Aug. 13, 1929. R. M. ELLIOTT 1,724,569

HIGH CHAIR STRUCTURE

Filed Nov. 18, 1927

Fig. 1.

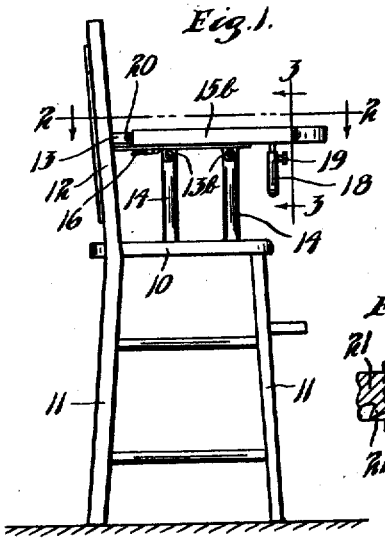

Fig. 2.

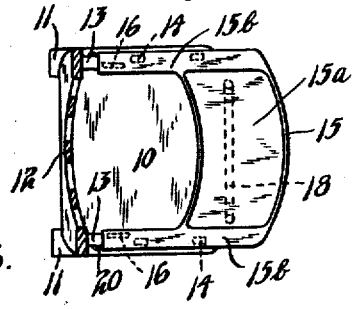

Fig. 6.

Fig. 4.

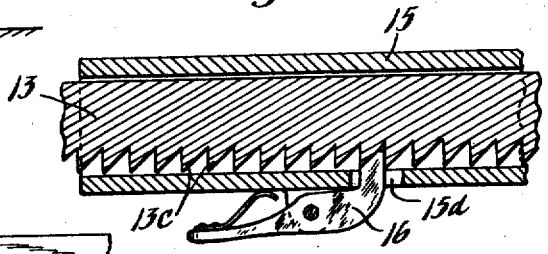

Fig. 3.

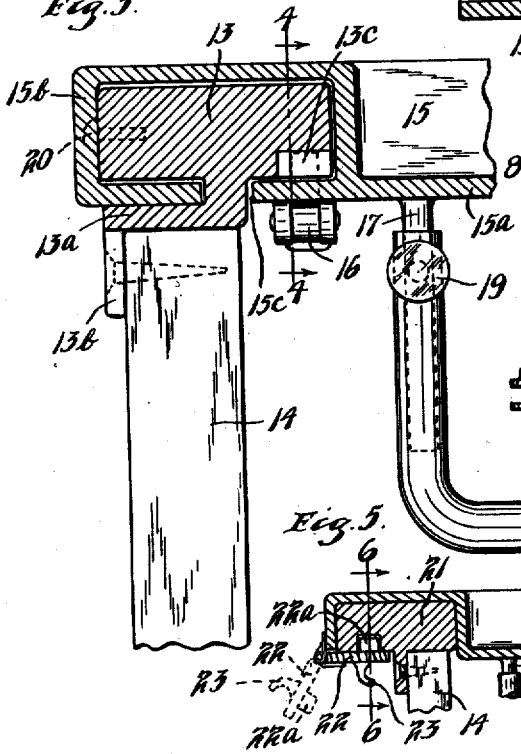

Fig. 7.

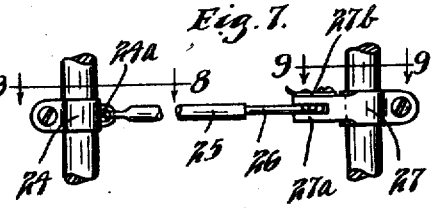

Fig. 8.

Fig. 9.

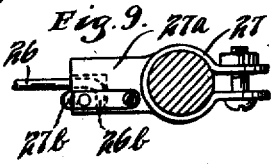

Fig. 5.

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UNITED STATES PATENT OFFICE.

RALPH M. ELLIOTT, OF MINNEAPOLIS, MINNESOTA, ASSIGNOR OF ONE-HALF TO CHRIS WILBUR LEE, OF MINNEAPOLIS, MINNESOTA.

HIGH-CHAIR STRUCTURE.

Application filed November 18, 1927. Serial No. 234,155.

This invention relates to improvements in child's high chairs and especially to improvements on the tray and facilities for holding the child in the chair.

High chairs on the market at the present time are objectionable for several reasons. In the first place, the tray or tray support is not adjustable for the growth of the child and consequently often is not disposed in the proper position for the child to conveniently reach the articles of food supported thereon. Also, in most high chairs the tray or tray support swings on a horizontal axis, is difficult to swing over the head of the child and often the child can tip the tray and its contents by swinging the tray support upwardly. Furthermore, in most commercial high chairs at this time the child can slip down beneath the tray and the seat and so fall out of the chair, sometimes injuring himself and often tipping the dishes and food and causing considerable damage.

It is the main object of my invention to provide an efficient high chair which will obviate the objections above noted and in which the tray or tray support will be adjustable for the growth of the child to always support the food in proper position with reference to the child.

Another object is to provide in high chair structure, an adjustable tray having slidable relation with the arms of the chair and adapted to be easily removed from the chair or attached thereto and utilized to carry in food to the child.

A further object is to provide an efficient high chair structure, including means associated with the tray for preventing the child from slipping downwardly between the tray and the seat and so falling out of the chair.

These and other objects and advantages will be apparent from the following description made in connection with the accompanying drawings wherein like reference characters refer to similar parts throughout the several views and in which,

Fig. 1 is a side elevation illustrating a preferred embodiment of the invention;

Fig. 2 is a horizontal section taken on the line 2—2 of Fig. 1, showing the tray of the chair in plan;

Fig. 3 is a vertical section on a considerable larger scale taken on the line 3—3 of Fig. 1, showing the manner in which the tray is adjustably mounted and locked in a desired position to the arms of the chair;

Fig. 4 is a vertical longitudinal section taken on the line 4—4 of Fig. 3 showing the locking engagement of the tray with the arms of the chair;

Fig. 5 is a vertical cross section of a slightly modified form of the invention, corresponding to the view of the preferred form illustrated in Fig. 3;

Fig. 6 is a vertical longitudinal section taken on the line 6—6 of Fig. 5 and corresponding to the longitudinal section of the preferred form of the invention illustrated in Fig. 4;

Fig. 7 is a fragmentary front elevation showing the modified means for preventing the child from falling out of the chair or slipping between the tray and the seat of the chair;

Fig. 8 is a horizontal section taken on the line 8—8 of Fig. 7; and

Fig. 9 is a horizontal section taken on the line 9—9 of Fig. 7.

The general structure of my high chair may be similar to any of the conventional high chairs marketed at this time, with the exception of the arms and tray of the chair. Thus, as illustrated in Figs. 1 to 4, inclusive, the chair comprises a suitable horizontally disposed seat 10 supported on a plurality of legs 11 preferably having their lower ends spread well apart to furnish an adequate base. The concave back 12 is inclined at a slight angle to the vertical and is connected with the rear ends of a pair of spaced parallel arms 13.

Arms 13 are preferably disposed horizontally and have straight upper portions of T-shaped cross section, the stem of the T's being provided with out-turned flanges 13^a extending parallel to and spaced a relatively short distance from the lower edge of the T head portion. Spaced attachment lugs or ears 13^b may depend from flanges 13^a and may be secured to the upper ends of the vertical rungs 14, said rungs being mortised at their lower ends in the edges of the chair seat 10. The inwardly disposed edges of my arms 13 on the under side are provided with a series of teeth 13^c, said teeth being inclined rearwardly.

My tray 15 includes the forwardly disposed food holding portion 15^a supported between the sides 15^b. Said sides 15^b are

preferably hollow and open ended being of substantially rectangular cross section, and of such proportion that they may easily slide over the parallel arms 13. A substantially central elongated slot 15[c] is formed at the bottom of each arm extending from the open end thereof forwardly for some distance and disposed longitudinally of said arm. Obviously, as shown in Fig. 3, slot 15[c] accommodates the stem portion of the T-shaped arm, while the under surface of the tray sides 15[b] at the outer portions bear against the flanges 13[a], thus preventing the upper surface of the arms 13 from becoming marred due to engagement with the under surface of the tray sides. Relatively small recesses 15[d] are formed through the lower portions of the sides of the tray adjacent the rear ends thereof, said recesses being substantially alined with the teeth 13[c] carried by the arms 13. A spring pressed pawl 16 is pivotally mounted beneath each of the sides of the tray 15[b] having its engagement end working through the recesses 15[d] and yieldingly held in engagement with teeth 13[c] to lock the tray 15 to the arms of the chair against withdrawal. As illustrated, because of the rearward inclination of teeth 13[c], tray 15 may be pushed rearwardly against the body of the child without requiring manipulation of the pawl 16, but cannot be moved forwardly or outwardly. Stop screws 20 may be threadedly secured in different positions to the outer edges of the tray sides 15[b] to adjustably limit the inward movement of the tray.

A pair of depending posts 17 are rigidly supported from the under side of the tray being disposed preferably adjacent the sides thereof, and upon said posts a tubular U-shaped guard 18 is adjustably supported. As illustrated, guard 18 comprises a substantially horizontal portion having up-turned tubular ends telescoping over the posts 17. Suitable set screws 19 provided with knurled handles are carried by the up-turned ends of the guard 18 adapted to be set against the posts 17 to secure the guard at a desired height within, of course, certain limits.

Assuming the device assembled as illustrated in Fig. 1, with the tray 15 properly disposed to position dishes on the tray conveniently for the child, it is only necessary to reach inwardly of the tray sides 15[b] and press the handles of the pawls 16 to withdraw the tray from the arms. The tray may be moved longitudinally of the arms 13 with dishes or articles of food thereon and said articles may be carried to the kitchen without removal from the tray. In attaching the tray to the arms, the open ends of the tray sides 15[b] are telescoped over the arms 13 and the tray moved rearwardly, the inclined teeth 13[c] permitting this movement, but, nevertheless, locking the tray against forward displacement. The adjustable stop 20 limits the extreme inward position of the tray and the position of the stop may be varied within certain limits to be positioned correctly for the size of the child.

The guard 18 obviously may be adjusted and set at various levels and its purpose is to prevent the child from sliding between the tray and the seat and falling out of the chair, or to prevent the child from wiggling up and standing on the seat of the chair. This guard is also adjustable with the growth of the child and may be so disposed that it will be impossible for the child to free himself in any way from the chair.

A slightly modified form of the invention is illustrated in Figs. 5 and 6. The general construction of the chair will be the same as that shown in the preferred embodiment. Here, however, the arms 21 of the chair, while being disposed horizontally and parallel, are provided at their under side with a series of sharply inclined teeth 21[a], the inclination and formation of said teeth being such that when engaged by a co-operating rearwardly inclined tooth 22[a], the shorter abutment surface of the teeth will be slightly interlocked preventing disengagement of the tray from the arms until the tray has been moved slightly rearwardly. In other words, said shorter abutment surfaces of the teeth are disposed at an incline to the vertical.

In this modified form of the invention, the sides of the tray are provided with hinged flaps 22 swingable on horizontal axes substantially coincident with the lower edges at the outer sides of the tray, said flaps carrying the co-operating tooth 22[a] previously referred to.

To remove this modified tray, it is only necessary to swing the flaps 22 downwardly and outwardly which may be facilitated by small handles 23 rigidly carried by the lower surface of the said flaps. In other respects, except for the differences above noted, the modified form illustrated in Figures 5 and 6 is similar to the preferred embodiment of the invention.

In Figures 7 to 9 inclusive, a modified form of guard is illustrated, adapted to be applied to all forms of high chairs having substantially vertically disposed rungs. Here a vertically adjustable clamping collar 24 is secured to one of the forward rungs of the high chair, said collar rigidly carrying a loop 24[a] into which tubular rod 25 is loosely hinged. I prefer to telescope within rod 25 a rod of relatively small diameter 26, which may have its inner end provided with a stop or abutment 26[a] adapted to prevent withdrawal of said rod against an inturned end 25[a] of said tubular member 25. The outer end of rod 26 may be provided with any suitable locking element, and, as illustrated, a simple form of locking element may constitute a sharply turned end 26[b]

which may be moved horizontally between bifurcated ends 27ª of a co-operating retaining member rigidly carried by an adjustable clamping collar 27. Said clamping collar is secured to the forward rung of the chair oppositely disposed to the rung to which clamping collar 24 is secured. A spring pressed dog which is disposed outwardly of the turned end of rod 26 when said turned end is inserted within the bifurcated retaining member 27ª is adapted to lock the guard formed by rods 25 and 26 in closed position. It will be seen that the height of rods 25 and 26 may be quickly and easily adjusted by varying the vertical position of the clamping collars 24 and 27 on their respective rungs. With said guard it will be impossible for the child to wiggle out of the chair and to stand up on the chair, since the movement of his legs will be prevented by the guard in co-operation with the chair seat 10.

From the foregoing description, it will be seen that I have invented a simple but highly efficient high chair structure, overcoming the difficulties and objections prevalent to standard high chairs on the market at this time. My device insures the safety of the child in the chair as well as provides a convenient and readily adjustable tray and guard adapted to support the food conveniently for the child and adapted to be readily removed without discomforting the child in any way. Previously stated, the tray may be used to carry in or carry out dishes or food. It will also be obvious that with my improved device, the tray is highly sanitary, since it can be readily removed and taken to the kitchen for cleaning.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of the present invention, which, generally stated, consists in the matter shown and described and set forth in the appended claims.

What is claimed is:

1. In a chair having a pair of spaced substantially horizontal arms, a tray or supporting member having substantially tubular sides adapted to telescope over said arms and slide thereon, a series of teeth longitudinally disposed on the bottom of one of said arms, and a pawl mounted on the bottom of one of said sides of the tray, said pawl being adapted to interlock with said teeth to retain said tray on said arms in a desired position.

2. The structure set forth in claim 1, and horizontal bearing flanges spaced below the bottoms of said arms and secured to said arms, said bearing flanges supporting the bottom portions of the tray sides to maintain the upper portions of said tray sides spaced slightly above the tops of said arms.

3. In a chair having spaced arms provided with substantially parallel forward portions, a removable tray having parallel side members, said side members comprising elongated channels adapted to have telescopic relation with said arms, and inturned retaining portions at the bottom of said channels adapted to engage the bottoms of said chair arms, a series of spaced detents, such as teeth, on one of the longitudinal edges of one of said arms and a pawl mounted on the corresponding longitudinal edge of one of said tray sides, said pawl being adapted to interlock with said teeth to retain said tray on said arms in a desired position.

In testimony whereof I affix my signature.

RALPH M. ELLIOTT.

DISCLAIMER

1,724,569.—*Ralph M. Elliott*, Minneapolis, Minn. HIGH-CHAIR STRUCTURE. Patent dated August 13, 1929. Disclaimer filed February 24, 1944, by the assignee, *The Lehman Company of America, Inc.*

Hereby disclaims claim 3 of said patent.

[*Official Gazette March 21, 1944*]

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