Feb. 27, 1951 P. O. BEIL 2,543,273

FOLDING ROCKING CHAIR

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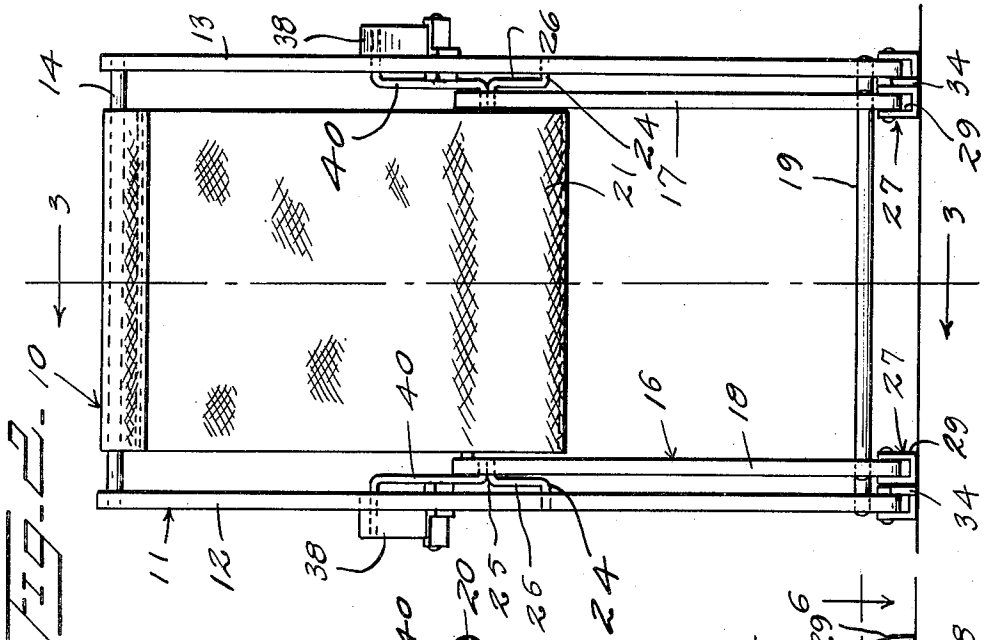


FIG. 2.

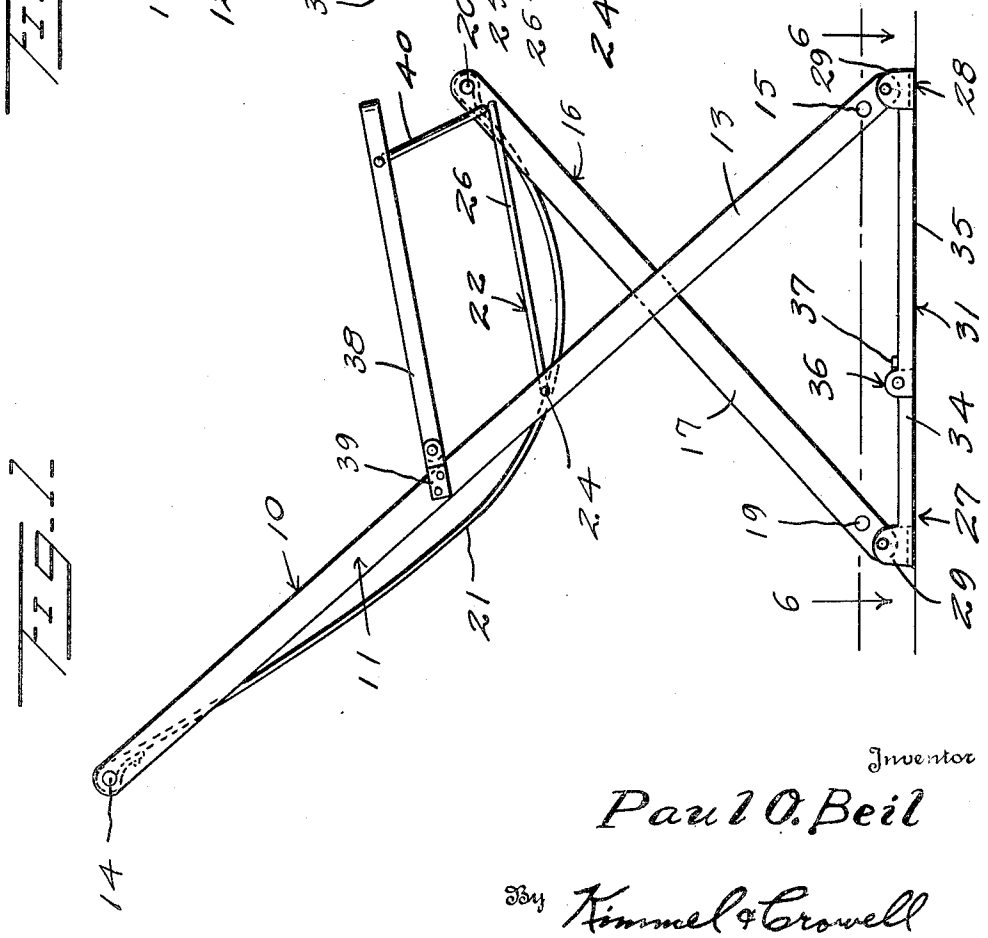


FIG. 1.

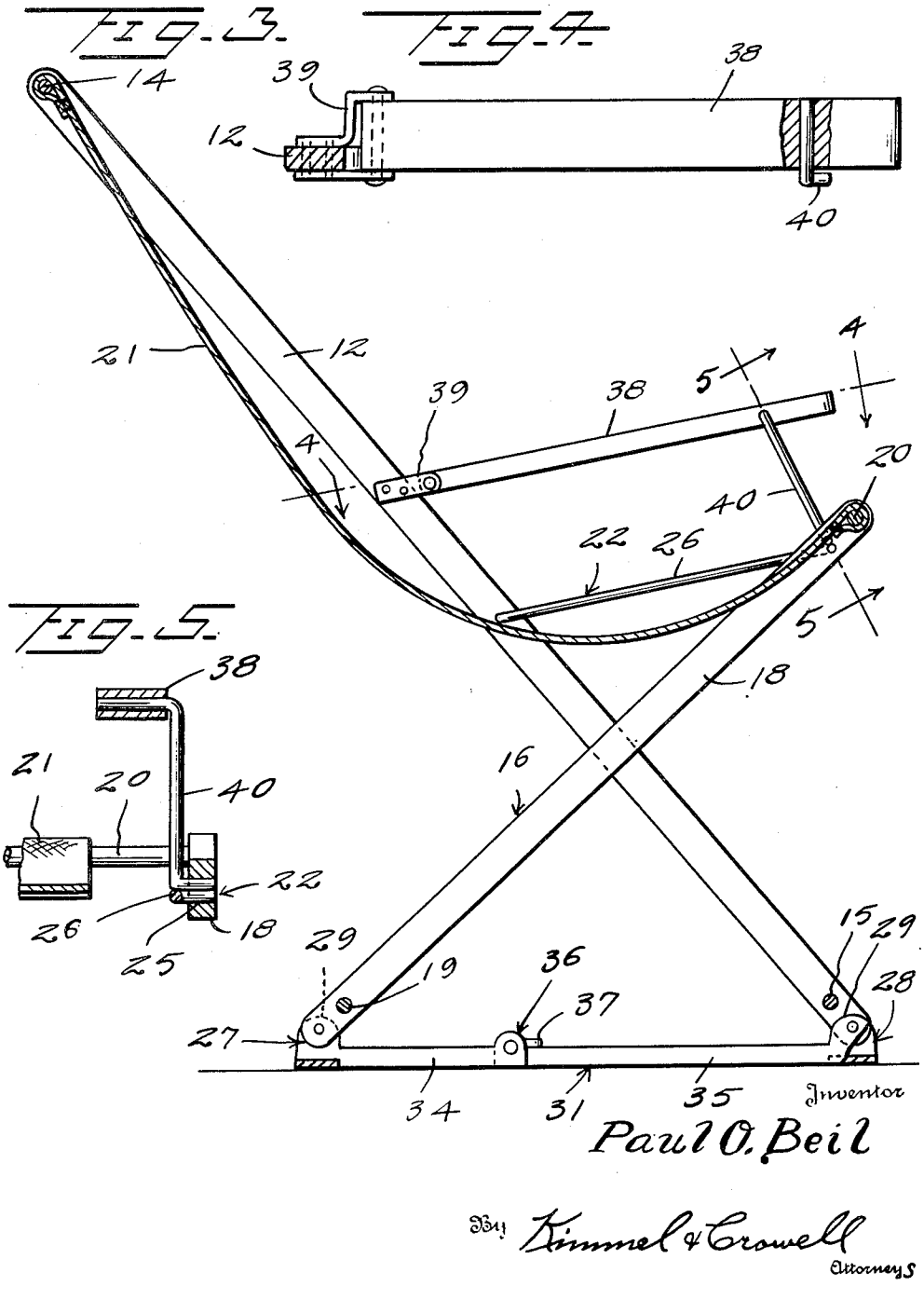
Inventor
Paul O. Beil

By Kimmel & Crowell
Attorneys

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Fig. 6.

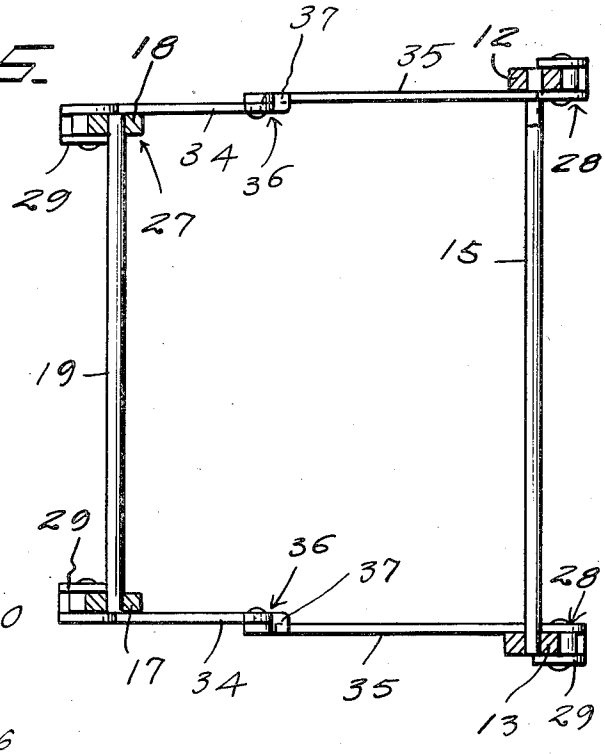
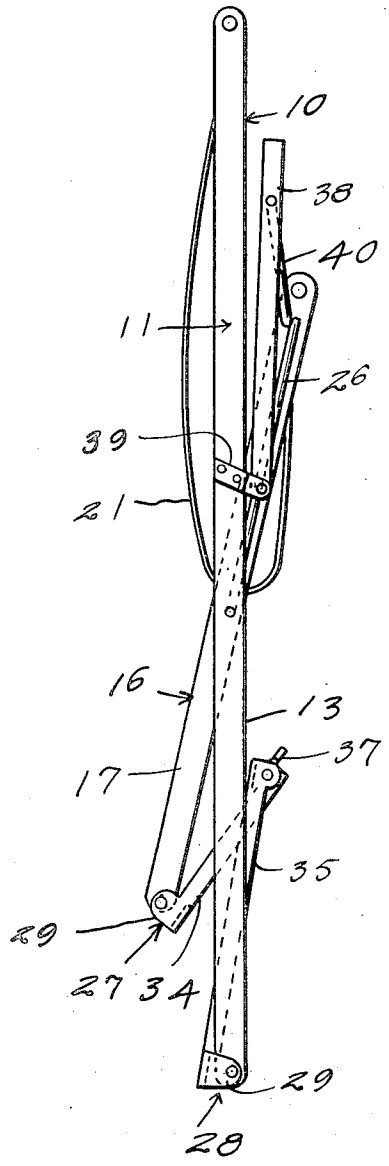


Fig. 7.



Inventor
Paul O. Beil

By Kimmel & Crowell
Attorneys

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FOLDING ROCKING CHAIR

Paul O. Beil, Chili, Wis.

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2 Claims. (Cl. 155—56)

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This invention relates to chairs and more particularly to folding or collapsible rocking chairs.

It is an object of this invention to provide an improved folding rocking chair which is so constructed and arranged that in the extended or unfolded position it will provide a substantially mounted rocking chair and which may be folded nearly completely flat in its collapsed or folded position.

Another object of this invention is to provide an improved folding rocking chair of the kind to be more particularly described hereinafter which is formed of a minimum number of hingedly connected parts so constructed and arranged to provide a very light weight and portable chair, while having suitable strength and rigidity.

Still another object of this invention is to provide a folding rocking chair of this kind so constructed and arranged that in its folded or collapsed position the lower frame and the connecting links and hinges between the lower frame and upper frame will be substantially disposed within the marginal edges of the upper or larger frame member.

A further object of this invention is to provide a folding rocking chair of this kind having a folding link between the lower ends of the upper and lower frame members for holding the lower ends in fixed relation in the unfolded or extended position of the chair, while being collapsible to provide for the disposition of the lower frame within the upper frame in the folded position.

A still further object of this invention is to provide an improved folding rocking chair of this kind which is so constructed and arranged that it is readily adaptable to the economic manufacture and at a cost suitable for the retail sale thereof.

A further object of this invention is to provide a folding rocking chair that will not mar the floor or work into the ground when used on a lawn.

Another object of this invention is to provide a folding rocking chair that will not tip over backwards, no matter how hard it is rocked.

Another object of this invention is to provide a folding rocking chair that can be stored in a very small space and carried with little difficulty.

With the foregoing objects and others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically referred to and illustrated in the accompanying drawings, wherein are shown embodiments of the invention, but it is to be understood that changes,

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variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a side elevation of a folding rocking chair constructed according to an embodiment of this invention;

Figure 2 is a rear elevation;

Figure 3 is a longitudinal section taken on the line 3—3 of Figure 2; and partly broken away;

Figure 4 is a fragmentary transverse section taken on the line 4—4 of Figure 3;

Figure 5 is a fragmentary transverse detailed section taken on the line 5—5 of Figure 3;

Figure 6 is a horizontal section taken on the line 6—6 of Figure 1; and

Figure 7 is a side elevation of the chair partly folded.

Referring to the drawings, the numeral 10 designates generally an improved folding rocking chair which is so constructed and arranged that in its extended or unfolded position it will provide a substantial rocking chair or chair adjustable for any desired inclination.

The chair 10 is adapted in its folded position to be substantially contained within the boundaries or extremities of the larger of the frames.

The folding chair 10 is constructed with an upper or rearwardly and upwardly inclined extending frame 11. The frame 11 is formed of side members 12 and 13 connected together at their upper and lower ends by horizontally extending frame members 14 and 15. A lower frame 16 is disposed for folding within the larger or outer frame 11. The lower frame 16 is formed of side members 17 and 18 which are inclined forwardly and upwardly in the normal extended position of the chair 10.

The side frame members 17 and 18 are fixed together in spaced apart relation at their ends by horizontal members 19 and 20. The side frame members 17 and 18 of the lower frame 16 are disposed between the side frame members 12 and 13 of the upper or outer frame 11.

In the normal extended position of the chair 10 the frames 11 and 16 are disposed in crossed relation. The frame 11 is formed with the side members thereof considerably longer than the side members of the lower frame 16 so that the upper end of the side members 12 and 13 may constitute the back of the chair.

A fabric seat 21 is disposed between the upper ends of the frames 11 and 16 being connected to the upper horizontal frame member 20 at the

lower end and about the upper horizontal frame member 14 at its upper end.

The side frame members 17 and 18 are loose relative to the side frame members 12 and 13 of the larger or outer frame to permit the sliding and pivoted movement of the lower frame within the outer frame as the chair 10 is folded. A connecting link 22 is pivotally connected between the side members of the two frames for securing them together above the intersection of the two frames in the normal extended position of the chair. The link 22 is formed of an elongated rod having its ends 24 and 25 oppositely bent at right angles for pivotal engagement into the side frame members. One end of the S-shaped connecting rod 22 is pivotally connected in the upper end of the side members of the lower frame 16 and the other end as 24 is pivotally connected in one of the side frame members of the larger frame 11 approximately midway of the length thereof.

The central portion of connecting bar 26 of the link 22 is disposed between the adjacent frame members of the frames 11 and 16 as clearly shown in Figure 2 of the drawings.

One link 22 is disposed on each side of the chair 10 in opposite relation to the other. The lower end of the chair 10 is formed of connecting links which are foldable in the folded position of the chair. A foot member as 27 is pivotally connected to each of the lower ends of the side frame members 17 and 18 of the inner or lower frame 16 and foot members 28 are pivotally connected to the lower ends of the side frame members 12 and 13 of the larger outer frame 11. The foot members 27 and 28 are substantially U-shaped in cross section having upwardly extending ears 29 at one end thereof between which the side frame members are pivotally engaged.

A link 31 connects the members 27 and 28 together at each side of the chair at the lower end of the side frames. The folding link 31 is connected at each end thereof to the foot members 27 and 28 or formed integral therewith. The link 31 is formed of a pair of hingedly connecting link members 34 and 35 pivotally connected together at one end thereof by a hinge 36. The hinge 36 is so constructed and arranged that the link members 34 and 35 may be folded in one direction as upwardly in Figure 1 and may not be folded beyond the aligned position in the other direction.

A stop pin as 37 is fixed to or formed on one of the link members as 34. The stop pin 37 is adapted to engage the other link member 35 to hold the link 31 rigid in the extending position thereof. Since the side frame members of the frame 16 are disposed inwardly of the side frame members of the frame 11, the link members 34 and 35 connected thereto are also disposed in a slidable side-by-side relation as indicated in Figure 6.

A substantially horizontal arm rest 38 is pivotally connected to the side frame members 12 and 13 of the upper frame 11 by a hinge bracket 39 fixed to the side members 12 and 13 above the hinge point of the link 22. A vertically extending link 40 also S-shaped pivotally connects the outer end of the arm rest 38 to the upper end of one of the side frame members 17 and 18. The S-shaped link 40 is connected at its lower end by one outwardly extending end thereof engaging pivotally through the upper end of one of the members 17 and 18 at the pivotal connection of the link 22.

The link 40 similar to the link 22 is disposed between the adjacent frame members of the frames 11 and 16 as seen in Figure 2. The length of the link 40 is substantially the same length as the distance between the connection of the link 22 to the side frame members 12 and 13 and the pivot brackets 39.

The links 22 and 40 together with the arm rests 38 and the section of the side frame members 12 or 13 constitute a 4-bar linkage which is foldable along the length of one of the side frame members 12 or 13. In the use and operation of this folding chair 10 when initially set up in the extended position as seen in Figure 1 the chair may be folded by raising the forward end of the lower frame 16 upwardly toward the upper end of the larger outer frame 11. In folding the chair the linkage 31 is initially broken at the hinge 36 upwardly. This movement will cause the lower end of the lower frame 16 to move upward relative to the lower end of the upper frame 11. As the lower end of the frame 16 moves toward the lower end of the frame 11, the upper end of the frame 16 will move upwardly about an arc with the point 24 of the link 22 as a center.

The 4-bar linkage described above will reach a straightened position with the upper end of the frame 16 disposed between the side frame members of the upper frame 11 as the linkage 31 is completely folded.

As shown in Figure 7, the 4-bar linkage of the upper end of the chair 10 is nearing its straightened position while the linkage 31 at the lower end of the chair is also being folded within the frames. Considering Figure 7, the further movement of the frames together will cause the links 22 and arm rest 38 to become further straightened for disposing the links 22 and the said frame members of the frame 16 within the frame 11.

For unfolding the chair to its extended position, the upper end of the lower frame 16 need merely be pulled forwardly of the frame 11 so that the linkage 31 on the foot members 27 and 28 will again become straightened out as shown in Figure 1.

Having thus described my invention, what I claim is:

1. An improved folding rocking chair comprising a rectangular upper frame, a rectangular lower frame substantially shorter than said upper frame, the side members of one of said frames being disposed loosely between the side members of the other frame, said frames being disposed in crossed relation in the normal extended position of said chair, a flexible seat member secured between the upper ends of said frames, a link pivotally connected to each of the side members of said upper frame intermediate the length thereof and pivotally connected to each of the side members of said lower frame at the upper ends thereof, said link being formed of a rod having oppositely bent frame connecting end portions, a pair of arm rests, each of said arm rests being pivotally connected at the rear end thereof to one of the side members of said upper frame, a pair of arm rest supporting links pivotally connecting the forward ends of said arm rests and the upper ends of the side members of said lower frame, each of said arm rest supporting links being formed of a rod having oppositely bent frame and arm rest connecting end portions, a pair of foldable link members between the lower

ends of each of the side members of said upper frame and the lower ends of the related side members of said lower frame, and means pivotally connecting the ends of said foldable links to the lower ends of said frames.

2. An improved folding rocking chair as in claim 1 in which each of said pair of foldable links are formed with U-shaped end portions for engagement about the lower ends of the side members of the related frames.

PAUL O. BEIL.

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