May 27, 1941. H. A. FREEDMAN 2,243,502

FOLDING CHAIR

Filed Jan. 13. 1939

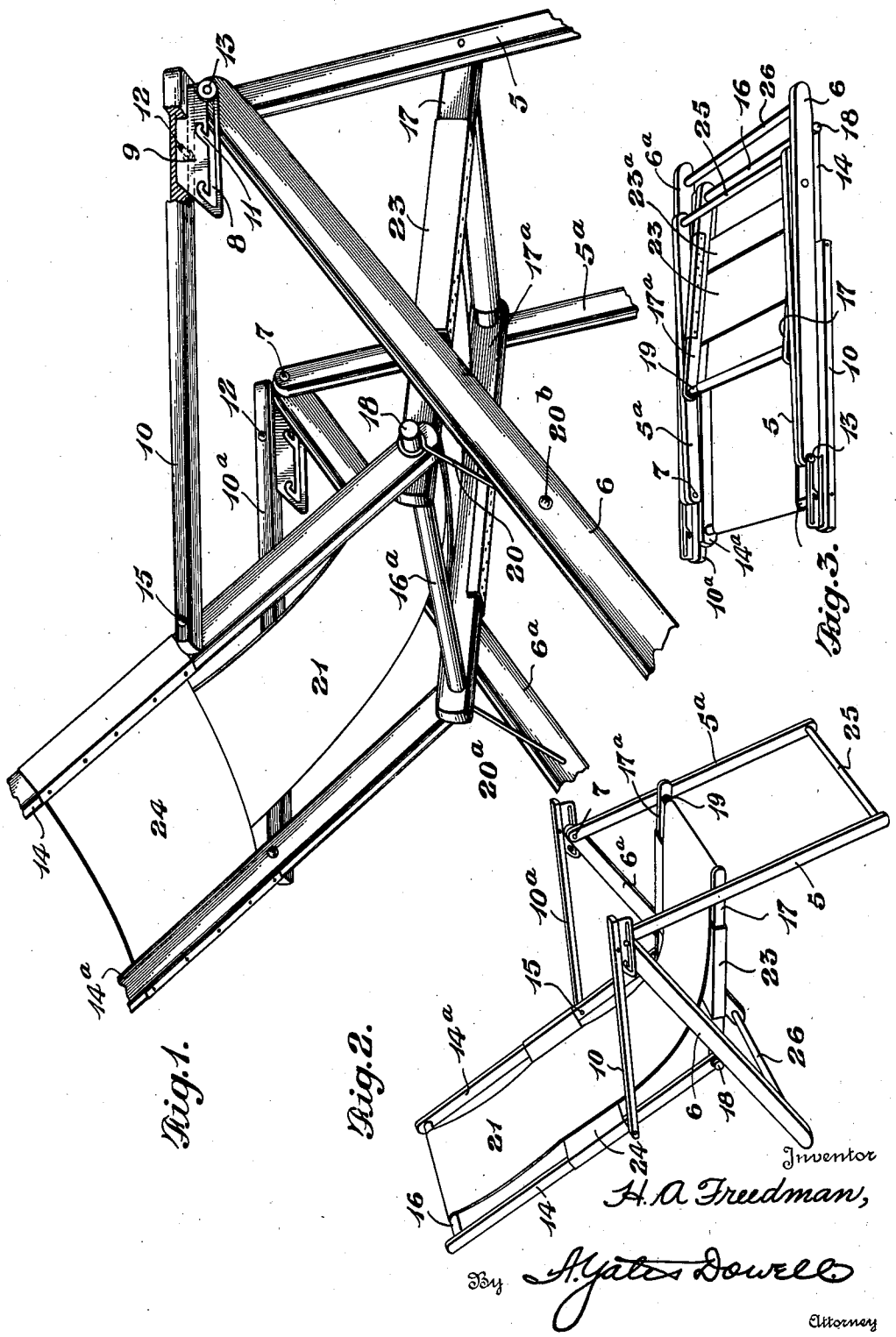


Fig. 1.

Fig. 2.

Fig. 3.

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Patented May 27, 1941

2,243,502

UNITED STATES PATENT OFFICE

2,243,502

FOLDING CHAIR

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Application January 13, 1939, Serial No. 250,822

1 Claim. (Cl. 155—139)

This invention relates to folding or collapsible chairs commonly known as the beach or steamer type, and the primary object of the same is to provide a light folding chair of relatively simple yet strong and rugged construction which will fold easily and quickly in one motion into an unusually compact bundle.

The chair embodying the features of the present invention may be considered in the nature of an improvement over that disclosed in Patent No. 2,072,075 granted February 23, 1937 to L. C. Travers et al. A compact fold is of considerable importance in chairs of this type, since it reduces the shipping costs, requires less storage space, and results in a marked convenience in use, particularly when the chair is to be carried from one place to another in the compartment of an automobile or similar vehicle. The chair of the above patent when folded occupies more space with regard to width than the chair of the present application.

The present chair also embodies features of improvement with respect to the fabric seat and back proper, the arrangement being such as to promote ease in folding and to avoid any possible interference of parts of the chair during the folding operation. Means are also provided to also ensure against rupture of the fabric seat by the sudden application of an unusually heavy load and to avoid premature wear of the said seat.

With the foregoing and other objects and advantages in view, the invention consists in the preferred construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawing:

Fig. 1 is a perspective view of a chair constructed in accordance with the features of the present invention;

Fig. 2 is another perspective but viewed from a different angle; and

Fig. 3 is a further perspective of the chair in folded or collapsed condition.

Referring to the drawing in detail, the chair comprises front legs or leg frames 5 and 5a which at their upper ends are pivotally connected to rear legs or leg frames 6 and 6a through the medium of pivot pins 7.

At their outer ends, each of these pivot pins extends through the slot 8 of a ratchet plate 9 connected to the forward end of each of a pair of arms 10 and 10a. Each of these ratchet plates is formed with a series of adjusting notches 11 open to the slot 8, there being three of these notches in each plate as shown in the present instance. The preferred manner of mounting the plates 9 is to slot the arms 10 and 10a at their forward ends and insert the plates in said slots and secure them in position through the medium of a rivet 12. The pivot pins 7 are provided with heads 13 to retain them in their respective slots.

The back frame rest comprises side rails or like members 14 and 14a which at an intermediate point are pivotally connected to the rear ends of the arm rests 10 and 10a through the medium of pivot pins 15. At their upper ends the side rails 14 and 14a are connected by a cross rod 16 and at their lower ends by a similar rod 16a, the latter rod also projecting through the rear end of the seat frame side rails 17 and 17a, thereby pivotally connecting the lower end of the back rest frame with the rear end of the seat frame. The opposite ends of the rod 16a project beyond the back rest side rails to provide dowels 18. At their front ends the seat side rails are pivotally connected to the front legs 5 and 5a by means of a cross rod 19.

Combined with the ratchet plate connection and adjustment is a swinging brace arrangement comprising relatively heavy wire members 20 and 20a, each of which has one end pivotally connected to an adjacent rear leg frame as at 20b and at its opposite end is provided with an eye or loop which pivotally or rotatably engages over the adjacent dowel 18. When the chair is in set-up position, the members 20 and 20a swing upwardly and come to rest on the rear legs 6 and 6a.

To ensure ease and compactness in folding, the upper extremities of the front leg frames and the lower extremities of the back rest side rails in conjunction with the arm rests and seat side rails should form opposite sides of a substantially parallelogram-shaped frame structure with the rear legs constituting a diagonal of the parallelogram; and in conjunction with this arrangement, the back rest and front leg portions should project beyond their pivot points with the arm rests and seat frame, respectively, to an extent approximating the length of the arm rests, and the rear legs should project beyond the rear lower corner of the parallelogram approximately the length of two adjacent sides of the parallelogram.

The back and seat rest proper comprises a single length of fabric 21, which at its upper end is looped over the head cross rod 16 and at its opposite end is looped over seat frame cross rod 19, which latter rod not only connects the front ends of the seat side rails 17 and 17a but also pivotally connects these rails with the front leg

frames 5 and 5a. The intermediate portion of the strip 21 is preferably left free and the seat portion proper is backed or supported by a cross strip 23, providing a double seat. At the back another cross strip or kidney strap 24 is provided. The cross strip 23 is wrapped at its opposite ends around the seat side rails 17 and 17a and secured thereto while the cross strip 24 is wrapped around the back side rails 14 and 14a and suitably secured thereto. By means of a fabric seat and back supporting structure of this type, there is no interference with the folding operation of the chair. However, the strips 23 and 24, and particularly the strip 23, should be relatively broad so as to provide adequate support for the seat and back.

To further reinforce the seat proper, a strap 23a is applied beneath the rear edge portion of the strip 23 at a point where the greatest weight is normally imposed on the seat by an occupant and also at a point which will ensure against tearing and premature giving away of the strip 23. This strap by its particular location ensures against rupture of the fabric seat by the sudden application of an unusally heavy load.

The lower ends of the leg frames 5 and 5a are preferably connected by a cross rod or brace 25, and the lower ends of the rear leg frames 6 and 6a are also connected by a similar cross rod 26.

The chair may be folded in one motion either from the front or back. Assuming the chair is to be folded from the front, it is only necessary to grasp the arms and lift upwardly thereon and simultaneously the weight of the respective parts causes the parts to collapse. To facilitate this folding operation, the chair may be pulled slightly forward against the person folding the chair. Once the back rest frame has swung past the pivot connections of the links with the rear legs, the chair automatically collapses to the position shown in Fig. 3.

Conversely to set up the chair, it is only necessary to grasp the back rest frame and raise upwardly thereon, whereupon the parts automatically come to the desired set-up position.

By referring to Fig. 3, the unusual compactness which permits the frames to fold into a relative short compass or unit of fold of the improved chair will be readily observed particularly with respect to width. Thus the front and rear legs substantially align themselves laterally of the chair when the latter is folded, permitting the arm rests to lie snugly against the folded front and rear legs or leg frames. There are only two tiers with respect to width in contradistinction to three as in the Travers patent heretofore noted. This is due in part to the fact that the front and rear legs at their upper ends are pivoted in overlapping relation or have a "scissors" connection. The particular method of connecting the back frame to the rear legs by the swinging members 20 and 20a in combination with the freely sliding pivotal connection at the ratchet and also in connection with the particular manner of mounting the fabric seat and back promotes unusual ease in folding. The chair is also light in weight, yet is of unusually strong and rugged construction, a feature of considerable importance in chairs of this type.

It will be understood that certain changes in construction and design may be adopted without departing from the spirit or scope of the invention as defined by the appended claim.

What is claimed is:

A folding chair including rear leg members and a back frame of approximately equal length, front leg members pivotally assembled with a seatframe and arm rests to form with said back frame an approximate parallelogram movably supported on said rear legs on each side of the chair when it is set up whereby the chair when collapsed will provide a group of overlapping relatively short folding frames forming a relatively short compass or unit whose overall length approximately equals that of said rear leg member, means adjustably connecting the outer ends of said arm rests with the upper ends of said front legs whereby the angle of the back frame may be adjusted when in use, said means comprising a depending flat slotted ratchet plate rigidly embedded in and projecting below the front portion of each arm rest, pivot members connecting the upper end portion of each of said front legs and the upper end portion of each of said rear legs, each of said pivot members being slidably held in a notch of one of said ratchet plates, an integral fabric strip forming a seat and back of said chair, means swingably connecting the lower end of the back frame with the rear legs and positioned in a manner whereby the folding and unfolding of the chair assembly will become automatic as soon as the back rest frame has been swung past the vertical plane of the pivot connections of said swingable means with said rear legs.

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