

Oct. 19, 1948.

L. W. MORRIS
COLLAPSIBLE CHAIR

2,451,687

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2 Sheets-Sheet 1

FIG. 2.

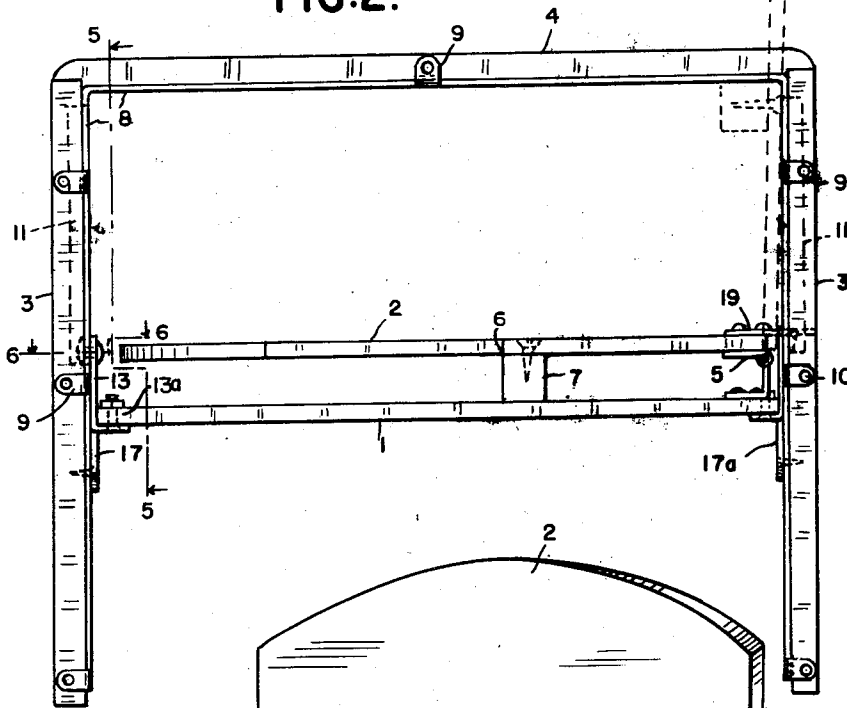
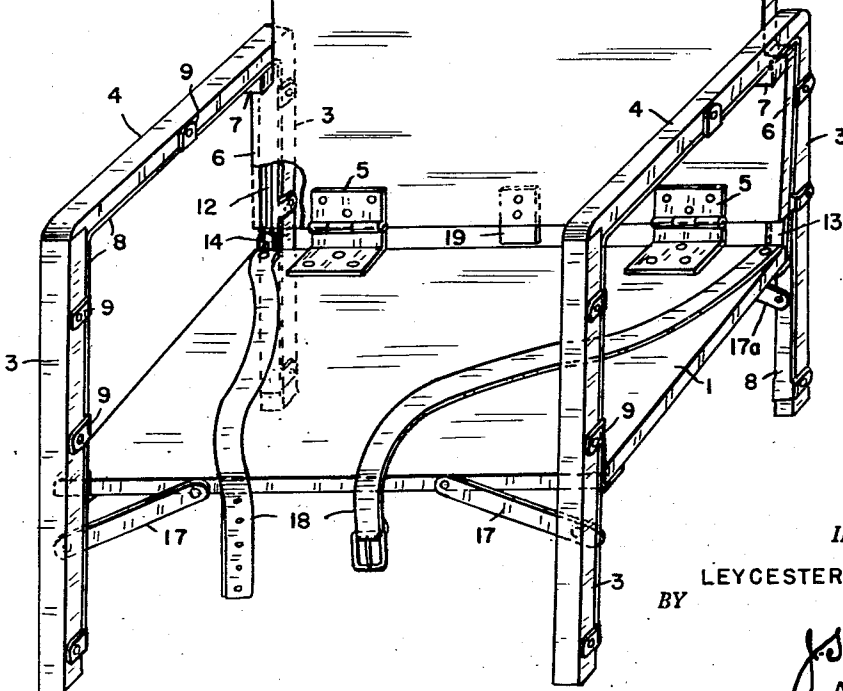


FIG. 1.

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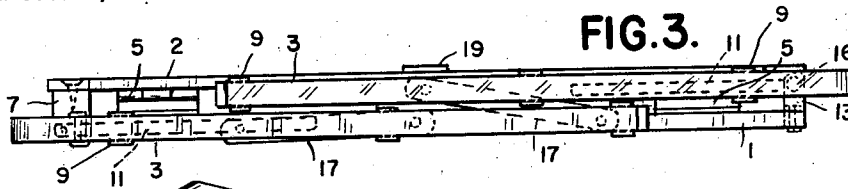
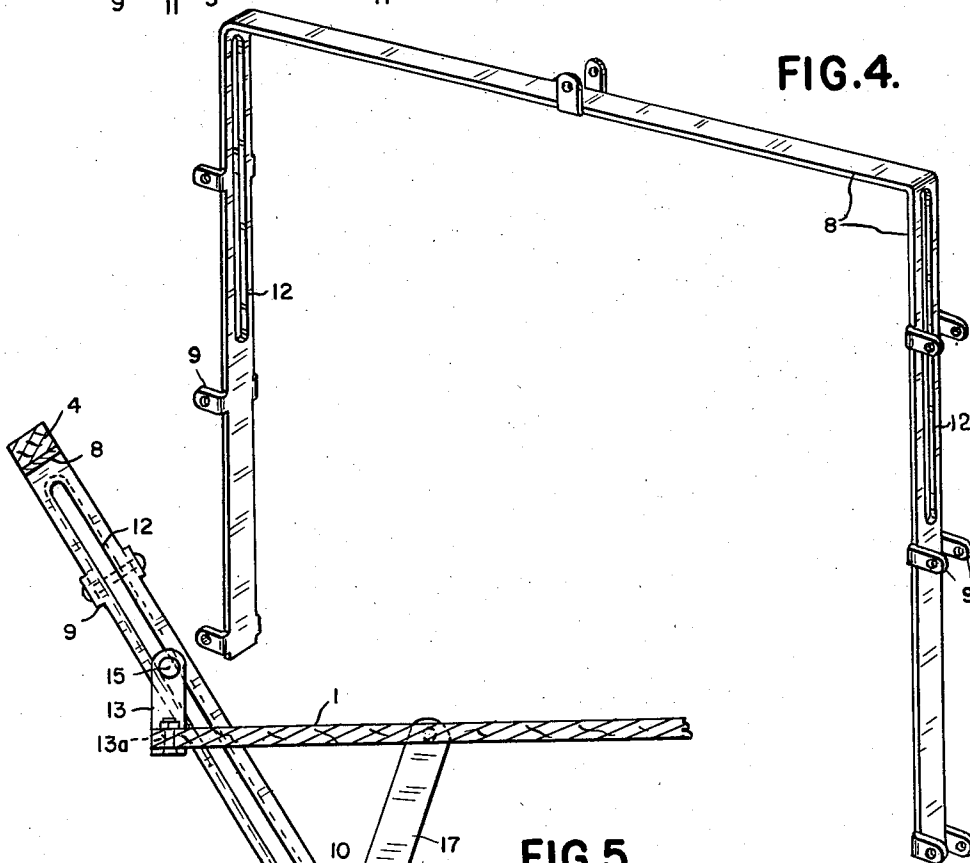
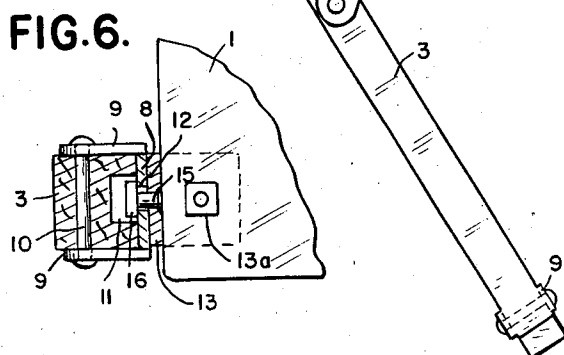
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COLLAPSIBLE CHAIR

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Application October 4, 1944, Serial No. 557,067

10 Claims. (Cl. 155—148)

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This invention relates to collapsible chairs and particularly such chairs for children's use.

Objects of the invention are to provide a simpler and less expensive mechanism than has been heretofore devised for adapting a chair to be collapsed or adjusted for use and to achieve a more compact collapsed form than heretofore.

These and various other objects are attained by the construction hereinafter described and illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the improved chair as adjusted for use.

Fig. 2 is a side elevational view of the chair, showing two limiting positions of the chair back.

Fig. 3 is a front view of the chair as fully collapsed.

Fig. 4 is a perspective view of a metal reinforcement, one of which is applicable to each side frame of the chair.

Fig. 5 is a fragmentary vertical sectional view of the chair on the line 5—5 of Fig. 2, showing a partially collapsed position of one of the side frames.

Fig. 6 is a fragmentary horizontal section taken on the line 6—6 of Fig. 2.

In these views, the reference character 1 designates the rectangular seat of a collapsible chair, 2 the back thereof, 3 the uprights of two similar arched side frames, and 4 the horizontal arm rest of each side frame. Each arm rest rigidly interconnects the uprights of the corresponding side frame, and a front and a rear leg are formed by said uprights. The back is hinged as indicated at 5 to the seat, being thus adapted to swing down to substantial parallelism with the seat as Fig. 2 illustrates. The pivotal axis of the hinges 5 is disposed some distance above the seat for reasons which will presently appear. The lower portion of the seat back has a width somewhat exceeding that of the upper portion, adapting the lateral margins 6 of said lower portion to bear against the rear uprights to maintain the use position of said back. A pair of small blocks 7 are so secured to the front faces of the margins 6 as to occupy positions beneath and in close proximity to the arm rests 4 when the chair is adjusted for use, said blocks engaging the seat and maintaining parallelism of the back and seat, when the back is swung down. The side frames are formed preferably of wood or some other light material and are interiorly engaged and strongly reinforced by arched metal strips 8. These respectively underlie the arm rests and extend downwardly on the uprights, preferably almost to their lower ends. To secure said rein-

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forcements rigidly to the side frames, opposed pairs of lugs 9, formed at suitable intervals on the reinforcements, are adapted to straddle the side frames, and rivets 10 are passed through the frames and lugs. The uprights have grooves 11, extending in their faces covered by the reinforcing strips substantially from the arm rests to points adjacent to the seat and slots 12 coextensive with and opening from such grooves are formed in the reinforcing strips. Said grooves and slots have a somewhat greater downward extent in one of the said frames than the other for a reason which will presently appear. A pair of angular brackets 13 are fastened by bolts 13a to front and rear corners of the seat at one side thereof, projecting predeterminedly above the seat, and a pair of brackets 14 bolted to the other two corners of the seat project upwardly a lesser distance. Pins 15 project rigidly forward from the upper ends of the two front brackets and rearward from the two rear brackets 13 and 14 through the slots 12 and into the grooves 11 of the uprights, being formed with enlarged heads 16 in said grooves. In use of the chair, said pins seat upon the lower ends of the slots 12, thus transmitting the load of the seat and its occupant to the uprights, and the slots and grooves of the side frame associated with the brackets 14 are somewhat longer than those of the other upright because of the differential nature of the brackets 13 and 14.

A pair of similar elongated sheet metal links 17 are pivoted at ends thereof to the front uprights some distance downward from the seat, said links extending toward each other at an upward inclination, in the use position of the chair, and being further pivoted at their other ends to the front edge portion of the seat. In the same manner the rear uprights are linked as indicated at 17a to the rear edge portion of the seat.

The described arrangement is such that the links 17 and 17a act as braces for the uprights, in use position of the chair, resisting pivoting of the side frames on the pins 15 and consequent wobbling or collapse of the chair. The weight of the seat and its occupant acting through the pins 15 on the uprights contributes to rigidity of the structure, in resisting any swinging of the links. The structure derives further and very considerable rigidity from the engagement of the seat back between the side frames, but a rigid structure remains even when the back is swung down upon the seat. To collapse the side frames, the chair is picked up and said frames are downwardly pivoted about the inner ends of the links,

concurrently sliding and pivoting on the pins 15, until the frames are in substantial parallelism with the seat and collapsed back, as appears in Fig. 3. The somewhat higher level of the pins 15 on the brackets 13 as compared to the pins on the brackets 14 is such as to adapt the collapsed side frames to lie, one closely above the other in substantial parallelism with each other as well as with the seat and back. As is clear from Fig. 3, the lowermost collapsed frame straddles the seat and the upper straddles the back, so that total thickness of the collapsed structure is no greater than the joint thickness of the two side frames. This achieves a compactness that is highly desirable for the purpose of carrying the collapsed chair or storing it in any container. The avoidance of any cross connection between the uprights of either side frame, except the arm rest, is of course a vital feature in attaining the desired compactness, since any such connection would prohibit the described straddling relation of the frames to the seat and back.

The space which occurs between the back and seat of the collapsed chair may serve to accommodate straps associated with the chair for any purpose. Thus in Fig. 1, straps 18 are shown secured to each of the rear corners of the chair seat for the purpose of securing an infant in the chair.

A chair of the described type has many possible uses. It may be set up in an adult chair to enable a child to use a table, eliminating need of a high chair, and can be conveniently carried for similar use in a restaurant or when the parents are visiting. In vehicles it may be set up on the seats to elevate a small child so that he may look out of the windows. It may be conveniently taken on any outing, to assure a suitable seat for a small child.

The extreme simplicity of the construction permits its production at low cost, yet it has ample strength for its purpose. It will be noted that the chair may be picked up by its back without a resulting downward collapse of the side frames, the margins 6 of the back preventing such collapse by their engagement beneath the arm rests.

The plate 19 secured to the back and projecting beyond its hinged edge serves as a stop, when the chair is collapsed, to prevent the side frames being swung to inverted rather than upright positions.

What I claim is:

1. A collapsible chair comprising a seat, a pair of side frames each including a pair of front and rear leg-forming uprights and an arm rest inter-connecting the paired uprights, means providing slidable and pivotal connections between the seat and uprights, means on the uprights for seating said connections and thereby imposing the weight of the seat and its occupant on the uprights, and a pair of links elongated transversely of the chair and forming swinging connections between the side frames and seat, and further forming braces in the use position of the uprights to maintain such position in conjunction with said slidable and pivotal connections and coacting with such connections to guide the side frames to collapsed positions of substantial parallelism with the seat.

2. A collapsible chair as set forth in claim 1, the uprights of each side frame being spaced sufficiently to afford a straddling of the seat by at least one of the side frames in the fully collapsed position of the chair.

3. A collapsible chair as set forth in claim 1, each side frame forming an opening and the

seat at least partially occupying one such opening in the fully collapsed position of the chair.

4. In a collapsible chair as set forth in claim 1, said pair of links being adjacent to the front edge of the seat and being connected to the front uprights, a second pair of links adjoining the rear edge of the seat and connected to the rear uprights.

5. In a collapsible chair as set forth in claim 1, a back hinged to said seat to assume either an upright position of use between the uprights or a collapsed position of substantial parallelism with the seat, the side frames forming openings, and the seat and back lying substantially within such openings in the fully collapsed position of the chair.

6. A collapsible chair as set forth in claim 1, the uprights having elongated guideways accommodating said slidable and pivotal connections, the lower ends of said guideways forming seats engagable by such connections in the use position of the chair.

7. A collapsible chair as set forth in claim 1, said slidable and pivotal connections comprising forwardly projecting pins engaging the front pair of uprights and rearwardly projecting pins, engaging the rear pair of uprights.

8. In a collapsible chair as set forth in claim 1, metallic reinforcements secured to the uprights and slotted longitudinally of the uprights to form slide guides for said sliding and pivotal connections.

9. In a collapsible chair as set forth in claim 1, an arched reinforcement secured within each side frame to the uprights and arm rest of such frame and slotted longitudinally of the uprights to form slide guides for said sliding and pivotal connections.

10. A collapsible chair as set forth in claim 1, said slidable and pivotal connections comprising forwardly projecting pins and rearwardly projecting pins, and the uprights having elongated guideways accommodating said pins, the pins associated with one of the side frames being sufficiently raised above those engaging the other to adapt said frames to collapse one above the other.

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