May 24, 1955 H. B. SHEPHARD 2,708,960

FOLDABLE ROCKING CHAIR

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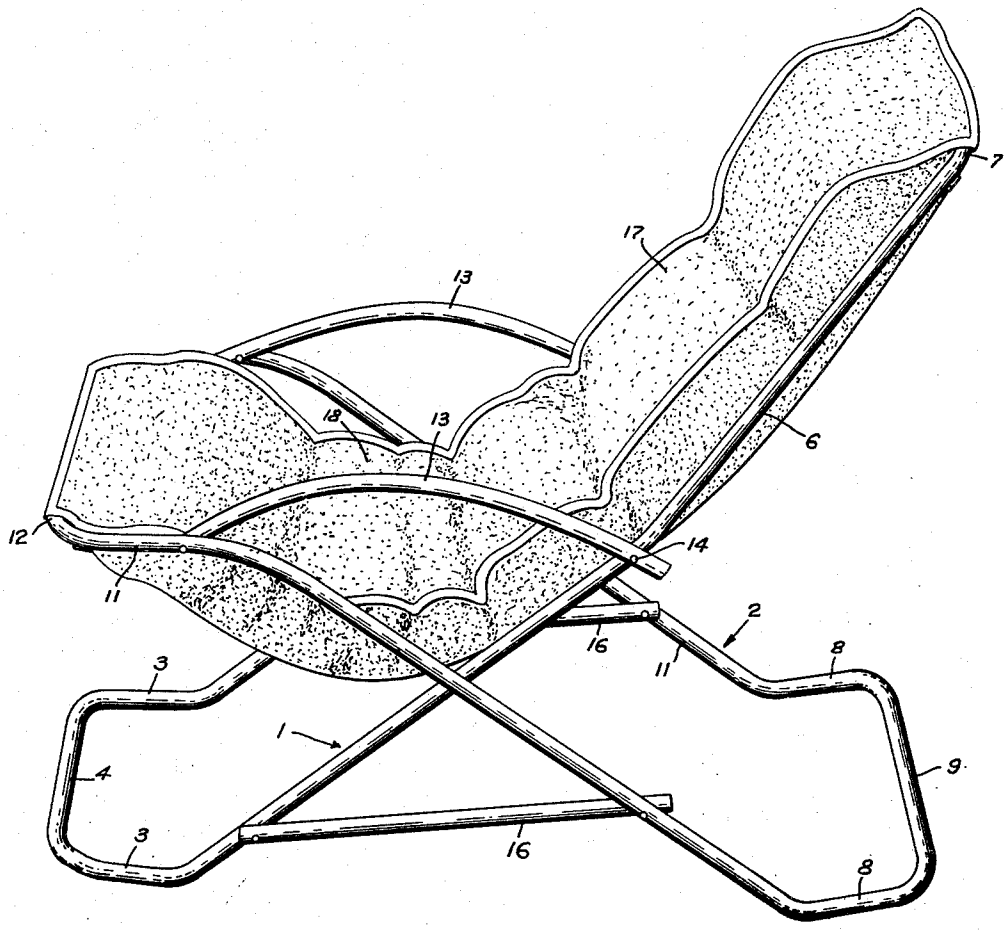


Fig. 1.

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Fig. 2.

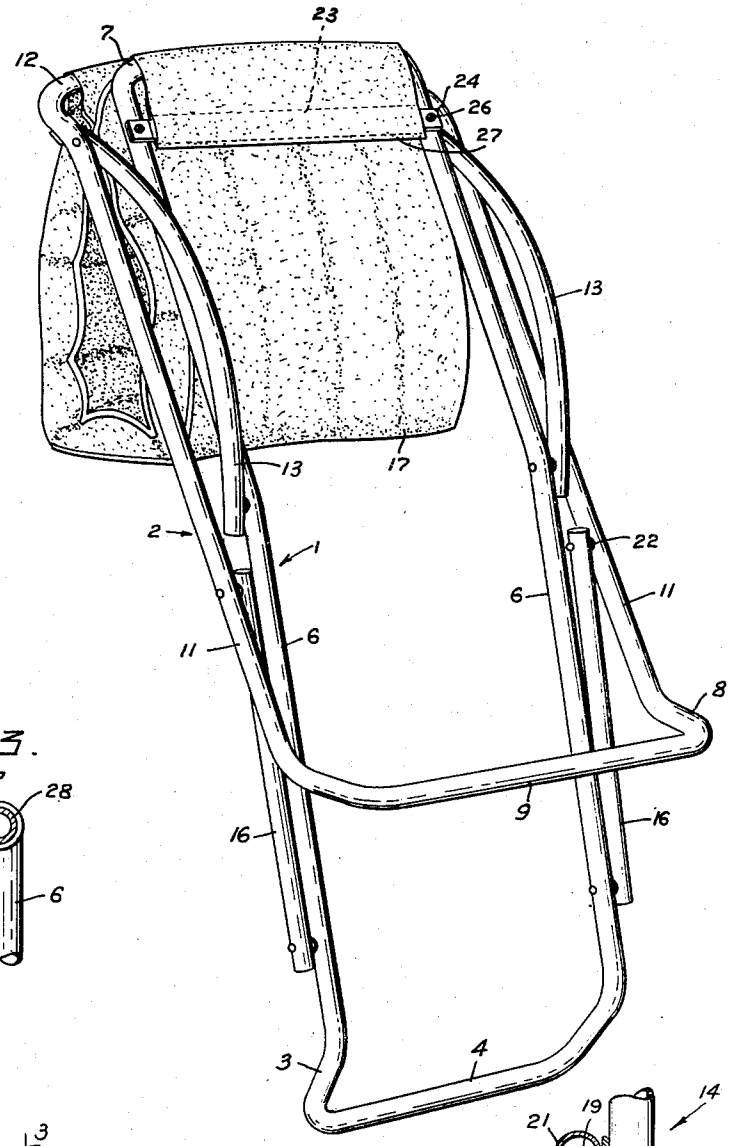
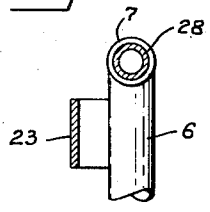


Fig. 3.



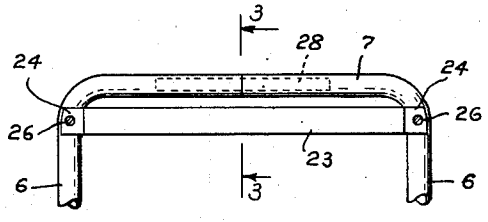


Fig. 4.

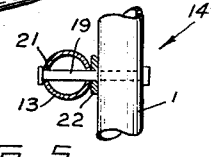


Fig. 5.

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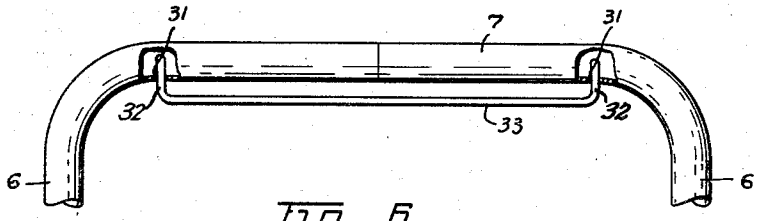


Fig. 6.

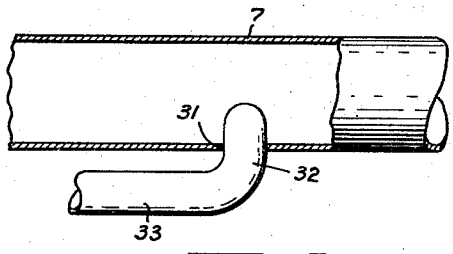


Fig. 7.

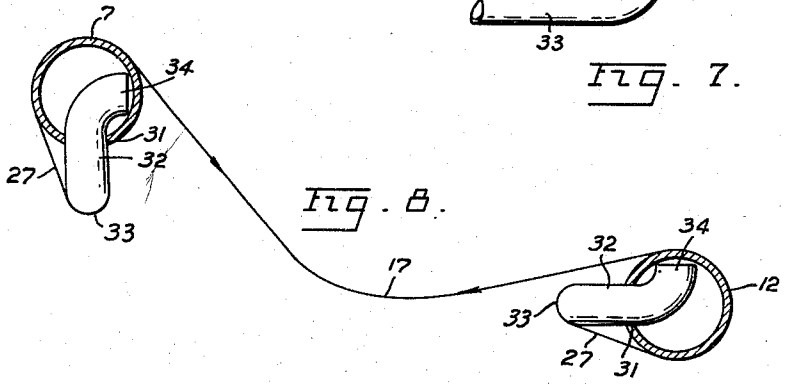


Fig. 8.

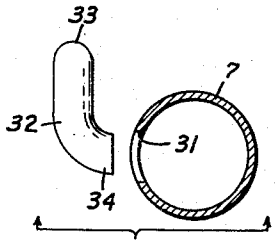


Fig. 9.

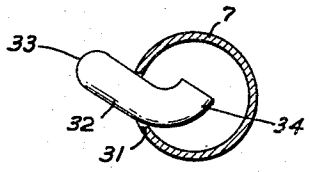


Fig. 10.

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FOLDABLE ROCKING CHAIR

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Application December 6, 1951, Serial No. 260,227

3 Claims. (Cl. 155—56)

This invention relates to a foldable rocking chair.

The primary object of the invention is to provide a skeleton frame for a collapsible rocking chair which forms the support for a canvas or cushion seat comfortable when the frame is extended and which can be easily collapsed so as to be light and readily portable and which requires a very small storage place.

The novel features of the invention include a pair of skeleton frames, one frame being movable within the other frame; link members to connect the leg portions and the upper portions so pivoted to the respective frame members as to allow the relative rocking of the frame elements; a seat and backrest in one piece either as a plain canvas or suitably padded; and means for rendering the single piece seat and backrest readily detachable if desired.

I am aware that some changes may be made in the general arrangements and combinations of the several devices and parts, as well as in the details of the construction thereof without departing from the scope of the present invention as set forth in the following specification, and as defined in the following claims; hence I do not limit my invention to the exact arrangements and combinations of the said device and parts as described in the said specification, nor do I confine myself to the exact details of the construction of the said parts as illustrated in the accompanying drawings.

With the foregoing and other objects in view, which will be made manifest in the following detailed description, reference is had to the accompanying drawings for the illustrative embodiment of the invention, wherein:

Fig. 1 is a perspective view of the chair in extended position.

Fig. 2 is a perspective view of the chair in collapsed position.

Fig. 3 is a sectional view taken on the lines 3—3 of Fig. 4.

Fig. 4 is a fragmental view of the frame showing an attachment for the backrest.

Fig. 5 is a sectional view through one of the pivot joints.

Fig. 6 is a fragmental view showing a modified form of attachment.

Fig. 7 is a fragmental detail view of the modified form of attaching bar and connection.

Fig. 8 is a somewhat diagrammatic view showing the direction of forces for the holding of the attaching bar in the frame tubes by the pull of the weight on the cushion or canvas.

Fig. 9 is a fragmental detail sectional view showing the attaching bar in position for assembly in the frame tube, and

Fig. 10 is a view showing the insertion of the ends of the attaching bar into the frame tube.

In carrying out my invention I make use of an oblong generally rectangular skeleton frame hereinafter referred to as the backrest frame 1, and another oblong generally rectangular seat frame 2. The seat frame 2 is wider

than the backrest frame 1 so that the backrest frame 1 is freely movable within the seat frame 2. Each of the frames is made of a single piece of material preferably of tube. The lower end of the backrest tube 1 has each longitudinal side bent forwardly and upwardly to form a foot member 3 on each side connected by the foot cross bar 4. All the bent corners are suitably rounded. The upper portion of each side member of the backrest frame 1 is bent forwardly at an obtuse angle to form a rearwardly inclined rest portion 6, connected by a top cross member 7. It is to be noted that the rearwardly inclined backrest portion 6 is about the upper half of the backrest frame 1 above said foot member 3.

The seat frame member 2 is also bent at its lower end on each side thereof rearwardly and upwardly to form rocking foot members 8 connected by the foot cross bar 9 at the rear. The upper ends of the sides of the seat frame 2 are bent forwardly to form leg rest portion 11 having side pieces connected by the seat cross bar 12.

In other words, the backrest frame 1 has its longitudinal sides bent at its lower end forwardly with respect to the plane of the frame and has its upper half also bent forwardly with respect to the plane of the frame but inclined at an oblique angle rearwardly to form the backrest at the top. The seat frame 2 is bent at its opposite ends oppositely with respect to the plane of the frame so as to form a rocking foot at the lower end thereof and a forward rest portion at the upper end thereof.

The two frames 1 and 2 are connected for holding and relative rocking by two pairs of link bars. These link bars are also tubular. The upper pair of link bars 13 are arcuate so that the convex sides thereof are on the top and form armrests. The opposite ends of the armrests 13 are pivoted to the respective frames 1 and 2. The pivots 14 extend through the adjacent longitudinal sides of the respective frame. The rear pivots of the armrests 13 are at or slightly below the point where the bar is bent to form the backrest portion 6. This rear end of each armrest 13 is on the outside of the respective longitudinal sides of the backrest frame 1. The forward end of each armrest 13 is similarly pivoted to the inside of the adjacent longitudinal side of the seat frame 2 at about the forwardly bent leg rest portion 11.

The lower link bars 16 are straight and extend below the point where the frames cross one another in the extended position as shown in Fig. 1. The rear end of each lower link 16 is pivoted to the inside of the seat frame 2. The forward end of each lower link bar 16 is pivoted to the outside of the longitudinal side of the backrest frame member 1. The respective pivots of the lower link bar 16 are spaced above the respective foot portions 3 and 8.

A canvas or cushion 17 is held secured to the upper end or top cross bar 7 of the backrest frame 1 and also to the upper end or seat cross bar 12 of the seat frame 2 so as to assume a convenient dip or angle to form a comfortable seat 18. The securing of the ends of the cushion 17 is such as to provide protection and padding on the respective cross bars 7 and 12.

Each pivot 14, as shown in Fig. 5, consists of a suitable rivet 19 extended through aligned holes 21 of the respective tubular members at the pivots. For instance in Fig. 5 the pivot 14 is extended through the longitudinal member of the backrest frame 1 and the end of the armrest 13. Between the tubular members and on the pivot 19 is a bearing washer 22 comparatively loosely held in place so as to take up the wear due to the relative movement of the adjacent tubular members.

In the form shown in Figs. 3 and 4 the securing of the ends of the cushion **17** is accomplished upon detachable retaining bars **23**, each of which is bent at its end to form securing flanges **24** held on the opposite longitudinal side of the frame member by screws **26** or the like, so as to space the middle portion of the retaining bar **23** away from the plane of the respective frame members **1** or **2**. In each case the retaining bar **23** is spaced from the underside and from the ends of the respective frame members so that the ends of the cushion **17** are wrapped around the respective frame ends **7** and **12** and then secured upon the retaining bar **23**. For this purpose each end of the cushion **17** has a sleeve or loop **27** formed therein and the bar **23** is inserted through the sleeve **27** and then secured upon a frame member to hold an end of the cushion **17** in place.

For the purpose of manufacture and assembly the top ends of the respective frames are split where the ends of the tube from which the frame is formed meet. To prevent separation and assure the desirable rigidity, a plug **28**, shown in Figs. 3 and 4, is inserted in the tube at said meeting ends to hold the latter aligned.

In the modified form shown in Figs. 6 to 7 inclusive the retaining elements for the cushion **17** are provided in a self locking form so as to obviate the use of screws. For this purpose a pair of spaced holes **31** are provided on the inner side of the top cross bar **7** of the backrest frame **1** and also on the inner side of the cross member **12** of the other frame **2**. In each of said holes are inserted the tips of the bent ends **32** of a retaining bar **33**. Each bent end **32** is bent at right angles to the retaining bar **33** and has its free end or tip **34** bent at right angles both to the retaining bar **33** and to the bent end **32**, in other words, at right angles to the plane formed by the bar **33** and the bent ends **32**. All bent corners are rounded. The sleeves **27** at the respective ends of the cushion **17** are inserted over the respective retaining bars **33** then the curved tips **34** of the bent ends **32** are inserted into the respective holes **31**, as shown in Figs. 9 and 10, in such a manner that the tips **34** point oppositely to the direction in which the ends of the cushion **17** extend around the respective cross member **7** or **12**. Each end of the cushion **17** extends from the retaining bar **33** oppositely to the tip **34** and then around the cross member **7** or **12**, as the case may be, and over the tops of the respective cross members **7** and **12**. Thus the direction of pull by the weight on the cushion **17** urges the tip **34** inwardly and toward the side of the respective tubular cross member **7** or **12** and locks the retaining bar **33** in place. In order to remove the retaining bar **33** the weight from the cushion **17** is relieved and the bar is moved so as to shift the tip **34** away from the side of the tube and out through the holes **31**. This structure materially facilitates the assembly and removal of the cushion **17** from the chair as desired.

In operation the chair when extended rests upon the feet **3** and **8** and the outward pressure thereon keeps the chair in this position as spaced by the respective links **13** and **16**. A person may comfortably rest upon the seat **18** of the cushion **17** and the weight of the person exerts the pressure upon the upper cross bar **12** of the outer frame member **2** and on the top cross bar **7** of the inner frame **1** keeping the links under tension and preventing the collapsing of the chair under the load of a person. The person may rock himself in the chair. The chair has upon the suitably curved feet **3** and **8** a relative rocking action with the limited relative movement between the frames **1** and **2**, as the user shifts the weight backward and forward.

To collapse the chair a person grips the upper cross members **7** and **12** of the respective frames **1** and **2** and pulls said cross members toward one another. As the lower cross member **12** is pulled up the armrest links **13** are generally parallel in the space between the sides of the inner frame **1** and outer frame **2**, while the rear ends of the lower link **16** are shifted upwardly to assume a parallel position between the frames as shown in Fig. 2. In this collapsed position the chair can be easily carried in one hand and stored in flat position.

A chair constructed in accordance with my invention is attractive in appearance, light but strong, can be easily collapsed or extended or carried in one hand, and is eminently adapted either as a convalescent chair or as a collapsible rocking chair indoors or outdoors.

I claim:

1. In a chair of the character described, a seat frame comprising a single bar bent into an oblong generally rectangular shape, a backframe comprising a single bar bent into an oblong generally rectangular shape and being narrower than the seat frame so as to be movable within the latter, a pair of armrest links respectively pivoted at the upper end of the seat frame and to about the middle of the backrest frame, a pair of lower links pivoted to the lower portions of the respective frames, and a cushion member extending between the upper ends of said frames to form a seat and back rest, a detachable element at the underside of the top of each frame member, and a sleeve at the end of said cushion member into which said detachable elements are inserted to secure said cushion member in place, each detachable element including a cross bar and detachable means to secure the ends of the cross bar to the respective frame, said cross bar being offset downwardly below the plane of the adjacent frame member to support said cushion member.

2. In a chair of the character described, a seat frame comprising a single bar bent into an oblong generally rectangular shape, a backframe comprising a single bar bent into an oblong generally rectangular shape and being narrower than the seat frame so as to be movable within the latter, a pair of armrest links respectively pivoted at the upper end of the seat frame and to about the middle of the backrest frame, a pair of lower links pivoted to the lower portions of the respective frames, and a cushion member extending between the upper ends of said frames to form a seat and back rest, a detachable element at the underside of the top of each frame and a sleeve at each end of the cushion member into which said detachable elements are inserted each of said detachable elements including a retaining bar, a bent leg at each end of the retaining bar, and a tip at each end of each leg being generally at right angles to the plane included by said leg and said bar, said frames being tubular and the upper ends of said frames having spaced holes on the insides thereof receiving the respective tips of said bar.

3. In a chair of the character described, a seat frame comprising a single bar bent into an oblong generally rectangular shape, a backframe comprising a single bar bent into an oblong generally rectangular shape and being narrower than the seat frame so as to be movable within the latter, a pair of armrest links respectively pivoted at the upper end of the seat frame and to about the middle of the backrest frame, a pair of lower links pivoted to the lower portions of the respective frames, and a cushion member extending between the upper ends of said frames to form a seat and back rest, a detachable element at the underside of the top of each frame and a sleeve at each end of the cushion member into which said detachable elements are inserted each of said detachable elements including a retaining bar, a bent leg at each end of the retaining bar, and a tip at each end of each leg being generally at right angles to the plane included by said leg and said bar, and the said ends of the cushion being wrapped around the respective upper ends of said frame and being extended from said retaining bars oppositely to the respective pair of legs, said frames being tubular and the upper ends of said frames having

spaced holes on the insides thereof receiving the respective tips of said bar.

References Cited in the file of this patent

UNITED STATES PATENTS

564,312	Paice	July 21, 1896
1,298,496	Haight	Mar. 25, 1919
1,953,351	Klee	Apr. 3, 1934
2,540,823	Heller	Feb. 6, 1951

FOREIGN PATENTS

233,865	Great Britain	May 27, 1925
489,988	Great Britain	Aug. 8, 1938
671,980	Great Britain	May 14, 1952