G. D. SCHERMERHORN.

FOLDING CHAIR.

APPLICATION FILED JUNE 10, 1921.

1,436,202.

Patented Nov. 21, 1922.

2 SHEETS—SHEET 1.

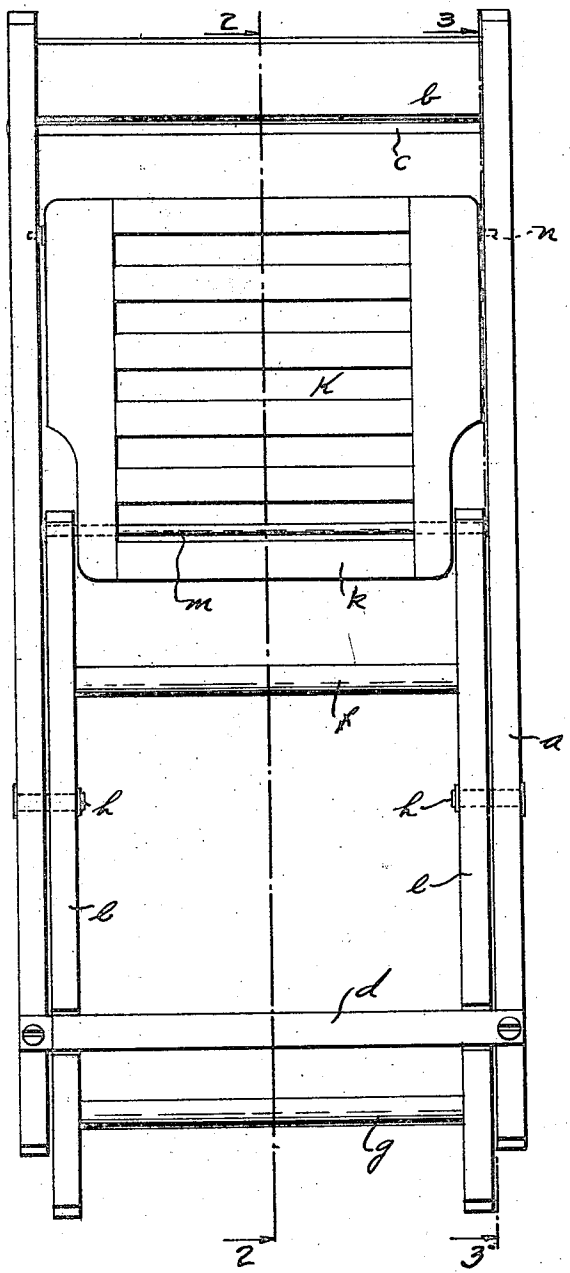



Fig. 1.

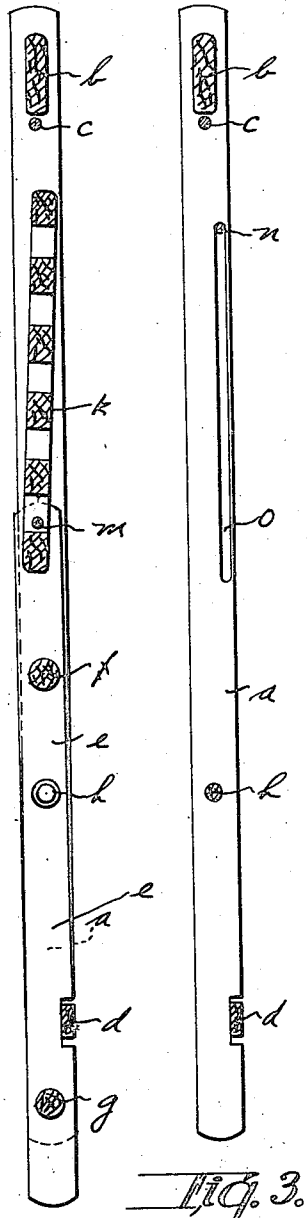



Fig. 2.




Fig. 3.

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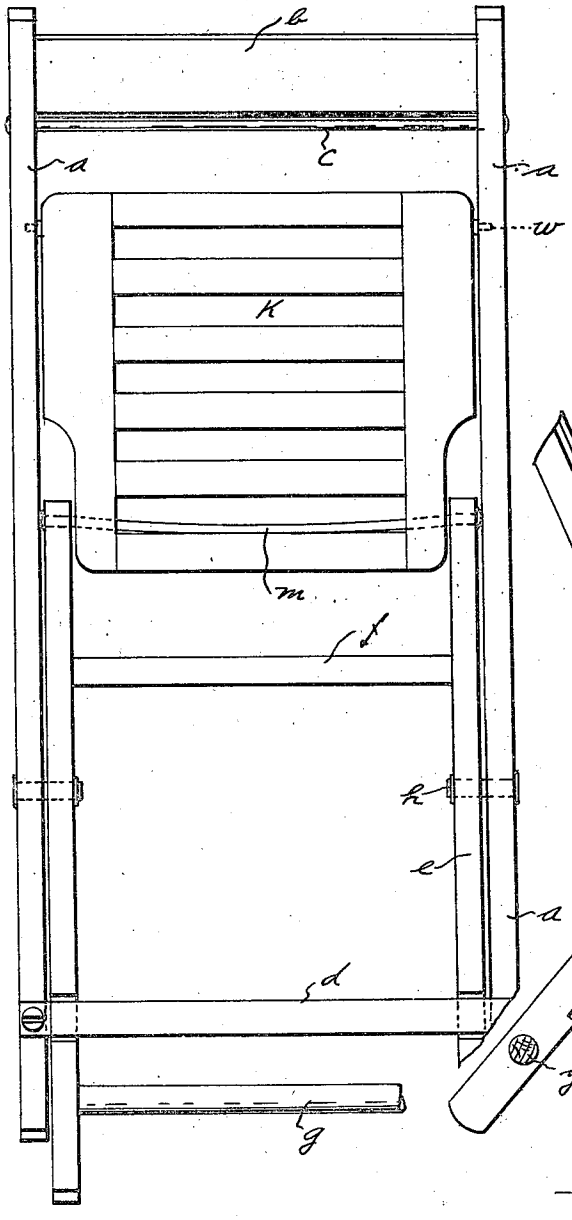



Fig. 4.

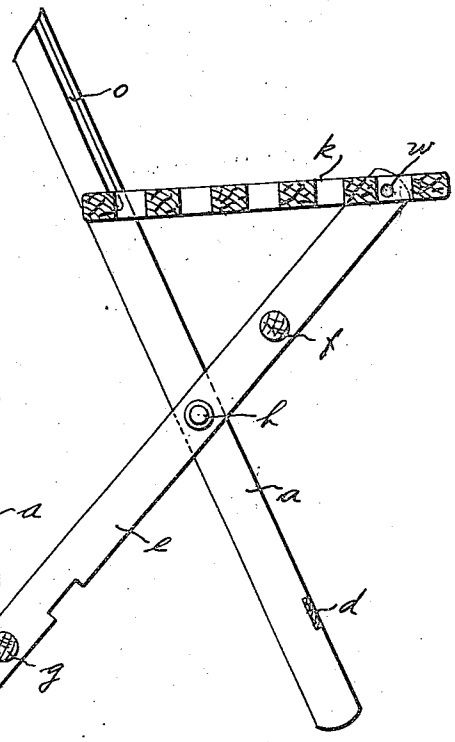



Fig. 5.

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# UNITED STATES PATENT OFFICE.

GEORGE D. SCHERMERHORN, OF READING, MICHIGAN.

## FOLDING CHAIR.

Application filed June 10, 1921. Serial No. 476,433.

*To all whom it may concern:*

Be it known that I, GEORGE D. SCHERMERHORN, a citizen of the United States, residing at Reading, county of Hillsdale, State of Michigan, have invented a certain new and useful Improvement in Folding Chairs, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to folding chairs.

The object is to provide a chair adapted to fold within the plane of the upright side rails and to be releasably locked therein. A further object is the provision of a simple, compact, sturdy folding chair in which the legs and seat fold within the uprights and are automatically locked in said folded relationship.

A further object, is the provision of a folding, automatically self-locking chair, of such construction that no extra parts or catches are necessary to lock the chair in its folded relation, but the seat is so pivoted and joined to the legs and uprights, as to automatically lock itself and the legs within the uprights, when the chair is folded.

These and other objects, together with details of construction, will more fully appear, from the following description, appended claims, and accompanying drawings, in which:

Figure 1 is an elevation of the chair folded.

Figure 2 is a section taken on line 2—2 of Figure 1.

Figure 3 is a section taken on line 3—3 of Figure 1.

Figure 4 is an elevation of the chair just before the folding operation is complete.

Figure 5 is a section through the chair in the open position.

In the drawings, the parallel, upright side rails indicated as *a*, are braced apart at the top by means of a cross bar *b*, a tie-rod *c* being also provided near such upper extremity. These uprights are braced apart at their lower ends by means of a cross bar *d*.

A pair of legs *e* are provided, which are braced apart by means of tenoned cross bars *f* and *g*, near the upper and lower extremities thereof, respectively. These legs are pivoted as a unit to the upright side rails by means of pins *h*, so as to fold therein, the cross bar *d* being received within recesses cut in the legs, when the chair is folded, in order that the legs will lie flush with the uprights.

A seat *k* is pivoted at one end within said legs by means of a resilient spring connection, here shown as a spring rod *m*, and at the other end to the uprights by means of laterally extending gudgeons *n*, which are disposed for slidable movement within longitudinally extending slots cut therein. As the legs and seat are folded within the uprights the gudgeons or pins *n* travel upwardly through the slotted ways *o*.

The relationship between the slotted uprights and pivoted seat and legs is such, that the gudgeons *n* arrive at the upper extremity of the slots in the uprights before the seat and legs are completely folded within the uprights, as shown in Figure 4, and a downward pressure is exerted on the yielding spring rod pivot connection *m* which pivots the seat within the legs. These slots are offset from the pivot point of the legs with the uprights, and are of such length, that as the pivot connection between the seat and legs reaches the center line of the uprights established by the pivot connection of the legs therewith the spring rod is flexed its greatest extent. As the folding operation continues the spring tension in the rod *m* throws the pivoted ends of the seat and legs back into a locked position, requiring application of outside force to unfold the chair against the resistance of the spring rod.

In the embodiment of the invention here shown, the slot in the uprights within which the gudgeons travel, is offset relative the pivot point of the legs with the uprights forwardly the center line of the uprights. The same result could, of course, be accomplished by pivoting the legs off center and grooving the uprights along their median line instead of forwardly thereof as shown. The object is to provide slots of such a length in the uprights and so positioned relative the pivot point of the legs therewith that the spring rod pivot connection formed between the legs and seat will throw the seat and legs off center as the chair is folded so that it will releasably lock. The legs are prevented from swinging forward through the uprights by means of the cross bar *d* carried by such uprights.

What I claim is:

1. In a folding chair, a pair of braced-apart longitudinally slotted side rails, a pair of braced-apart legs pivoted to fold within said rails, a seat pivoted at one end to said legs by means of a resilient metal rod and at the other end slidably pivoted for longitudinal travel within the slots in said side rails, said slots being of such a length that the seat reaches its limit of travel therein before being completely folded within the side rails and completes the folding movement against yielding resistance of said resilient metal rod.

2. In a folding chair, a pair of uprights, a pair of legs pivoted to said uprights to fold therebetween, a seat pivoted near one end to said legs by means of a yielding spring pivot connection, said seat provided with laterally extending gudgeons near its opposite end, one on each side thereof, each of said uprights provided with a longitudinally extending slot within which a gudgeon is adapted to travel as the seat and legs are folded up together with the uprights, said slots being of such a length that the seat gudgeons arrive at the end of their permitted travel therein before the seat is completely folded within the uprights and the folding operation is completed against the resistance offered by the spring pivot connection between the seat and legs which causes said legs and seat to spring back into a releasably locked folded relationship within the uprights.

3. In a folding chair, a pair of braced-apart uprights, a pair of legs pivoted as a unit thereto, a seat pivoted near one end to said legs by means of a yielding spring rod, said uprights provided with a longitudinally extending slot cut in the inner face thereof, which slot is offset from the pivot point of the legs therewith, a pair of oppositely disposed laterally extending pins carried by said seat one on each side thereof near the opposite end to the end pivoted to the legs, said pins adapted to travel in said slots in the uprights, said seat and legs adapted to fold within the uprights, said slots cut in the uprights being of such a length that said pins in their travel therein arrive at the end thereof before said legs are entirely folded within the uprights so that further folding of the seat within the uprights is against the resistance of the spring rod which pivots the seat to the legs until such rod passes the pivot point of the legs with the uprights when the released tension thereof causes the seat and legs to spring back into a releasably locked folded relationship with the uprights.

4. In a folding chair, in combination, a pair of upright braced-apart side rails, a pair of legs pivoted as a unit thereto so as to fold therein, each of said upright rails provided with a longitudinally extending slot offset the pivot point of the legs therewith, a seat pivoted to said legs at one end by means of a spring rod, gudgeons extending from each side of said seat near its opposite end received in said slots in the uprights and adapted to travel upwardly therein as the seat is folded within the uprights, a cross bar carried by said uprights adapted to engage the lower extremities of said legs before the completion of the folding operation, said slots in the uprights being of such a length that the seat gudgeons reach the upper end thereof so that pressure is exerted on the yielding spring rod producing flexion thereof as the seat in its folding within the uprights travels past the pivot point of the legs therewith so that said seat and legs spring back into the locked position, the lower extremities of the legs having a bearing against the cross bar during the flexion of the spring rod to prevent radial travel of said legs.

5. In a folding chair, a pair of braced-apart substantially parallel, longitudinally slotted side rails, a pair of braced-apart substantially parallel legs pivoted as a unit within said rails, a seat pivoted at one end to said legs by means of a yielding spring connection and at the other end to said rails by means of gudgeons disposed for travel within said slots in said rails, said slots in the rails offset forwardly the center line of the rails and of such a length that the gudgeons will arrive at the end of the slots before the seat is completely folded within the rails and downward pressure will be exerted on the yielding spring connection formed with the legs distorting the same so that such spring connection will throw the pivot point of the legs and seat back of the center line of the rail.

6. In a folding chair, a pair of braced apart side rails provided with longitudinally extending guide-ways, a pair of braced apart legs pivoted to said rails to fold therein, a seat pivoted at one end to the upper extremities of said legs by a yielding spring pivot connection, and at the other end pivotally mounted within said ways for slidable longitudinal travel therein, and means for arresting the travel of said seat within said ways before it is completely folded within said rails so that the folding operation is completed against the yielding resistance of the spring pivot connection of the seat with the legs.

7. In a folding chair, a pair of braced apart upright rails provided with longitudinally extending guide-ways, a pair of braced apart legs pivoted as a unit to said upright rails to fold therein, a seat pivoted at one end by a flexible connection to said legs and slidably pivoted at the opposite end for longitudinal travel within the guide-ways of

said rails, said guide-ways being of such a length that the seat arrives at the limit of its permitted travel therein before it is completely folded within the upright rails, and means for arresting the rotatable travel of said legs before the folding movement is completed, and said flexible connection between said legs and said seat being of such a character that it yields to permit completion of the folding movement.

In testimony whereof, I sign this specification.

GEORGE D. SCHERMERHORN.