Dec. 17, 1963 R. A. HOPKINS 3,114,572

FOLDING ROCKING CHAIR

Filed Nov. 16, 1961

3 Sheets-Sheet 1

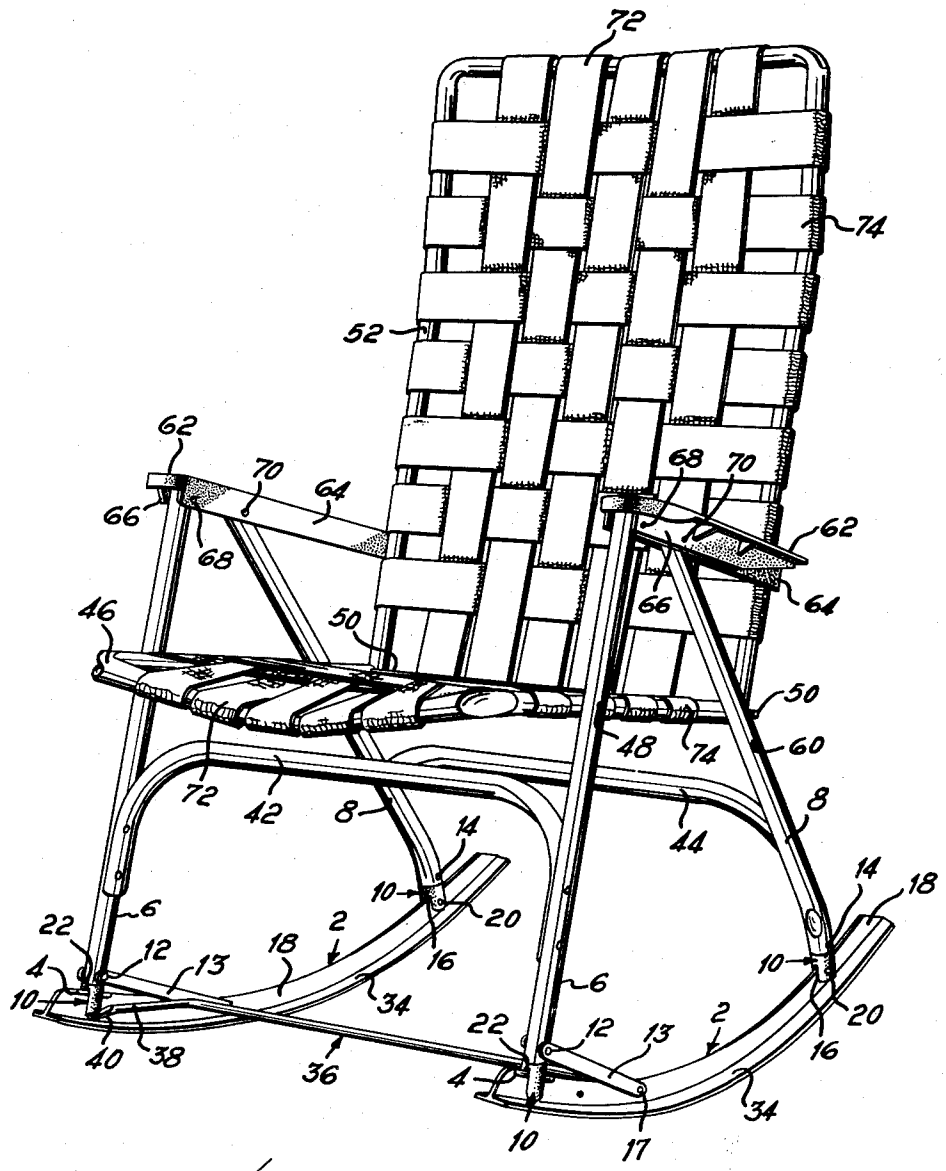


Fig. 1

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3 Sheets-Sheet 2

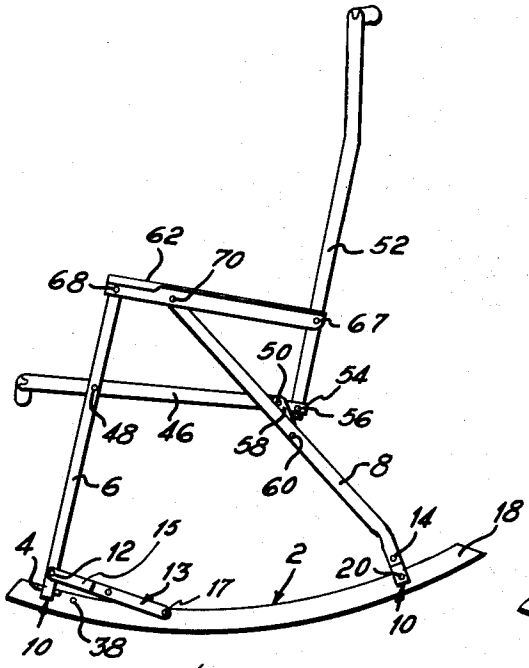


Fig. 2

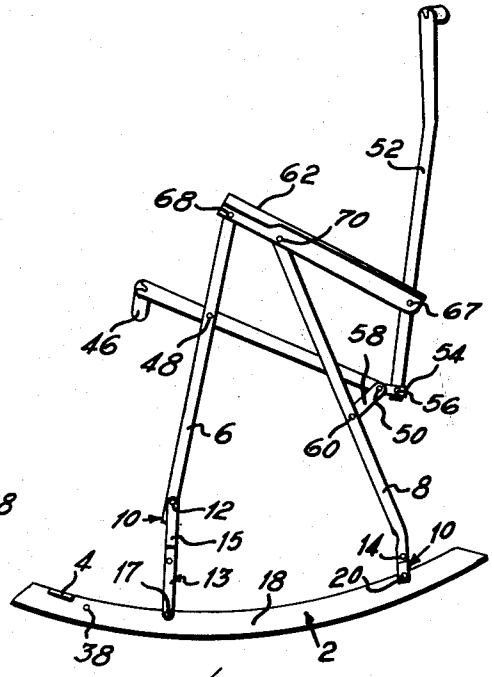


Fig. 3

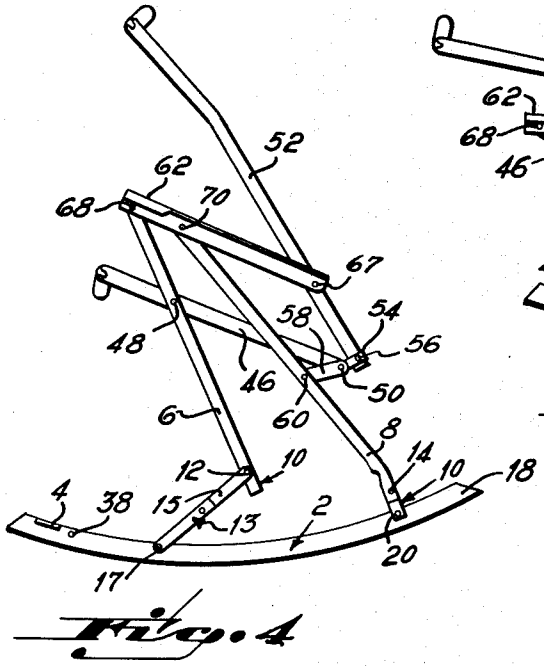


Fig. 4

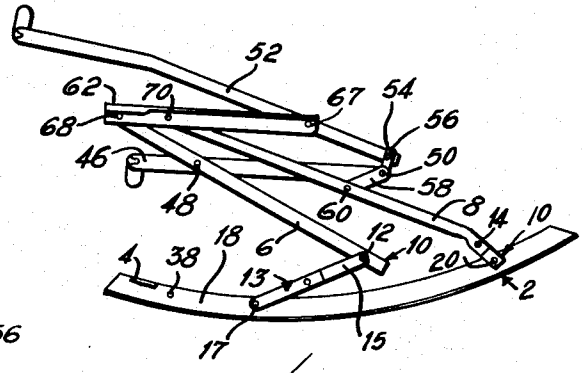


Fig. 5

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3 Sheets-Sheet 3

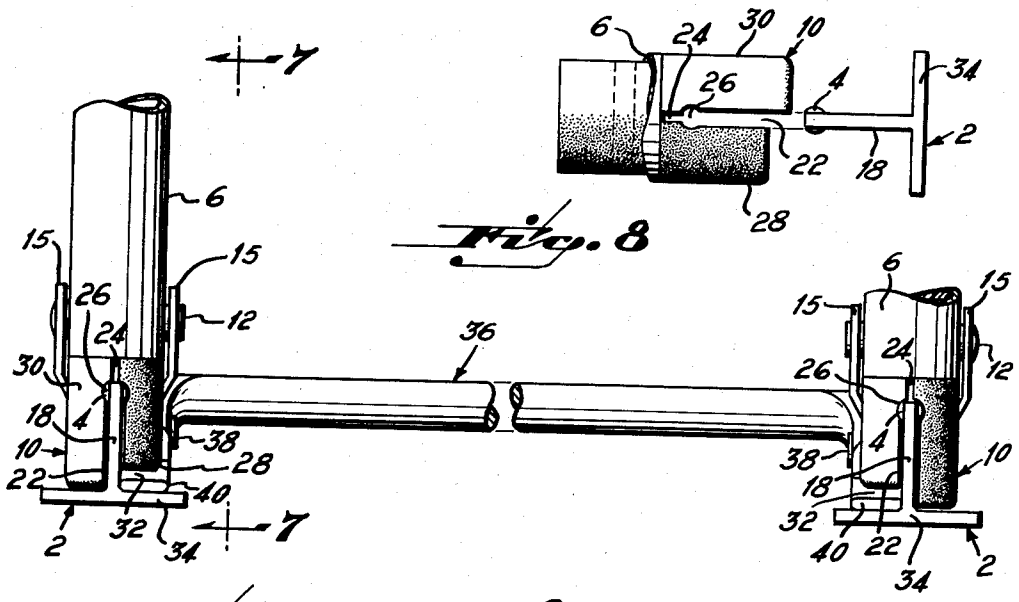


Fig. 6

Fig. 8

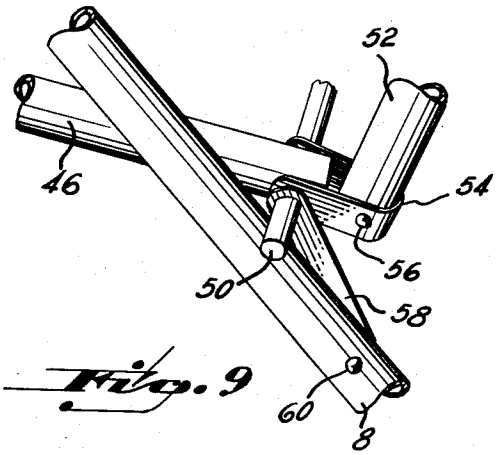


Fig. 9

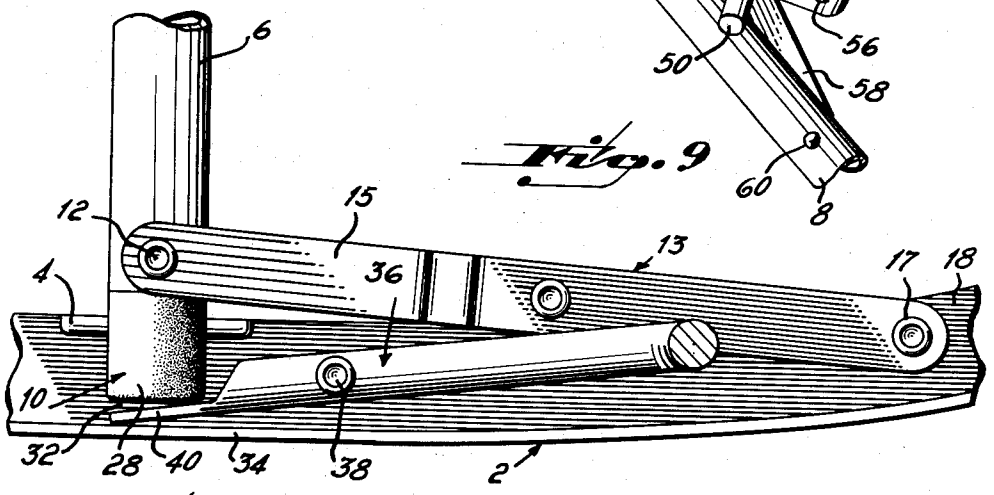


Fig. 7

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3,114,572

FOLDING ROCKING CHAIR

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10 Claims. (Cl. 297—33)

This invention relates to folding furniture and more particularly to a folding rocking chair.

One of the objectives of this invention has been to provide an inexpensive, light weight, collapsible rocking chair which may be securely locked in an open position and which is easily unlocked so as to be foldable into the closed or collapsed position.

In connection with folding rocking chairs, the problem of securely locking the chair in the open position is particularly acute since the weight of a person using the chair is continually being shifted therein, and as a consequence, there is a very definite danger of the chair being inadvertently collapsed with the person seated in the chair. Accordingly, it has been an objective of this invention to provide a chair which may be very easily locked into the open position with absolutely no danger of the chair being inadvertently or accidently collapsed.

Another objective of this invention has been to provide a collapsible chair which is easily unlocked from in front of the chair without the person using it being required to walk around the chair and manipulate it from the back so as to cause it to collapse.

Briefly, the chair of the present invention consists of a rocking chair having the conventionally shaped arcuate rockers connected to the legs of the chair. Preferably, the rockers, in cross-section, are in the shape of an inverted T. Both the front and back legs of the chair have plastic plugs at their lower ends which are split to fit down over the top of the vertical flanges of the rockers. Obviously, however, these plugs could be omitted and the slots made integral with the legs of the chair. Both back legs are pinned to the vertical flanges; however, the plugs at the front fit down over the vertical flanges in snap-fit relation. The front legs are joined to the rockers by pivoted links making it possible to release the snap-fit engagement of the front legs with the rockers and swing them up and back into an overcenter position which permits the chair to collapse, bringing the back, seat, legs and rockers into positions in which they roughly parallel one another. In order to assist in the disengagement of the snap lock fit between the lower ends of the front legs of the rockers, preferably a U-shaped cross bar extends between the two rockers and is pivoted to them with the ends of this bar residing underneath the front legs when they are locked. By stepping on the bar, the legs are pushed out of their locked position and thus the collapsing of the chair from the point of disengagement on is simply a matter of folding it at its pivoted joints.

This construction has the advantage of providing a very simple lock which is snap-fit into locked engagement with the base of the chair and yet is very easily disengaged from the locked position with a minimum of effort.

Additionally, this construction has the advantage of permitting the user to merely step on the cross bar member in the front of the chair and cause the release of the locked engagement without the necessity of pulling, tugging, and otherwise manipulating the chair so as to cause it to collapse.

This construction has the additional advantage of being "fail-safe." By this term, it is meant that a person can in no way possibly collapse it while being seated in it. This "fail-safe" characteristic results from the fact that the chair pivots about the rear legs and only the front legs are released from the base in order to collapse the chair.

The invention can best be further described with reference to the drawings in which:

FIGURE 1 is a perspective view of the chair in the open position;

FIGURE 2 is a side elevation of the chair in the open position;

FIGURE 3 is a side elevation of the chair with the arms in the raised position during the folding process;

FIGURE 4 is a side elevation of the chair partially collapsed during the folding process;

FIGURE 5 is a side elevation view of the chair in its nearly completed folded position;

FIGURE 6 is a fragmentary front elevation of the front legs of the chair;

FIGURE 7 is a side elevation of the snap-in chair lock;

FIGURE 8 is a front elevation of a portion of the leg and rocker just prior to being snapped into lock position; and

FIGURE 9 is a perspective view of the intersecting portions of the seat, back and rear leg of the chair.

Referring to FIGURE 1, it will be seen that the chair of this invention is mounted upon two arcuate shaped rockers 2, each of which is an inverted T-shaped channel member. Near the front and at the top edge of the web portion 18, each rocker has ribs 4 thereon which serve as areas of increased cross-sectional thickness to aid in the locking action of the front legs to the channels as will be more fully explained hereinafter.

The lower ends of the front legs 6 and the back legs 8 have plastic plugs 10 fitted therein. The plastic plugs are made from a plastic material such as polyethylene, nylon etc. and are securely held in the front legs by rivets 12 and in the back legs by rivets 14. The plugs in the rear legs have a vertical slot 16 therein extending upwardly from the bottom. This slot 16 is received over the vertical web portion 18 of the rockers and the plugs 10 of the rear legs are pivotally hinged to the vertical flange by rivets 20.

The plugs 10 in the front legs also have vertical slots 22 extending upwardly from the bottom thereof. However, these plugs are slotted somewhat differently from the plugs of the rear legs so that they will fit down over the vertical flanges 18 in snap-fit relation. Referring to FIGURES 6 and 8, it will be seen that the slot 22 has a portion of decreased thickness 24 near the top portion thereof. At the point of juncture of the wide portion of the slot 22 with the narrow portion 24, the slot widens out to form a rib receiving portion 26. When the plugs in the front legs are forced down over the vertical web portion 18 of the rockers, the rib receiving portion 26 of the slot 22 fits over the locking rib 4 to form a snap-fit lock between the rocker 2 and the front leg 6 of the chair. Due to the inherent resiliency of the plastic plug 10, the slot 22 will permit flexing of the plastic plug so that the slot 22 will fit over the rib 4 as the plug slides down over the rib. The portion 28 of the front plugs 10 which is on the inside of the slot 22 is of a lesser height than the outside portion 30 of these plugs so that when the front legs of the chair are in locking engagement with the vertical web 18 of the rockers, there is a gap 32 between the bottom of the inside portion 28 and the top edge of the flange portion 34 of the rocker. This gap accommodates a section of a release kick bar 36.

The release kick bar 36 consists of U-shaped bar which is fitted between the inside edges of the vertical web portion 18 of the rockers and is pivotally connected to the vertical web portion of each of the rockers by rivets 38. The front portions 40 of the kick bar are of decreased thickness relative to the rest of the bar and are received in the gap 32 between the bottom of the front plugs and the top 34 of the flange of the rockers. In order to release the snap-fit lock between the front legs and the rock-

ers, it is only necessary to step down upon the kick bar 36 which in turn forces the front portions 40 of the kick bar upwardly and in so doing, forces the front legs out of engagement with the rockers. The top surface 34 of the flanges of the rockers 2 serve as an abutment surface to limit the oscillation of the kick bar 36 in both directions. As viewed in FIGURE 7, when the kick bar is rotated clockwise about the pivot 33 the portion of the kick bar 36 which extends between the legs will engage the top surface of the flange of the rocker and when the kick bar is rotated in a counter clockwise direction about this pivot, the front portion 40 will similarly engage the top surface of the flange.

The front legs of the chair are each attached to one of the rockers 2 through a link member 13 (FIGURES 6 and 7). Each link 13 consists of a yoke shaped portion 15 which fits around the front leg and pivotally connected thereto by rivet 12. The ends of the links 13 opposite the yoke shaped portions 15 are pivotally connected to the rockers 2 by rivets 17.

A U-shaped reinforcing bar 42 extends between the two front legs 6 of the chair at a point beneath the seat. This reinforcing bar serves to maintain the proper spaced relationship between the front legs and to reinforce the assembly so as to give it added rigidity. This bar may be secured to the legs by means of riveting or welding. Likewise a similar U-shaped reinforcing bar 44 extends between the two rear legs 8 of the chair and is rigidly connected to the legs 8 in a manner similar to the bar 42 in the front.

The chair seat is in the form of a U-shaped section of tubing 46 having the open portion at the rear. The chair seat 45 fits within the legs of the chair and is connected to the front legs of the chair by rivets 48 which permit the seat to pivot about these legs.

At the rear (FIGURE 9) the side portions of the seat have apertures therein through which passes a locating bar 50. This locating bar extends laterally beyond the sides of the chair and serves as an abutment when the chair is in the open posiiton. Thus, in the open position this bar abuts against the back legs of the chair and maintains the seat in a horizontal position.

The back of the chair is made from a section of tubing which is also bent into the shape of a U. At each end the back section of tubing 52 has a U-shaped bracket 54 connected thereto by a rivet 56. The ends of the brackets 54 have apertures therein through which passes the locating bar 50. On both sides of the chair a link 58 is pivotally connected to the bar 50 between the inside edge of the rear leg and the bracket 54. The links 58 are also pivotally connected to the rear legs 8 by rivets 60.

The chair is complete with arm rests to which the back and the tops of all four legs are pivotally connected. The arm rests have a flat upper surface 62 and two depending flanges 64, 66. The back of the chair is pivotally connected to the inside flanges 64 of the arm rests by rivets 67. The front legs of the chair are received between the two flanges 64, 66 near the front thereof and are pivotally connected thereto by rivets 68. The tops of the rear legs are also received between the flanges 64, 66 and are pivotally connected to the arm rests by rivets 70 at a point approximately ⅓ the distance from the front of the arm rests to the rear.

The seating portion and back rest portions of the chair are completed by conventional interwoven fabric straps 72—74. The vertical straps 72 are connected to the front of the seat and the top of the back and pass beneath the locating bar 50. The horizontal straps 74 extend between the two sides of the seat and back respectively.

Referring to FIGURES 2 through 5, it will be seen that the chair is very easy to move from the open position to the folded position from a point in front of the chair. Assuming the chair to be in the open position, the snap-fit lock is released by the user placing his foot on the kick bar 36 and thus releasing the snap-fit lock of the front legs. Thereafter, by lifting up on the arm rests the front leg links 13 are passed over center. Thereafter it is only necessary to push down upon the arm rests to complete the folding operation.

Opening the chair is likewise a very simple operation. It is only necessary to hold the chair by the top of the back section, place the rear of the rocker on the ground and push downwardly. The chair will fall into the position illustrated in FIGURE 3 where the link is overcenter so that it is only necessary to sit the chair down and push down on the arm rests. The snap-fit locks on the front legs will thereby be forced into engagement with the rockers and the chair will be locked in the open position until such time as the kick release bar is forced downwardly to release the snap-fit lock.

It will be understood that the above detailed description is by way of illustration and not by way of limitation, it being contemplated that modification of the details of the invention may be made without departing from the scope of the appended claims.

Having described my invention, I claim:

1. A folding rocking chair having front legs, rear legs and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, the rear legs of said chair being pivotally connected to said rockers and the front legs of said chair being connected to said rockers through a linkage member, said front legs having slots therein adapted to engage and lock the front legs of the chair to the rockers, and lock release means mounted on said chair and adapted when actuated to force said front legs out of engagement with said rockers.

2. A folding rocking chair having front legs, rear legs, and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, the rear legs of said chair being pivotally connected to said rockers and the front legs of said chair being connected to said rockers through a linkage member, said front legs having slots therein adapted to engage and lock the front legs of the chair to the rockers, and lock release means mounted on said rockers and having a portion thereof extending between said rockers and said front legs when the front legs and rockers are in locked engagement, whereby the front legs and rockers may be forced out of engagement by said lock release means.

3. A folding rocking chair having front legs, rear legs, and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, the rear legs of said chair being pivotally connected to rockers and the front legs of said chair being connected to said rockers through a linkage member, at least one of said front legs having a slot therein adapted to engage and lock the slotted front leg of the chair to one of said rockers, and lock release means mounted on said chair and adapted when actuated to force said slotted front leg out of engagement with said rocker.

4. A folding rocking chair having front legs, rear legs, and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, the rear legs of said chair being pivotally connected to said rockers and the front legs of said chair being connected to said rockers through a linkage member, at least one of said front legs having a slot therein adapted to engage and lock the slotted front leg of the chair to one of the rockers, and lock release means mounted on one of said rockers and having a portion thereof extending between said one rocker and said slotted front leg when the slotted front leg and rocker are in locked engagement, whereby the slotted front leg and rocker may be forced out of engagement by said lock release means.

5. A folding rocking chair having front legs, rear legs, and a seat and back which are connected to the legs of

the chair so as to be foldable into a substantially common plane, a pair of rockers, the rear legs of said chair being pivotally connected to said rockers and the front legs of said chair being connected to said rockers through a linkage member, said front legs having slots therein adapted to engage and lock the front legs of the chair to the rockers, and a U-shaped lock release means pivotally mounted on said rockers and having a portion thereof extending between said rockers and said front legs when the front legs and rockers are in locked engagement, whereby the front legs and rockers may be forced out of engagement by said lock release means.

6. A folding rocking chair having front legs, rear legs, arm rests, and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, each of said rear legs of said chair being pivotally connected to one of said rockers and to one of said arm rests of said chair, each of said front legs of said chair being pivotally connected to one of said arm rests and one of said rockers through a linkage member, said front legs having slots therein adapted to engage and lock the front legs of the chair to the rockers, and lock release means mounted on said chair and adapted when actuated to force said front legs out of engagement with said rockers.

7. A folding rocking chair having front legs, rear legs, arm rests, and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, each of said rear legs of said chair being pivotally connected to one of said rockers and to one of said arm rests of said chair, each of said front legs of said chair being pivotally connected to one of said arm rests and to one of said rockers through a linkage member, said front legs having slots therein adapted to engage and lock the front legs of the chair to the rockers, and a U-shaped lock release means pivotally mounted on said rockers and having a portion thereof extending between said rockers and said front legs when the front legs and rockers are in locked engagement whereby the front legs and rockers may be forced out of engagement by said lock release means when said lock release means is rotated about said pivoted mounting.

8. In a folding chair having seat, back, leg and connecting link elements pivotally connected so as to be foldable into a substantially common plane, said chair including means to lock said chair in an open position, said locking means comprising a slotted resilient member attached to one of said elements adapted to be snap-fit over a second of said elements whereby said elements are securely locked in engagement in unfolded position, and lock release means mounted on said chair, said lock release means being mounted on one of said chair elements

and comprising a lever pivotally mounted between its ends, said lever having an end portion thereof extending between said snap-fit elements when in locked engagement and adapted to force said snap-fit elements out of engaged locked position when rotated about said pivot mounting.

9. A folding rocking chair having tubular metal front legs, tubular metal rear legs, arm rests and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers which are of inverted T-shape in cross section, each of said rear legs of said chair being pivotally connected to one of said rockers and to one of said arm rests of said chair, each of the front legs of said chair being pivotally connected to one of said arm rests and to one of said rockers through a linkage member, each of said front legs having plugs of resilient material extending from the lower ends thereof, each of said plugs having slots extending upwardly from the bottom surface of the plug, said slots being adapted to be expanded over and frictionally engage a vertical flange of said rockers to thereby lock the chair in the open position.

10. A folding rocking chair having a pair of front legs, a pair of rear legs, and a seat and back which are connected to the legs of the chair so as to be foldable into a substantially common plane, a pair of rockers, one pair of legs of said chair being pivotally connected to said rockers and the other pair of legs of said chair being connected to said rockers through a linkage member, said other pair of legs having slots therein adapted to engage and lock the slotted legs of the chair to the rockers, and lock release means mounted on said rockers and having a portion thereof extending between said rockers and said slotted legs when the slotted legs and rockers are in locked engagement, whereby the slotted legs and rockers may be forced out of engagement by said lock release means.

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