W. E. FRANK.

FOLDING CHAIR.

APPLICATION FILED MAY 3, 1915.

1,208,127. Patented Dec. 12, 1916.

Fig. 1.

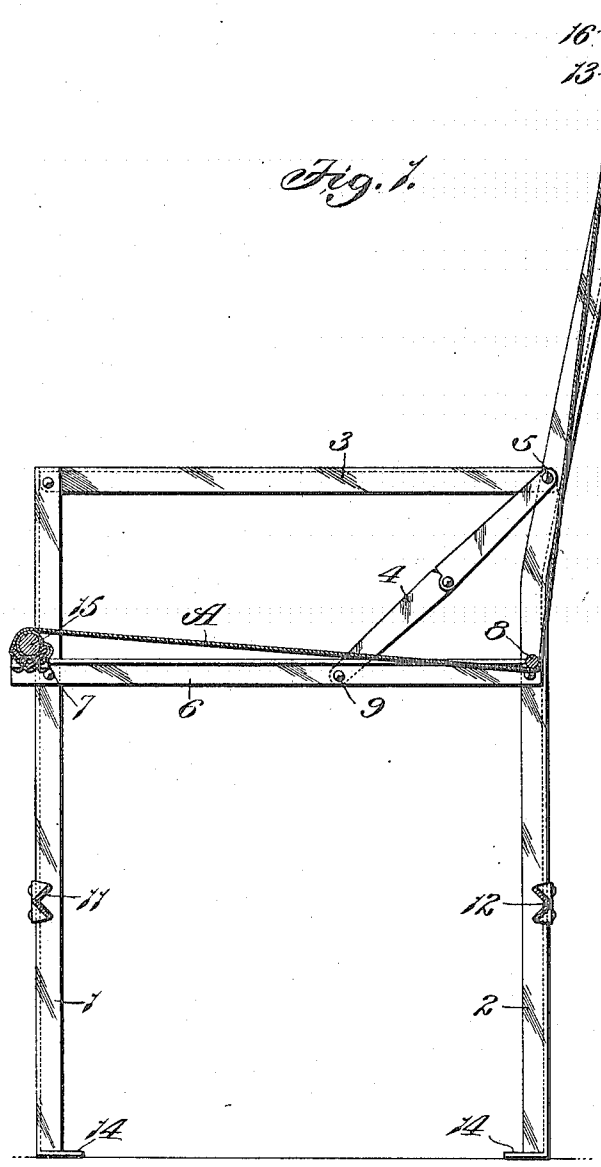


Fig. 2.

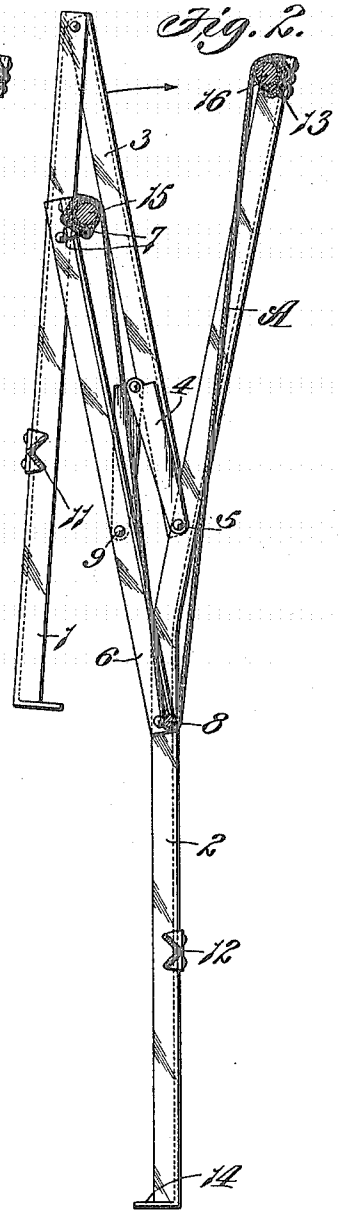


Fig. 3.

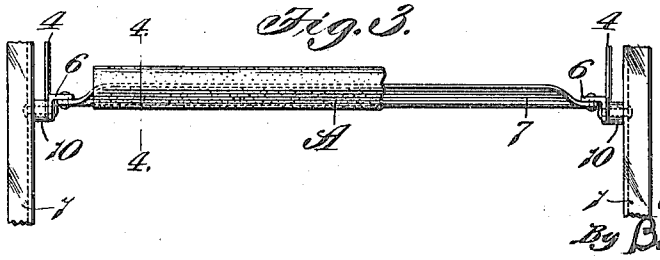


Fig. 4.



Inventor,
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By Bakewell & Church Attys

THE NORRIS PETERS CO. PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

WILLIAM E. FRANK, OF ST. LOUIS, MISSOURI, ASSIGNOR TO THE FOSTER BROS. MANUFACTURING COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

FOLDING CHAIR.

1,208,127. Specification of Letters Patent. Patented Dec. 12, 1916.

Application filed May 3, 1915. Serial No. 25,503.

To all whom it may concern:

Be it known that I, WILLIAM E. FRANK, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Folding Chairs, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to folding chairs and benches, and has for its main object to provide a strong and serviceable collapsible chair or bench that presents a neat and ornamental appearance and which can be manufactured at a low cost.

Another object is to provide a chair or bench that is equipped with a fabric seat or back or a combined seat and back which is retained in position in a novel manner that enables it to be removed and applied quickly and easily.

Another object is to provide a folding chair or bench of novel design that can be folded compactly and which comprises an efficient means for securely locking it in its open position. And still another object is to provide a light-weight, collapsible chair or bench which is constructed from pieces of angle iron and a strip of canvas or other suitable fabric that forms the seat and the back.

Other objects and desirable features of my invention will be hereinafter pointed out.

Figure 1 of the drawings is a vertical sectional view of a chair constructed in accordance with my invention, showing the chair open. Fig. 2 is a similar view, showing the chair partly folded or collapsed. Fig. 3 is a front elevational view of a portion of the chair, partly broken away, so as to more clearly illustrate the construction of some of the frame members; and Fig. 4 is a detail sectional view taken on the line 4—4 of Fig. 3.

Referring to the drawings, which illustrate the preferred form of my invention, 1 designates the front legs of the chair which project upwardly above the seat, 2 designates the rear legs which also project upwardly above the seat and form the side members of a back frame, and 3 designates arm rests or pieces which are pivotally connected at their front ends to the upper ends of the members 1 and at their rear ends to the members 2, said members 1, 2 and 3 preferably consisting of pieces of angle iron. A rectangular-shaped seat frame is pivotally connected at its front and rear ends to the members 1 and 2 and two toggle joint or rule joint braces 4 are connected to said seat frame and to the members 2 so as to securely lock the chair in its open position, the upper ends of the braces 4 being pivotally connected to the members 2 by the same rivets or fastening devices 5 which secure the rear ends of the arm rests 3 to the members 2. The seat frame above referred to is preferably formed from two side members 6, a front cross piece 7 and a rear cross piece 8, all of which are rigidly connected together by rivets or in any other suitable manner. The side members 6 preferably consist of pieces of angle iron arranged with their horizontal flanges projecting inwardly and the front cross piece 7 preferably consists of a piece of angle iron arranged in such a manner that said front cross piece will form a grooved or recessed member that is substantially V-shaped in cross section. The rear cross piece 8 preferably consists of a round rod, as shown in Fig. 1. One convenient way of connecting the members 6, 7 and 8 together is to flatten the end portions of the members 7 and 8 and then rivet them to the horizontal flanges of the side members 6. The lower ends of the toggle joint braces are pivotally connected at 9 to the vertical flanges of the side members 6 of the seat frame, and sleeves or tubular-shaped spacing devices 10 are preferably arranged between the seat frame and the front and rear legs 1 and 2 at the points where said parts are pivotally connected together. The front legs 1 are joined together by a cross brace 11 and the rear legs 2 are joined together by two cross braces 12 and 13, each of said braces consisting of a piece of angle iron whose end portions are flattened so as to

enable it to be riveted to the parts to which it is attached. As shown in Fig. 1, the cross brace 13 forms the top member of the back frame of the chair and it is so arranged that the V-shaped recess formed by the two diverging legs or flanges of same is presented forwardly. The legs 1 and 2 are provided at their lower ends with feet 14 which are formed by cutting off a portion of one flange of the angle bar that constitutes the leg and then bending the projecting portion of the other flange laterally.

The seat and back of the chair are formed from a strip of canvas or other suitable fabric A which extends rearwardly from the front cross piece 7 of the seat frame, under the rear cross piece 8 of said seat frame and thence upwardly to the top member 13 of the back frame. Said fabric A is secured to the members 7 and 13 in a novel manner that enables it to be removed and applied easily and without withdrawing or inserting fastening devices. The means that I employ for accomplishing this desirable result consists of two rods or bars 15 and 16 that serve to clamp the fabric tightly againt the members 7 and 13, respectively. One end portion of the frabic A is wrapped around the bar 15 which is seated in the V-shaped recess in the front cross piece 7 of the seat frame and said fabric leads downwardly over the rear edge of the member 7 across the underside of same, and thence upwardly and rearwardly over the bar 15. Any downward pressure on the portion of the fabric A that constitutes the seat of the chair will tend to force the bar 15 downwardly toward the member 7, and consequently, cause said bar to clamp the portion of the fabric that is wrapped around same tightly against the flanges of the V-shaped member 7 of the seat frame. The upper end portion of the fabric A is clamped to the V-shaped member 13 by the bar 16 in practically the same manner, said bar 16 being so arranged that a downward pull on the fabric tends to cause said bar to clamp the fabric more tightly against the upper cross piece 13 of the back frame. To release the fabric it is only necessary to exert pressure on the bars 15 and 16 in a direction to lift them out of the V-shaped members 7 and 13 in which they are seated. I prefer to fold over the end portions of the fabric A and stitch it so as to form casings or loops for the retaining members 15 and 16, but this is not not essential, as the ends of the fabric could be simply left free and wrapped around said retaining members in such a manner that said members will clamp the fabric against the V-shaped parts in which said retaining members are seated, whenever downward pressure is applied to the seat portion of the fabric.

A chair of the construction above described is strong and rigid; it presents a neat and ornamental appearance; it can be manufactured at a low cost and it can be folded easily by simply pushing the toggle braces 4 and swinging the seat frame upwardly, as shown in Fig. 2. When the chair is folded it is very compact and takes up little space, and when it is open there is no liability of its collapsing accidentally, as the toggle braces 4 securely lock it in its open position. The fabric seat and back form a comfortable support, and as said fabric is retained in position without the aid of tacks, stitches or other similar fastening devices, it is a very easy matter to remove the fabric either to clean or renew it. In case the fabric stretches or sags, it can be tightened easily by simply releasing one of the retaining bars and wrapping more of the fabric around same prior to placing said retaining bar back in position.

While I have herein shown my invention embodied in a chair, it will, of course, be understood that the invention is applicable to benches and that the means herein described for retaining the fabric in position could be employed in various other structures that comprise a piece of fabric and a part to which the fabric is connected.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is:

1. In a chair, a seat frame, a back frame, the outer transverse rail of said seat frame consisting of an angle iron whose concave portion is presented upwardly and the upper transverse rail of said back frame consisting of an angle iron whose concave portion is presented forwardly, a piece of fabric having a loop at each end, a retaining bar arranged in each of said loops, said fabric entirely surrounding said angle iron rails and having the end loops that carry the retaining bars seated in the concave portion of said rails, and means for supporting said fabric at the junction of said seat and back frames.

2. In a chair, a seat frame consisting of side members formed of angle iron having vertical and horizontal flanges, and a front cross member formed of angle iron whose flanges are presented upwardly at an angle and whose ends are flattened for connection to the horizontal flanges of said side members; a back frame consisting of side members formed of angle iron, and a top cross member formed of angle iron whose flanges are presented forwardly at an angle; a continuous piece of fabric extending from said top cross member to said front cross member, said fabric being provided at each end with retaining bars which are seated in the grooves formed by said cross members, said

retaining bars being of greater diameter than the depth of said grooves and said fabric being wrapped around said cross members and lying over said bars; and means at the junction of said seat and back frames for supporting said fabric.

In testimony whereof I hereunto affix my signature in the presence of two witnesses, this twenty-ninth day of April 1915.

WILLIAM E. FRANK.

Witnesses:
WELLS L. CHURCH,
GEORGE BAKEWELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."