

June 14, 1949.

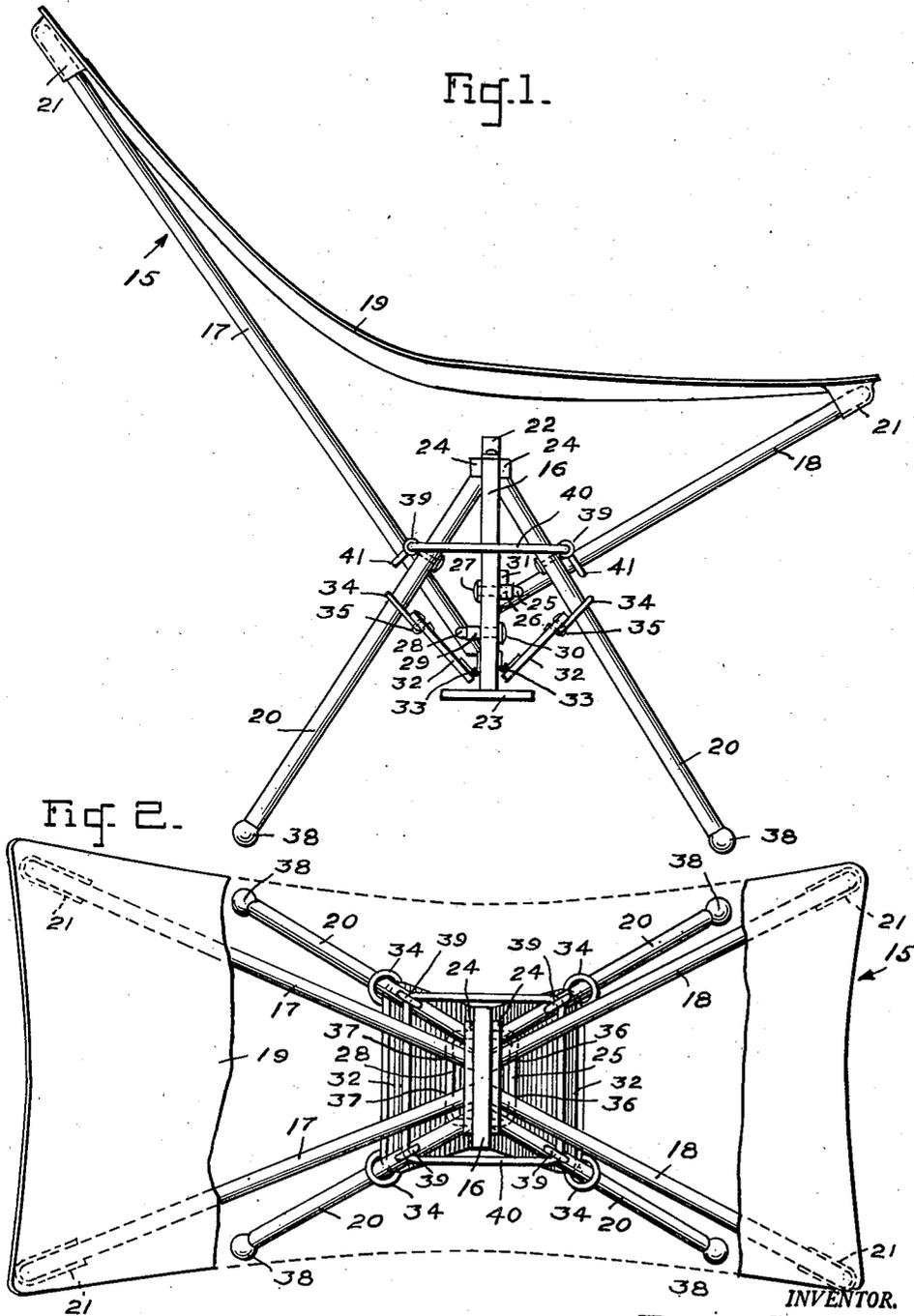
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2,473,090

TELESCOPING COLLAPSIBLE CHAIR

Filed Sept. 23, 1947

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

Fig. 3.

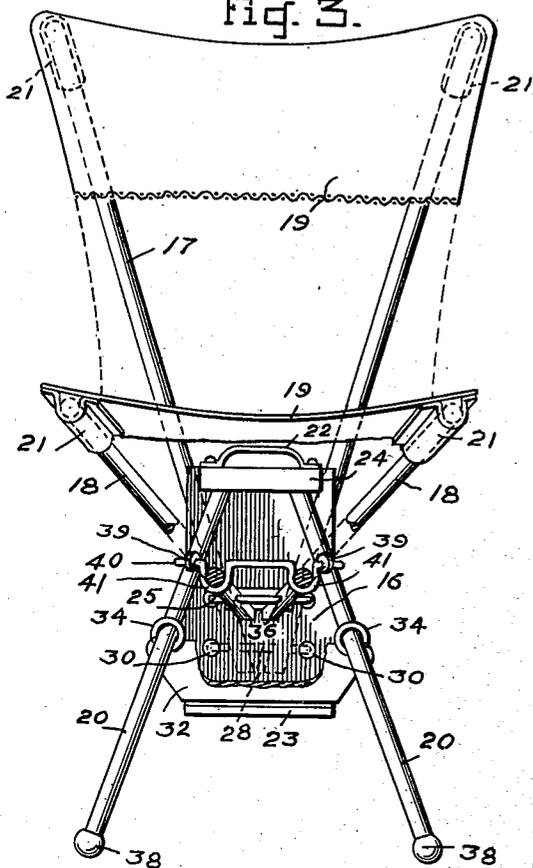


Fig. 4.

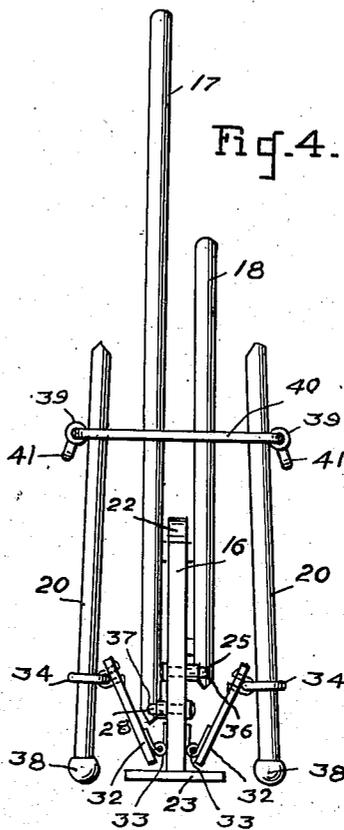


Fig. 5.

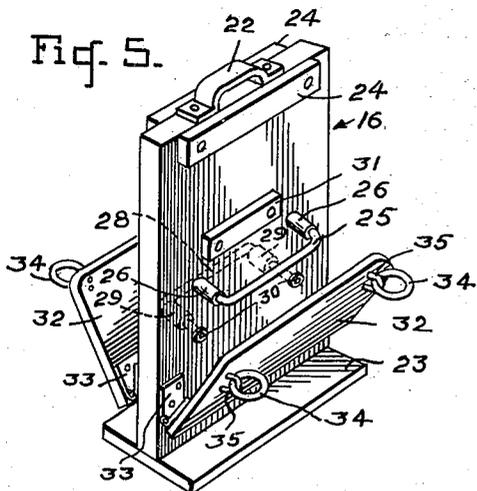
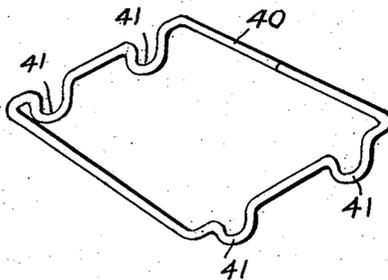


Fig. 6.



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TELESCOPING COLLAPSIBLE CHAIR

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13 Claims. (Cl. 155—139)

1

My invention refers to chairs: particularly to a collapsible folding chair of the type commonly known as "beach chairs" and provided in large numbers for temporary use, for example, on excursion boats and which, when not in use, must be folded and stored in a minimum of storage space.

Heretofore the varied types of chairs of this character have been such that when folded considerable storage space was needed, and each, in its own way, presented difficulties in erecting and/or folding, and frequently proved unstable in use even when the difficulties of erection were overcome.

It is a primary object of my invention to provide a chair of the character described which may be folded into a small and compact unit for ease of storage; which is simple to erect; and which is comfortable and stable in use.

It is an important object of the invention to provide a chair of the character described which, in its folded condition, presents a compact unit in which the standards supporting the back rest and seat are telescoped within the folded legs, and which may be erected for use instantly by the withdrawal therefrom of the said standards.

It is another object of the invention to provide a chair of the character described which is so constructed and arranged that when in use the weight of the user tends to stabilize the chair itself by keeping the legs expanded and thus eliminates all possibility of collapse.

It is a further object of the invention to provide means therein to interlock the seat supporting members and the extended legs so that pressure upon the seat portion of the said chair will act against said legs to maintain the said legs in their extended position.

It is a still further object to provide a chair of the character described which is light in weight; simple to open and close; inexpensive to manufacture; compact when folded; and efficient and comfortable in use.

Other objects and advantages of my chair will become apparent during the course of the following specification, and the accompanying drawings, forming part of the specification, in which like numerals are used to designate like or similar parts throughout.

In the drawings:

Figure 1 is a side elevational view of a preferred embodiment of my invention.

Figure 2 is a plan view of the same, part of the combination seat and back fabric and the handle of the stem unit being omitted for clarity.

2

Figure 3 is a front elevation of the same, partly in section, and with part of the stem unit omitted for clarity.

Figure 4 is a side elevation of the chair, with the seat and back fabric removed, in a folded condition.

Figure 5 is a perspective view of the stem unit, Figure 6 is a perspective view of the split retaining ring,

Figure 7 is a plan view of a modified form of the invention, part of the combined seat and back fabric being omitted for clarity.

Figure 8 is an elevation of the framework of the modified form, taken substantially on the line 15—16 of Figure 7,

Figure 9 is a side elevation of the modified form of the invention, in folded condition for storage, Figure 10 is a transverse section of the modified form taken substantially on the line 10—10 of Figure 8, and,

Figure 11 is a vertical section of the same taken substantially on the line 11—11 of Figure 10.

Referring now in detail to the drawings, particularly to Figures 1, 2 and 3, the numeral 15 designates generally the chair of my invention, comprising a vertical stem member 16 on which are mounted a pair of elongated standards 17 and a relatively shorter pair of standards 18 in a manner hereinafter to be described, the said standards 17 and 18 cooperating to support a continuous strip of flexible fabric 19, such as canvas, which forms a combined back rest and seat for the said chair 15, and a plurality of supporting legs 20, four said legs 20 being shown in the accompanying drawings. The stem member, standards, and legs, and all other parts not specifically described as being of canvas or metal, are preferably made of wood.

The fabric 19 is maintained in position on the standards 17 and 18 by insertion of the free ends of the said standards in closed pockets 21 formed at each corner of said fabric. The pockets 21 shown in Figure 3 are shown open for clarity.

Stem member 16, as clearly shown in Figure 5, is generally rectangular in shape and is provided at its top with a handle 22 of suitable material and has a flat base portion 23 secured thereon normal to the vertical plane of the said member, the purposes of said base portion and handle being hereinafter apparent. A pair of outwardly projecting studs 24 of slightly less length than the width of the member 16 are secured by screwing or otherwise on the opposite sides of the said member 16 closely adjacent the top thereof for a purpose to be later described.

A metal cross-bar 25 having inturned ends supporting suitable collars 26 which space said cross-bar outwardly from the face of the said member is mounted thereon intermediate the top and bottom thereof in holes therethrough provided for this purpose and is secured on said member by suitable metal nuts 27 or otherwise on the opposite side of said member, and a similar metal cross-bar 28 axially parallel and positioned slightly below the cross-bar 25 is mounted on the opposite side of the member 16, the cross-bar 28 being also spaced outwardly from the face of the member by collars 29, the inturned ends of the said cross-bar 28 passing through other suitable holes provided in the said member and secured thereon by the nuts 30. A short stud 31 is mounted on the member 16 by screwing or otherwise closely above the cross-bar 25 for a purpose to be explained, and a pair of transverse shelf members 32 are secured on the opposite sides of the member 16 adjacent the bottom thereof by means of a plurality of metal hinges 33, the said shelf members being adapted for swinging movement on said hinges. Each said shelf member 32 carries on its face removed from the member 16 and adjacent the free ends thereof a pair of metal rings 34, secured to the said shelf member by a plurality of staples 35, clearance being allowed in each said staple 35 for free swinging movement of the respective ring 34 secured thereby.

The standards 18 are mitred at one end and are provided adjacent said mitred end with a transverse hole or passageway 36 to permit mounting said standards 18 for pivotal swinging movement on cross-bar 25, the downward swing of the said standards 18, however, being limited by the stud 31. Similarly, the standards 17 are mitred at one end thereof and provided with adjacent transverse holes 37 for similar pivotal mounting on cross-bar 28.

The legs 20 are doubly mitred at one of their ends and are provided with balls 38 or other enlarged bases at the opposed or ground-engaging ends. Each said leg 20 is provided with a metal eye-bolt 39 at a point near the mitred end, the eyelets of said eye-bolts being adapted and arranged to receive and engage a metal split ring 40, generally rectangular in configuration and provided on each of its opposite shorter sides with a pair of spaced apart and outwardly extending oppositely disposed portions or stirrups 41, the said stirrups being adapted and arranged to provide bearings in which standards 17 and 18 are received when the said chair is erected for use.

Assembly of my chair is very simple. The standards 17 and 18 having been mounted on the cross-bars 28 and 25, respectively, the mitred ends of the legs 20 are passed upward through the rings 34, and split ring 40 is engaged in the eyelets of eye-bolts 39. The chair is then in the condition shown in Figure 4. The fabric 19 may now be secured on the free end of standards 17 and 18 in the manner heretofore described, and the chair is in condition for storage or erection for use.

To erect the chair for use it is necessary only to pull upwardly on handle 22, the resultant upward movement of the stem member 16 spreading the legs 20 by the pressure imparted to them by the impingement of the rings 34 thereagainst as the shelf members 32 swing outwardly on the hinges 33, the upper ends of the said legs 20 being restrained against outward movement

by the split ring 40. The upper mitred ends of the said legs 20 are now engaged under the studs 24, and standards 17 and 18 are resting in the stirrups 41. The chair has thus been erected for use in a matter of a few seconds without possibility of mix-up of the members. In use, the stud 31 engages the mounted ends of the standards 18, limiting the downward movement of the standards and eliminating all possibility of collapse of the chair while in use.

To fold the chair for storage, handle 22 is simply pushed downward after legs 20 have been disengaged from the studs 24, it being unnecessary even to remove the fabric since the fabric may be retained between the folded standards. The swinging action of the shelf members 32 translates the rings 34 downward on the legs 20, swinging the bottoms of the said legs inwardly to the position shown in Figure 4.

It should be noted that it is impossible to disengage an assembled chair while in the folded position shown in Figure 4 in case erection was attempted by pulling the legs upward rather than the stem since the rings 34 would restrain passage of the bulbous ends 33 of the said legs therethrough.

In the modified form shown in Figures 7 through 11 I have simplified my design by the omission of the stem member, but compactness of the folded chair is maintained by following the basic principle of my invention, the telescoping of the seat and back standards within the folded legs, as clearly shown in Figure 9.

In the modification, legs 42 are permanently mounted for free pivotal movement on a circular metal ring 43, the said legs being spaced apart 90 degrees circumferentially on said ring and maintained thus by a plurality of collars 44 carried on said ring 43.

The ends of the said legs 42 adjacent the ring 43 are secured in outwardly directed arcuate metal shoes 45, each said shoe terminating in an integrally formed H-shaped guard member 47 provided with opposed arcuate outwardly-flaring side flanges 48, the purpose of said flanges being hereinafter apparent. The outer periphery of the said shoe 45 is provided with a serrated portion 46 between the flanges 48, and the entire shoe assembly is secured on the said leg 42 as by the rivets 49.

Four standards adapted to define the back and seat of the said chair, each said standard terminating in an inwardly disposed arcuate metal shoe 50 provided with an enlarged bulbous end 51, are mounted on a circular metal ring 52 of a smaller diameter than the ring 43 so that the said ring 52 and the thereon attached bulbous ends 51 may freely pass therethrough. The said standards are also spaced apart 90 degrees on said ring 52 and retained in this position by a plurality of collars 53. Each said shoe 50 is provided with a serrated portion 54 on its inner periphery, of a pitch complementary to the serrations 46 on legs 42, to permit registry of the teeth of the respective serrated portions 46 and 54. The numeral 55 designates one pair of adjacent standards defining the back rest of said chair, the numeral 56 designating the standards which define the seat portion.

The numeral 57 denotes a continuous strip of flexible fabric, such as canvas, adapted to form a combined back rest and seat for said chair. It is provided with closed pockets 43 at each corner to engage the free ends of the standards 55 and 56 to maintain the fabric in position.

As may be observed in Figure 9, the respective

5

leg and standard assemblies are not permanently connected one to the other when the chair is folded and in a condition for storage. Assembly of the separate units is accomplished as heretofore described. The chair is erected for use by simply lifting up the standard assembly from its telescoped position within the folded leg assembly and imposing the covered ends of the standards upon the covered ends of the legs to engage the serrated portions 54 thereof with the serrated portions 46 of the said legs after the said legs have been swung outward on the ring 43 to form a support for the chair. Interlocking of the said serrated portions will define the extent of opening of the legs 42, and lateral separation of the said interlocked portions is impossible during use because of the guard flanges 48. Since the bulbous ends 51 are of greater diameter than the width between the flanges, disengagement of the serrated portions by upward movement of the standards on the legs is impossible when the chair is in use.

Folding the chair for storage is effected by merely disengaging the registering serrated portions and folding the standards inwardly. The standard assembly may now be dropped inside the leg assembly, which, in turn, is folded inwardly on ring 43.

I have thus described my invention in the forms best known to me at this time. My invention is intended to teach the construction of a collapsible folding chair wherein the legs and standards defining the back and seat interconnect when erected and are held in a stable condition when in use by the pressure of the weight of the user, and wherein the said standards may be telescoped within the folded legs when the chair is folded for storage. It is further to be understood that the forms herein shown and described are preferred forms and embodiments of the same, and that changes in the shape and arrangement of parts, and substitution of materials and equivalents, may be made within the scope of the subjoined claims without departing from the spirit of the invention.

Having thus described my invention, I claim:

1. In a collapsible folding chair, the combination of a support structure including a plurality of legs pivotally mounted at one of their respective ends and spaced apart circumferentially on a ring member, adapted to swing freely thereon to and from a first position in which the said legs are substantially axially parallel to a second position in which the said legs are extended to form a support for said chair, a superstructure including a plurality of standards, two said standards being adapted to define a back rest portion for said chair and two relatively shorter standards being adapted to define a seat portion, means interconnecting one end of each said standard for pivotal movement to and from a first position in which the said standards are substantially axially parallel to a second position in which the said standards are extended to define the back rest and seat portions of said chair, the said interconnecting means for said standards being adapted to pass through the ring member connecting the said legs when the said legs and said standards are in their respective first positions whereby the said superstructure is telescoped within the said support structure, cooperative connecting means carried jointly by said support structure and said superstructure for releasably interlocking said structures when said legs and said standards are in their respective second positions, and

6

a flexible cover member arranged to engage the free ends of each said standard to form a seat and back rest for said chair.

2. A collapsible folding chair comprising, in combination, a plurality of supporting legs; ring means pivotally connecting each said leg at one of their ends in spaced apart relation for oscillation thereon, the said legs being arranged to swing from a first or folded position wherein the said legs are substantially axially parallel one to the other to a second or extended position wherein the legs provide a supporting structure for the chair, a plurality of standards adapted to define a back rest and a seat structure for said chair, the standards defining the seat portion being relatively shorter than the standards defining the back rest, means interconnecting each said standard at one of their respective ends for oscillating movement from a first or folded position in which said standards are substantially axially parallel to a second or extended position defining said back rest and seat portions, the said means and standards mounted thereon being adapted to be positioned below the ring means connecting said legs and enclosed by said legs when the said standards and legs are in respective first or folded positions, complementary locking means releasably connecting said legs and said standards when in respective extended positions whereby pressure of the back rest and seat structure is distributed over the said legs to maintain said legs in said extended position, and a flexible cover member arranged to engage the free ends of each said standard to form a seat and back rest for said chair.

3. A folding collapsible chair comprising a plurality of longitudinal legs, a ring pivotally interconnecting said legs adjacent one of the respective ends thereof, the said legs being arranged for swinging movement on said ring from a first position wherein said legs are substantially axially parallel to a second position wherein the legs are in an extended position adapted to support the said chair on the free ends thereof, a planiform stem member normally positioned within said legs when in said first position, constructed and arranged to be translated upward and downward through said ring, means carried by said stem member adapted to slidably engage said legs during said translative movement to automatically expand said legs to said second position during said upward movement and to automatically fold said legs to said first position during the downward translative movement thereof, locking means, including lateral studs on the opposite sides of said stem member, releasably engaging said legs in said second position, a plurality of standards pivotally mounted at one end in pairs on opposite sides of said stem member, one pair of said standards being adapted to provide frame-work for a back rest for said chair, the other pair of standards, of relatively shorter length, being adapted to provide a frame-work for a seat portion, the said standards being responsive to the translative movement of said stem member to move to and from a first position wherein the said standards are substantially axially parallel with each other and the vertical axis of said stem member when the said stem member is positioned within said legs in their respective first position and a second position in which the said legs are expanded to define the frame-work for said back rest and seat portion respectively, and a flexible cover member arranged to engage the free ends of each said standard to form a seat and back rest for said chair.

4. The structure of claim 3 in which each said leg is provided with an eyelet adjacent one end thereof arranged to receive and engage said connecting ring for pivotal movement of each said leg thereon.

5. The structure of claim 4 in which the said metal ring pivotally connecting said legs is of substantially rectangular configuration provided with an opening through the material forming the said ring to permit insertion of the said ring through the said eyelets, and further provided with spaced apart opposed stirrups on the respective shorter sides of said ring constructed and arranged to receive and support the said standards when extended.

6. The structure of claim 5 in which the means carried by said stem member for automatically expanding and folding the said legs during the respective upward and downward translation of said stem member includes a pair of shelf members hingedly mounted on opposite sides of the said stem and a plurality of rings attached to each said shelf member and enclosing said legs, the said rings being responsive to the said upward and downward movement of said stem member to exert pressure against said legs during the translative movement of said rings on said legs.

7. A folding chair comprising a plurality of legs mounted adjacent one of their respective ends for pivotal movement to and from a first position wherein said legs are substantially axially parallel to a second position wherein said legs are extended outwardly to form a supporting structure for the said chair when the other end of the said legs rest upon a supporting surface, a stem member normally positioned within said legs axially parallel therewith when said legs are in said first position, constructed and arranged for manually urged vertical translation within said legs, a plurality of standards pivotally mounted on said stem member and responsive to the vertical translation thereof to move to and from a first position in which the said standards are substantially axially parallel to the said legs and a second position in which the said standards define the structure of a seat and back rest for said chair, means carried by said stem member and responsive to said vertical translative movement to move said legs to and from said respective first and second positions, and a cover member adapted for engagement on the free ends of said standards to form a seat and back rest for said chair.

8. A folding chair comprising a plurality of legs, each said leg being pivotally mounted on a ring member adjacent one of its ends for swinging movement to and from a first position in which the said legs are substantially axially parallel to a second position in which said legs form a supporting structure for said chair, a plurality of standards, each said standard being pivotally mounted adjacent one end on a second ring member of lesser diameter than the ring member mounting said legs, the said second ring member and the standards mounted thereon being adapted for manually urged pivoting on said second ring from a first position wherein the said standards are substantially axially parallel to a second position in which the said standards define the structure of a seat and back rest for the said chair, the said second ring and said standards mounted thereon being adapted for manual positioning within said legs when said standards are

in said first position, releasable connecting means carried jointly by said legs and said standards adjacent their respective pivoted ends, including complementary inter-engaging elements, to maintain said legs and said standards in interlocked relation when the said legs and said standards are in their respective second positions, and a flexible member adapted to engage the free ends of said standards to provide a seat and back rest for said chair.

9. The structure of claim 8 in which said first and second ring members are provided with a plurality of collar members adapted to space apart and maintain said legs and said standards on the respective ring members in said spaced apart relation.

10. The structure of claim 9 in which the complementary connecting means include outwardly extending arcuate shoes mounted on the ends of the said legs and said standards adjacent their respective pivotal connections, each said leg shoe being provided with a serrated portion about its outer periphery adapted to register with and engage a complementary serrated portion carried about the inner periphery of each said standard shoe.

11. The structure of claim 10 in which each said leg shoe is provided with an integral guard member having opposed side flanges whereby the said serrated portions of said legs and said standards are restrained from lateral separation while in registry.

12. The structure of claim 11 in which the standard shoes are provided with enlarged terminals of greater diameter than the space between the flanges of the said integral guard member to arrest passage of said shoes therebetween.

13. A folding chair comprising a plurality of legs pivotally mounted for manually urged swinging movement on a circular ring adjacent one end of each said leg, a plurality of standards pivotally mounted for manual swinging movement on a second circular ring, the said first ring being of such diameter that the said second ring and the standards mounted thereon may pass freely therethrough when the said standards have been moved on their pivots to a position in which the said standards are substantially axially parallel, releasable connecting means carried jointly on the ends of said legs and said standards adjacent their respective pivotal connections, said means comprising complementary concave and convex serrated portions thereof, the serrations of the said standards being adapted to engage in and interlock with the serrations of the said legs when the said legs and said standards have been extended on their respective connecting rings to form a supporting structure and seat and back structure, respectively, for said chair and said seat and back structure is superimposed on said supporting member, and a flexible member adapted to engage the free ends of said standards to provide a seat and back rest for said chair.

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