June 16, 1953 R. P. FRICK 2,642,121

CHAIR

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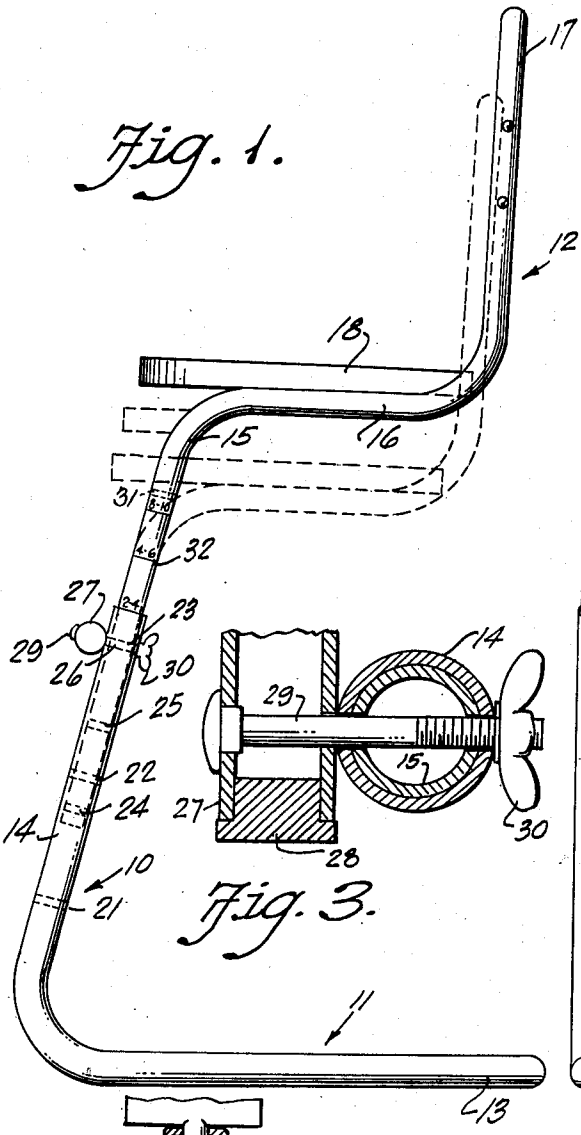


Fig. 1.

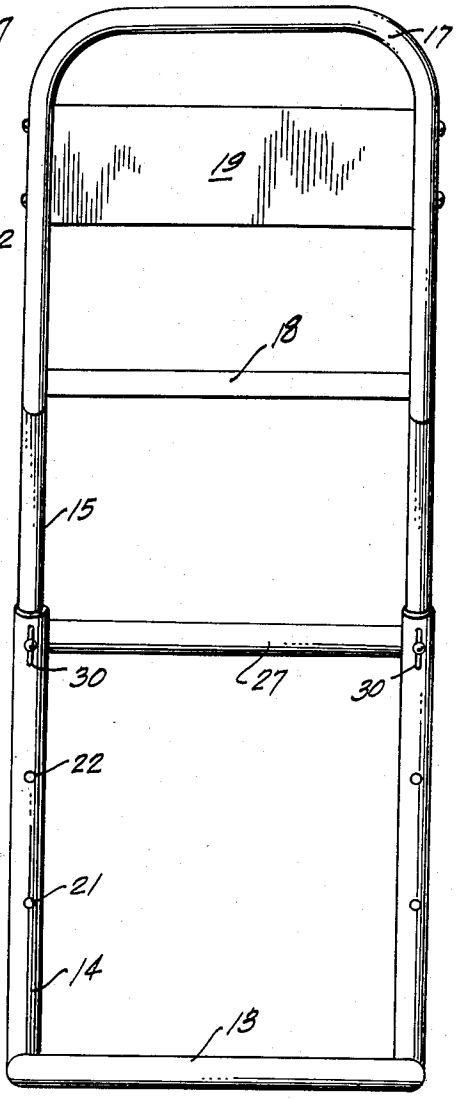


Fig. 2.

Fig. 3.

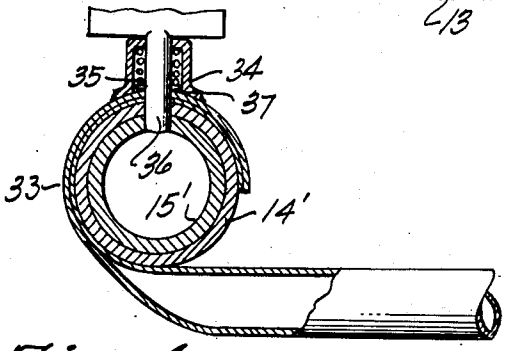


Fig. 4.

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CHAIR

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6 Claims. (Cl. 155—88)

1

This invention relates to chairs, and more particularly to a chair especially adapted for use by a growing child.

The chair of the present invention is especially adapted for use by a child who has developed beyond the conventional high-chair but who is yet not large enough to use a conventional chair. There have been previously proposed so-called "youth chairs" which were nothing more than a conventional chair formed with longer legs to support the seat member of the chair a greater distance from the floor than a conventional chair. Although this chair during a stage of his growth would support the child at a height which permitted him to eat at a conventional table, it was not comfortable to the child, for the reason that there was not adequate support for his legs. Although some of these so-called "youth chairs" were supplied with foot rests, there was actually only a short period in which the foot rests were spaced such a distance from the seat as to comfortably support the legs of the child.

In the chair of the present invention, not only is the seat adjustable so that the child can be comfortably supported at lessening distances from the floor as he grows, but the distance between the seat member and the foot rest is also adjustable so that as the child grows and is more comfortably seated at lesser distances from the floor his lengthening legs can be more comfortably supported by the foot rest as the distance between the same and the seat is increased. Thus in the chair of the present invention, as the distance between the floor and the seat is decreased the distance between the seat and the foot rest is increased. These adjustments therefore make it possible for the child to be comfortably seated in the chair throughout the entire period of his development, beginning at the time he outgrows his high-chair and continuing until he is large enough to use a conventional chair.

To simplify the adjustment of the seat and foot rest, the means for holding the foot rest to the chair frame is also used to hold the seat in the desired position of adjustment relative to the floor. In the illustrated embodiment of the invention the chair frame is formed of two lengths of tubular material bent into the desired shape. The floor-engaging portion of the chair frame is formed into a U-shaped pedal element presenting a pair of upstanding open-ended tubular sections telescopically receiving a matching pair of downwardly extending tubular elements carried by the frame member to which the seat and back rest are mounted. Each of the upstanding tubular

2

members of the floor-engaging element is formed with a plurality of longitudinally spaced openings diametrically formed in the wall thereof. The tubular elements to be telescopically received in the upstanding tubular elements are also formed with a plurality of longitudinally spaced diametrically opposed apertures. When the apertures of the upstanding tubular members are aligned with the apertures of the downwardly extending tubular members means passed therethrough will hold the members against relative movement and the seat some preselected distance from the floor. These means in the now preferred embodiment of the invention are carried by the foot rest to simplify adjustment of the seat and the foot rest. As the space between the diametrically opposed apertures of the one set of members is different than that between the other apertures the telescoping portions can be so adjusted that the seat can be lowered one distance and the foot rest a greater distance to bring about the desired adjustment.

Indicia means carried by the downwardly extending tubular members facilitate alignment of the apertures, for the spaced apertures of these members are so located that as the indicia moves into registry with the upper end of the upwardly extending members, predetermined apertures of the telescopic members will be aligned. Thus there is no difficulty in changing the relative positions of the telescopic members and no need to "fish" for the apertures in an effort to move preselected ones into registry.

In one form of the invention illustrated the means to be mounted in the aligned apertures consist of threaded pins fixedly carried by the foot rest adapted to receive wing nuts or the like to hold the telescopic members in the desired position of adjustment. In another form of the invention illustrated this means comprises a spring pressed pin mounted to the foot rest and normally urged to a position engaging the aligned apertures formed in the telescopic members but yet which can be moved outwardly to permit the telescopic members to be moved relative to each other.

Other features and advantages of the present invention will be apparent from the following description taken in connection with the accompanying drawing, in which:

Figure 1 is a side elevational view of the one embodiment of the chair of the present invention, the several adjustments of the seat member being shown in broken lines;

Figure 2 is a rear view of the chair of the present invention;

Figure 3 is a fragmentary view partly in section and partly in elevation, showing one form of the means used to hold the telescopic members in a desired adjustment; and

Figure 4 is a view similar to Figure 3 but showing a modified form of the holding means.

The chair of the present invention, referring now to the embodiment shown in Figures 1 through 3, comprises a frame member 10 formed in two sections 11 and 12. The frame section 11 comprises a tubular member bent into the form shown and presenting a substantially U-shaped base element 13 having a pair of open-ended tubular elements 14 angularly extending upwardly therefrom. The frame section 12 also comprises a single tubular member bent into the form shown to provide a pair of tubular elements 15 angularly extending downwardly from a seat-supporting member 16 integrally formed with a back rest supporting member 17. A seat member 18 of any desired construction is secured to the member 16 by conventional means such as bolts, screws, or the like.

A back rest member 19 is secured between the vertical rail members of the back rest supporting element 17. This back rest member may be formed of any material desired and is rigidly supported in place by any conventional means desired.

The upwardly extending tubular elements 14 are provided with a plurality of longitudinally spaced openings 21, 22 and 23. The downwardly extending tubular elements 15 are also formed with spaced openings 24, 25 and 26 diametrically formed through the wall thereof. It will be seen, referring now to Figure 1, that when the apertures 23 are aligned with the apertures 26 the seat member 18 will be held in an elevated position above the floor-engaging member 14 and that the seat member will be depressed if the telescoping members are adjusted to bring the apertures 22 into alignment or registry with the apertures 25. The seat member will be even further depressed if the apertures 21 are brought into registry with the apertures 24.

Although any means desired may be used to hold the telescoping members in a desired position of adjustment, in the now preferred embodiment of the invention the means used to hold the foot rest bar 27 to the chair is also employed to hold the telescoping members against relative movement. In the form of the invention illustrated in Figure 3, the foot rest bar 27 comprises a tubular member, the opposite ends of which are plugged or capped by a plug 28 which may be merely force-fitted into the bore of the foot rest bar 27. This foot rest bar 27, in the form of the invention now described, is held to the telescoping frame members by means of a bolt 29 passed through aligned apertures formed in the foot rest bar 27 as well as the aligned apertures in the telescoping members 14 and 15. The bolt 29 is of a length sufficient to pass through the foot rest bar 27 and the telescoping members to take at its inner end a conventional wing nut 30 which when tightened clamps the foot rest bar 27 against the telescoping members. It is also obvious that the bolt 29 passed through the aligned apertures of the telescoping members 14 and 15 will also hold these members against relative movement.

The chair in the position of adjustment in which apertures 23 and 26 are aligned provides a chair most suitable for a child who has just reached a stage of his development in which he has outgrown a conventional high-chair. This is so, for the seat member 18 of the chair is now at a level slightly less than the seat level of a conventional high-chair and the foot rest bar 27 is spaced from the seat member 18 at a distance which will comfortably allow the child to rest his feet thereon.

After the child has outgrown the just described position of adjustment of the chair of the present invention, the wing nuts 30 may be removed from the studs 29 to allow the telescoping members 14 and 15 to be moved into a position in which the apertures 22 and 25 of the members 14 and 15 respectively are brought into registry, after which the studs 29 are inserted through the aligned apertures and the wing nuts 30 again tightened to hold the telescoping members against movement. It will be seen that in this position of adjustment the seat member 18 has been lowered and that the foot rest bar 27 has also been lowered, by an amount greater than the amount of depression of the seat member 18. The lowered foot rest bar 27, as it is now spaced from the seat member a greater distance than before, accommodates the lengthening legs of the growing child, who in his growth is also more comfortably seated on a chair whose seat member is closer to the floor.

Here again as the child outgrows this position of adjustment of the chair the foot rest bar 27 can be removed as hereinbefore explained and the telescoping members 14 and 15 moved into a position in which apertures 21 and 24 are brought into registry. With the telescoping members held in this position the foot rest bar can be again mounted to the chair, the wing nuts 30 tightened to hold the foot rest bar 27 to the chair, and the telescoping members 14 and 15 against relative movement. In this position of the chair the seat member 18 has again been lowered by one amount and the foot rest bar 27 by a greater amount. The seat member 18 in this position of adjustment is supported at an elevation above the floor just slightly in excess of the elevation of a conventional chair.

To convert the chair to one having a seat member supported the conventional distance above the floor, the telescoping members can be adjusted to a position in which the apertures 23 are aligned with the apertures 31 formed in the downward extending members 15 and the foot rest bar in this adjustment of the chair serves not as a foot rest but merely as a reinforcing member to prevent spreading of the telescoping members.

To facilitate adjustment of the chair the one downward extending member 15 is formed with indicia 32 which cooperates with the upper edge of one of the members 14 which forms an index member to locate the apertures of the member 15 relative to the apertures of the member 14. For instance, when the lowermost indicia 32 is aligned with the index member formed by the top edge of the one member 14, apertures 23 and 26 are in alignment. When the intermediate or middle indicium 32 is moved down and is in registry with the index means formed by the upper edge of the member 14, the apertures 22 and 25 are in alignment, and when the uppermost indicium 32 is in registry with the index means formed by the top edge, apertures 21 and 24 are in alignment.

The indicium 32 thus eliminates any difficulty which might be had in moving the telescoping members into relative positions of adjustment in which the desired apertures are aligned. Thus there is no necessity to "fish" for the apertures in an effort to bring desired apertures into alignment and the adjustment of the chair is a relatively simple one.

There is shown in Figure 4 a modified form of the foot rest bar, for in this form of the bar the opposite ends thereof are flattened as shown at 33 and formed into a substantially cylindrical end element which receives the tubular members 14' of the chair frame. The end portions are each provided with a small housing 34 concealing a coiled spring 35 sleeving a headed plunger 36. The spring seats on the transverse end closing wall of the housing and acts against a transverse pin 37 carried by the plunger. It will thus be seen that the spring will normally tend to urge the plunger 36 to the position shown in Figure 4 in which it has passed through aligned apertures formed in the telescoping members 14' and 15' similar to the telescoping elements 14 and 15 of the previously described form of the invention. In the adjustment of this form of the foot rest bar it is merely necessary to grasp the head of the plunger 36 and pull the same outward, compressing the spring and freeing the inner end of the plunger from the aligned apertures of the telescoping members. With the plunger in this position the telescoping members can be moved to any other of the desired positions of adjustment and as the plunger is free of the aligned openings the foot rest bar can be moved relative to the outer member 14' to its new position relative thereto. In this form of the chair it will be seen that it is not necessary to separate any of the elements of the chair to bring about an adjustment of the seat member and foot rest bar so that there is no danger of an element being removed by a child and lost or misplaced.

Although the present invention has been shown herein as embodied in a tubular frame chair of the particular type illustrated, it should be understood that the advantages of the present invention can be still realized if the invention is embodied in other forms of chairs.

The chair has been described hereinabove as one to be used by a growing child, but it can be pointed out that the chair may also be used by an adult, particularly a housewife, as a stool for work before a sink, ironing board, or any other use wherein a higher chair than usual can be conveniently used. In this use of the chair the telescoping members would be moved to bring apertures 22 and 24 into alignment, after which the stud 29 or the pin 36, depending upon which form of chair was being used, would be passed through the aligned apertures to hold the telescoping members against relative movement. In this position of adjustment of the chair the seat member 18 is elevated above the floor at such a distance that the chair forms a conventional height stool. The foot rest bar, as should be obvious, will be positioned a relatively great distance from the seat member to accommodate the longer legs of the adult using the stool.

Although the now preferred embodiment of the present invention has been shown and described herein, it is to be understood that the invention need not be limited thereto, for it is susceptible to changes in form and detail within the scope of the appended claims.

I claim:

1. A chair for use by a growing child comprising: a floor-engaging frame element; a seat-supporting frame element; a seat fixed to said last named frame element; means for connecting said seat-supporting frame element to said floor-engaging frame element for vertical movement relative thereto whereby said seat-supporting frame element can be moved to vary the distance between said seat and the floor; a foot rest member; and means carried by said foot rest member cooperable with means carried by said frame elements for holding said frame elements in a preselected position of adjustment to position said seat a preselected distance from the floor and for securing said foot rest member to said frame elements a preselected distance from said seat, whereby as the child grows the distance between the seat and the floor can be decreased and the distance between the seat and the foot rest increased.

2. A chair for use by a growing child comprising: a floor-engaging frame element; a seat-supporting frame element; a seat fixed to said last named element; means for connecting said seat-supporting frame element to said floor-engaging element for vertical movement whereby said seat-supporting element can be moved to vary the distance between said seat and the floor; a foot rest member; and means carried by said foot rest member to be removably engaged with said frame elements for holding said seat-supporting frame element in a preselected position of adjustment relative to said floor-engaging element to position said seat a preselected distance above the floor and for securing said foot rest member to said frame elements a preselected distance below said seat, whereby as the child grows the distance between the seat and the floor can be decreased and the distance between the seat and the foot rest increased.

3. A chair for use by a growing child, comprising: a pedal frame element adapted to be supported on the floor; an upper frame element; a seat fixed to said last named frame element; a back rest carried by said upper frame element; means for connecting said upper element to said pedal element for vertical movement relative thereto whereby said upper element can be moved to vary the distance of the seat above the floor; a foot rest member; and means carried by said foot rest member cooperable with a selected one of a plurality of spaced means on said pedal frame element and a selected one of a plurality of spaced means on said upper frame member for holding said frame elements in a preselected position of adjustment to fix said seat a preselected distance from the floor and for securing the foot rest member to said pedal frame element a preselected distance from said seat, whereby as the child grows the distance between the seat and the floor can be decreased and the distance between the seat and the foot rest increased.

4. A chair for use by a growing child, comprising: a pedal frame member adapted to be supported on the floor; a pair of open ended tubular members extending upwardly from said pedal frame element; an upper frame element; a seat fixed to said last named frame element; a pair of tubular members extending downwardly from said upper frame element and telescopically received within said first named tubular members, whereby said upper frame element can be vertically moved relative to said

pedal frame element to vary the distance between the seat and the floor; a foot rest member; and means carried by said foot rest member for securing said foot rest member to the upwardly extending tubular members a preselected distance above the floor and for simultaneously holding said tubular members against relative movement to fix said seat a preselected distance above said foot rest member.

5. A chair for use by a growing child, comprising: a pedal frame element adapted to engage the floor; at least one tubular member extending upwardly therefrom; an upper frame element; a seat member carried by said upper frame element; a tubular member depending from said upper frame element and telescopically received within said upwardly extending tubular member; said upwardly extending member having a plurality of spaced apertures therethrough; a foot rest member; and means carried by said foot rest member for reception within a selected aperture for mounting said foot rest member to said tubular member a preselected distance above the floor, the tubular member depending from said upper frame element having a plurality of spaced apertures therethrough, a selected one of said last named apertures being registerable with a selected aperture of said upwardly extending member and receiving the means carried by said foot rest member whereby said telescoping elements are held against relative movement to fix the seat a predetermined distance above said foot rest member.

6. A chair for use by a growing child, comprising: a floor-engaging frame element comprising a single length of a tubular element bent to form a substantially U-shaped horizontally disposed pedal element having a pair of open ended tubular members extending upwardly therefrom; an upper frame element comprising a single length of tubular element bent to form a vertically extending substantially U-shaped back rest supporting member and a pair of horizontally extending rail members for supporting a seat member terminating in a pair of downwardly extending parallel tubular members telescopically received within the tubular members extending upwardly from said floor-engaging pedal element; a seat connected between said rail members; a foot rest member; pin means carried at the opposite ends of said foot rest member for reception in preselected aligned apertures of a plurality of longitudinally spaced apertures formed in said telescoping tubular members for securing said foot rest member to said upwardly extending tubular members a preselected distance above the floor and for holding said telescoping members against relative movement to fix said seat a preselected distance above said foot rest member; and means for holding the pin means against accidental movement to retain said frame elements and foot rest member in a preselected relative position of adjustment.

ROBERT P. FRICK.

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