Sept. 26, 1939. R. G. GELLER 2,174,224

FOLDING CHAIR AND ALIGNER THEREFOR

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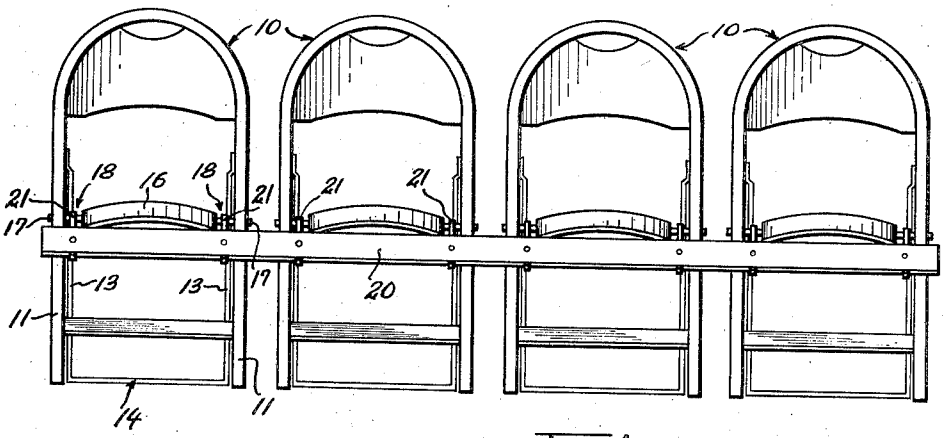


Fig. 1

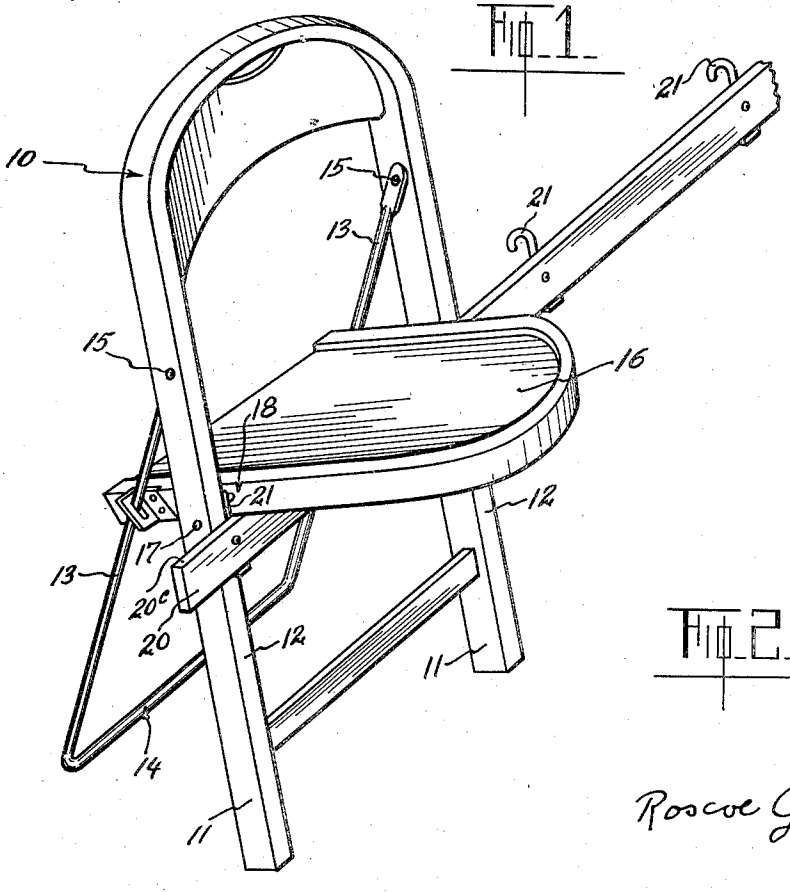


Fig. 2

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FIG. 3

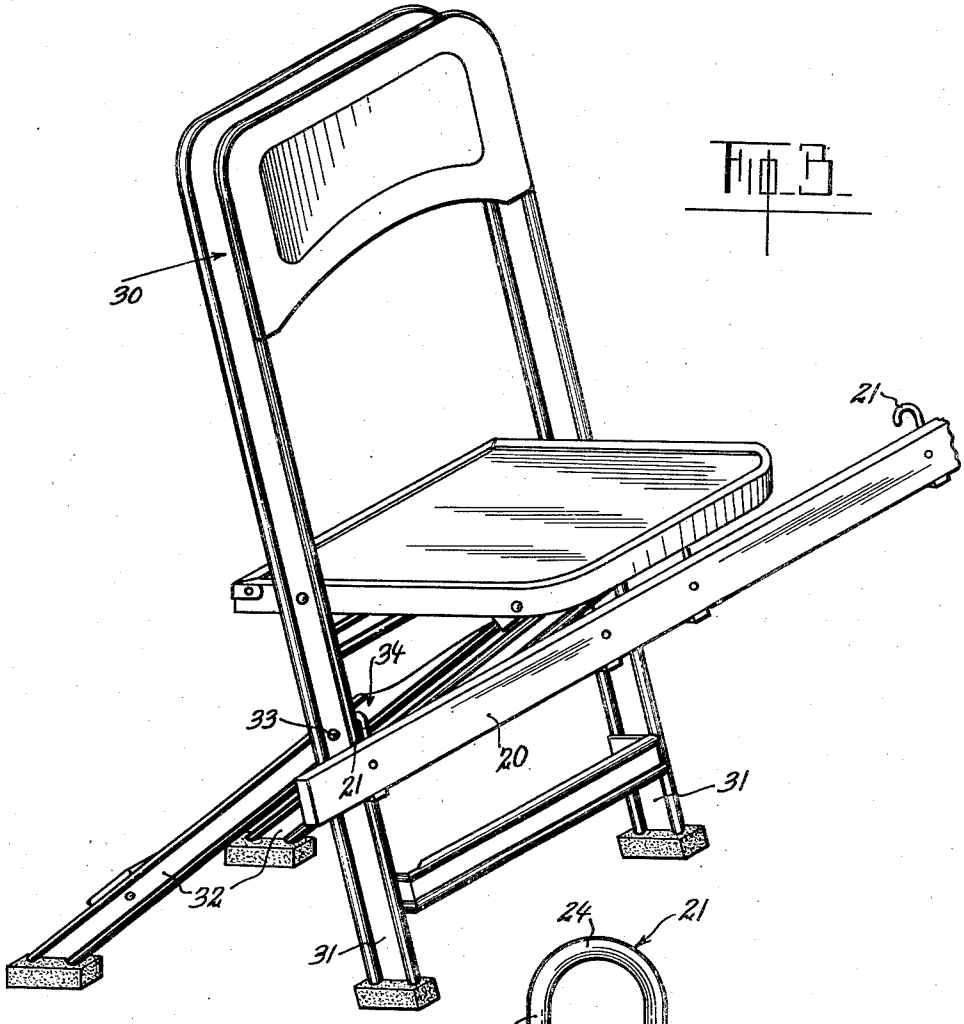
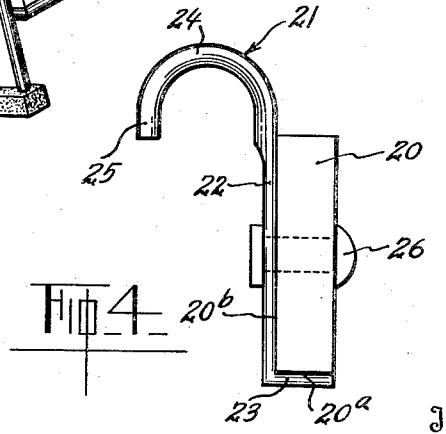


FIG. 4



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FOLDING CHAIR AND ALIGNER THEREFOR

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Application September 17, 1936, Serial No. 101,304

3 Claims. (Cl. 155—130)

This invention relates to folding chairs and more particularly to a device for holding a plurality of said chairs when arranged in a row for occupancy in locked aligned relationship.

It is well known that folding chairs when placed in rows for use soon become disarranged by virtue of the movements of the people occupying the same either while seated or during ingress or egress between the rows thereof. In some cases a chair or chairs are even bodily removed from a row and carried to another place which obviously destroys the aligned relationship of the same. In any case where folding chairs are utilized in large numbers considerable confusion, annoyance, inconvenience, noise and loss in time results unless some expedient is resorted to for holding the chairs in place.

To accomplish this desired result various methods have been utilized to hold the chairs together, such as by clamping or fastening a board to the underside of the seats, or by clamping or fastening a rod or bar directly to the legs of the chairs. The employment of such expedients involves the expenditure of great amount of time and labor especially when it is necessary to lay out a large number of chairs, both when assembling the chairs in rows and when dismantling the same, and has proven quite expensive.

It is therefore an object of this invention to provide a readily attachable and demountable rigid cross bar adapted to engage certain selected pivotal connections of folding chairs in such a manner as to lock a selected number of chairs, aligned side by side, into a single unitary row.

Another object is to provide a means for aligning any selected number of folding chairs, which means is itself locked in place by similar portions of the chairs in their unfolded position.

Another object of this invention relates to the provision of hook elements on the aligner bar which are adapted to engage said pivotal connections or like members and to so suspend the aligner bar therefrom as to provide a locking engagement between the aligner bar and the seats of the chairs.

A further object of the invention relates to the simplified quick and efficient manner of applying the aligner bar to a row of chairs and in removing the same therefrom without the use of tools, separable fastening elements or other mechanical appurtenances.

These and numerous other objects and advantages will be more apparent from the following detailed description when considered in connection with the accompanying drawings, wherein:

Fig. 1 shows in front elevation a group of folding chairs with the aligner bar in applied position thereon.

Fig. 2 shows in perspective one of the folding chairs shown in Fig. 1 and the mounting of the aligner bar with relation to the seat of the chair.

Fig. 3 shows a similar view in perspective of the mounting of the aligner bar on a folding chair of a different type.

Fig. 4 shows in end elevation one end of the aligner bar and the hook construction.

Referring now to the drawings more in detail wherein like numerals have been employed to designate similar parts, Fig. 1 shows four folding chairs 10 arranged side by side to constitute what will hereinafter be referred to as a row. Each of the chairs 10 is of a conventional and well known design and comprises a pair of front legs 11 made of wood and having a flat forward edge or face 12, and a pair of rear legs 13 constituting the arms of a metallic U-shaped rod 14, the upper free ends of the legs 13 being pivotally connected to the inside faces of the front legs 11 as at 15. Between the pivotal connections 15 and the bottoms of the front legs 11 is a seat 16 which seat is pivotally mounted on the seat rod 17 connecting the seat 16 to the front legs. A detailed description of the chairs is not essential for a clear understanding of the invention and these particular chairs are merely shown for the purpose of illustrating one practical application of the invention. It will be observed from both Figs. 1 and 2 that the sides of the seat 16 are spaced a substantial distance as at 18 from the inside faces of the front legs 11.

Arranged to extend traversely across the underside of the chair seats 16 of the row of chairs 10 is an aligner bar 20 which may be made of wood or metal of any desired cross-sectional shape. Preferably the aligner bar 20 is formed of a wood rail rectangular in cross-section for a purpose to be hereinafter described, the rail being of such a length to extend completely across the row of chairs as clearly shown in Fig. 1. On one side of the cross bar 20 there are securely attached four pairs of identical hooks 21. Each hook 21 comprises a flat shank portion 22, see Fig. 4, the lower end of which terminates in a forwardly projecting flange 23 adapted to fit the lower edge 20a of the cross bar, the flat side of the shank 22 abutting the inside face 20b of said cross bar.

The length of the shank 22 is substantially

equal to the width of the aligner bar 20 and terminates at its upper end in a hook 24 oppositely directed with respect to the flange 23, the terminus 25 of the hook being preferably parallel to the shank 22, and with the end a substantial distance below the top of the hook whereby to provide an engaging portion of substantial depth. Rivets 26 securely connect the hooks 21 to the aligner bar 20, the flanges 23 functioning to prevent turning of the hooks.

The hooks 21 are arranged in pairs on the aligner bar 20, the hooks in each pair being spaced apart a distance substantially equal to distance between the vertical parallel center planes of the spaces 18. The adjacent hooks 21 of adjacent pairs are spaced apart a sufficient distance to effect the normal spaced apart relation between the chairs 10.

Thus, with the chairs 10 arranged in a row and properly spaced, the aligner bar 20 is easily and quickly applied thereto by the simple expedient of positioning the pair of hooks 21 in the spaces 18 for hooking engagement with the hinge pins 17. When so suspended the inside flat face of the aligner bar 20 will lie on the front flat face 12 of the front legs 11. With the hook portions 24 being made a predetermined length, the upper edge 20c of the aligner bar 20 is in position, when the cross bar is applied, as to be pressure contacted by the underside of the seats 16 to effect a positive locking engagement of the aligner bar 20 to the row of chairs.

It will thus be apparent that the aligner bar 20 acts to positively hold the chairs 10 in their proper alignment and prevents accidental removal of a chair from the row or disarrangement of the entire row. It is also obvious that by virtue of the extreme simplicity of the aligner bar 20 and the manner of attaching and demounting the same, a great saving in time and labor is achieved in assembling the chairs in groups of rows. While the aligner bar 20 has been shown of a length to connect together four folding chairs in a group or unit it is to be understood that the same may be made of any desired length for any desired number of chairs. In some cases suitable connecting means may be utilized for connecting together adjacent ends of lengths of cross bars to provide a single cross bar of great length.

Fig. 3 illustrates the type of chair shown in U. S. Patent No. 1,873,768 granted August 23, 1932, to Albert S. Kux, and assigned to Stakmore Co., Inc., in which a telescopic connection is provided between the front part of the seat and the upper parts of the rear legs 32, to permit folding of the chair. The chair 30 is also provided with front legs 31, and these front legs 31 are pivoted to the rear legs 32 at a point intermediate their ends, as indicated at 33. The construction is such that the rear legs are spaced from the front legs at their pivotal connection 33 a suitable distance, as indicated at 34. In assembling together such a group of chairs 30, utilizing the same form of aligner bar 20, the hooks 21 are slipped into the spaces 34 for engagement with the hinge pivots 33. When so suspended the aligner bar 20 lies against the forward edges of the front legs 31, and is locked in place by the upper part of the rear legs 32 when the chair is in its unfolded position.

While the preferred form of the invention has been herein shown and described, it is to be understood that various changes may be made in the details of construction and in the combination and arrangement of the several parts, within the scope of the claims, without departing from the spirit of the invention.

1. In combination, a plurality of folding chairs each having relatively movable parts, each chair comprising a plurality of pairs of leg elements and a folding seat, means pivotally connecting said seat to at least one leg of each pair of said leg elements, horizontally aligned pivot means for connecting each of said pairs of leg elements, and a unitary device detachably engaging the aforesaid horizontally aligned pivot means and locked in place by like movable parts of each chair, only when said chairs are in their unfolded position, for maintaining the said plurality of chairs in spaced aligned relation.

2. In combination, a plurality of folding chairs each having relatively movable parts, each chair comprising a plurality of pairs of leg elements and a folding seat, means pivotally connecting said seat to at least one leg of each pair of said leg elements, horizontally aligned pivot means for connecting each of said pairs of leg elements, and a unitary device detachably engaging the aforesaid horizontally aligned pivot means and locked in place by like movable parts of each chair, only when said chairs are in their unfolded position, for maintaining the said plurality of chairs in spaced aligned relation, said unitary device comprising a bar having pairs of spaced hook members.

3. A plurality of folding chairs arranged side by side, each chair having a pair of forwardly inclined front legs and a pair of rearwardly inclined rear legs pivoted to the front legs, a seat pivotally connected to one pair of said legs and foldably connected to the other pair of said legs, an aligned bar having hooks engaged on like pivotal connections of adjacent chairs, said bar being gripped at the juncture of the pivoted elements connected by said pivoted connections.

ROSCOE G. GELLER.