June 4, 1940. R. E. BASCOM ET AL 2,203,610

FOLDING CHAIR

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Fig. 1.

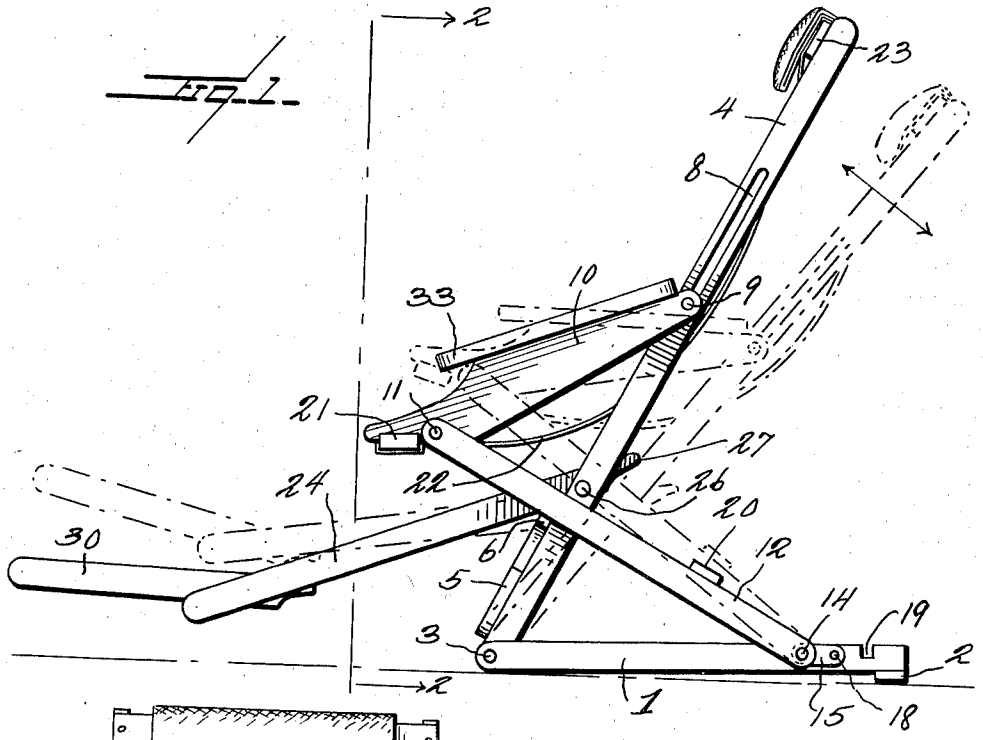


Fig. 2.

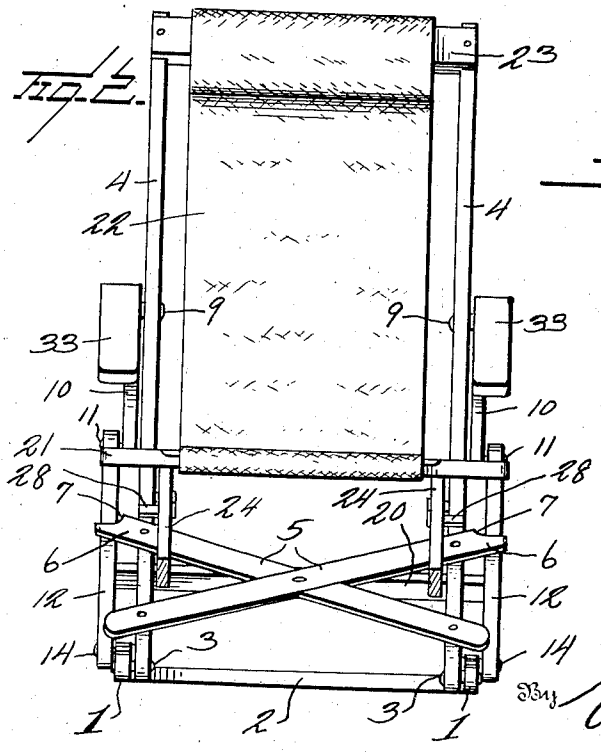
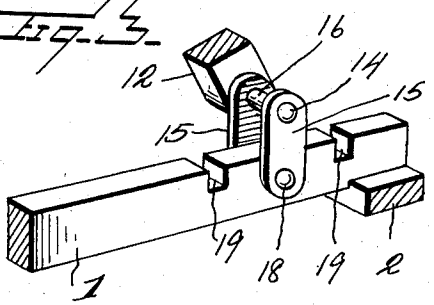


Fig. 3.



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FOLDING CHAIR

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Fig. 4

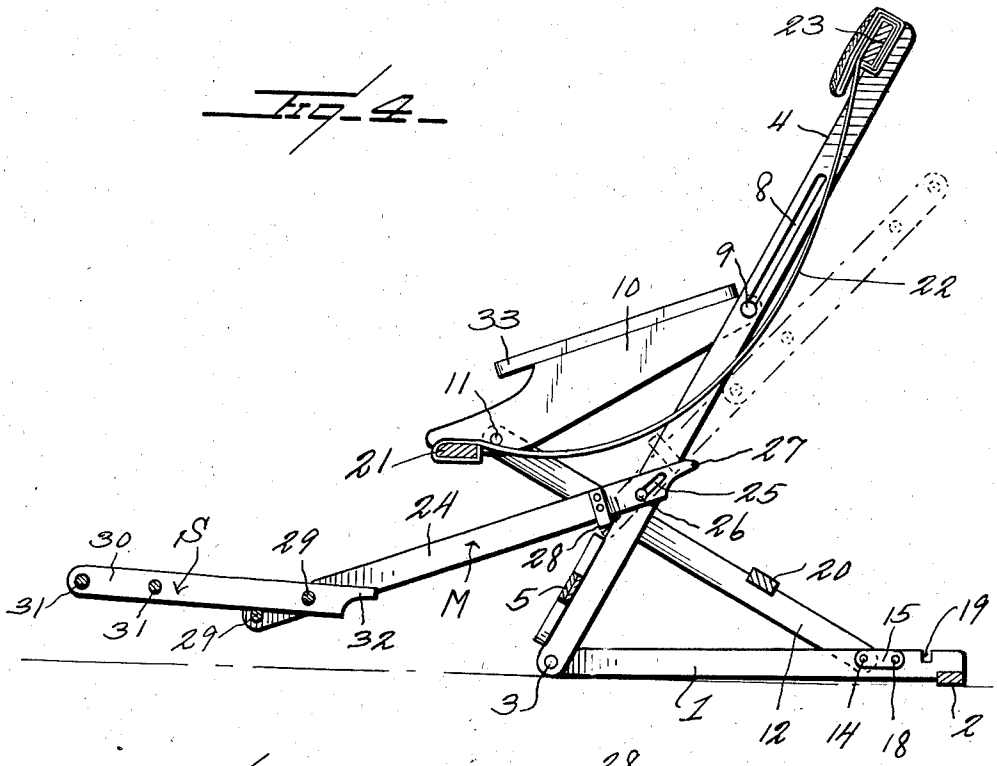
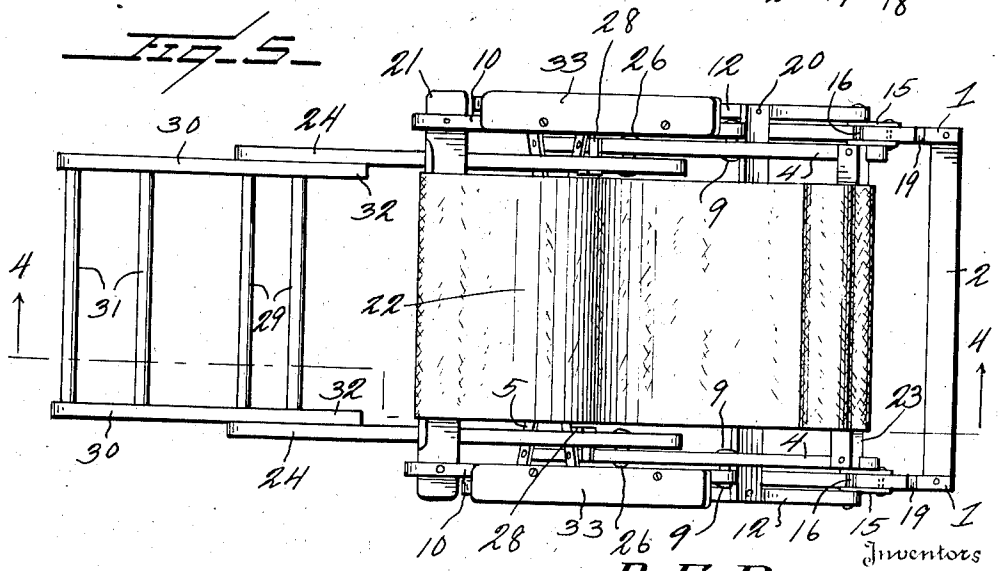


Fig. 5



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FOLDING CHAIR

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Fig. 6

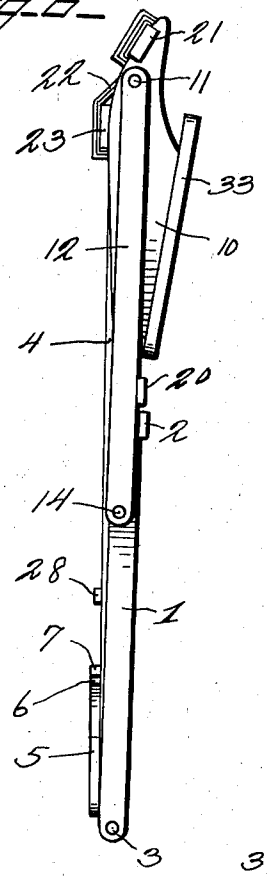


Fig. 7

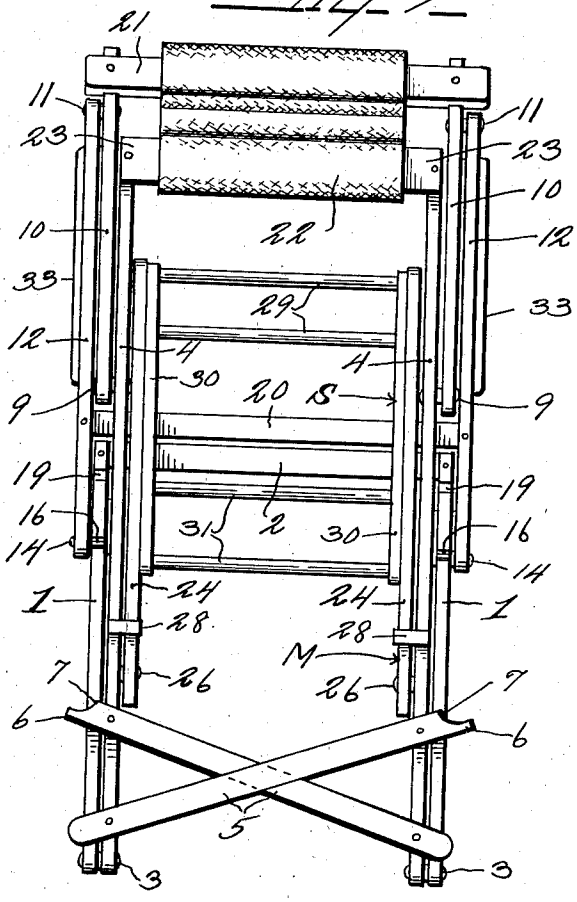


Fig. 9

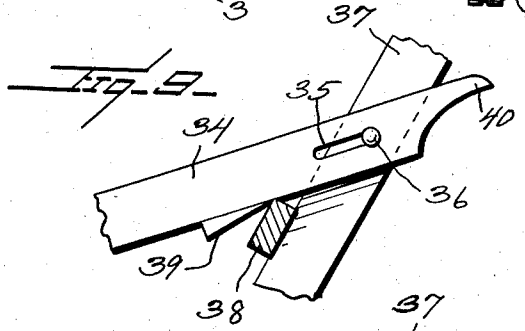


Fig. 8

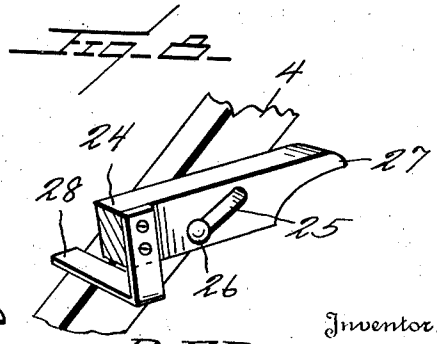
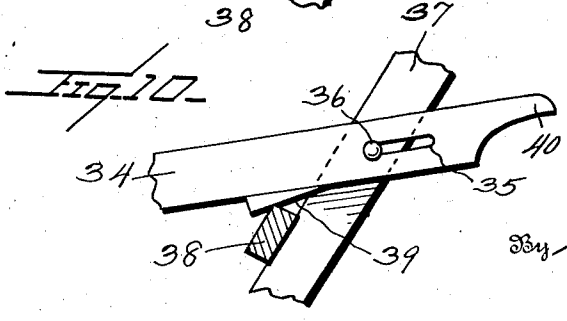


Fig. 10



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UNITED STATES PATENT OFFICE

2,203,610

FOLDING CHAIR

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Application November 11, 1937, Serial No. 174,119

4 Claims. (Cl. 155—56)

This invention relates to a folding chair of a type commonly used upon lawns and porches, and it is an object of the invention to provide a chair of this kind embodying an arrangement of parts whereby the chair may be readily adjusted to either a sitting up position or a lying down position.

The invention also has for an object to provide a chair including a foot rest which, when in extended or working position, is disposed on a downward incline so that the foot rest is out of the way when the chair is in its normal sitting position and also permitting the foot rest to be employed with equal facility by a person with long legs or a person with short legs.

Another object of the invention is to provide a chair of this character including a foot rest pivotally connected with the chair structure proper so that said foot rest may be extended forwardly into working position or adjusted to a position behind the occupant of the chair when it is not desired to use the foot rest, said foot rest when in its inoperative position being free of contact with the occupant of the chair or more specifically the flexible seat and back element comprised in the structure of the chair proper.

An additional object of the invention is to provide a chair of this kind including a foot rest so engaged with the chair proper as to be readily adjusted into a working or ineffective position as may be required and wherein said foot rest in its structure includes a secondary rest which, when in one position, is disposed at an angle with respect to the main portion of the foot rest and which, when in a second position, is folded back to a position substantially parallel with the main portion of the foot rest so that no hindrance or obstruction is offered by the secondary foot rest when adjusting the foot rest as a whole into either of its several positions and also when it is not desired to use the secondary foot rest.

A still further object of the invention is to provide a chair of this kind which is constructed and assembled in a manner permitting the same to be conveniently folded or compacted when not in use and wherein the chair when extended for use substantially eliminates any tendency of the chair to mar the lawn or other surface upon which it may be resting and particularly as a result of creeping.

The invention consists in the details of construction and in the combination and arrangement of the several parts of our improved folding chair whereby certain important advantages are attained and the device rendered simpler, less expensive and otherwise more convenient and advantageous for use, as will be hereinafter more fully set forth.

The novel features of our invention will hereinafter be definitely claimed.

In order that our invention may be the better understood, we will now proceed to describe the same with reference to the accompanying drawings, wherein:

Figure 1 is a view in side elevation of a chair constructed in accordance with an embodiment of our invention, a second position of certain of the parts being indicated by broken lines and which second position is assumed when the chair is used to rock;

Figure 2 is a view partly in section and partly in front elevation of the chair as illustrated in Figure 1, the section being on the line 2—2 of Figure 1;

Figure 3 is a fragmentary view in perspective particularly illustrating the link connection between one of the side legs of the chair and a base member or sill;

Figure 4 is a view partly in elevation and partly in section of the chair as illustrated in Figure 1, the section being taken on the line 4—4 of Figure 5, the ineffective or folded position of the foot rest being indicated by broken lines;

Figure 5 is a view in top plan of the chair as illustrated in Figure 1;

Figure 6 is a view in side elevation of the chair folded or compacted;

Figure 7 is a view in elevation of the folded chair as illustrated in Figure 6;

Figure 8 is a fragmentary detailed view illustrating a stop carried by one of the side bars of the main portion of the foot rest for contact with a leg of the chair proper for holding the foot rest when extended free for movement with the chair proper;

Figure 9 is a fragmentary view partly in elevation and partly in section illustrating an operative connection with a side bar of the foot rest and a supporting leg of the chair proper in accordance with another embodiment of my invention;

Figure 10 is a view similar to Figure 9 but showing the bar of the foot rest in a second or raised position with respect to Figure 9.

As illustrated in the accompanying drawings, our chair comprises a pair of suitably spaced and substantially parallel elongated base members or sills 1 having their rear end portions connected by a cross member 2. This cross member, as

herein illustrated, comprises a flat bar which is secured from below to the sills 1 and is adapted to have direct contact with the surface upon which the chair is positioned.

The forward end portions of the base members or sills 1 have pivotally connected thereto, as at 3, the lower end portions of the elongated side supporting legs 4. These legs 4, as illustrated in the accompanying drawings, are each straight from end to end and the lower or pivoted portions of these legs are connected by the crossed braces 5 each of which has its upper portion extending laterally, as at 6, beyond the supporting leg 4 to which it is secured. Each of these extended portions 6 is notched or recessed at its outer or free extremity to provide a shoulder 7 for a purpose to be hereinafter more particularly referred to.

Each of the supporting legs 4 at a predetermined point intermediate its ends is provided therethrough with a longitudinally disposed slot 8 which provides a runway for a laterally disposed part 9 carried by the inner portion of an arm rest 10. This part 9 constitutes a pivot for the arm rest 10 to permit the same to readily swing as desired while the slot 8 permits sufficient endwise movement of the pivoted end portion of the arm rest 10 along the associated side leg 4 to facilitate the desired folding or compacting of the chair and also the extension of the chair into working position.

Each of these arm rests 10 at a predetermined distance inwardly of its outer extremity has pivotally connected thereto, as at 11, a second side leg 12 also illustrated as being straight from end to end and of a length materially less than the length of the adjacent side leg 4 and which leg 12, when the chair is extended for use, is inclined upwardly and forwardly and terminates in advance of said adjacent side leg 4 which is disposed on an upward and rearward incline. These legs 4 and 12 are free of direct connection one with the other so that said legs are readily movable independently one of the other to facilitate folding or extending of the chair.

Disposed laterally through the opposite or lower end portion of each of the legs 12 is a shank 14 which extends a distance laterally from the leg 12 beyond the inner face thereof, and pivotally mounted upon said extended portion of the shank 14 is a pair of links 15 maintained in desired spaced relation by a sleeve 16 surrounding the shank 14 between the links. These links 15 engage over the opposite side faces of the adjacent sill and are pivotally connected thereto, as at 18. The portion of the shank 14 between the links 15 together with the sleeve 16 thereon is selectively received within either of the notches 19 provided in the top face of the sill 1. These notches 19 are equidistantly spaced from the pivotal mounting 18 for the link and a distance therefrom to assure the proper reception of the sleeve 16 and the adjacent portion of the shank 14 in either of such notches.

When each of the legs 12 is operatively engaged within a forward notch 19 the chair as a unit will be in sitting up adjustment whereas when each of the legs 12 is operatively engaged with the rear notch 19 the chair will be in lying down adjustment.

These links 15 are of material advantage and importance as by the use of such links the sleeves 16 with the adjacent portions of the shanks 14 will not slip out of the notches and thus allow the chair to accidentally collapse or fall. In addition to this the links 15 provide means to further facilitate the folding or compacting of the chair or its extension, it being understood that when the chair is compacted the sleeves 16 are free of the notches 19. The side legs 12 are connected by a cross member or bar 20.

The forward portions of the arm rests 10 are connected by a flat and cross member 21 secured from below to the arm rests and positioned in advance of the pivotal connections 11 between the legs 12 and the arm rests 10. Secured to this member 21 is an end portion of a flexible seat and back element 22, the opposite or upper end portion of which element is suitably secured to a cross bar or member 23 connecting the outer or top portions of the supporting legs 4.

It is to be particularly noted that when the chair is extended for use it will readily rock or oscillate but the forward or downward movement of the legs 12 is limited by contact with the lateral extending portions 6 of the cross members 5 within the notches thereof. This particular contact is of advantage because with the legs 12 so engaged within the notches of the portions 6 each of said legs 12 is effectively held against inward lateral movement by the adjacent shoulder 7. It is, therefore, assured that at all times the legs 12 will be in proper position and which is of advantage to assure not only the desired balance of the chair when in use but to facilitate the folding or compacting of the chair structure in its entirety.

Associated with the chair, as herein disclosed, is a foot rest comprising two sections M and S. The section M constitutes the main body of the foot rest and, as illustrated in the drawings, this section or body M comprises two spaced side bars 24 substantially in parallelism, and the inner or rear end portion of each of these bars 24 is provided with a slot 25 disposed lengthwise and obliquely of the bar. The inner or rear end portion of each of these bars 24 extends across the inner face of an adjacent supporting leg 4 at the lower portion thereof and the slot 25 has disposed therethrough an inwardly directed shank 26 carried by the leg 4. By this means the bar 24 is supported for convenient swinging movement. This pivoted end portion of each of the side bars 24 is continued by a rearwardly directed extension or tail piece 27 which constitutes a stop for contact with one of the members 5 for limiting the upward or folding swinging movement of the bar 24 when substantially parallel with a leg 4. When the bar 24 is in this position the then upper end wall of the slot 25 will be in contact with the shank 26. However, with the foot rest in folded position but the chair extended for use it is important that the folded foot rest assume a position sufficiently to the rear of the flexible back and seat element 22 to offer no interference therewith. Upon raising the folded foot rest so that each of the shanks 26 is in the then lower portion of the slot 25 of each of the bars 24, the tail piece will be above the cross bars or members 5 a distance sufficient to allow the folded foot rest to be swung rearwardly of the legs 4 until the inwardly extending lug or bracket 28 carried by each of the side bars 24 contacts with the front edge of an adjacent supporting leg 4. This lug or bracket 28 is positioned in relatively close proximity to the inner or pivoted end portion of a bar 24 and when the foot rest is swung into an extended or working position, each of these lugs or brackets 28 will contact with the front edge of an adjacent supporting leg 4 at a point below

the shank 26. By this means the extent of adjustment of the foot rest is positively limited and at a point wherein said foot rest will be disposed outwardly on a downward incline yet with its outer end portion free of the surface upon which the chair is supported. Therefore, the foot rest provides an effective means to facilitate the rocking movement of the chair by the occupant as such foot rest will serve after the fashion of a lever.

The outer end portions of the side bars 24 are connected by a plurality of spaced cross bars 29 herein disclosed as two in number.

The supplement or secondary foot rest S comprises two side bars 30 having their outer ends connected by the spaced cross rods 31 while the inner portions of the side bars 30 are pivotally mounted upon the inner bar 29 connecting the side bars 24 of the foot rest of the section or body M. The pivoted end portions of these bars 29 have tail extensions 32 which, when the secondary or supplemental section or body S is folded inwardly of the member or body M, contact from below with the outer bar 29 and thereby maintain the section or body S between and substantially coplanar with the side bars 24 of the section or body M. When the supplemental section or body S is swung outwardly or extended as particularly illustrated in Figure 4, the side bars 30 rest from above upon the outer bar 29 and thus maintain such section or body S in an angular relation with respect to the main section or body M. This is of advantage as it assures the occupant of the chair comfortably engaging his feet with one of the bars 31 and the outward and downward inclination of the foot rest as a whole together with the relative positioning of the secondary or supplemental section or body S, when the foot rest is extended for use, permits the foot rest to be employed with equal convenience and facility by those having either short or long legs.

By referring to Figure 4 it will be noted that by having the foot rest when extended for use disposed outwardly and downwardly it is out of the way thus facilitating a person sitting in the chair or leaving the same. It is also believed to be self-evident that the construction and assembly of the parts are such that the chair when extended for use is substantially free of creeping and particularly when rocking and that its assembly is such to also facilitate the desired folding or compacting of the structure.

The comfort of the chair is also further facilitated by having each of the arm rests so constructed that the top portion of such rest is extended, as at 33, to provide a firm hand hold to materially aid in getting in or out of the chair and also giving a streamline appearance to the chair. It is also of advantage to have the cross member 21 wide and flat so that it will not cut under the knees the occupant of the chair and which desirable result is further facilitated by having the front or forward edge of said member 21 rounded. It is also important to provide this rounded forward edge to eliminate cutting or injury to the flexible seat and back element 22.

In Figures 9 and 10 of the drawings is illustrated a means for maintaining the foot rest in either its upper or lower adjustment and also for limiting the extent of forward downward movement of the foot rest as well as limiting the upward or folding movement of the foot rest. In this embodiment of our invention each of the side bars 34 of the main section or body of the foot rest is provided in its rear portion with a longitudinally directed slot 35 through which is directed the inwardly disposed shank 36 carried by the adjacent supporting leg 37 comprised in the chair structure proper. When the foot rest is swung forwardly in position for use, the side bar 34 of the foot rest will contact from above with a cross member 38 connecting both of the supporting legs 37. The under edge face of each of the bars 34 of the foot rest is provided with a cam face 39, said cam face extending outwardly and downwardly so that upon moving the bar 34 inwardly with respect to the supporting leg 37, as permitted by the slot 35, the high portion of the cam face 39 will have contact with the cross member 38 and thus maintain the foot rest in a second or raised position as is particularly illustrated in Figure 10.

When the side bar 34 is at the limit of its inward movement as in Figure 10, as the foot rest is swung upwardly into its folded position, the bar 34 proper will have contact from the rear with the cross member 38 whereby the side bar 34 will be maintained substantially in parallelism and coplanar with the adjacent supporting leg 37. However, if it is desired to have the foot rest swing further to the rear in order to avoid interference with the flexible back and seat element it is only necessary to raise the bar, as permitted by the slot 35, so that the reduced tail piece 40 at the inner end of the bar 34 will contact with the cross member 38. By reduced tail piece it is meant the part resulting from reducing the width of the bar 34 proper as is particularly illustrated in the drawings.

From the foregoing description it is thought to be obvious that a folding chair constructed in accordance with our invention is particularly well adapted for use by reason of the convenience and facility with which it may be assembled and operated, and it will also be obvious that our invention is susceptible of some change and modification without departing from the principles and spirit thereof and for this reason we do not wish to be understood as limiting ourselves to the precise arrangement and formation of the several parts herein shown in carrying out our invention in practice except as hereinafter claimed.

We claim:

1. A folding chair comprising a pair of spaced base members, side legs pivotally connected to the forward end portions of the base members and extending upwardly and rearwardly when the chair is in use, additional side legs pivotally connected with the rear end portions of the base members and extending upwardly and forwardly when the chair is in use, links pivotally connected to the second leg and to the base members, said links providing an adjustment lengthwise of the base members of the operative connection between said second legs and the base members, and a seat structure operatively supported by both sets of legs.

2. A folding chair comprising a pair of spaced base members, side legs pivotally connected to the forward end portions of the base members and extending upwardly and rearwardly when the chair is in use, additional side legs pivotally connected with the rear end portions of the base members and extending upwardly and forwardly when the chair is in use, links pivotally connected to the second legs and to the base members, said links permitting an adjustment length-

wise of the base members of the operative connection between said second legs and the base members, and a seat structure operatively supported by both sets of legs, said base members being provided with slots fore and aft of the pivotal connections between the links and the base members, said links having parts selectively engaging within said slots depending upon the adjustment of said second legs with respect to the base members.

3. A folding chair comprising a pair of spaced base members, a pair of side legs operatively connected to the forward end portions of the base members and extending upwardly and rearwardly when the chair is in use, a second pair of side legs operatively connected with the rear end portions of the base members and extending upwardly and forwardly when the chair is in use, the operative connections between one pair of legs and the base members comprising links pivotally connected to the base members and to said legs, said links providing an adjustment of the associated legs lengthwise of the base members to raise or lower the chair, a seat structure operatively connected with both pairs of legs.

4. A folding chair comprising a pair of spaced base members, a pair of side legs operatively connected to the forward end portions of the base members and extending upwardly and rearwardly when the chair is in use, a second pair of side legs operatively connected with the rear end portions of the base members and extending upwardly and forwardly when the chair is in use, the operative connections between one pair of legs and the base members comprising links pivotally connected to the base members and to said legs, said links permitting an adjustment of the associated legs lengthwise of the base members to raise or lower the chair, and a seat structure operatively connected with both pairs of legs, said links having parts for contact with the base members to limit the swinging movement of the links in either direction.

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