclose a seated child therebetween; a downwardly extending stud depending from each of said arms; a detachable feeding tray positionable between said arms and including a rim portion extendable over each of said arms; a hook member on the underside of said rim portion engageable with one of said arms and defining a first recess for receiving one of said studs; a manually operable spring clip member on the underside of said rim portion to engage the other of said arms and defining a second recess for receiving the other of said studs; a reclining backrest including a backwardly curved upper portion positioned to simultaneously support the neck and head of a child and rest on the edge of a sink when in the reclined position; first and second spaced mounting brackets depending downwardly from said backrest, said mounting brackets being positioned on opposite sides of said seat and pivotally mounted thereon, the lower portion of each of said brackets extending below said seat and defining aligned locking openings therein, the lower end of each mounting bracket including an inwardly projecting limit stud; a first substantially U-shaped locking bracket having first and second spaced arms defining aligned locking rod openings therethrough, one of said arms being longer than the other and secured to a first side of said seat, said longer arm defining an arcuate slot engaging the limit stud of one of said mounting brackets; a second substantially U-shaped locking bracket having first and second spaced arms defining locking rod openings therethrough, one of said arms being longer than the other and secured to a second side of said seat; manually operated first locking rod means

retained in the locking rod openings of said first locking bracket for movement of a first end thereon into and out of the opening in said first mounting bracket when said backrest is in its upright position, a second end of said first locking rod means including a first finger grip; first spring means resiliently urging said first locking rod means toward said first mounting bracket; manually operated second locking rod means retained in the locking rod openings of said second locking bracket for movement of a first end thereof into and out of the opening in said second mounting bracket when said backrest is in its upright position, a second end of said second locking rod means including a second finger grip spaced from said first finger grip a distance spannable by an adult hand; and second spring means resiliently urging said second locking rod means toward said second mounting bracket.

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