

June 3, 1941.

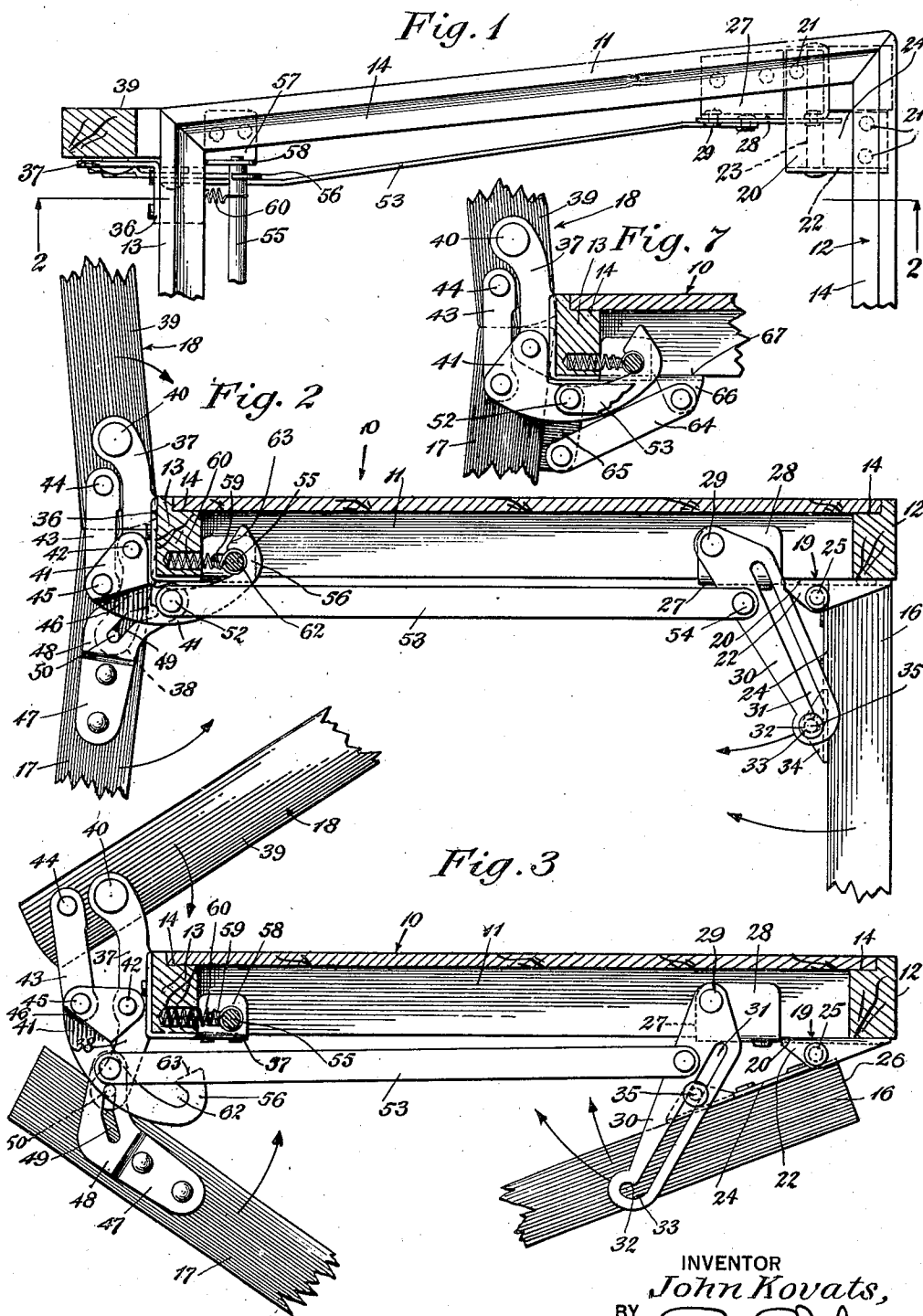
J. KOVATS

2,244,399

FOLDING CHAIR

Filed April 21, 1938

2 Sheets-Sheet 1



INVENTOR
John Kovats,
BY *John G. Johnson*
ATTORNEY

June 3, 1941.

J. KOVATS

2,244,399

FOLDING CHAIR

Filed April 21, 1938

2 Sheets-Sheet 2

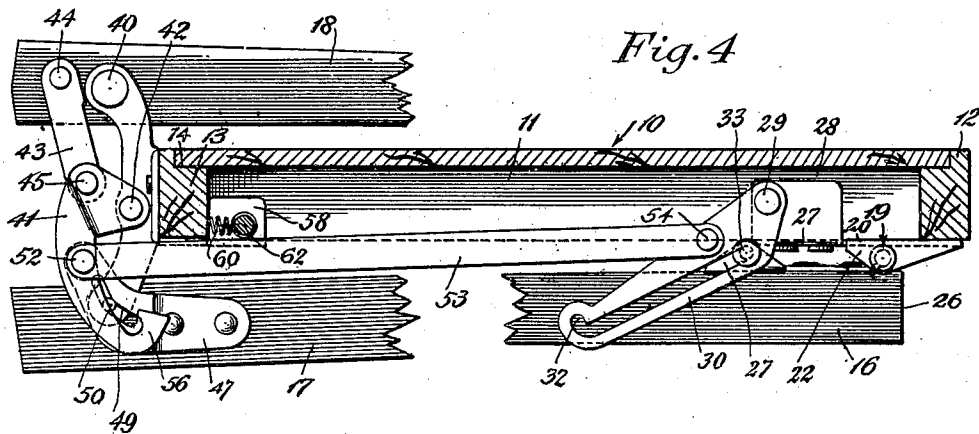


Fig. 4

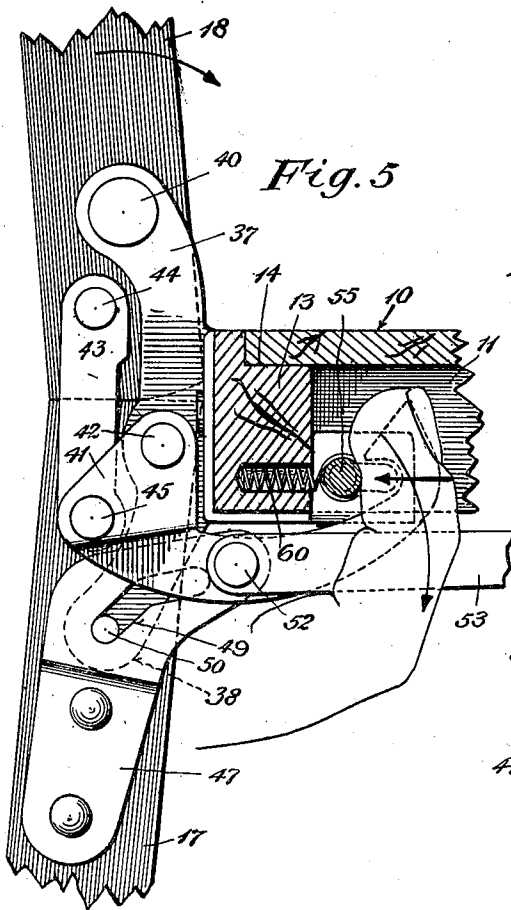


Fig. 5

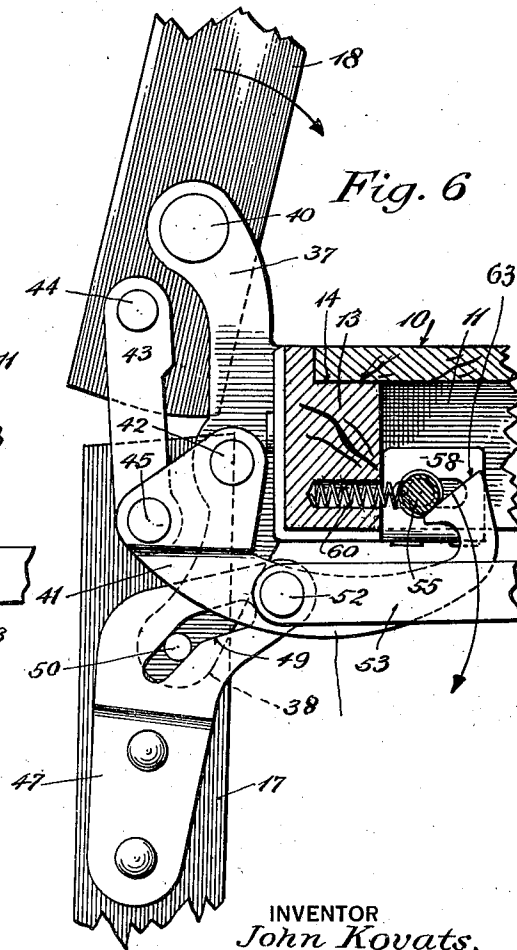


Fig. 6

INVENTOR
John Kovats,
BY *Sam A. Johnson*
ATTORNEY

UNITED STATES PATENT OFFICE

2,244,399

FOLDING CHAIR

John Kovats, Fairfield, Conn.

Application April 21, 1938, Serial No. 203,221

18 Claims. (Cl. 155—148)

This invention relates to folding chairs and to other similar articles of furniture.

Folding chairs have heretofore been proposed in which, through pivotal interconnecting linkage, the legs were made to follow the back member as the same was moved to the folded or extended positions. The complicated linkage mechanism employed in these chairs rendered the closing and opening operations of the same rather difficult so that it was not possible to fold or extend these prior chairs without considerable effort on the part of a user.

To avoid this complication, the back member and legs, according to the present invention, are interconnected by a very simple mechanism, positive in its action, and capable of transmitting the folding and extending movement of the back member to the legs in such a manner that the chair can be operated with considerable ease and with little effort.

Also, the complicated mechanism of the previously proposed chairs included a plurality of pivotally connected links, and required many stamping and assembling operations which increased considerably the manufacturing costs of the chairs. The simple mechanism of the chair of the present invention obviates the necessity of the plurality of interconnectors and consequently the manufacturing costs thereof have been materially decreased, and the assembling operations simplified.

Further, the actuating mechanism of the chair, according to the invention herein disclosed, not only affords a simple, easy operation of the chair to the folded or extended positions but also tends to increase the rigidity of the chair when fully extended for use. The preferred form of the actuating mechanism is so organized and so interconnected with the legs of the chair that movement of the latter will not be imparted to the actuating mechanism so that any tendency of the legs to collapse will be thereby prevented.

To further increase the rigidity of the chair, a pair of brace members are mounted, one on each side of the chair, and so connected to the front legs that the same are held in rigid extended position but yet quite easily moved to the folded position when so desired.

Chairs have also been proposed hereinbefore in which means were employed to lock either the back member or one pair of the legs when the chair was extended and which, due to the interconnection of the back member and legs, held all of the elements of the chair in extended

position. The previously proposed construction, although maintaining the legs and back member in the extended position, nevertheless, resulted in an unstable chair when extended as the pivotally interconnected links must necessarily, to reduce friction and binding during movement thereof, be given a certain amount of play. This lost motion between the links, as will be understood, prevented the chair from being locked in rigid extended position and resulting in shifting movements when the chair was in use.

To obviate this undesirable construction, the invention, as disclosed herein, securely locks the actuating mechanism in the extended position. The means for securely locking the actuating mechanism comprises a latch means, an integral part of the actuating mechanism, adapted to automatically engage keeper means mounted on the underside of the seat member when the chair is moved to the extended position. Accordingly, with the actuating mechanism securely held against movement, the chair of the present invention is extremely rigid when in use.

Other features and advantages will herein-after appear.

In the accompanying drawings:

Figure 1 is a top plan view of the seat member with the seat proper removed.

Fig. 2 is a view partly in elevation, taken on line 2—2 of Fig. 1, showing the chair in the fully extended position.

Fig. 3 is a similar view showing the position of the elements of the chair when the same is partially collapsed.

Fig. 4 is a view similar to Fig. 2 and showing the position of the elements of the chair in the folded position.

Fig. 5 is an enlarged view, partly in section showing the means by which the back member and rear leg are connected to the seat member as well as the means for locking the actuating mechanism in the fully extended position.

Fig. 6 is a view similar to Fig. 5 with the chair back moving in the direction of the arrow toward the folded position.

Fig. 7 is a view similar to Fig. 5 and showing a modified form of the means for connecting the rear legs to the seat member.

In the preferred form of the invention, the chair comprises a seat member 10 of any suitable construction, and may, as shown herein, include two side bars 11 interconnected at the opposite end thereof with front and rear bars 12 and 13, respectively. The front and rear bars are slightly recessed, as at 14, for carrying the seat proper

of any suitable material or construction. The seat member 10 may be of any desired shape, but, in the present invention, it is slightly oblong and flared somewhat toward the front so that the seat is wider at the front edge than at the rear edge. In this construction, the front legs 16 will be spaced somewhat further apart than the rear legs 17 so that the legs may fold longitudinally adjacent each other on the underside of the seat member in a manner hereinafter more completely described. A back member 18 is pivotally connected to the seat member and is adapted to fold against the top side thereof.

The legs 16-17 and back member 18 preferably, as herein shown, are adapted to be pivotally interconnected to the seat frame 10 by two groups of elements, one group being the counterpart of the other and each being suitably arranged for installation respectively on the right and left hand sides of the chair. The elements are preferably stamped from sheet metal, and, with few exceptions, are interchangeable so that they can be used in connection with either group. This greatly reduces the number of stamping operations and results in a greater economy of manufacture. As the two groups comprise identical members, one only will be described in detail, and the second group will be hereinafter mentioned only where it appears necessary to clearly describe the operation of the chair, or where a member of one group performs a function in conjunction with its counterpart of the other group.

The front legs 16, in the present invention, are pivotally secured to the seat member 10 adjacent the front edge thereof by a hinge support 19. The hinge support, in its present preferred form, comprises a substantially L-shaped bracket 20, one leg of which is secured to the underside of the side bar by a screw 21 and the other leg to the underside of the front bar by additional screws 21. The bracket 20 thus serves to greatly strengthen or brace the corner connection between the side bar 11 and the front bar 12.

The bracket 20 is provided with downturned ears 22 adapted to accommodate a curled portion 23 of a plate 24 on the front leg 16, with a pivot pin 25 extending therebetween, forming the hinge support 19.

The plate 24 is connected to the rear side of the front leg 16 by the studs or any other suitable fastener means, and the curled member 23 thereof is offset slightly relative to the top end face 26 of the leg 16 so that the entire top face moves downwardly away from the underside of the seat member 10 when the leg 16 is moved from the extended position, thereby making it unnecessary to round the corner or cut away any of the top end of the leg for clearance during pivotal movement thereof. Thus, there is provided a large area of supporting contact between the leg 16 and seat member 10 when the leg is in the fully extended position shown in Fig. 2 which adds greatly to the rigidity of the chair.

The bracket ears 22 are widespread, and although not shown preferably the plate 24 is gradually tapered from the bottom toward the top including the curled portion 23, so that the latter is considerably wider than the chair leg 16; thus, the hinge support 19 of the present invention effectively braces the leg against unusual sidewise strain. This feature, and the pivotal connection which makes it possible to

provide a large area of contact where the chair leg 16 engages the seat member 10, provides such a rigid support for the leg that it is unnecessary to provide the usually unattractive supporting or bracing cross bar between the two front legs.

The bracket 27, secured by screws 21 to the underside of the side bar 11 adjacent the hinge support 19, is provided with an upturned ear 28 to which is pivoted at 29 a brace 30 for the leg 16. The brace 30 has a hook-shaped slot 31 therein comprising a short hook or notch 32 extending transversely of the brace and a longitudinal portion extending substantially the entire length of the brace 30. The short notch 32 forms a shoulder 33 adjacent the longitudinal portion of the slot. Fixed to an ear 34 of the plate 24 and riding in the slot 31 is a shouldered stud 35. It will be seen that, with the leg 16 in the extended position and the stud 35 in the notch 32 of the slot 31, the leg will be firmly braced and any tendency of the leg to fold inwardly will be prevented by the engagement of the stud 35 with the shoulder 33.

Secured adjacent each end of the rear bar 13 is a mounting bracket 36. Each bracket is secured to the outside of the rear bar 13 by studs or the like and is provided with oppositely projecting ears 37-38, extending above and below the seat member respectively.

The back member 18 may be of any suitable or desired construction, but preferably includes side bars or rails 39 pivotally mounted intermediate their ends, as at 40, on the upwardly extending ears 37 of the mounting brackets 36.

An actuating lever 41 is connected to each of the mounting brackets 36 by a pivotal pin 42 intermediate the ears thereof. The lower end portion of the side rail 39 of the back member 18 is pivotally interconnected to the lever 41 by a short link 43. The link 43 is pivotally connected adjacent the upper end thereof to the side rail 39 intermediate the pivot 40 and the end thereof by a suitable rivet or pin 44. The lower end of each link is pivotally secured by a pivotal pin 45 to its corresponding actuating lever 41.

The levers 41 are, as herein shown, offset as at 46 to provide clearance for the links 43 so that the lower ends of the same may pass between the levers 41 and the rear legs 17 when the chair is moved to the extended position, as shown in Fig. 2.

The rear legs 17 of the chair are adapted to be pivotally held to seat member 10 by a floating pivotal mounting including a pin-and-slot connection therebetween. The floating pivotal mounting preferably, as herein shown, comprises a mounting plate 47 secured to each of the rear legs 17 by studs or other suitable fastening means. The plates are provided with an upper laterally offset portion 48 substantially transverse to the legs 17 and extending beyond the front sides thereof. Each plate 47 has a dog-leg cam slot 49 within which a rivet 50, carried by the ear 38 of the mounting bracket 36, is adapted to operate. The plates 47 of the present invention are offset outwardly so that the ear 38 of the bracket 36 may be accommodated between the rear leg 17 and the plate 47.

The laterally-offset portion 48 of the mounting plate 47 of the rear leg 17 is pivotally secured by a rivet or pin 52 to the actuating lever 41.

It will now be apparent that, when the back member 18 is moved from the fully extended position (as shown by Fig. 2) to the partially

folded position of Fig. 3, the rear leg, due to the novel actuating lever 41 and the floating pivotal connection 49, 50, will also be moved to a corresponding position. The actuating lever 41, as will now be seen, is, in reality, a bell crank lever fulcrumed by the pin 42 on the mounting bracket 36 of the seat member 10, one arm of the bell crank being pivotally connected to the lower end of the back member 18 by a link 43, and the second arm to the plate 47 of the rear leg 17. Movement of the lower end of the back member 18, as that member is pivoted about pin 40, is positively transmitted by the bell crank to the plate 47 on the rear leg 17, and, due to the action of the pin 50 operating in the cam slot 49 of the plate, the rear leg is initially forced downwardly and then forwardly in a direction opposite to the path of movement of the back member.

The camming action between slot 49 and the pin 50 operating therein causes the leg 17 to move downwardly away from the back member during the initial pivotal movement of the latter, making it necessary to only slightly round or cut away the lower end of the rail 39 for clearance during the pivotal movement of the same. This permits a substantially large area of supporting contact between the leg 17 and rail 39 of the back member when the leg is in the fully extended position which augments the rigidity of the chair. The rigidity of the chair when extended is also increased by the floating pivotal connection, as any tendency of the leg 17 to pivot, except in the exact path of movement permitted by the pin 50 and slot connection 49, results in binding engagement between the pin 50 and the wall of the slot 49.

According to the present invention, the front legs 16 are also adapted to be controlled, that is moved into their folded or extended position, as the back member 18 is folded or extended. To this end there is provided an elongate actuator link 53 for each of the front leg braces 30, which is connected to the actuating lever 41 or bell crank preferably by the rivet 52 and extending forward underneath the seat member 10 to a pivot 54 on the brace 30. The location of the pivots 54, 52, 45 and 44 preferably, as clearly shown in Fig. 2, are so disposed relative to the arms of the bell crank 41, that casual movement of the link 53 caused by any tendency of the front legs 16 to move toward their folded position will not result in any pivotal movement being given to the bell crank. This construction, it will be seen, inherently increases the rigidity of the chair in use.

It will be understood now that movement of the front legs 16 can be controlled by the back member 18 by means of the bell cranks and actuating links 53 swinging the braces 30 about the pivots 29 and through the medium of studs 35 riding in the slots 31 cause the legs 16 to be pivotally moved to a position corresponding to the back member 18.

To positively lock the chair in the extended position and to prevent accidental collapse thereof, a novel locking means has been provided in the present invention. In the preferred form of the invention, the novel locking means comprises a bar or rod 55 extending substantially the entire width of the seat member 10 adjacent the rear edge thereof, which is adapted to lockingly engage a detent 56 carried by an extension of one of the arms of the bell crank lever 41. The bar 55 is mounted on the

underside of the seat member 10, in order to be inconspicuous, by suitable brackets 57 having upturned ears 58 carried by the side bars adjacent the rear ends thereof. The brackets 57 are adapted to be secured to the underside of the side bars 11 with wood screws or the like.

Each end of the bar 55 is slidably retained in a slot 59 provided in the upturned ears 58 of the brackets 57. The bar 55 is adapted to be forwardly urged by means of small coiled springs 60 each having an end coil secured about the bar. The springs 60 are carried by the rear bar 13 of the seat member 10. The means for mounting the springs 60 may comprise, as herein shown, small sockets or recesses 61 formed in the front surface of the rear bar 13, each adapted to receive or house the free end of the rear ends of the springs 60.

The detent 56, in the present invention, comprises a hook 62 adapted to receive the resiliently urged bar 55. The hook 62 is an integral part of the bell crank 41 and securely locks the same when the chair is in the extended position. It will now be apparent, that, with the actuating mechanism securely held against movement, the elements of the chair will be held in rigid extended position, and, as the actuating mechanism per se is held against movement, the chair will be extremely rigid.

To automatically retract the keeper bar 55 to permit the hook detent 56 of the bell crank 41 to be moved to its position when the chair is fully extended, and then held in such position by the keeper bar, the detent 56 is provided with a cam nose 63. The cam nose 63 is adapted to engage the bar 55 as the bell crank is moving into the fully extended chair position, and, due to the camming action therebetween, the bar is thrust backward against the action of the springs and the detent is allowed to complete its movement, whereupon the bar rides into the hook 62, securely locking the bell crank against movement.

A modified form of the rear leg support and control, therefore, is shown by Fig. 7 of the drawings. In this modified form of the invention, the pin-and-slot connection, including the lower ear of the bracket, has been dispensed with and the rear leg 17 is pivotally interconnected with the seat member 10 by means of a link 64. The remaining elements of this form of the invention are identical with those previously described although a somewhat different pivotal movement of the rear leg is obtained in the form now being described. One end of the link 64 is pivotally secured to a bracket 65, carried by the front side of the rear leg 17, and the opposite end to a downturned ear 66 of a bracket 67 secured to the underside of the side bar 11.

The actuating lever or bell crank 41, in this form of the invention, is secured to the upper edge of the bracket 65 by means of a pin similar to pin 52 of the preferred form of the invention. The actuator link 53 is also adapted to be connected to this pin, as it is in the form of the invention shown by Figs. 1 to 6 inclusive, and the control of the front legs remains the same.

The locking means employed in this modified form of the invention are identical with the locking means employed in the preferred form and need not be described in detail.

It will be seen that the action of the bell crank, in this form of the invention, is similar to that described hereinbefore, and transmits the movement of the back member 18 as that member is

moved about its pivot 40 to the bracket 65, imparting corresponding movement to the rear leg. Movement of the rear leg, in this form of the invention, is somewhat different than that obtained by the invention shown in Figs. 1 to 6, as no initial downward movement is given to the leg as the back member is moved from its extended position toward the folded position.

When it is desired to fold the chair of either form of the invention for the purpose of storage or transportation, the keeper bar 55 may be grasped intermediate the ends thereof (see Fig. 5) and by a backward pull thereon retract the same, simultaneously disengaging the ends thereof from the depressions of the detents 56. The chair may then be easily folded by grasping the back member 18 and moving it to its folded position overlying the seat member 10. This forward movement of the back member 18 is transmitted by the links 43 to the bell crank levers 41 and by the latter to the rear legs and by means of the links 53 and braces 30 to the front legs, and the legs are then caused to be moved about their respective pivots to their folded position underlying the seat member. Due to the positive action of the actuating mechanism the operation of the chair is made extremely easy and very little effort is required to either fold or extend the chair.

As the seat member has a greater width across the front edge than the rear, the rear legs, when the chair is in the folded position, nest between the front legs and it will be seen, as shown by Fig. 4, that the internested legs and back member are in substantial parallelism with the seat member, so that the chair occupies but a minimum of storage space.

Variations and modifications may be made within the scope of this invention and portions of the improvements used without others.

I claim:

1. In a chair of the type described, a seat member; a back member pivoted to said seat member; front legs pivotally secured to the seat member; rear legs; means including a pin-and-slot connection for securing said rear legs to said seat member; means including means carried by said seat member for transmitting movement of the back member to said rear legs, the pin-and-slot connection forming guide means for controlling the movement of said rear legs; and link means operatively interconnecting the means carried by said seat member and said front legs.

2. In a chair of the type described, a seat member; a back member pivoted to said seat member; front legs pivotally secured to the seat member; rear legs; means for connecting the rear legs to said seat member including a pin-and-slot connection; means carried by said seat member for transmitting movement of the back member to said rear legs; and link means operatively interconnecting the said first-named means and said front legs.

3. In a chair of the type described, a seat member; a back member pivoted to said seat member; front legs pivotally secured to the seat member; rear legs; means including a displaceable pivot for pivotally securing said rear legs to the seat member; means including means fulcrumed on said seat member for directly transmitting movement of the back member to said rear legs; and means operatively interconnecting the means fulcrumed on said seat member and said front legs.

4. In a chair of the type described, a seat

member; a back member pivoted to said seat member adapted to fold against the top side thereof; a plurality of supporting legs for said chair adapted to fold in opposite directions against the underside of said seat member; means for securing said legs to said seat member for pivotal movement; rigidly interconnected angularly related arms fulcrumed at the intersection thereof on said seat member; and means pivotally interconnecting said arms and said back member and legs, whereby to move the legs to folded and extended positions as the back member is folded and extended.

5. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; front and rear legs secured to said seat member and adapted to fold in opposite directions against the underside of said seat member; means for interconnecting the legs to said back member so that movement of the latter to folded and extended positions will impart a corresponding movement to said legs, said means, including link means, interconnecting by the legs of a bell crank fulcrumed at the apex thereof on said seat member; and means for locking said bell cranks against movement when the said chair is in the extended position.

6. In a chair of the type described, a seat member; a back member pivoted to said seat member; front and rear legs pivotally secured to the seat member; rigidly interconnected angularly related lever means fulcrumed at the apex thereof on said seat member; and link means pivotally interconnecting said back member and legs to the free ends of said rigidly interconnected lever means whereby the movement of the lever means when the back member is moved to folded or extended position will impart corresponding movement to the legs.

7. In a chair of the type described, a seat member; a back member pivoted to said seat member; front legs pivotally secured to the seat member; rear legs; means for pivotally securing said rear legs to said seat member; a pair of rigidly interconnected levers fulcrumed at the apex thereof on said seat member; link means pivotally interconnecting the back member and the free end of one of said levers; a pivotal connection between the free end of the other of said interconnected levers and rear legs; and elongate link means pivotally interconnecting the pivotal connection and the front legs.

8. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; front and rear legs secured to said seat member and adapted to fold in opposite directions against the underside of said seat member; means for interconnecting the legs to said back member so that movement of the same to folded and extended positions will impart a corresponding movement to said legs, said means including link means interconnecting by the legs of a bell crank fulcrumed at the apex thereof on said seat member; and means for locking said bell cranks against movement when the said chair is in the extended position, said means including hook means carried by said cranks adapted to engage latch means carried by said seat member, said latch means being releasable whereby the chair may be moved to a folded position.

9. In a chair of the type described, a seat member; a back member pivoted to said seat

member adapted to fold against the top side thereof; front and rear legs secured to said seat member and adapted to fold in opposite directions against the underside of said seat member; means for interconnecting the legs to said back member so that movement of the same to folded and extended positions will impart a corresponding movement to said legs, said means, including link means, interconnected by the legs of a bell crank fulcrumed at the apex thereof on said seat member; and means rendered operative by movement of the back member to the extended position for locking said cranks against movement, said means including hook means carried by said cranks adapted to engage resiliently biased detent means carried by the seat member, said hook means being provided with cam means adapted to engage the detent means during movement of the back member to the extended position whereby the detent means are rendered operative.

10. In a chair of the type described, a seat member; brackets secured to said seat member adjacent the rear edge thereof; a back member pivoted to said brackets; front legs pivoted to said seat member; rear legs; means for securing said rear legs to the seat member, said means including mounting plates secured to said rear legs provided with cam slots; means carried by said brackets operating in said slots; means, including means pivotally mounted on said seat member, pivotally interconnecting said back member and mounting plates; and an operative connection between the last-named means and said front legs.

11. A foldable chair comprising a seat member, a back member pivoted to said seat member; front legs having a pivot connection to the seat member; means for holding the front legs in the extended position, said means including plate members pivotally secured to said seat member adjacent the front legs provided with downwardly extending slots terminating in laterally offset portions; means carried by said front legs operating in said slots and adapted to lock the front legs in the extended position when the same are in the offset portions of said slots; rear legs; means for pivotally securing said rear legs to the seat member; means, including a bell crank lever, fulcrumed at the apex thereof on said seat member, having one leg thereof connected to a rear leg and link means interconnecting the back member and the other leg of said lever for transmitting movement of the back member to said rear legs; and link means pivotally connected with said plate members and said lever for actuating said plate members to withdraw the means carried by the front legs from the offset portions of said slots and move said plate members rearwardly as the back member and rear legs are moved to a folded position to thereby also move said front legs to a folded position.

12. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; front legs secured to said seat member and adapted to fold against the underside of said seat member; rear legs; means for securing said rear legs to said seat member including a pin-and-slot connection; means, including means operated by said back member and cooperating with said pin-and-slot connection, for moving the rear legs initially downwardly and then quickly forwardly to closed position underlying

the seat member upon movement of the back rest member to closed position; and means interconnecting said last-named means and the front legs for folding said legs to their folded position upon movement of the back member to the closed position.

13. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; a pair of front legs secured on opposite sides of said seat member adapted to fold against the underside thereof; a pair of rear legs; a plate rigidly secured to each rear leg having a slot formed therein; a projection carried by said seat member on opposite sides thereof operating in the slot of each plate; motion transmitting means pivotally mounted on said seat member adjacent the projections having direct pivotal connection with the plate carried by each rear leg; means pivotally interconnecting said last-named means and said back member whereby the closing movement of said back member is transmitted to said plates causing the projections operating in the slot of each plate to force the rear legs initially downwardly and then forwardly to closed position underlying the seat member; and means operatively interconnecting said motion transmitting means and the front legs.

14. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; a pair of front legs secured on opposite sides of said seat member adapted to fold against the underside thereof; a pair of rear legs; a plate rigidly secured to each rear leg having a dog leg cam slot formed therein; a projection carried by said seat member on opposite sides thereof operating in the cam slot of each plate; motion transmitting means pivotally mounted on said seat member adjacent said projection and having a direct pivotal connection with the plate carried by each rear leg; means pivotally interconnecting said last-named means and said back member whereby the closing movement of said back member is transmitted to said plates causing the projections operating in the cam slot of each plate to cam the rear legs initially downwardly and then forwardly to closed position underlying the seat member; and means operatively interconnecting said motion transmitting means and the front legs.

15. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; front and rear legs secured to said seat member and adapted to fold in opposite directions against the underside of said seat member; means for interconnecting the legs to said back member so that movement of the latter to folded and extended positions will impart a corresponding movement to said legs, said means, including link means, interconnected by L-shaped levers fulcrumed at the angle formed by the legs thereof on said seat member; and means for preventing accidental collapse of said chair in the extended position including means for restraining movement of said levers.

16. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; front and rear legs secured to said seat member and adapted to fold in opposite directions against the underside of said seat member; means for interconnecting the legs to said back member so that movement of the latter to folded

and extended positions will impart a corresponding movement to said legs, said means, including link means, interconnected by L-shaped levers fulcrumed at the angle formed by the legs thereof on said seat member; means for preventing accidental collapse of said chair in the extended position including means for restraining movement of said levers, said means including a hook portion formed by an extension of one leg of said levers; and means carried by the seat frame engaged by said hook portions when the chair is in the extended position.

17. In a chair of the type described, a seat member; a back member pivoted to said seat member and adapted to fold against the top side thereof; a pair of front legs secured on opposite sides of said seat member and adapted to fold against the underside thereof; a pair of rear legs secured on opposite sides of said seat member at the rear thereof and adapted to fold in the direction opposite to that of the front legs to lie against the underside of the seat member; a pair of L-shaped levers pivotally mounted at the angle formed by the two legs thereof on opposite sides of said seat member; a pair of relatively short links pivotally interconnecting the back rest and one leg of each lever, the other leg of each lever being pivotally connected to each rear leg; and a substantially elongate link pivotally secured at one end to the pivotal connection between the leg of each lever and each back leg and projecting forward thereof, the opposite end of each elongate link being pivotally connected to means engaging each front leg, where-

by movement of the back member toward the folded position moves the relatively short links upwardly thereby pivotally moving the L-shaped levers, and transmitting movement of the back rest member to the legs whereby the same are caused to pivotally move in opposite directions to underlie the seat member.

18. In a chair of the type described, a seat member; a back member pivoted to said seat member adapted to fold against the top side thereof; a pair of front legs secured on opposite sides of said seat member adapted to fold against the underside thereof; a pair of rear legs; a plate rigidly secured to each rear leg having a slot formed therein; a projection carried by said seat member on opposite sides thereof operating in the slot of each plate; a pair of L-shaped levers pivotally mounted on opposite sides of the said seat member at the angle formed by the legs of each lever, one leg of each lever having a direct pivotal connection with the plate carried by each rear leg; link means pivotally interconnecting the other leg of each lever and said back member whereby the closing movement of said back member is transmitted to said plates causing the projection operating in the slot of each plate to force the rear legs initially downward and then forwardly to forward position underlying the seat member; and link means pivotally connected to the leg of each lever at the pivotal connection between each leg of the lever and the plate carried by each rear leg and interconnecting each lever with each front leg.

JOHN KOVATS.