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2,568,269

FOLDING CHAIR

Filed April 16, 1949

2 Sheets-Sheet 1

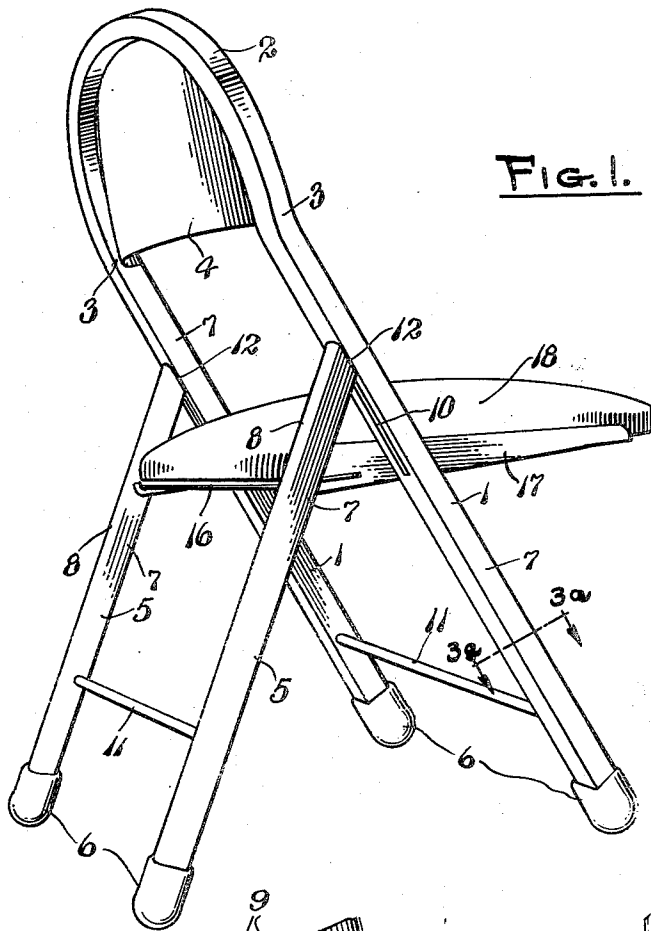


FIG. 1.

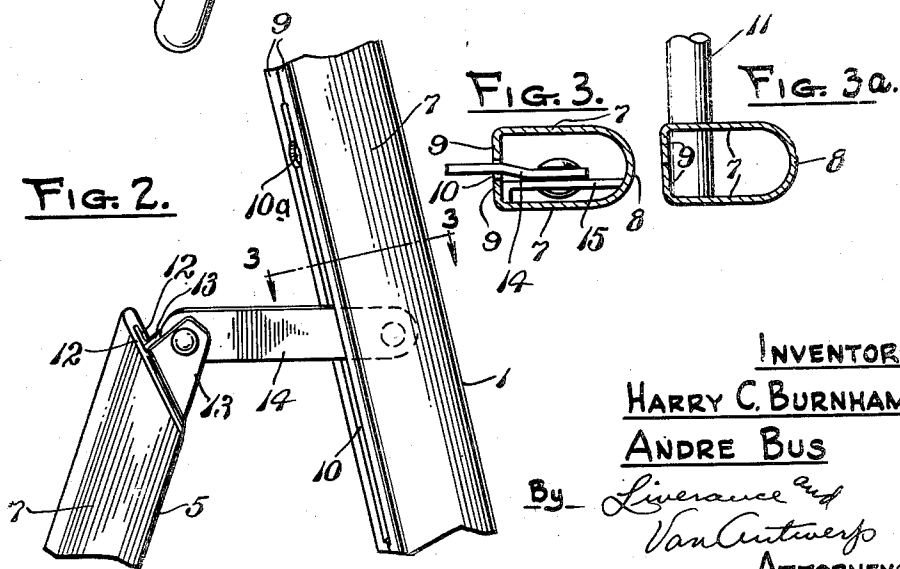


FIG. 2.

FIG. 3.

FIG. 3a.

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FIG. 4.

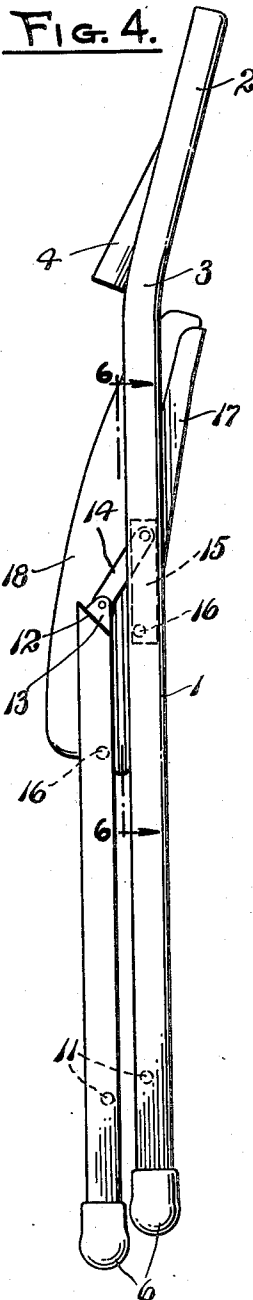


FIG. 5.

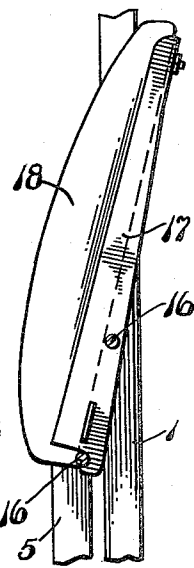
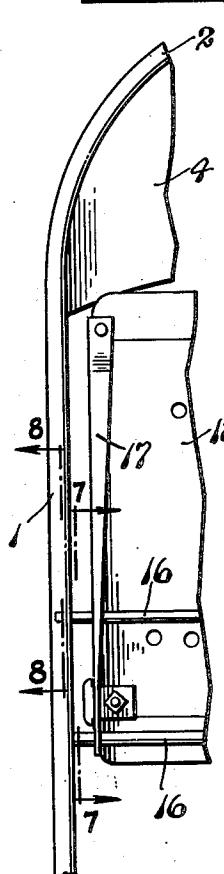


FIG. 7.

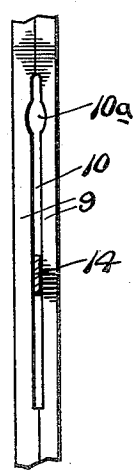


FIG. 6.

FIG. 8.

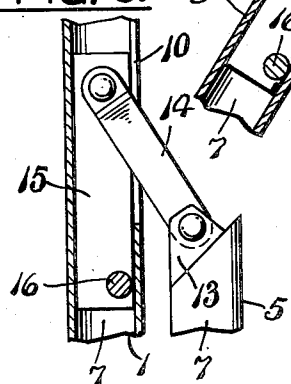
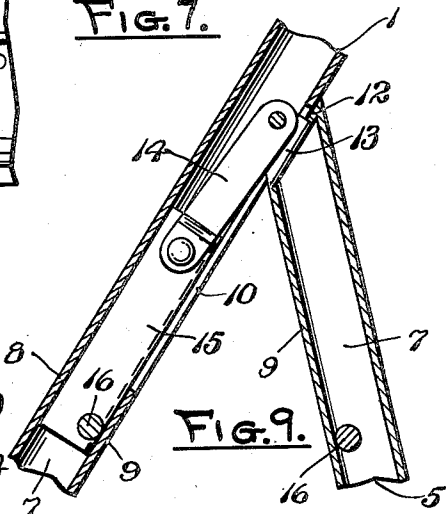


FIG. 9.



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FOLDING CHAIR

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Application April 16, 1949, Serial No. 87,918

8 Claims. (Cl. 155-142)

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This invention relates to folding chairs, and is particularly concerned with folding chairs which are very economically constructed, particularly strong and durable, and which have a desirable appearance without unsightly joints and connections, novel structure being used in connecting the movable foldable parts of the chair together, the connections being disguised and concealed when the chair is in its unfolded useful position.

We have heretofore filed an application upon a folding chair, having Ser. No. 689,949, filed August 12, 1946, now abandoned. The present application is a continuation thereof with improvements in structure which better the structure shown in the prior application and by means of which the chair may be more economically manufactured and have a better appearance.

An understanding of the invention may be had from the following description, taken in connection with the accompanying drawing, in which,

Fig. 1 is a perspective view of the folding chair in its unfolded useful position.

Fig. 2 is a fragmentary enlarged perspective view, illustrating the connecting between the upper ends of the back legs of the chair to the front legs thereof.

Fig. 3 is a horizontal section, substantially on the plane of line 3-3 of Fig. 2.

Fig. 3a is a similar section on the plane of line 3a-3a of Fig. 1.

Fig. 4 is a side elevation of the folded chair.

Fig. 5 is a fragmentary rear elevation, at one side of the folded chair shown in Fig. 4.

Fig. 6 is a partial vertical section and a rear elevation, the section being taken on the plane of line 6-6 of Fig. 4.

Fig. 7 is a fragmentary vertical section and side elevation, the section being taken on the plane of line 7-7 of Fig. 5.

Fig. 8 is a fragmentary vertical section substantially on the plane of line 8-8 of Fig. 5, and

Fig. 9 is a similar section showing the parts in a different position, Fig. 8 being the folded position of the chair and Fig. 9 the useful, unfolded position thereof.

Like reference characters refer to like parts in the different figures of the drawings and the sections are taken looking in the directions indicated by the arrows associated with the section lines.

In the disclosed structure, a front frame of inverted U-form has spaced apart legs 1 which

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are integrally connected by a U-shaped bend 2 at their upper ends. Preferably, substantially at the joinder of the straight legs 1 with the U-bend 2, a bend, as indicated at 3 is made in each side of the frame so that the upper bend portion is inclined forwardly at an angle to the plane of the spaced legs 1. It is, however, to be understood that such bends as indicated at 3 need not be used and will not be used in one form of chair. A back supporting member 4 of any desired structure is secured to and fills the upper U-bent portion. Such front frame in the use of the chair inclines upwardly and to the rear, as shown in Fig. 1, and is supported by two spaced rear legs 5 foldably connected to the front legs 1 as hereafter described. At the lower ends of each leg 1 and 5, floor engaging feet 6, preferably are attached.

Such frame with the legs 1, and the rear legs 5 are formed from lengths of sheet metal which are bent and shaped to provide oppositely spaced parallel sides 7, connected integrally by an arc shaped bend 8 which will be at the front of the front legs 1 and at the rear of the rear legs 5 each side 7. At the back of the front legs and at the front of the rear legs flanges 9 are bent inwardly at right angles toward each other to and from the sides 7. Such flanges come together except that between the upper and lower ends of the front legs 1, sufficient metal is removed to provide in the rear side of each of the legs 1 an elongated relatively narrow slot 10. Each slot 10 at the upper end portion may be further widened as indicated at 10a for reasons hereafter appearing. The two front legs 1 and the two rear legs 5 adjacent their lower ends have rods 11 extending between and permanently connected therewith by welding or any other equivalent connecting means for reinforcement and extending said legs to prevent their separation.

Each of the rear legs 5 has the metal of the sides 7 turned inwardly toward each other to make an abutment 12 at the upper end of each rear leg; and from the edges of the flanges turned in to make such abutment, two spaced ears 13 extend upwardly. A link 14 of flat metal is pivotally connected at one end to and is located between each pair of ears 13 at the upper ends of the legs 5. The links 14 extend through the slots 10 and at their inner ends have pivotal connection to bars 15 formed of flat metal which are permanently and rigidly secured one within each of the front legs 1. Said links 14 have a pivotal connection to the upper ends of the bars

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15 which are somewhat elongated over what is required for such pivotal connection, to strengthen and reinforce the front legs 1 and to dispense with making such bars in "rights" and "lefts," for the right and left front legs.

Two additional rods 16 are located one between the spaced front legs 1, and the other between the spaced rear legs 5. The rod 16 between the front frame legs 1 preferably extends through the inner sides of said legs and have a permanent and rigid connection to the bars 15, so that said bars 15 provide a support of greater strength for such rod upon which the chair seat is mounted for folding movement. The rod 18 between the back legs 5 is a distance below the upper ends of said legs and to it the folding seat of the chair is connected at its rear under portion.

The chair seat which may be made in many specific ways preferably includes two spaced side bars 17 of a generally angular form in cross section having vertical and horizontal legs. Between the horizontal legs a steel supporting bottom of a seat 18 is located and secured. The side bars 17 are mounted on the front rod 16 at a distance from the rear edge of the seat, and the rear edge of the seat is connected to the rear bar 16. The seat above the side bars 17 and its metal bottom 18 may be finished in any desired material, as by upholstering padding underneath a cover therefor, by a wood veneer panel secured in place, or in various other ways to provide the form of the seat wanted.

The upper ends of the rear legs 5, at the abutments 12 when the seat is folded as in Fig. 4, are inclined to both the horizontal and vertical. When the folded seat shown in Fig. 4 is to be unfolded to the position as in Fig. 1, the legs 1 and 5 are separated at their lower ends and the seat turned downwardly whereupon links 14 (Figs. 1 and 4) automatically swing in a counter-clockwise direction and pass, together with ears 13 through the slots 19 and are located wholly within the hollow legs 1 (Fig. 9) with the abutments 12 of the rear legs 5 against the flanges 9 at the rear sides of the front legs 1. The seat likewise is simultaneously swung or turned about the front rod 16 in a counter-clockwise direction from the substantially vertical folded position shown in Fig. 4 to the horizontal position as in Fig. 1.

The chair is of novel structure, and economical to produce. When in its useful position, Fig. 1, it has a distinctive and attractive appearance, the links 14 and ears 13 being wholly concealed and the abutment provided at the upper end of each rear leg 5, at 12, being snugly against the flat rear sides of the front legs 1, providing smooth joints without unsightly projections. The channel form, in cross section of the legs, with opposite rounded and flat sides gives strength and rigidity to the structure, and is one which is readily fabricated. The reinforcement and strengthening provided by the bars 15 add to the value of the chair and provide increased strength for support of the seat and any weight thereon. The slots 10 at their upper ends may be widened as much as necessary for the passage of the ears 13 and for the heads of the pivot which connect said ears with the links 14, as indicated at 10a.

The structure is a marked improvement in the art of folding chairs in its provision of a sturdy and durable, economically produced chair, and one which may be folded to occupy small space. It is light in weight and has a particularly desirable appearance.

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The invention is defined in the appended claims and is to be considered comprehensive of all forms of structure coming within their scope.

We claim:

5 1. A folding chair comprising, a front frame having spaced apart sides inclining upwardly and to the rear and connected at their upper end portions, the lower end portions of said sides providing spaced front legs for the chair, rear chair legs spaced from each other adapted to incline downwardly and to the rear, a seat pivotally connected to and located between said front legs and having pivotal connection at its rear end to and located between the rear legs, said connection of the seat to the rear legs being below their upper ends, a link pivotally connected at the upper end of each rear leg extending into said front legs and having pivotal connection thereto, said front legs at the rear side thereof having vertical slots, the links extending through and being located inside said front legs when the seat is in unfolded useful position, the upper ends of said rear legs and the upper sides of said front legs having abutting engagement and said links within the front legs extending upwardly therein from their points of pivotal connection to said front legs.

2. A structure as defined in claim 1, said frame and said rear legs being hollow and having spaced opposed sides and a front and a rear side, said slots being located in the rear sides of said front legs, and a bar fixed within each of the front legs adjacent said slots to which the inner ends of said links are pivotally connected, said links extending above said bar when the upper ends of the rear legs are in abutting engagement against the rear sides of the front legs and said links are housed within the front legs.

3. A structure as defined in claim 1, said frame and rear legs being hollow and of generally channel form in cross section, having parallel spaced opposite sides integrally connected at one edge by a curved bend of generally semi-circular form, and at the other edges having flanges turned inwardly toward each other at right angles to the sides, said flanges abutting their full length except at the slots in the front legs of said frame.

4. A structure as defined in claim 1, said rear legs being of sheet metal and hollow and of a generally channel form in cross section, having spaced parallel sides connected at their rear edges by a concave arc shaped portion and at their front edges having flanges turned inwardly toward each other abutting at their free edges, said sides of the rear legs at their upper ends having returned extensions generally at right angles to said sides, from each of which an ear extends above and generally in the direction of the lengths of said rear legs, said links having pivotal connection at one end to and located between the ears at the upper ends of said legs.

5. In a folding chair a front frame having spaced apart legs connected at their upper ends, rear spaced apart legs, all of said legs being hollow and the front legs at their rear sides having narrow, relatively long slots therein, a link adapted to extend through each of said slots pivotally connected at its forward end to and within each of said front legs, projecting members at upper ends of each of the rear legs to which rear ends of said links are pivotally connected, said links and said projecting members passing through associated slots when the upper ends of the rear legs are against the rear sides of the

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front legs, a horizontal rod extending between and permanently connected to said front legs adjacent the lower ends of the slots therein, a seat mounted between its front and rear edges for folding movement on said rod, and a second horizontal rod extending between and permanently connected to the rear legs a distance below their upper ends to which the seat at its rear edge portion has pivotal connection.

6. A structure as defined in claim 5, the outer side of said front and rear legs lying in substantially two spaced parallel vertical planes and the inner sides of said legs lying substantially in two closer spaced parallel vertical planes, said rear legs at their upper ends having abutment surfaces located at an acute angle to the lengths of said rear legs adapted to bear against the rear sides of said front legs, adjacent sides of said front and rear legs at said abutments being substantially flush with each other.

7. A construction as defined in claim 5, and metal bars permanently secured one with each of said front legs to the upper ends of which said links are pivotally connected, said first mentioned horizontal rod extending between the front legs having a permanent connection to said bars adjacent the lower ends thereof.

8. A folding chair comprising, a front frame having spaced apart sides inclining upwardly and to the rear, and connected at their upper end portions, the lower end portions of said sides providing spaced front legs for the chair, rear

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legs for the chair spaced from each other adapted to extend downwardly and to the rear, a seat pivotally connected at its rear portion on said rear legs to turn upwardly about a horizontal axis extending between the sides of the frame, having a pivotal connection thereto, links pivotally connected at one end, one to each of the rear legs, said sides of the frame each being substantially hollow and each open at its rear for inward passage of said links into said sides of the frame to be housed therein in the unfolded operative position of the chair, each link at the other end having a pivotal connection to its associated side of the frame within said side thereof, and adapted to be swung about its pivotal connection when the chair is folded and unfolded, each link, when the chair is folded, extending partially out of and to the rear of the side of the frame to which connected.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,977,766	Kivler	Oct. 23, 1934
2,044,378	Bergner	June 16, 1936
2,233,749	Salomon	Mar. 4, 1941
2,262,500	Johannsen	Nov. 11, 1941