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2,262,500

FOLDING CHAIR

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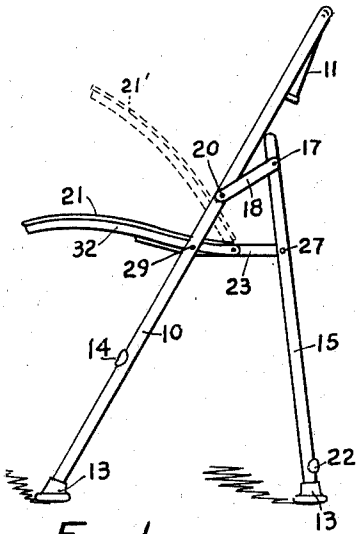


FIG. 1.

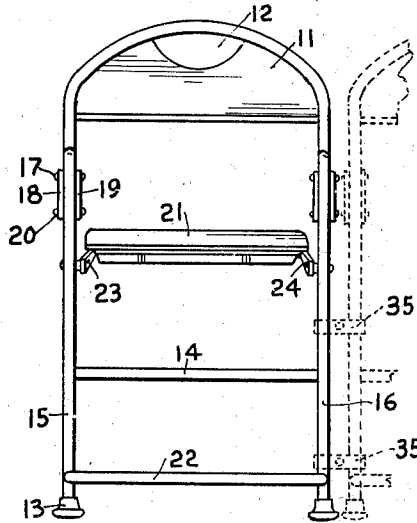


FIG. 3.

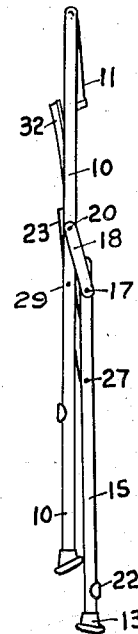


FIG. 4.

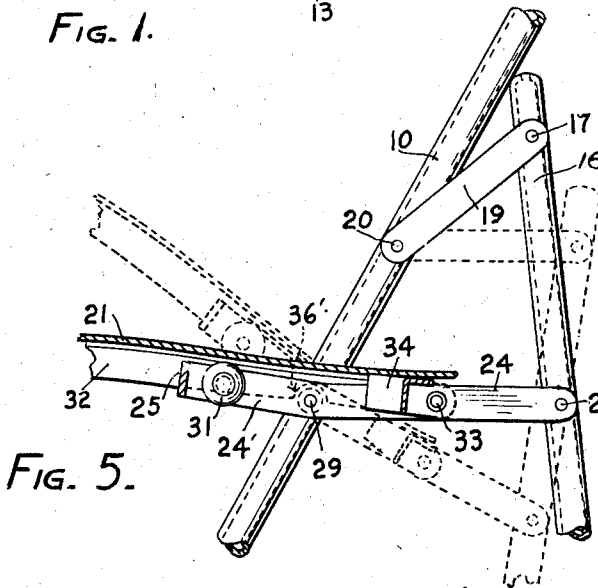


FIG. 5.

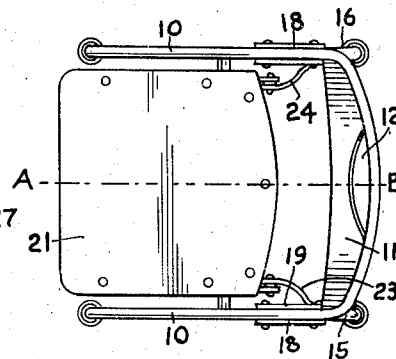


FIG. 2.

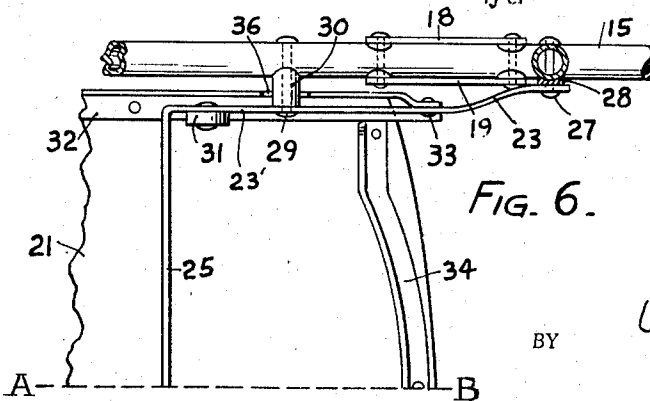


FIG. 6.

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FOLDING CHAIR

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4 Claims. (Cl. 155-142)

The present invention relates to an improved collapsible chair of the so-called inverted Y type including a rigid U-shaped front leg framework having a pair of rear prop legs pivotally attached thereto, and the instant improvements are more particularly directed to an effective linkage for conveniently folding a floating seat panel arranged to be independently tipped upwardly while its unfolded supporting structure remains erect.

Different groups of chairs may be clamped together to constitute a series of closely spaced rows of chairs. In such connection, certain rising seat occupants are thus enabled to step within my erected front leg confines in front of a rearwardly tilted seat panel to provide a cleared passageway for late-comers and which disposition results in a considerable increase in seating capacity for a given auditorium floor space.

The guided upper ends of the rear prop legs are herein attached to a medial portion of their respective front legs by shiftable self-locking links and a pair of panel supporting bars pivotally bridge the erected chair legs beneath the level of the opened seat panel. Such swingable prop links and said bars are so coordinated and remotely actuated that when shifting said links into one extreme of travel, the floating seat panel may be automatically folded by an extremely simple and obvious manipulation requiring the use of but one hand, all chair elements being simultaneously collapsed without having to directly handle the underlying supporting bars during the folding of my opened seat panel.

The object of my invention is to provide for an inherently light weight but sturdy foldable chair of the indicated character whose linkage can be fabricated on a low cost productive basis and which chairs are adapted to be compactly stacked when not in use.

Reference is had to the annexed one sheet of drawings which are illustrative of a specific embodiment, and in which drawings:

Fig. 1 is a side elevational view of an erected chair assembly equipped with my preferred linkage, while Fig. 2 is a top view thereof.

Fig. 3 shows a rear end view of Fig. 2.

Fig. 4 depicts an elevational side view of my chair as it appears when fully collapsed.

Fig. 5 illustrates an enlarged fragmental detail of my leg linkage in its open position as taken along line A—B of Fig. 2, and Fig. 6 is a partial bottom view of Fig. 5.

Referring more specifically to the structural details of my inverted Y type of folding chair

which is kept symmetrical about the reference line A—B, 10 denotes its rigid U-shaped frame preferably fabricated from bent tubular metal stock. A concaved back rest 11 may be mounted in the yoke region of such frame and cut away to constitute a centralized hand grip 12. The respective floor contacting front leg ends may each be provided with a rubber shoe such as 13 and a rung 14 may span the front leg structure.

A pair of rear prop legs 15 and 16 may each be pivotally connected inwardly away from their respective upper end regions as at 17, preferably by the use of twin guide links 18 and 19 for each prop leg. Such multiple links augment rigidity of the prop legs. The respective opposite link ends may be pivoted at 20 to an intermediate portion of a corresponding front leg, said pivot 20 lying above the level of the unfolded seat panel 21 as shown. The floor contacting end of each rear leg may likewise be provided with shoes and have a prop rung 22 located adjacent thereto serving as treadle means for manipulating my folding chair.

As an additional tie between the front and rear legs, I provide for mated seat supporting bridge bars 23 and 24 which as detailed in Figs. 5 and 6, respectively include a forward extending projection 23' or 24' that may be integrally cross-connected at 25. The rear end of each such bar may be pivoted at 27 to a contiguous prop leg and provided with an interposed washer 28. Between the ends of each supporting bar, an intermediate pivot 29 may be riveted to the front leg and preferably embraced by a reinforcing spacer bushing 30. The forward end region of each such bar projection extending onwardly beyond the front leg pivot 29, may carry a rubber buffer or other noiseless cushioning element 31 upon which the lowered seat panel rests in its operative position.

The curved seat panel 21 of substantially rectangular contour may be fabricated from thin plywood or in any other suitable manner and may be provided with an underlying angle iron frame of U-shape to comprise a pair of reinforcing side rails such as 32 of which the respective rear ends may be riveted at 33 to a mated supporting bar, preferably between the rivets 27 and 29 so that the rear panel edge may extend back of the last named pivot. The depending flanges of the panel side rails 32 are preferably kept spaced wider than the bars 23 and 24 and such flanges may respectively be recessed at 36 to obviate interference with their co-operating bushings 30. A cross strap such as 34

may also be riveted beneath the rear panel edge for lateral stiffening purposes.

As schematically indicated in Fig. 3, a plurality of my folding chairs may be alignedly located alongside each other into row formation by means of multiple front leg clamps such as 35. By the use of a guide link connection for the upper extremity of each rear prop, no rubbing action occurs lengthwise of either chair leg and hence does not tend to mar the enamel finish that may be given to the several chair components. Having described the structural aspects of my improved chair linkage, its mode of operation may be traced as follows:

When erected as in Fig. 1, the seat panel 21 may be independently lifted through its dotted position 21'. The seat occupant may therefore rise and unobstructedly step back between the front legs toward the rung 14 to allow others more freely to pass in front of such occupant while the several erected chair legs remain fully spaced apart without any collapse.

In order to fold my chair, the operator need merely tread upon the prop rung 22 and simultaneously lift the hand grip 12. Thereupon the links 18 and 19 will be caused to swing about their pivot 20 into an opposed extreme of travel and be brought into the fully folded relation represented by Fig. 4. Such simple manipulation at the same time cooperatively turns the supporting bars 23 and 24 around their respective front leg pivots 29 as indicated in dotted outline by Fig. 5 and thereby automatically carries the seat along into full collapse. Hence, although my floating seat panel is kept independently liftable when erected for use without tending to draw the rear prop legs toward the front legs, it is unnecessary to reach beneath the seat panel or otherwise directly actuate my supporting bar to initiate collapse of the erected legs.

A reversal of the cited folding operations, brings about a convenient and positive unfolding of my chair into its erected operative position wherein the respective upper extremities of the prop legs are made to firmly contact behind the front legs and are stabilized by the self-locking links 18 and 19 to withstand comparatively heavy body loading without undue side sway. In the present linkage, such actuated side links are disposed to positively control the folding or unfolding movement of the panel supporting bars 23 and 24 and as a consequence the floor contacting shoes of the folded rear legs will be carried outwardly beyond those of the front legs as in Fig. 4. It will also be observed that when collapsed, the bar projections 23' and 24' are made to fall into substantial alignment with the plane of the front leg frame 10.

As will be obvious to those skilled in this art, various equivalent structural changes may be resorted to in carrying out my illustrative embodiment, all without departing from the spirit and scope of my invention heretofore described and more specifically defined in the appended claims.

I claim:

1. A collapsible chair of the inverted Y type adapted to be unfolded into erected position and comprising a pair of yoke interconnected front legs, a pair of rung connected rear prop legs, shiftable guide link means pivoted to the upper end portion of each such prop leg and to a corresponding front leg, said link means being rockable in unison about their respective front

leg pivots and in one direction of movement serving to carry said prop ends upwardly into locked abutment with their respective front legs when the chair is erected, mated bridge bars located beneath said link means and respectively pivoted to a front leg and to its corresponding prop leg, said bars each including a forward projection that in erected position extends horizontally beyond the front leg pivot thereof as a seat panel upholding agency, and a floating seat panel of which a rear marginal region is pivotally mounted to span the respective bars having a medial region that liftably rests upon the erected bar projections, said bridge bars being actuated by their respective prop legs when the link means are rocked in a reverse direction and thereby automatically bringing the seat panel into substantial alignment with the several folded legs.

2. A collapsible chair of the inverted Y type adapted to be unfolded into erected position and comprising a pair of parallel front legs lying in a common plane, a pair of rung connected rear prop legs, shiftable guide link means pivoted to the upper end portion of each such prop leg and to a corresponding front leg, said link means being rockable in unison about their respective front leg pivots and in one extreme of such travel serving to carry the said prop ends upwardly into locked abutment with their respective front legs when the chair is erected, mated bridge bars respectively pivoted to a front leg and to its corresponding prop leg, said bars each including a forward projection that in erected position inclines upwardly and extends beyond the front leg pivot thereof, and a floating seat panel of which a rear marginal region is pivotally mounted to span the respective bars having another panel region that liftably rests upon the erected bar projections, said link means when shifted downwardly into an opposed extreme of travel serving to cooperatively collapse the several chair legs and thereby automatically fold said bar extensions into substantial parallelism with the front leg plane.

3. A collapsible chair of the inverted Y type adapted to unfold into erected position and comprising a pair of yoke interconnected front legs, a pair of rung connected rear prop legs, actuatable guide link means pivoted to the upper end portion of each such prop leg and to a corresponding front leg, said link means being rockable in unison about their respective front leg pivots and in one direction of movement serving to carry said prop ends upwardly into locked abutment with their respective front legs when the chair is erected, mated bridge bars that are laterally offset and respectively pivoted interiorly to an adjacent front leg and to its corresponding prop leg, said bars each including a forward projection that in erected position extends beyond the front leg pivot thereof and provides for an inward clearance spacing with respect to the front leg, and a floating seat panel reenforced by opposed side rails respectively adapted to lie within a registering clearance space between a bridge bar and a front leg and having the respective rear rail ends tiltably riveted to the exterior of a contiguous bar, said bridge bars being actuated by their respective prop legs when said link means are rocked in a reverse direction and thereby auto-

matically folding the seat panel into substantial alignment with the several legs.

4. A collapsible chair of the inverted Y type adapted to unfold into erected position and comprising a pair of yoke interconnected front legs, 5 a pair of rung connected rear prop legs, shiftable guide link means pivoted to the upper end portion of each such prop leg and to a corresponding front leg, said link means being rockable in unison about their respective front leg pivots 10 and in one direction of movement serving to carry said prop ends upwardly into abutment with their respective front legs when the chair is erected, mated bridge bars respectively pivoted to a front leg and to its corresponding prop leg, 15

said bars each including a forward projection that in erected position extends horizontally beyond the front leg pivot thereof and which projections are cross connected, buffer means located adjacent to such cross-connection, and a floating seat panel of which a rear marginal region is pivotally mounted between the respective bars having a medial region liftably resting upon the buffer means, said bridge bars being actuated by their respective prop legs when the link means are rocked in a reverse direction and thereby automatically fold said bars into substantial alignment with the several legs.

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