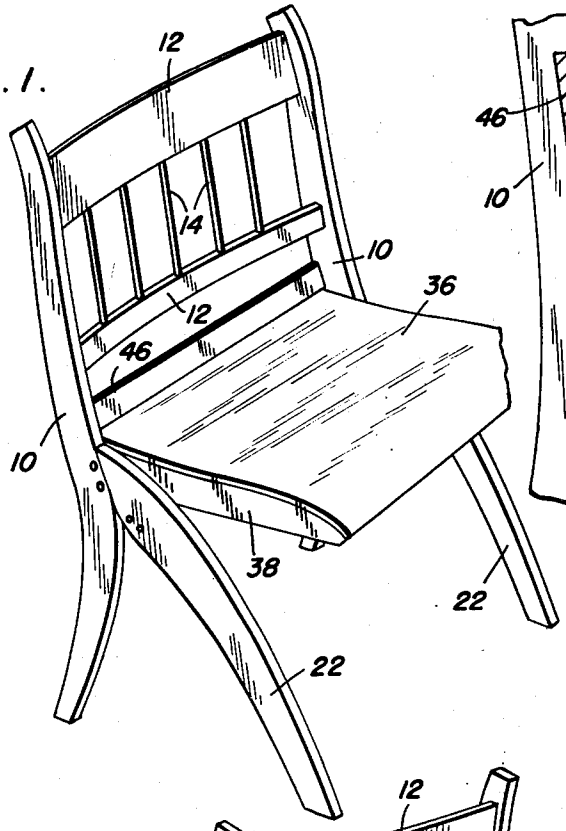
Aug. 12, 1952 C. T. CARLSON 2,606,597

COLLAPSIBLE STEEL CHAIR

Filed Aug. 18, 1948 2 SHEETS—SHEET 1

Fig. 1.



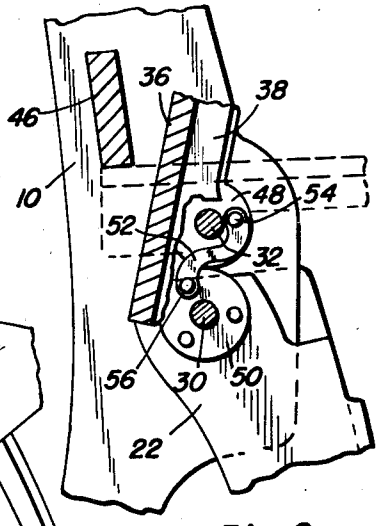


Fig. 9.

Fig. 2.

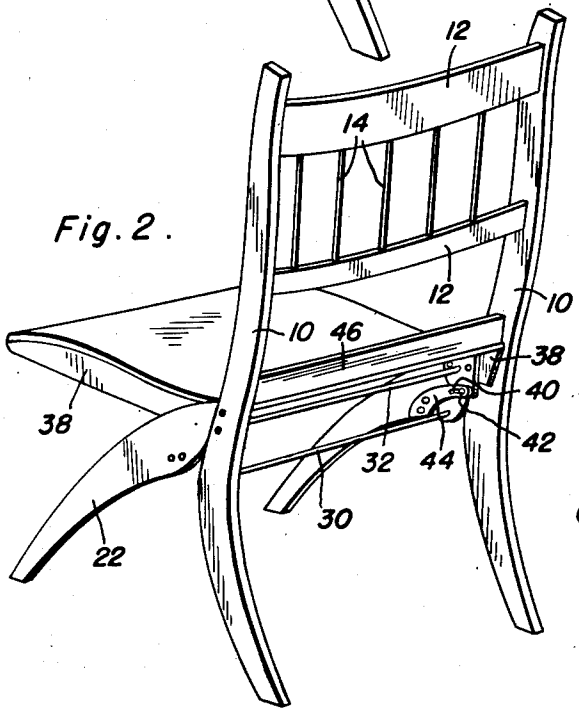
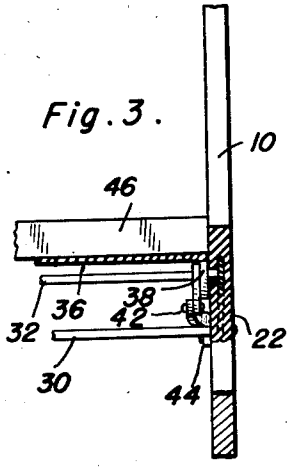


Fig. 3.



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Fig. 8.

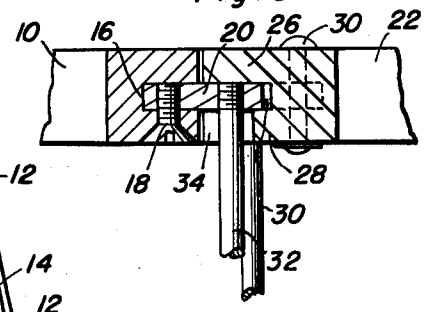


Fig. 4.

Fig. 5.

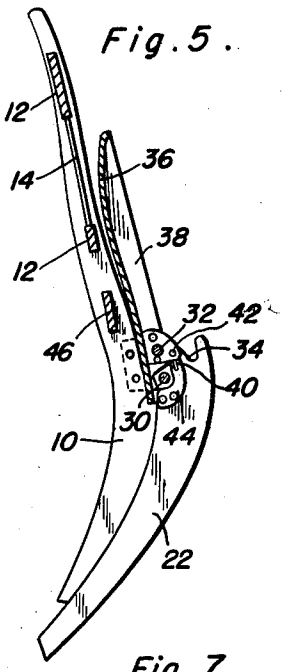


Fig. 7.

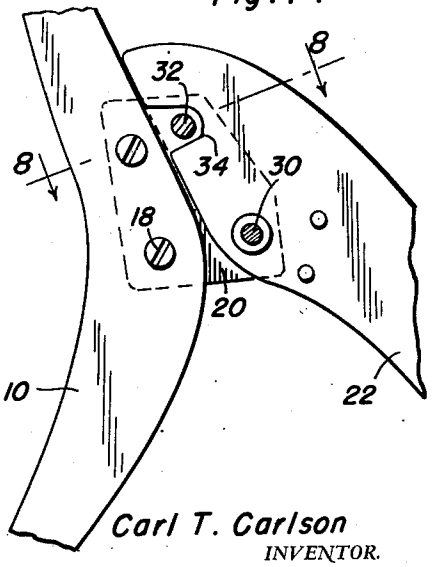


Fig. 6.

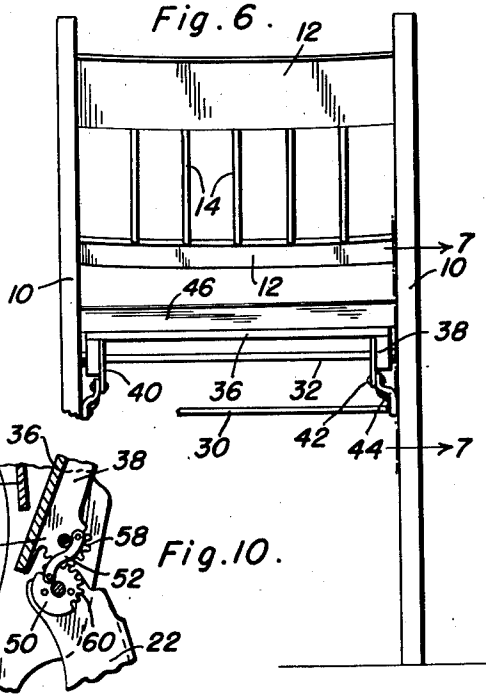


Fig. 10.

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UNITED STATES PATENT OFFICE

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COLLAPSIBLE STEEL CHAIR

Carl T. Carlson, Iron Mountain, Mich.

Application August 18, 1948, Serial No. 44,846

6 Claims. (Cl. 155—141)

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This invention comprises novel and useful improvements in a collapsible steel chair and more specifically pertains to a folding or collapsible chair construction which represents an improvement over the construction set forth in my copending application Serial No. 748,151, filed May 18, 1947, now matured into Patent No. 2,467,963 of April 19, 1949, for Steel Folding Chair.

The principal purpose of this invention and a fundamental concept thereof is to provide a collapsible steel chair wherein the seat and front leg portions are pivotally connected to the back portion and to each other for simultaneous folding movement against the back in order to collapse the chair.

A further important object of the invention is to provide a collapsible chair as set forth in the preceding object wherein a positive abutting action is provided between the front and rear leg assemblies when the chair is in its assembled position, and wherein an improved hinging of the folding portions of the chair to the rear leg assembly is provided.

An important feature of the invention resides in the provision of a forwardly extending support bracket mounted intermediately of the rear leg assembly, to which are pivotally connected a folding seat assembly and a folding front leg assembly, in an improved manner.

A still further feature of the invention resides in a novel construction of the folding front leg assembly for providing a more positive abutting action between the front and rear leg assemblies in the assembled position of the chair, and wherein any interference between the folding action of the two assemblies is averted.

These, together with various ancillary features and objects of the invention which will later become apparent as the following description proceeds, are attained by this device, a preferred embodiment of which is to be illustrated by way of example only in the accompanying drawings, wherein;

Figure 1 is a front perspective view, parts being broken away, showing a satisfactory embodiment of the invention illustrating the principles thereof;

Figure 2 is a perspective view taken from the rear of the embodiment of Figure 1;

Figure 3 is a fragmentary vertical transverse sectional view showing certain constructional features of the seat and rear leg assembly and is taken substantially upon the plane of the broken section line 3—3 of Figure 4;

Figure 4 is a vertical longitudinal sectional view through the embodiment of Figure 1;

Figure 5 is a view similar to Figure 4 but showing the chair in its collapsed instead of its assembled position;

Figure 6 is a fragmentary rear elevational view out of the embodiment of Figure 1;

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Figure 7 is an enlarged side elevational view taken substantially upon the plane indicated by the section line 7—7 of Figure 6, illustrating the mounting of the front leg assembly upon the supporting brackets of the rear leg assembly, and the abutting action of the front and rear legs of the device;

Figure 8 is a fragmentary vertical transverse sectional detail view taken substantially on the plane of the section line 8—8 of Figure 7;

Figure 9 is a view similar to Figure 7 but of a modified construction of the invention; and,

Figure 10 is a view similar to Figure 9 but of a still further modification of the invention.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, attention is directed first to the embodiment of Figures 1–8 wherein the numeral 10 designates each of the rear legs of the chair which are rigidly connected by transversely extending re-enforcing panels 12 which are in turn joined by interconnecting vertically disposed slats or rods 14, to thus form a unitary and substantially rigid rear leg and conventional back assembly of a chair.

As will be more clearly seen by reference to Figures 7 and 8, the rear legs 10 are provided intermediate their ends with longitudinally or vertically disposed slots 16 in their front surfaces, in which are rigidly but removably secured as by screws 18 or the like, forwardly extending support brackets 20 in the form of metallic plates or the like. A pair of front legs indicated at 22 are provided at their upper and rear ends with medial, longitudinally extending slots or notches 24 which thus provide furcations 26 and 28, these furcations straddling or receiving the forwardly extending portion of the bracket 20, as will be readily understood from Figures 7 and 8. Screws, rivets or other fasteners 30 extend through the furcations 26 and 28 for pivotally supporting the legs 22 upon the lower and outer or forward edges of the support brackets 20. Secured to the upper and forward edges of the brackets 20 and screw threadedly engaged therebetween, is an axle or fulcrum rod or shaft 32, which overlies or is vertically spaced from the pivot pins 30, and is likewise disposed forwardly of the rear legs 10. By a special reference to Figures 5, 7, and 8, it will be seen that the upper or rear end of the legs 22 are provided with a flat surface which is adapted to abut against the forward surface of the rear legs 10, when the front legs are folded into their assembled position, and to permit such abutting engagement for the two leg assemblies, this rear surface of the front legs 22 is provided with a cut away or notch portion 34 in the furcations 26, 28, as will be seen by reference to Figures 5 and 8. This notch 34 thus gives clearance for the axle 32 thus permitting the front legs to be folded

into their assembled position without interference with or by the axle **32**.

Loosely journaled on the axle **32** is a seat assembly **36** having parallel side frame members **38** which are suitably journaled upon the axle **32**. As will be more clearly seen by reference to Figures 2 and 4, the frame members **38** have rigidly attached to their inner surfaces downwardly and rearwardly extending lever **40** which are pivotally connected as at **42** to similar upwardly extending lever **44** carried by and secured to the front legs **22**. This lever arrangement is so arranged that the seat assembly **36** and the front legs **22** are compelled to move in opposite directions simultaneously whereby either member may be employed to collapse or assemble the seat and leg construction of the chair.

It will be further noted that the rear portion of the seat **36** extends a sufficient distance rearwardly of the supporting axle **32**, to enable this extending portion to be engaged on the under surface of a transversely extending frame member **46**, carried by the rear legs **10** whereby the weight which the seat **36** supports may be carried jointly by the axle **32** and by this frame member **46**.

By reason of the positioning of the axle **32** and the pivot pins **30** forwardly of the rear legs **10** and in vertically spaced position, a very compact folding of the seat and leg assemblies against the rear legs is permitted as shown in Figure 5.

In furtherance of the foregoing construction and mode of operation, attention is directed to Figure 9 wherein it will be seen that the frame members **38** of the chair seat **36** and the upper or rear ends of the front legs **22** are provided with substantially circular, metallic plates **48** and **50**, which respectively encircle the axle **32** and the pivot pins **30**, and are rigidly attached in any suitable manner to the frame member and the legs. A connecting link **52** is pivotally connected as at **54** and **56** respectively to these metallic plates **48** and **50** and thus to the seat and front leg assemblies. The distances and proportions of this connection are so chosen as to give the requisite folding movement to the seat and to the front leg assemblies to effect their desired purposes, and this link may conveniently be of S-shaped configuration as shown in Figure 9 in the interests of compactness.

Finally, as shown in Figure 10, in addition to the link **52** abovementioned, a further positive interconnecting means between the folding operation of the seat and front leg assemblies may be provided by forming teeth **58** and **60** upon the metallic plates **48** and **50** to provide in conjunction with the link **52** a further interconnecting timed and positive engagement between these parts.

From the foregoing, the manner of constructing and operating the device will be readily understood and further explanation is believed to be unnecessary.

However, since numerous modifications and changes will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not desired to limit the invention to the exact construction shown and described, but all suitable modifications and equivalents may be resorted to falling within the scope of the appended claims.

Having thus disclosed and described the invention, what is claimed as new is as follows:

1. A collapsible chair including a unitary back and rear leg assembly, said rear leg assembly having rear leg, support brackets mounted intermediate the ends of and within said rear legs, an axle journaled in said brackets, a front leg assembly pivoted on said brackets, a seat assembly attached to said axle for pivotal movement thereon, said front leg assembly having upper surfaces in abutting engagement against said rear leg assembly in the erect position of the chair, and notches in said upper surfaces to provide clearances for said axle.

2. The combination of claim 1 wherein said axle is positioned in front of said rear leg assembly and said seat assembly extends rearwardly of said axle whereby said rearward extension is engageable beneath a portion of said back assembly for abutment therewith.

3. The combination of claim 1 including a connecting means secured to said seat and leg assemblies for effecting simultaneous pivoted movement thereof in opposite directions.

4. The combination of claim 1 wherein said brackets comprise plates mounted in longitudinal slots in the front surfaces of their rear legs and extending forwardly therefrom, said front leg assembly having bifurcations receiving and pivoted to the forward end of said plates.

5. The combination of claim 4 wherein said notches are provided in the inside branches of the bifurcations, the ends of the axle terminating inwardly of the outer branches of the bifurcations.

6. A collapsible chair including a unitary back and rear leg assembly, said rear leg assembly having rear legs, support brackets mounted intermediate the ends of and within said rear legs, an axle journaled in said brackets, a front leg assembly pivoted on said brackets, a seat assembly attached to said axle for pivotal movement thereon, said front leg assembly having upper surfaces in abutting engagement against said rear leg assembly in the erect position of the chair, and notches in said upper surfaces to provide clearances for said axle, a connecting means secured to said seat and leg assemblies for effecting simultaneous pivoted movement thereof in opposite directions, said means comprising a downwardly extending lever attached to said seat assembly, an upwardly extending lever attached to said front leg assembly, said downwardly extending lever being pivotally attached to said upwardly extending lever.

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