

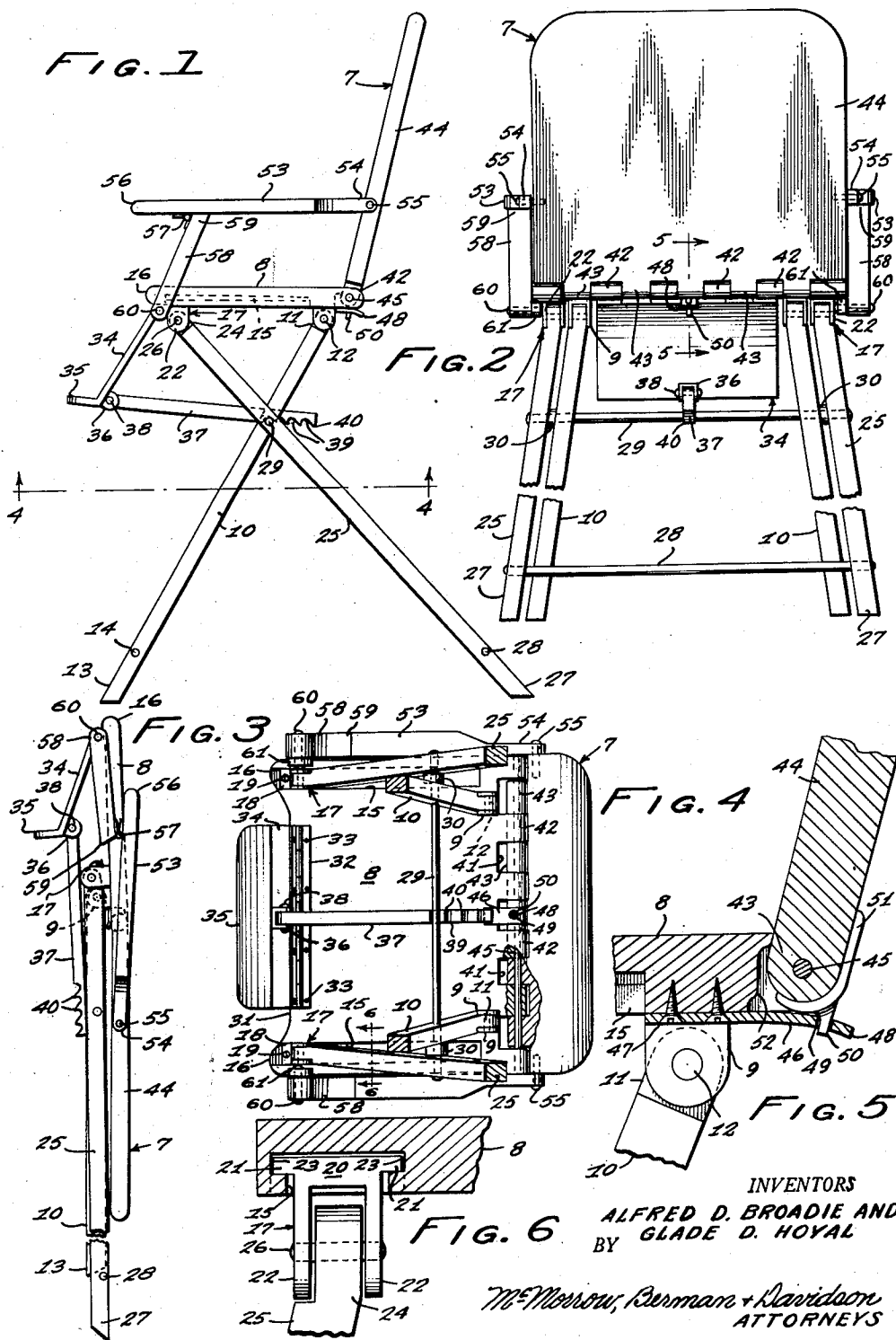
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FOLDING HIGH CHAIR

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## UNITED STATES PATENT OFFICE

2,666,475

## FOLDING HIGH CHAIR

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1

This invention relates to folding chairs capable of being folded into compact condition for storing them in a closet or the like, and particularly to a folding high chair for small children.

The main object of our invention is to provide a folding high chair which is safe due to the presence of a wide leg base and releasable automatic locking means for holding the chair open in a positive manner during use.

Another object is to provide a chair of the indicated character with a footrest which is adjustable independently of the folding features of the chair.

A further object is to include a pair of slidable mountings for one pair of the legs of the chair to allow them to shift beneath the seat toward the other pair in order to facilitate folding the two pairs together and folding of the chair as a whole.

It is also an object to have such a folding high chair which is provided with folding arm rests and supports therefor as well as a back that folds rearwardly into substantial alignment with the seat of the chair in the folded condition of the latter.

A practical object is, of course, to provide a folding high chair as outlined which is light in construction and both simple and convenient to use, as well as to fold together after use.

Other objects and advantages of our invention will appear in further detail as the specification proceeds.

In order to facilitate ready comprehension of this invention for a proper appreciation of the salient features thereof, the invention is illustrated on the accompanying drawing forming part hereof, and in which:

Figure 1 is a side elevation of a folding high chair made according to the invention and embodying the same in a practical form, the chair being shown in operative position ready for occupancy by a small child;

Figure 2 is a rear elevation of the same chair of Figure 1;

Figure 3 is a side elevation of the same chair in folded condition;

Figure 4 is a transverse section taken on line 4-4 in Figure 1, and virtually forming in large part a bottom plan view of the major portion of the chair;

Figure 5 is an enlarged fragmentary section taken on line 5-5 in Figure 2;

Figure 6 is an enlarged fragmentary section taken on line 6-6 in Figure 4.

In the views, the same reference numerals indicate the same or like parts.

2

High chairs for small children of conventional type have been known for a long time, despite the fact that they are notoriously dangerous, as they are all too easily tipped over with more or less serious results. To be sure, there have been designed various types of folding chairs, and different devices and means have been resorted to at times, but as yet none has appeared that is suitable for use as a high chair as to be generally adapted for this purpose.

Upon considering this problem, it has occurred to us that a special folding high chair should be available that is not only capable of being folded together, but is also perfectly safe to use, and as a result we have succeeded in producing such a high chair as we shall now proceed to describe more fully.

Hence, in the practice of our invention, and referring again to the drawing, a folding high chair, generally indicated at 7, primarily includes a seat 8 provided rearwardly beneath the same with a pair of fixed leg mountings 9, 9 forming depending lugs for the upper ends of a pair of forwardly-inclined legs 10, 10, the mountings 9, 9 being spaced apart and secured to the bottom of the seat by means of screws, bolts or any other means which may occur to the manufacturer. Through the upper ends 11 of legs 10, as well as the mountings 9, extend pivot pins or bolts 12, and preferably we make each mounting in the form of a pair of adjacent lugs so that two lugs extend downwardly upon each side of the upper end 11 of each leg 10, the two legs being not only inclined forwardly, but also outwardly to provide for wide spacing of the lower ends 13 of these legs where they engage upon a floor. Between the lower ends 13 of these legs 10 is secured a tie rod forming a cross-piece 14.

While the leg mountings or lug brackets 9, 9, etc., have been mentioned as secured in fixed manner to the bottom of seat 8, the latter is provided with a pair of undercut slots 15, extending inwardly from the underface thereof within the side edges and parallel to the latter, these slots opening downward and extending to the forward ends or portions 16, 16 of the sides of the seat and serving to receive a pair of slidable lug brackets 17, 17, each of these bracket members being rearwardly slidable and at the forward ends of the slots 15 being prevented from accidental removal from the latter by means of a pair of stop cleats 18 secured in the slots by means of screws 19. As best seen in Figure 6, each bracket 17 includes an upper base portion 20 provided with a pair of side flanges 21, 21 and

3

within the latter with a pair of downwardly-extending or pendent leg-supporting lugs 22, 22, the side flanges 21, 21 extending into the undercut portions 23, 23 of slots 15 in each case.

Between each pair of lugs 22, 22 on the slidable bracket members 17 is pivoted the upper end 24 of rearwardly and outwardly-inclined legs 25 by means of pivot pins or bolts 26. Within the lower ends 27, 27, both legs 25 are connected together by a cross-piece or tie rod 28, the lower ends 27 of these legs extending far to the rear of the seat 8, and as both legs 25, as well as the forwardly-extending legs 19 also extend toward the sides, they together cover a wide leg base for the seat which will tend to prevent tipping of the chair in use. It is evident from viewing Figure 1 that when the seat is in normal horizontal position, it will tend to urge and hold the brackets 17 in forward position against the stop cleats 18 in slots 15, while all four legs are disposed in their extreme extended positions on the floor. The rear legs 25 last described are disposed exteriorly of the front legs 19, 19 and are arranged in criss-cross relation with respect to the latter, the two pairs of legs being pivoted together at their criss-cross points by means of an intermediately-disposed securing element or cross-rod 29 which at the ends extends through an inner leg 19 and an outer leg 25 with a washer or spacing member 30 disposed between the two in order to maintain a proper spacing of the legs and prevent wobbling or dislocation during folding of the chair.

Within the front edge 31 of seat 8 is secured a long hinge 32 to the bottom of said seat by means of screws or the like 33, and to this hinge is secured a depending footrest 34 terminating at the lower end in a foot-supporting ledge 35. At the lower end of the intermediate portion of depending footrest 34 is mounted a bracket member 36 by means of screws or the like (not shown), and to bracket member 36 is pivotally connected the forward end of an adjustable brace 37 by means of a pivot pin or bolt 38. Beneath the rear end of brace 37 the latter is formed with a series of downwardly-open slots resulting in teeth 40 intermediate said slots forming stops adapted to engage with the cross-rod 29 which interconnects the two sets of legs, the footrest 34 with its foot-supporting ledge 35 being swingable upon the hinge 32 beneath seat 8, while the brace 37 connected to the lower end of the footrest support is adapted to be shifted from slot to slot 39 for adjusting the foot support 34 into various positions more or less in advance of the forward edge 31 of seat 8 or in any select position of support with respect to seat 8, the foot support being naturally projected to its maximum forward extension when the rearmost slot 39 is seated upon the cross-rod 29 and brace 37 remaining in place by gravity upon the cross-rod. It is self-evident that the adjustment of the footrest or support 34 is quite independent of the operation of either folding or opening out of the chair, for when the chair is once opened and placed in position with the lower ends 13 and 27 of legs 19 and 25 in proper position upon the floor, the footrest may be adjusted by lifting the rear end of brace 37 and causing it to engage in the particular one of the slots or notch means 39 upon cross-rod or securing element 29 and the footrest 34 will then remain in attained position.

At the rear, the seat 8 is formed with a plurality of spaced slots 41, 41 resulting in a series of equidistantly-spaced, rearwardly-extending

4

seat lugs 42, 42 occupying the entire rear end of the seat. Extending down between the lugs 42, 42 on the seat in the slots 41, 41, etc., of the latter, are a corresponding series of downwardly-pendent back lugs 43, 43 integral with the back 44 of the chair. Through all of the lugs 42 and 43 extends a long pivot rod 45 in such fashion that the back 44 may be hinged downwardly toward the rear of seat 8 into substantial alignment therewith when the chair is to be folded into idle condition.

However, in order to ensure a proper operative position for the back 44, and incidentally in order to maintain the chair as a whole in extended operative position, upon the intermediate portion of the rear of seat 8 a spring 46 is secured at its inner end by means of a pair of screws 47 or the like and extends rearwardly in a downwardly-arching manner to terminate at 48 with an aperture 49 within the rear end 48 adapted to receive a locking member or locking means 50 depending integrally from a bracket 51 secured to the lower end and rear portion of the back 44 by means of screws, bolts or the like (not shown). The arrangement is such that when the back member 44 is in idle extended position lying rearwardly of seat 8, the lower portion of the bracket 51 and also the locking projection 50 thereof occupy the space 52 cut into the rear end of seat 8 to form a clearance chamber to receive the mentioned parts without obstructing the same or in any way inhibiting movement of the back 44 upon the pivot rod 45. When the back 44 is erected into the generally upright position shown in Figures 1, 2 and 4, the locking projection 50 will push the outer end 48 of spring 46 downward to a sufficient extent to allow the mentioned locking member to ultimately register with aperture 49 in the spring when the latter will suddenly approach the bracket 51 and cause the locking member to project through aperture 49, preventing further movement in either direction of the back 44, thus locking the latter in its attained position. If the outer end 48 of spring 46 is manually drawn downward so that the spring clears the lower end of the locking member 50, it will then be possible to lower the back 44 rearwardly of seat 8 when the chair is to be folded or collapsed. To the side edge of back 44, a short distance above seat 8 are pivotally mounted a pair of arm rests 53, 53 at the rear ends 54 thereof by means of screws or bolts 55. Upon the under side of each of the side arm rests 53 and within the forward end 56 of each is secured a hinge 57 by means of screws or the like (not shown), and to the hinges 57 are secured depending arm braces or supports 58, 58 for swinging movement about an axis transverse of the arm rests. The mentioned braces or supports 58 at their upper ends are cut in such fashion as to present an acute angle at 59 toward the rear in order to cause the members to incline forwardly from a directly downwardly-extending position and virtually form stops engaging against the under side of the arm rests 53. At the lower ends of braces 58 pivot pins or bolts 60 pivotally connect the braces to a pair of depending lugs 61, 61 fixed to the under side of the seat at the sides and immediately within the forward ends 16 of the sides by means of screws or the like (not shown), so that the braces 58 will pivot on the bolts 60 when the chair is being folded into its idle condition.

From the foregoing, it is evident that all parts of the folding high chair which have been described are linked or pivoted together in such

manner that when desired the chair may be folded together or opened out into operative position. For example, if it is assumed that the high chair is folded into its most compact condition, as shown in Figure 3, in which the back 44 is shown substantially in line with and depending from the rear or lower end of seat 8, the back 44 may be raised to cause the locking projection 50 to engage with spring 48 and particularly engage in the aperture 49 of the spring, the raising of the back 44 automatically also raising the arm rests 53 spacing them from the seat 8 with simultaneous raising of the arm rest supports or braces 58, 58. The legs 10, 10 may then be pulled or swung out toward the left from the legs 25, 25 which will cause the bracket members 17, 17 to slide forwardly toward the forward ends 16, 16 of the side portions of seat 8 in slots 15, 15 until the legs assume the position shown in Figure 1 when the bracket members 17 will come to rest against the lugs or cleats 18, 18 in the slots 15, 15. Thereafter the brace 37 connected to the lower portion of footrest 34 is brought under the seat above cross-rod 29 and then brought down upon the latter with one of the slots 39 seating upon rod 29 and fixing footrest 34 and foot ledge 35 in position, when it will be found that the chair as a whole is in position to receive a child upon seat 8 between arm rests 53, 53 in such position that the feet may rest on ledge 35 and the child rest its back against the seat back 44.

Folding the chair together is virtually a reversal of the foregoing steps, the brace 37 being released from cross-rod 29 and allowed to hang down from bracket 36 at the lower end of footrest 34 when the legs 10 and 25 can be swung together, sliding bracket 17 rearwardly toward the rear fixed brackets 9, 9 of the seat in slots 15, 15, after which the finger may be applied to the outer end 48 of spring 46 to release the latter from locking projection 50 at the lower end of back 44 when the latter may be swung rearwardly into line with seat 8 which automatically also folds down the side rests 53 and supports 58 thereof close to the sides of seat 8 when a final folded condition of the chair shown in Figure 3 will be attained. In this folded compact condition, the chair is obviously readily placed in a closet or behind a sofa, or in any other unobtrusive place of storage.

Manifestly, variations may be resorted to and parts and features may be modified or used without others within the scope of the appended claims.

Having now fully described our invention, we claim:

1. A folding chair comprising a first pair of upstanding legs arranged in side by side spaced relation, a second pair of upstanding legs arranged in crisscross relation with respect to said first pair of legs, a securing element extending through said first and second pairs of legs at their crisscross point and pivotally connected thereto, a seat positioned upon the upper ends of said first and second pairs of legs, a pair of spaced aligned lugs positioned below said seat adjacent one end thereof and secured thereto, the upper end of each of said first pair of legs being pivotally connected to the corresponding one of said

lugs, said seat having spaced parallel slots extending inwardly from the underface thereof adjacent the side edges and arranged in parallel relation with respect to said side edges, brackets positioned below said seat and mounted in the corresponding one of said slots for sliding movement, the upper end of each of said second pair of legs being pivotally connected to the respective one of said brackets, an upstanding back arranged adjacent said one end of said seat and pivotally connected thereto, locking means on said back and engageable with said seat for securing said back to said seat, a horizontally disposed arm rest positioned on each side of said back above said seat and having one end pivotally connected to said back, and a brace positioned below each of said arm rests adjacent its other end thereof and having one end connected to said arm rest for swinging movement about an axis transverse of said arm rest, the other end of each of said braces being pivotally connected to the other end of said seat.

2. A folding chair comprising a first pair of upstanding legs arranged in side by side spaced relation, a second pair of upstanding legs arranged in crisscross relation with respect to said first pair of legs, a securing element extending through said first and second pairs of legs at their crisscross point and pivotally connected thereto, a seat positioned upon the upper ends of said first and second pairs of legs and pivotally connected adjacent one end to the upper ends of said first pair of legs, said seat having spaced parallel slots extending inwardly from the under face thereof adjacent the side edges and arranged in parallel relation with respect to said side edges, brackets positioned below said seat and mounted in the corresponding one of said slots for sliding movement, the upper end of each of said second pair of legs being pivotally connected to the respective one of said brackets, an upstanding back arranged adjacent said one end of said seat and pivotally connected thereto, locking means on said back and engageable with said seat for securing said back to said seat, a horizontally disposed arm rest positioned on each side of said back above said seat and having one end pivotally connected to said back, and a brace positioned below each of said arm rests adjacent its other end thereof and having one end connected to said arm rest for swinging movement about an axis transverse of said arm rest, the other end of each of said braces being pivotally connected to the other end of said seat.

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