Aug. 8, 1950 J. N. KAHN 2,518,425

CHAIR

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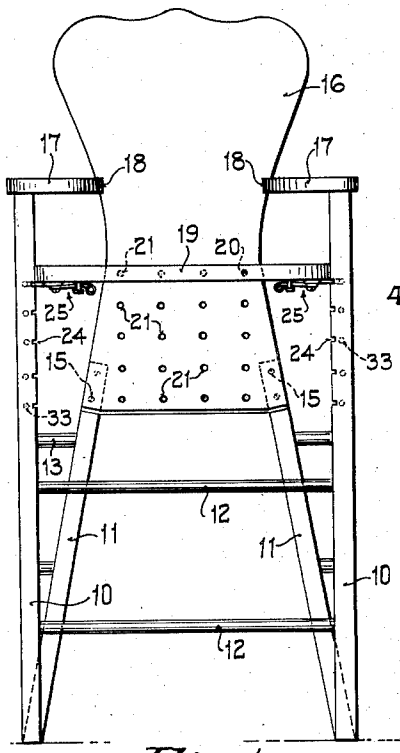

Fig. 1

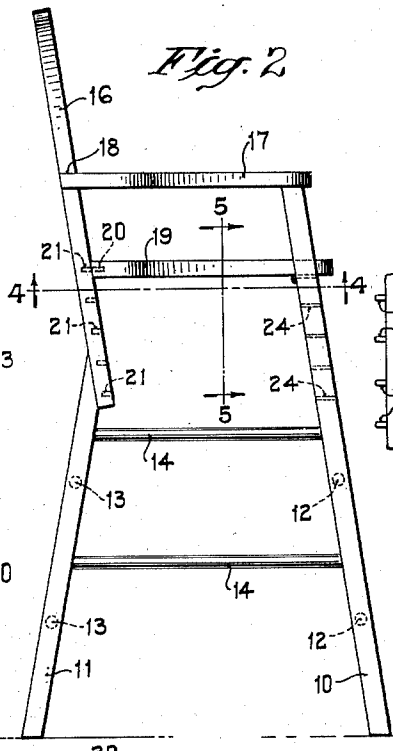

Fig. 2

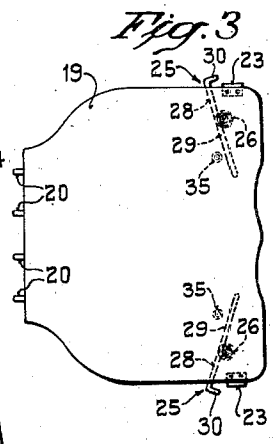

Fig. 3

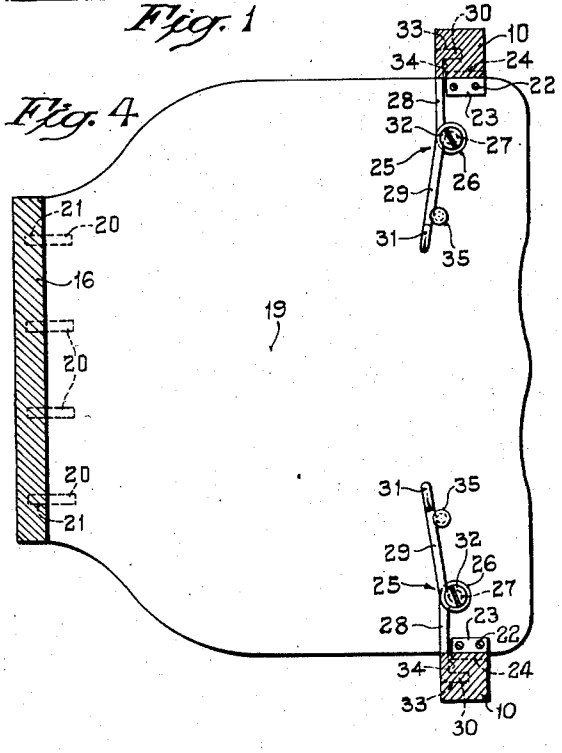

Fig. 4

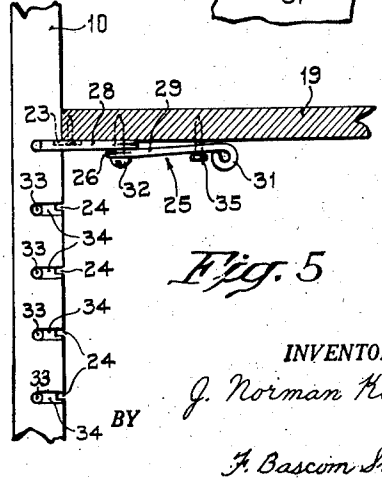

Fig. 5

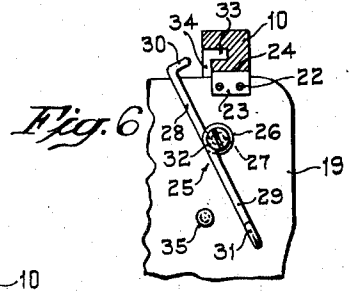

Fig. 6

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CHAIR

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12 Claims. (Cl. 155—88)

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This invention relates to chairs, and more particularly to chairs having vertically adjustable seats.

One object of the present invention is to provide a chair having a seat supported therein in a novel manner whereby it may be quickly and easily located and supported at various selected levels.

Another object of the invention is to provide a high chair constructed in a novel manner whereby it may be readily adjusted to fit the needs of a growing child, or for children of various heights.

A further object is to provide a child's high chair having novel means for locking the seat thereof at selected levels.

The above and further objects and novel features of the present invention will more fully appear from the following detail description when the same is read in connection with the accompanying drawings. It is to be expressly understood, however, that the drawings are for the purpose of illustration only, and are not intended as a definition of the limits of the invention, reference for this latter purpose being had primarily to the appended claims.

In the drawings, wherein like reference characters refer to like parts throughout the several views,

Fig. 1 is front elevation of a chair embodying the present invention;

Fig. 2 is a side elevation of the chair shown in Fig. 1;

Fig. 3 is a detail top plan view of the seat shown in Figs. 1 and 2;

Fig. 4 is an enlarged horizontal section taken substantially on the line 4—4 of Fig. 2, looking in the direction of the arrows;

Fig. 5 is an enlarged fragmentary vertical section taken substantially on the line 5—5 of Fig. 2, looking in the direction of the arrows; and

Fig. 6 is a fragmentary view, similar to Fig. 4, but showing the seat locking and supporting means in inoperative position.

Referring to the drawing, the frame construction of the novel chair contemplated by the present invention, comprises a pair of transversely spaced rearwardly inclined front legs 10, and a pair of transversely spaced rear legs 11 inclined toward each other and toward said front legs (Figs. 1 and 2). Legs 10 and 11 are connected together by a plurality of vertically spaced transverse rungs 12 and 13, respectively, and by a plurality of vertically spaced longitudinally extending rungs 14, said rungs being secured to said legs, as by gluing or in any other suitable manner. As shown in Figs. 1 and 2, the rear legs 11 are shorter than the front legs 10 for purposes to be presently described.

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Secured to the upper ends of rear legs 11, as by screws 15, is a back rest 16 extending upwardly beyond said legs and beyond the tops of front legs 10, and disposed at the same angle of rearward inclination as the latter. Secured in any suitable manner to the tops of front legs 10 are arm rests 17 extending rearwardly from said legs and having their opposite ends engaged in grooves 18 formed in back rest 16. Arm rests 17 are secured to back rest 16, as by gluing, or in any other suitable manner, and provide additional supports for said back rest.

The front legs 10 and the back rest 16 jointly support a seat 19 which is mounted thereon in a novel manner whereby said seat may be quickly and easily located at various selected levels to enable seating of the occupant at a comfortable, convenient or desired level. As shown more particularly in Figs. 1 to 4, seat 19 wholly occupies the space between front legs 10, and is provided at its rear end with a plurality of transversely spaced and aligned dowel pins 20, four being shown, pressed and glued therein. Pins 20 are adapted to be received in any one set of a plurality of vertically spaced sets of transversely aligned horizontal openings 21 formed in back rest 16. Secured to underside of seat 19, as by screws 22, adjacent the front and at opposite sides thereof are two plate-like members 23 (Figs. 3 to 6) which project laterally beyond the sides of said seat. Members 23 are adapted to be engaged in one of a series of vertically spaced horizontal grooves 24 formed in the inner sides of the front legs 10. Grooves 24 correspond in number and in relative spacing to the number and spacing of the sets of openings 21 in back rest 16, and extend through the entire width of said legs.

With the construction thus far described, seat 19 is initially installed by sliding it endwise rearwardly between the front legs 10 from the front side of the chair, and is supported thereon by engaging pins 20 in a set of openings 21 in back rest 16, and by engaging plate members 23 in a corresponding pair of grooves 24 in front legs 10. When it is desired to adjust seat 19 to a desired level, said seat is moved forwardly a distance sufficient to disengage pins 20 and plate members 23 from openings 21 and grooves 24, respectively. Thereupon seat 19 may be raised or lowered, as the case may be, to the desired level, and supported at said level by again moving said seat rearwardly and reengaging pins 20 and plate members 23 in the selected set of openings 21 and corresponding grooves 24, respectively. In the illustrated embodiment of the invention, there are five sets of openings 21 in back rest 16, and five corresponding grooves 24 in each front leg 10. It will be understood that the number

of sets of openings 21, and the number of grooves 24, as well as the number of dowel pins 20, may be varied as desired.

Novel means are provided for locking seat 19 in adjusted positions to prevent accidental endwise displacement of the same from the chair, said means also serving to support the seat in all its positions of adjustment. As herein shown, said seat locking and supporting means preferably comprise two members 25 (Figs. 3 to 6) each formed from a straight piece of comparatively heavy spring wire and coiled intermediate its ends as indicated at 26 providing a central opening 27 and two oppositely extending parallel portions 28 and 29. Portion 28 of each member 25 is bent at its free end to provide an angularly extended hook 30, and portion 29 is coiled at its free end as indicated at 31.

Resilient members 25 are pivotally mounted on the underside of seat 19 adjacent plate members 23 by screws 32 passing through the openings 27 in said members and threaded in said seat. The hooks 30 of members 25 are adapted to be engaged in one of a series of vertically spaced horizontal openings 33 formed in the rear side of each front leg 10 and equal in number and spacing to the number and spacing of grooves 24, and sets of openings 21. Openings 33 terminate in horizontal grooves 34 which are adapted to receive the straight portions 28 of members 25. It will thus appear that when resilient members 25 are swung toward the front legs 10 from the position shown in Fig. 6 to the position shown in Fig. 5, which is effected after seat 19 is located at a selected level as hereinbefore described, the hooks 30 and portions 28 of said members will engage a pair of openings 33 and a pair of grooves 34, respectively, in said legs and through such engagement further support seat 19 in elevated position. Resilient members 25 are held under tension in seat supporting position to lock seat 19 against accidental endwise displacement. For this purpose, seat 19 has threaded therein two downwardly projecting screws 35 to the rear of which the portions 29 of members 25 are flexed, as shown in Fig. 4, by applying rearward thumb pressure on coils 31.

There is thus provided a chair which, through the provision of a vertically adjustable seat and novel supporting and locking means therefor, will have a prolonged period of usefulness, may be used with utmost safety and quickly adapted to fit the needs of a growing child, or for children of various heights, to seat the same at comfortable, convenient or desired levels. Additionally, the seat may be easily adjusted by any one person without assistance and without the use of any tools.

Although a single embodiment of the invention has been illustrated and described in the foregoing specification, it is to be expressly understood that changes may be made therein, particularly in the design and arrangement of the parts, without departing from the spirit and scope of the invention, as will now be clear to those skilled in the art. For example, screws inserted through the openings in the back rest and threaded into the seat may be used instead of the dowel pins. Also, the plate-like seat supporting members may be dispensed with, and rigid seat supporting and locking members may be substituted for the spring wire members. For a definition of the limits of the invention, reference is had primarily to the appended claims.

What is claimed is:

1. A chair comprising a pair of transversely spaced front uprights, a pair of transversely spaced rear uprights, means for connecting said pairs of uprights together and for connecting said front uprights with said rear uprights, a back rest secured to said rear uprights, a vertically adjustable seat, and means projecting rearwardly and laterally beyond the rear and side edges of the seat and having operative engagement with said back rest and front uprights, respectively, for supporting said seat at various levels on said back rest and said front uprights.

2. A chair comprising a pair of transversely spaced front legs, a pair of transversely spaced rear legs, means for connecting said pairs of legs together and for connecting said front legs with said rear legs, a back rest secured to said rear legs, a vertically adjustable seat disposed between said front legs, means disposed parallel with the seat and projecting beyond the rear and side edges thereof for supporting said seat at various levels on said back rest and said front legs, said projecting means having operative engagement with recesses in said back rest and said front legs, and means for locking said seat at any selected level.

3. In a chair of the type having a pair of transversely spaced front legs, a pair of transversely spaced rear legs, and a back rest secured to said rear legs, the combination therewith of a vertically adjustable seat, interfitting means on said seat and back rest for supporting the rear end of said seat at various levels on said back rest, means mounted on said seat for movement relative to said front legs and said seat and projecting beyond the side edges of the seat for supporting the front end of the latter on said front legs at said levels, said projecting means having operative engagement with recesses in said front legs, and means for holding said last-named means in seat supporting position.

4. In a chair of the type having a pair of transversely spaced front legs provided with a series of vertically spaced grooves in opposite sides thereof, and a pair of transversely spaced rear legs, the combination therewith of a back rest secured to said rear legs, said back rest having a plurality of sets of transversely spaced and aligned openings located intermediate the side edges thereof and arranged in superposed spaced relation, a vertically adjustable seat, means carried by said seat and projecting beyond the rear edge thereof and engageable in a selected set of said openings, and means carried by said seat and engageable in one of said grooves in each of said front legs, said first and last-named means operating to support said seat at a desired level.

5. A chair comprising a pair of transversely spaced rearwardly inclined front legs having a series of vertically spaced horizontal grooves in inwardly facing sides thereof, a pair of transversely spaced rear legs, an inclined back rest secured to said rear legs, said back rest having the same rearward inclination as said front legs and being provided with a plurality of sets of transversely aligned openings arranged in superposed spaced relation, a vertically adjustable seat, means for supporting said seat at various levels comprising a plurality of elongated members projecting beyond the rear edge of the seat and receivable in a selected set of said openings and secured to said seat, and two members pivotally mounted on said seat and projecting beyond the side edges thereof and engageable in one of said grooves in each of said front legs, and

means for holding said pivoted members in engagement with said grooves.

6. A chair comprising a pair of transversely spaced front legs having a series of vertically spaced grooves in inwardly facing sides thereof, a pair of transversely spaced rear legs, means for connecting said pairs of legs together and for connecting said front legs with said rear legs, a back rest secured to said rear legs, said back rest having a plurality of sets of transversely aligned openings arranged in superposed spaced relation, a vertically adjustable seat, means for supporting said seat at various levels comprising a plurality of elongated members projecting beyond the rear edge of the seat and receivable in a selected set of said openings and secured to said seat, and two resilient members pivotally mounted on said seat for swinging movement in a plane parallel with the plane of the seat and engageable in one of said grooves in each of said front legs, and means for holding said resilient members under tension when engaged in said grooves as aforesaid.

7. A chair comprising a pair of transversely spaced front legs having a series of vertically spaced grooves in corresponding sides thereof, a pair of transversely spaced rear legs, means for connecting said pairs of legs together and for connecting said front legs with said rear legs, a back rest secured to said rear legs, said back rest having a plurality of sets of transversely aligned openings arranged in superposed spaced relation, a vertically adjustable seat, means for supporting said seat at various levels comprising a plurality of transversely spaced and aligned pins secured to said seat at the rear end thereof and engageable in a selected set of said openings, and two plate-like members secured to said seat adjacent the front and at opposite sides thereof and engageable in one of said grooves in each of said front legs, and means for locking said seat in adjusted positions.

8. A chair comprising a pair of transversely spaced front legs each having a series of vertically spaced horizontally disposed openings at one side thereof and terminating in horizontal grooves at said side, a pair of transversely spaced rear legs, means for connecting said pairs of legs together and for connecting said front legs with said rear legs, a back rest secured to said rear legs, said back rest having a plurality of sets of transversely aligned openings arranged in superposed spaced relation, a vertically adjustable seat, means for supporting said seat at various levels comprising a plurality of elongated members receivable in a selected set of said back rest openings and secured to said seat, two resilient members pivotally mounted on said seat and having portions engageable in one of said openings and grooves in each of said front legs, and means for holding said resilient members under tension when engaged in said leg openings and grooves as aforesaid.

9. A chair comprising a pair of transversely spaced front legs each having a series of vertically spaced horizontally disposed openings in the rear side thereof and terminating in horizontal grooves in said side, and a series of vertically spaced horizontal grooves in the inner side thereof, a pair of transversely spaced rear legs, a back rest secured to said rear legs, said back rest having a plurality of sets of transversely aligned openings arranged in superposed spaced relation, a vertically adjustable seat, means for supporting said seat at various levels comprising

a plurality of spaced transversely aligned pins secured to said seat at the rear thereof and engageable in a selected set of said back rest openings, two plate-like members secured to said seat adjacent the front and at opposite sides thereof and engageable in one of said last-named grooves in each of said front legs, and two resilient members pivotally mounted on said seat adjacent said plate-like members and having portions engageable in one of said leg openings and associated groove in each of said front legs, and means on said seat for holding said resilient members under tension when engaged in the leg openings and grooves as aforesaid.

10. A chair seat having supporting means comprising a plurality of transversely spaced rearwardly projecting pins secured to said seat at the rear edge thereof, two plate members secured to the underside of said seat adjacent the front and at opposite sides thereof, said plate members projecting laterally beyond said sides of the seat, and two resilient members pivotally mounted on the underside of said seat adjacent said plate members for swinging movement toward and away from the latter, said resilient members each being formed with a hook arranged to extend parallel with and laterally spaced from the plate member when swung towards the latter.

11. A chair comprising an inclined back, spaced uprights disposed forwardly of said back and having inclination like that of the back, a seat having a side bevelled to conform to the back when assembled therewith, and means on and projecting laterally from the seat for cooperation with vertically spaced recesses in said back and uprights to support the seat at different heights in conforming and abutting relation to the back.

12. A chair comprising an inclined back rest, a support therefor, legs disposed forwardly of said support and having inclination like that of the back rest, a seat having a side bevelled to conform to the back rest when properly positioned, and means on and projecting laterally from said seat cooperating with vertically spaced recesses in said back rest and legs to support the seat selectively at different heights in conforming positions.

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