

Jan. 20, 1931.

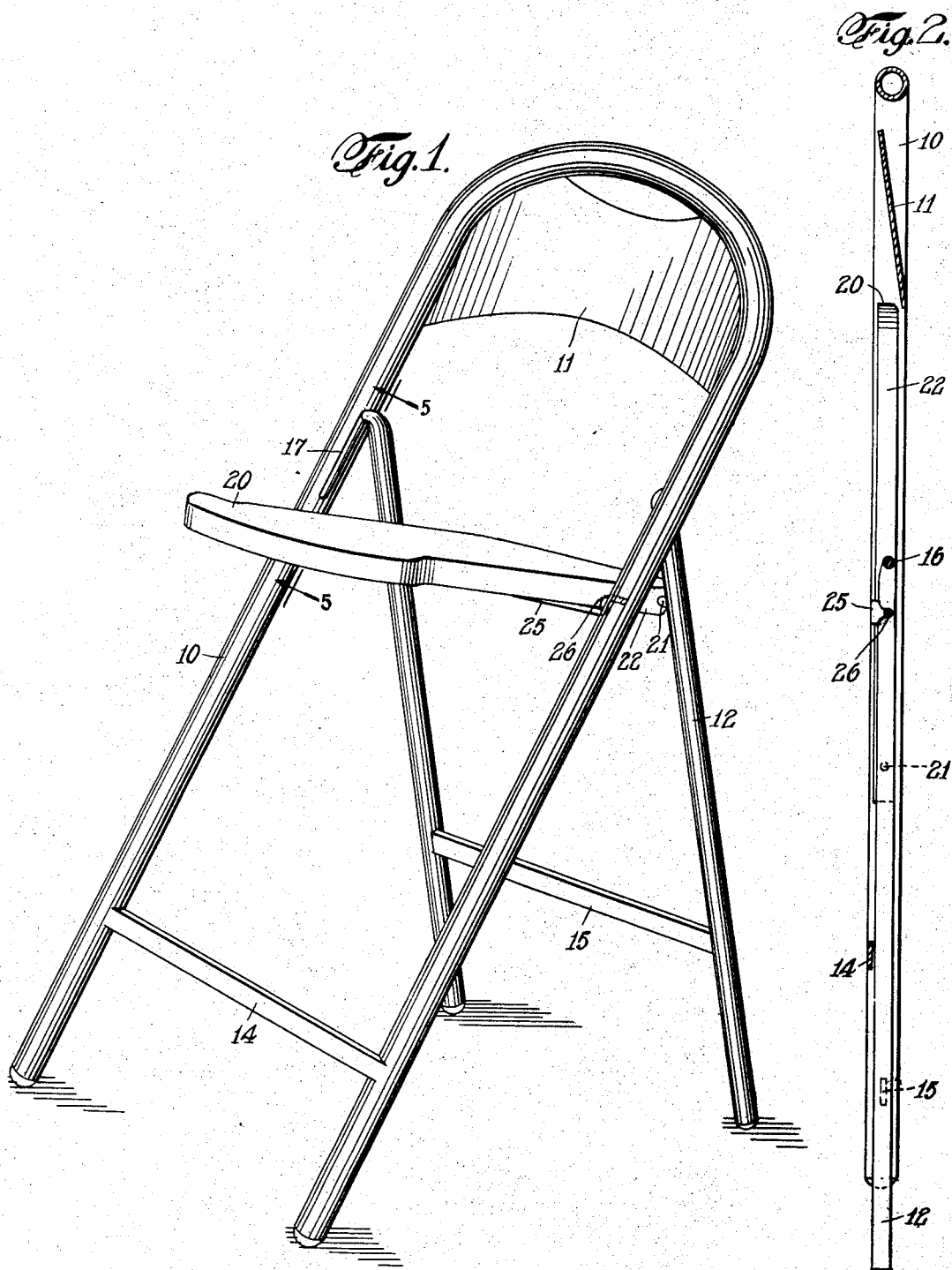
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1,789,295

COLLAPSIBLE CHAIR

Filed Jan. 9, 1929

4 Sheets-Sheet 1



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Fig. 3.

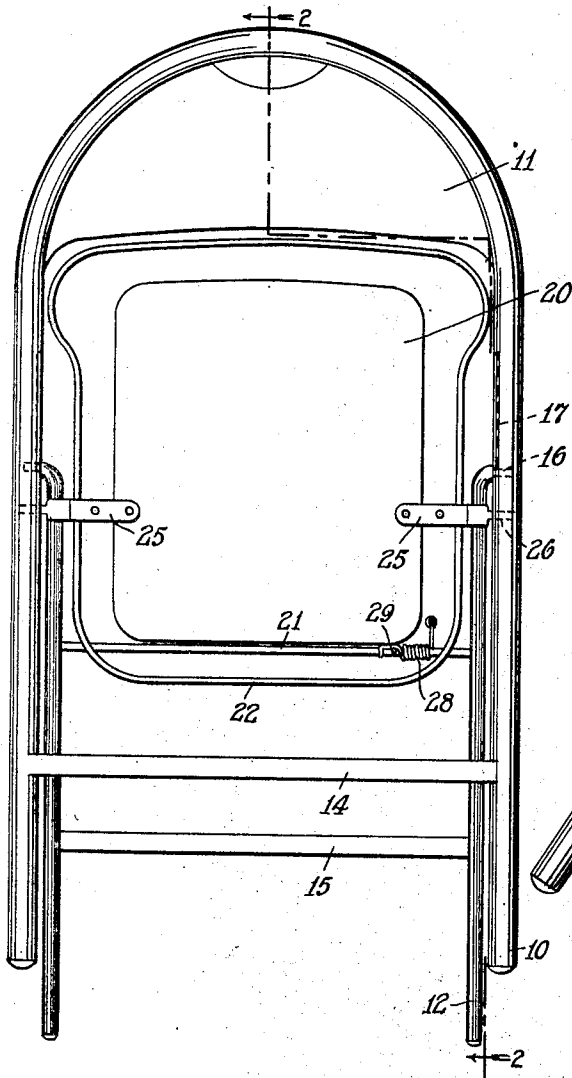


Fig. 4.

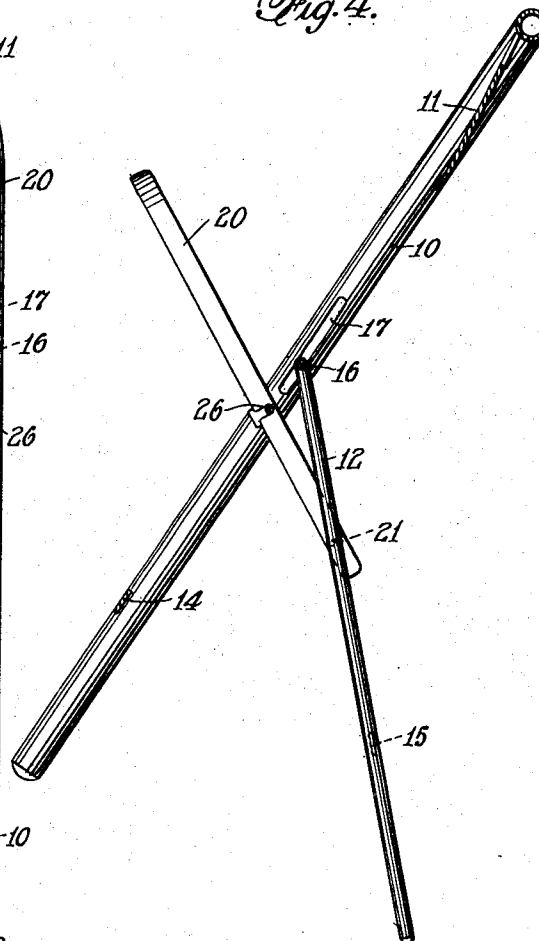
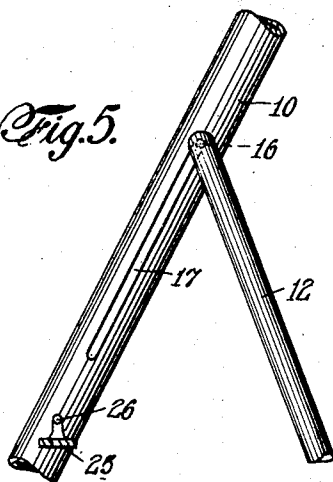


Fig. 5.



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Fig. 8.

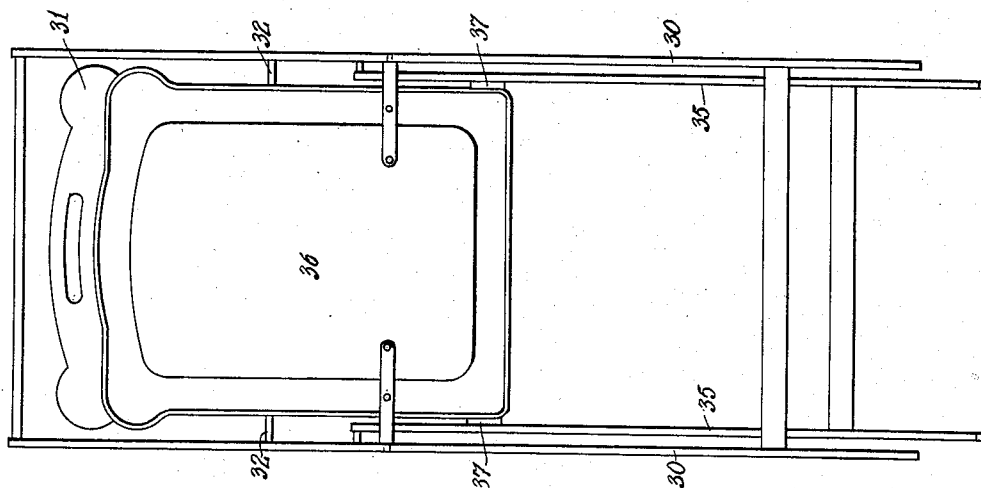


Fig. 7.

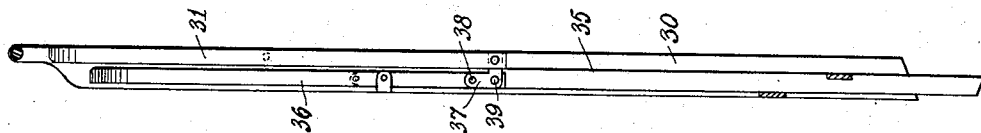
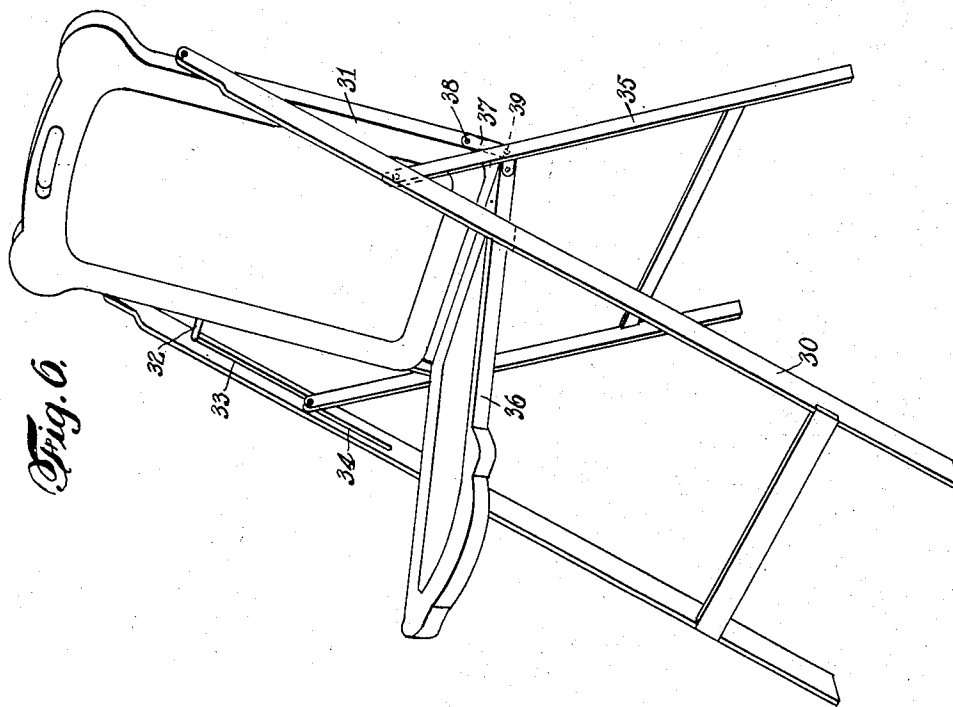


Fig. 6.



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Fig. 11.

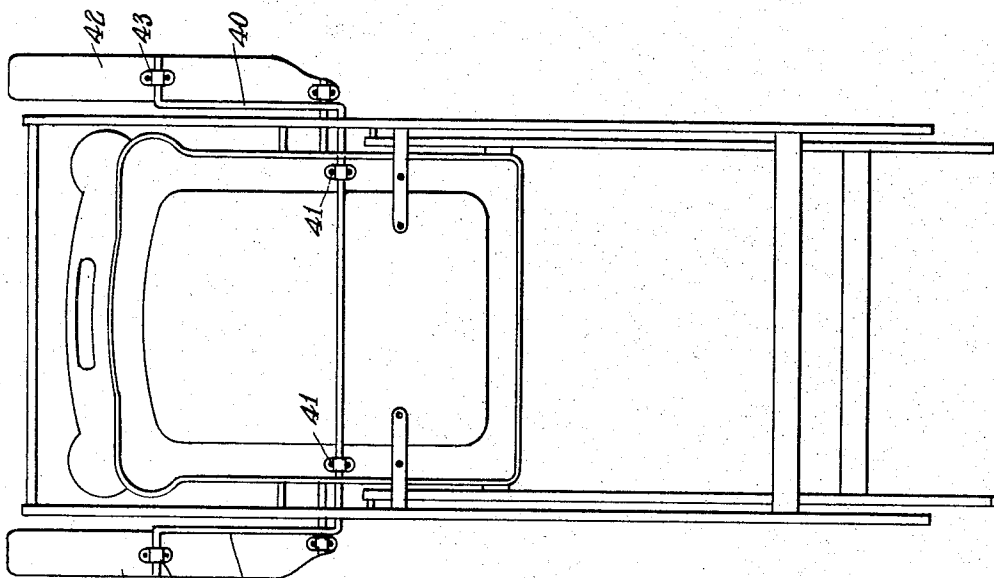


Fig. 10.

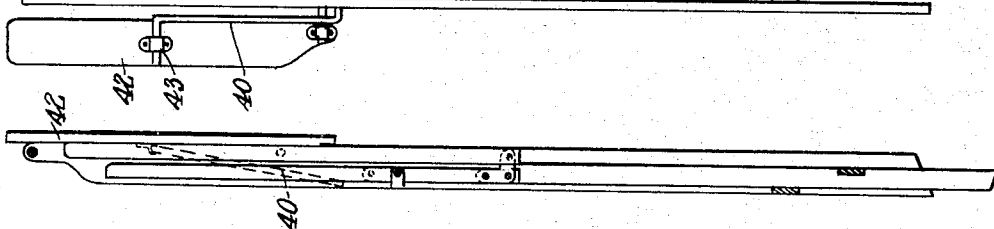
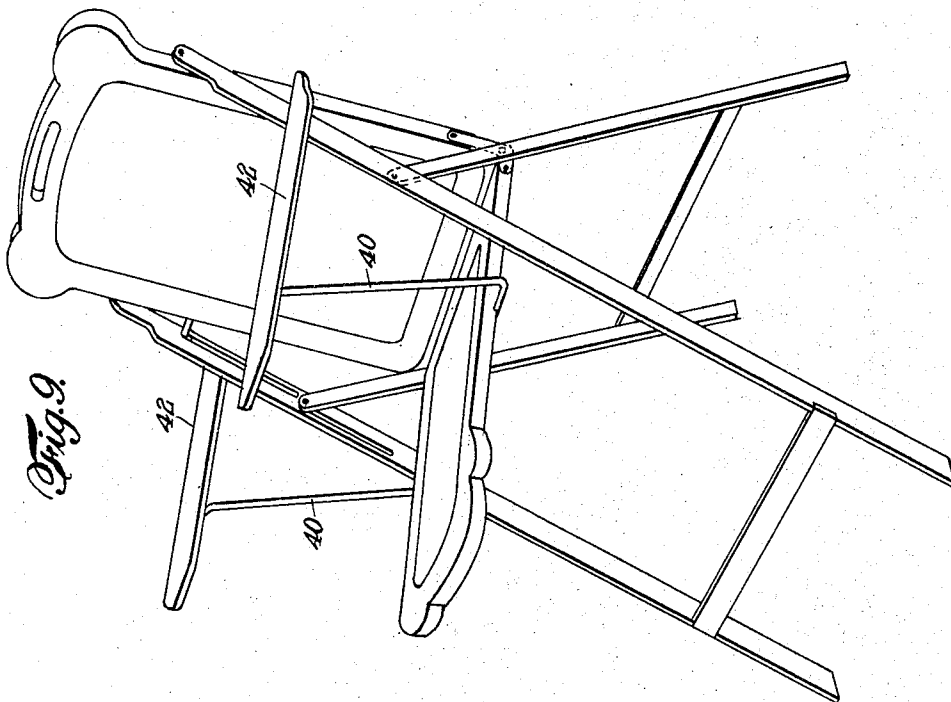


Fig. 9.



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UNITED STATES PATENT OFFICE

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COLLAPSIBLE CHAIR

Application filed January 9, 1929. Serial No. 331,325.

The invention relates to chairs, more particularly to the automatic folding or collapsible type suitable for compact storage when desired. It has for its object to simplify the construction of chairs of this character and to provide a chair which may conveniently be collapsed merely by raising the same off its support and, also, which may be extended for use by resting the rear pair of legs on a support and tilting the chair slightly forward when the weight of the front pair of legs and seat of the chair will unbalance the chair members and open the chair for use. A further object of the invention resides in means to assist in the retention of the seat member within the pair of front legs when the chair is in the collapsed condition.

In carrying out the invention, as embodied in the novel collapsible chair shown and hereinafter more fully described, a pair of front legs is provided within which the pair of rear legs is adapted to fit when the chair is in the collapsed condition. The upper ends of said pair of rear legs, moreover, are slidable and swingable in the corresponding pair of front legs, or rather in extensions thereof, while a seat member for the chair is hingedly secured or pivoted at its rearward portion to the said pair of rear legs, means being provided also for pivotally securing the seat intermediate its rearward and forward portions to the front pair of legs. The arrangement is such, furthermore, that when the chair as a whole is lifted from its support the combined weight of the rear pair of legs and the rearward portion of the seat will over-balance the forward portion of said seat and cause the said rear pair of legs with attached seat member to fold within the front pair of legs.

The nature of the invention, however, will best be understood when described in connection with the accompanying drawings, in which:

Fig. 1 is a perspective view of the novel chair in extended condition ready for use.

Fig. 2 is a vertical section of the chair in collapsed or folded condition, taken on the line 2—2, Fig. 3, and looking in the direction of the arrows.

Fig. 3 is a front elevation of the chair in the folded or collapsed condition.

Fig. 4 is a vertical section through the chair and illustrates the collapsing action.

Fig. 5 is a fragmentary vertical section taken on the line 5—5, Fig. 1 of the drawings, and looking in the direction of the arrows.

Fig. 6 is a perspective view of the chair, in open condition ready for use, and illustrates a modification therein.

Figs. 7 and 8 are respectively a vertical section and a front elevation of said modified form of chair and in the folded or collapsed condition.

Fig. 9 is a perspective view of the chair, in open condition ready for use, and illustrates a further modification therein.

Figs. 10 and 11 are respectively a vertical section and front elevation of the latter form of chair and in the collapsed or folded condition.

Referring to the drawings, the novel chair comprises, for example, a rigid, one-piece outer frame composed of the inverted U-shape piece 10 which constitutes the pair of front legs whose extensions form the supporting frame for the partial back member 11 of the chair. A pair of rear legs 12 is designed to fit within the frame 10 when the chair is in collapsed or folded condition; and these leg members are designed, also, to be attached at their upper ends to the extensions or upper portions of said front pair of legs. A rung member 14 may be secured across the lower extremities of the pair of front legs and similarly a rung member 15 across the lower extremities of the pair of rear legs 12 to insure rigidity of the chair.

In accordance with the invention, the pair of rear legs is secured to the pair of front legs in manner such as to permit not only of the same pivoting or swinging freely therein but also to allow of movement longitudinally thereof. This may conveniently be effected by means of trunnions 16 or the like extending laterally from the upper extremities of said rear pair of legs into corresponding longitudinal slots 17 formed in the extensions of said pair of front legs which are composed, preferably, of tubing, the said slots being

located above the seat member 20 of the chair. The particular means shown of connecting the upper extremities of the rear legs with the corresponding pair of front legs is not material so long as said rear legs may pivot therein as well as have a motion longitudinally thereof.

The said seat member 20, moreover, is carried by the rear pair of legs, for example, by pivoting its rearward portion thereto as by means of a rod 21 passing through the sides of a down-turned flange 22 of the seat member and having its opposite ends welded or otherwise secured in the respective rear leg members. The said seat member may thus rock freely on said rod; and it is also supported intermediate its rearward and forward portions as by laterally-extending brackets 25 attached to the under-face thereof and having laterally extending and vertically off-set trunnions 26 fitting in the corresponding front pair of legs to allow the seat to fulcrum about the same as an axis.

The seat member may thus swing about its intermediate portion as a fulcrum as well as about its rearward portion which is pivoted to the rear pair of legs, while the latter as a whole may through their upper ends move longitudinally as well as pivot in the said pair of front legs. Moreover, the arrangement is such that the combined weight of the said rearward portion of the seat member and the rear pair of legs will over-balance the weight of the forward portion of the said seat member. Thus, when the chair is lifted from its support, said rearward portion will immediately drop as will also the upper extremities of the rear pair of legs with respect to the slots 17 (see Fig. 4 of the drawings), while the forward portion of the seat member will swing upwardly, or rather backwardly, to bring both seat member and the pair of rear legs within the surrounding pair of front legs and provide the chair in compact collapsed condition. The backward movement of said seat member will be limited by contact of the brackets 25 with the respective rear leg members, the off-set portion of said brackets being spaced from the sides of the seat member to accommodate the rear pair of legs therebetween as they are folded.

As the chair elements are thus so balanced that the same will maintain the collapsed condition aforesaid only when the same is held in a substantially vertical plane, it is preferred to include means which will exert a slight pressure upon the seat member under the collapsed chair conditions to assist in retaining it in position within the said pair of front legs. For example, a spring 28 may be coiled about the rod 21 with one free end pressing against a stop 29 of said rod, or be directly secured to the said rod, while its other free end presses against the under-face of the seat member.

To extend the chair for use, it is necessary merely to rest the pair of rear legs on a support as a floor or the like upon which it is to remain and then tilt the said chair as a whole slightly forwardly to cause the front pair of legs with attached seat member to move forwardly in rocking about the trunnions 16. At the same time this will bring said pair of rear legs upwardly with respect to their slots until the movement of their upper extremities or trunnions 16 is arrested by contact with the upper end of the corresponding slots.

While the inverted U-shape piece forming the front pair of legs of the chair affords a convenient construction, where a solid or complete type of back is desired the pair of front legs will be modified to the extent of consisting merely of parallel members 30, Figs. 6-8 of the drawings. The back member 31 of said chair is then to be secured thereto by means of trunnions 32 extending laterally from said back member into corresponding slots 33 of the upper extensions of the pair of front leg members, said slots being above and to the rear of slots 34, which are parallel to the former slots and serve to pivotally and slidably secure the upper extremities of the pair of rear legs 35 of the chair, as in the previously described embodiment.

The seat member 36 is secured similarly to the mounting hereinbefore described; but at its rearward portion there is hingedly attached thereto also the lower portion of the back member 31, as by means of a pair of angle pieces 37 pivoted to the respective sides of said back by the pins or rivets 38, the angle pieces being also pivoted by pins or rivets 39 to the corresponding rear legs.

Where it is desired to provide the chair also with arm rests, this may conveniently be effected, reference being had to Figs. 9-11 of the drawings which show a chair similar to that shown in Figs. 6-8. Arm supports 40 in the nature of a U-shaped member are, in this instance, pivotally secured at the lower extremities to the seat member as by means of straps 41 fitting over the cross-bar of said member and secured to the under-face of the seat member, while the arm supports at their upper ends are off-set or turned outwardly and secured pivotally to the under-surface of corresponding arm rests 42 as by means of straps 43 attached thereto. The said arm rests are also hingedly secured at their inner ends to the back member, as shown. This will allow of the chair members collapsing as hereinbefore described, with the additional parts also folding up in the common plane, as shown.

I claim:

1. A collapsible chair, comprising a pair of front legs, a pair of rear legs pivotally and slidably engaging the same, a seat member pivotally attached to both pairs of legs, and

a back member pivotally and slidably engaging the pair of front legs and pivotally connected to the pair of rear legs and to the seat member.

5 2. A collapsible chair, comprising a pair of front legs provided with respective longitudinal slots along the inner walls and with additional slots parallel to the first-named slots therein, a pair of rear legs having means extending therefrom into the said first-named slots to pivotally and slidably secure said rear pair of legs to the said front pair of legs, a seat member pivotally attached to both pairs of legs, and a back member pivotally and slidably mounted in said last-named pair of slots and hingedly connected with the rearward portion of the seat member.

20 3. A collapsible chair, comprising a pair of front legs provided with respective longitudinal slots along the inner walls, and with additional slots parallel to the first named slots therein and above and behind the same, a pair of rear legs having means extending therefrom into the said first-named slots to pivotally and slidably secure said rear pair of legs to the said front pair of legs, a seat member pivotally attached to both pairs of legs, and a back member pivotally and slidably mounted in said last-named pair of slots and hingedly connected with the rearward portion of the seat member.

35 4. A collapsible chair, comprising a pair of front legs provided with respective longitudinal slots along the inner walls, and with additional slots parallel to the first-named slots therein, a pair of rear legs having means extending therefrom into the said first-named slots to pivotally and slidably secure said rear pair of legs to the said front pair of legs, a seat member pivotally attached to both pairs of legs, a back member pivotally and slidably mounted in said last-named pair of slots and hingedly connected with the rearward portion of the seat member, arm supports pivoted to the seat member beyond its intermediate support and extending upwardly upon either side of said seat member, and arm rests pivotally secured to the upper ends thereof and to the back member.

In testimony whereof I affix my signature.
WILLIAM J. BAUER.

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