No. 611,048. Patented Sept. 20, 1898.

E. E. ALLEN.

FOLDING CHAIR.

(Application filed Aug. 30, 1897.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

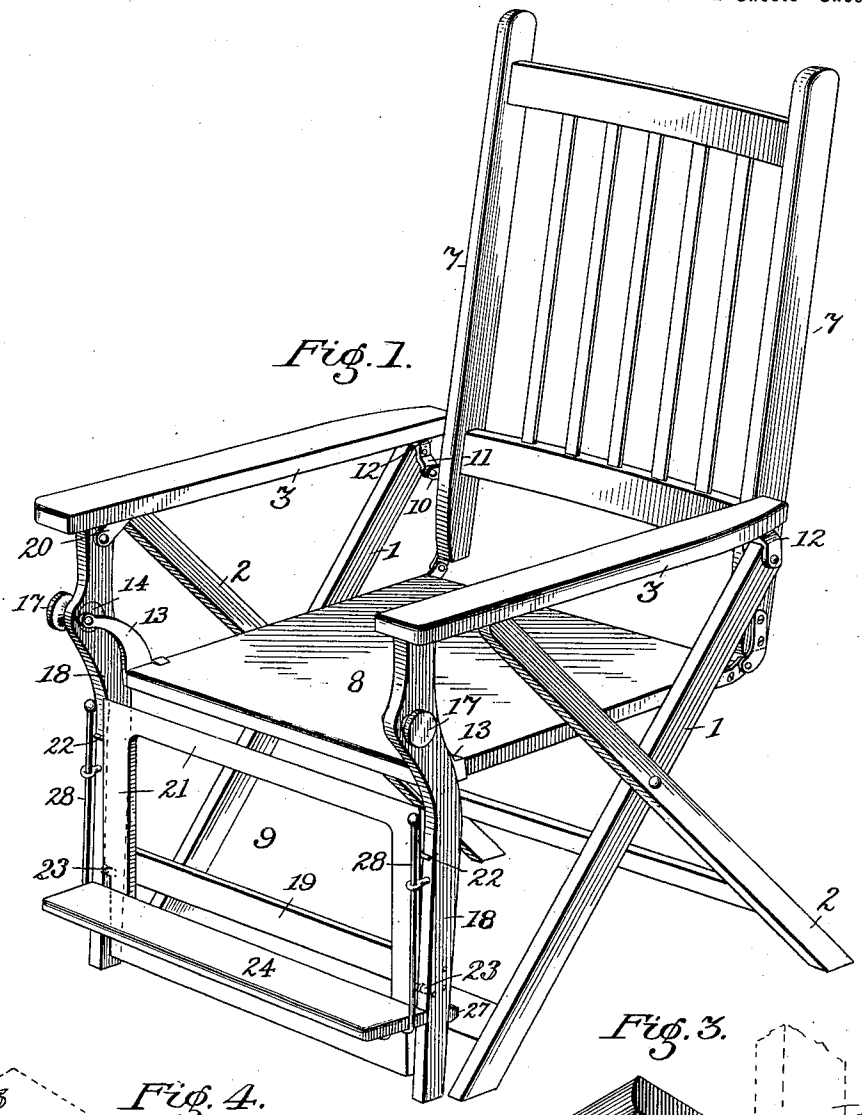


Fig. 3.

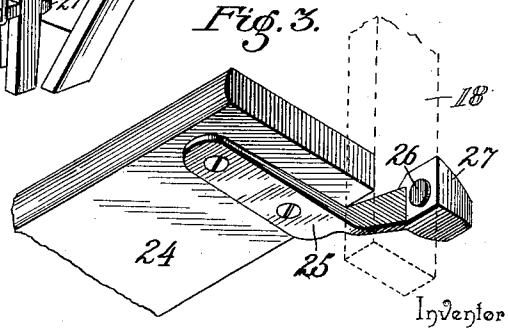
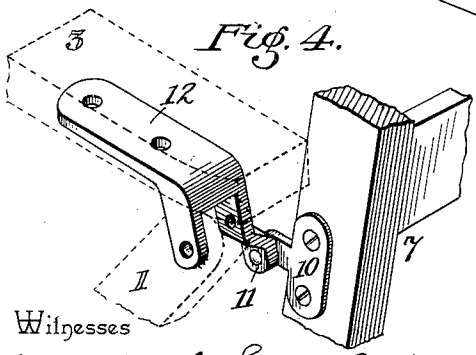


Fig. 4.



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Fig. 2.

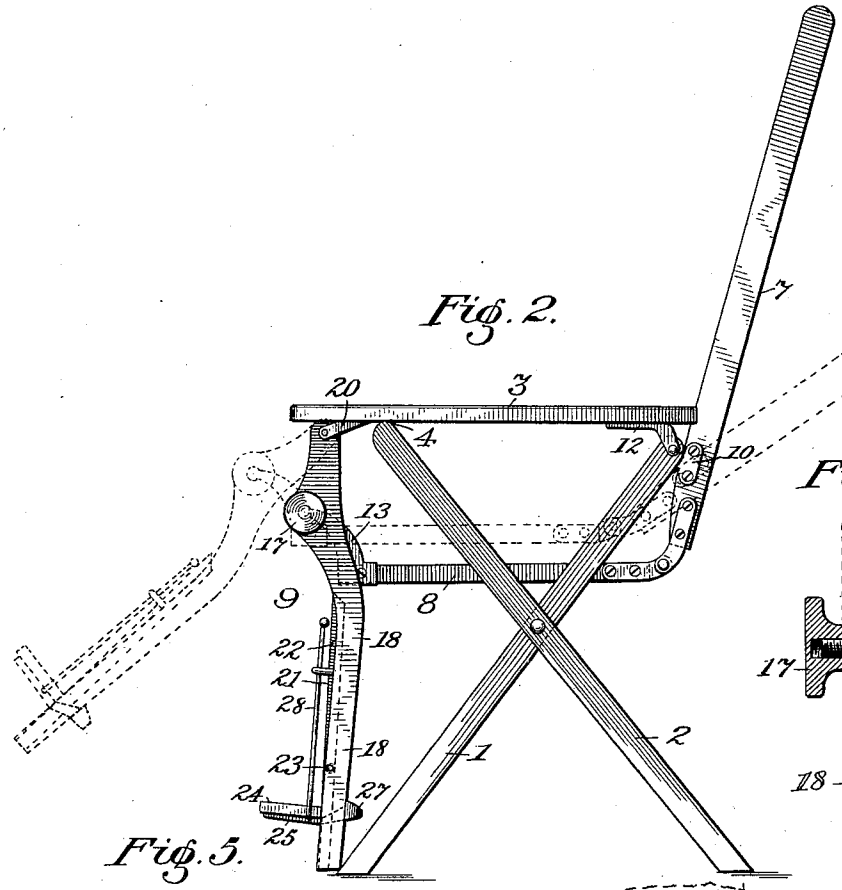


Fig. 7.

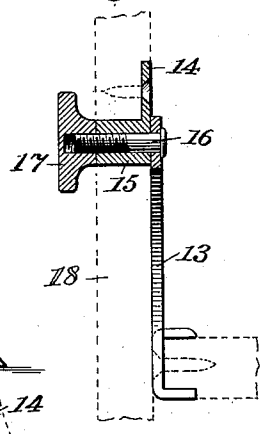


Fig. 5.

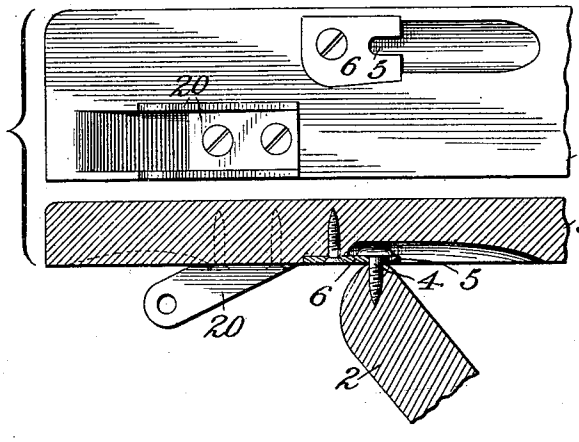
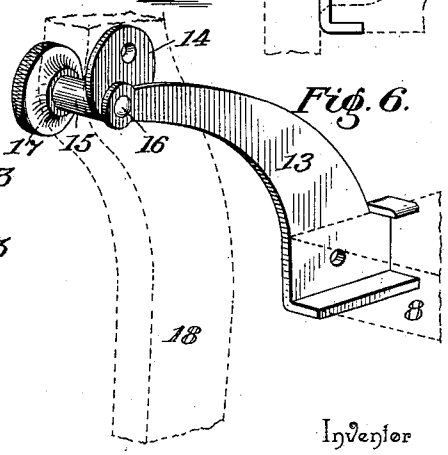


Fig. 6.



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UNITED STATES PATENT OFFICE.

ELMER ELLSWORTH ALLEN, OF SUNDERLAND, VERMONT.

FOLDING CHAIR.

SPECIFICATION forming part of Letters Patent No. 611,048, dated September 20, 1898.

Application filed August 30, 1897. Serial No. 649,978. (No model.)

To all whom it may concern:

Be it known that I, ELMER ELLSWORTH ALLEN, a citizen of the United States, residing at Sunderland, in the county of Bennington and State of Vermont, have invented a new and useful Folding Chair, of which the following is a specification.

This invention relates to chairs which are adjustable to enable the occupant to change from an upright to a recumbent position or to any intermediate point between these extreme movements as may be required to secure perfect ease and comfort, and has for its object to devise a chair of the character aforesaid which will be perfectly balanced and enable the person adjusting the chair to the desired position without necessitating the leaving of the chair for the purpose of loosening fastenings and moving the parts into the required position. The essential parts are so connected that the weight of the person is evenly distributed, thereby enabling the chair to be easily adjusted and maintained in the required position.

For a full understanding of the merits and advantages of the invention reference is to be had to the accompanying drawings and the following description.

The improvement is susceptible of various changes in the form, proportion, and the minor details of construction without departing from the principle or sacrificing any of the advantages thereof, and to a full disclosure of the invention an adaptation thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a folding and convertible chair constructed in accordance with this invention. Fig. 2 is a side elevation, the dotted lines showing an adjusted position. Fig. 3 is a detail view in perspective of an end portion of the foot-rest, showing the side bar to which it is attached by dotted lines. Fig. 4 is a detail view in perspective of the bracket connection between the legs, arms, and back. Fig. 5 is a detail view of the interlocking connection between the arms and legs. Fig. 6 is a detail view in perspective of the connection between the front end of the seat and the leg-rest. Fig. 7 is a front view of the parts shown in Fig. 6.

Corresponding and like parts are referred to in the following description and indicated in the several views of the accompanying drawings by the same reference characters.

The stand or support of the chair is composed of similarly-formed crossed legs 1 and 2, pivoted at their point of crossing and strengthened at their lower ends by transverse bars. The front legs 1 are pivotally connected at their upper ends with the rear ends of the arm-rests 3, and the rear legs 2 have an interlocking connection at their upper ends with the front ends of the said arm-rests and are provided with headed studs 4 to enter a notch 5, provided in the rear edge of a plate 6, secured to the under side of each arm-rest, said plates being let into the arm-rests so as to come flush therewith and the arm-rests being cut away to provide for the entrance and exit of the headed studs 4 when engaging or disengaging them from the notched plates 6.

The chair proper comprises a back-rest 7, a seat 8, and a leg-rest 9, pivotally connected in the manner presently to be described, whereby they are evenly balanced, and the weight of the person is distributed so that the chair may be adjusted with ease and celerity to the desired position and maintained in the adjusted position without extra effort on the part of the occupant. Plates 10 are secured to the side bars of the back-rest near their lower ends and have forward extensions to which an extension 11 of brackets 12, secured to the rear ends of the arm-rests, is pivotally connected. Each bracket 12 has a downward extension at its rear end, which is cleft to receive the upper end of a leg 1, which is pivoted thereto, and the inner cleft portion is projected and offset, forming the extension 11, which has pivotal connection with the plate 10 in the manner set forth. It will thus be seen that the brackets 12 pivotally connect the front legs and back-rest and serve as means for connecting the legs with the body of the chair.

The seat 8 has pivotal connection at its rear end with the lower end of the back-rest, similar plates or strap-irons being secured to the opposing ends thereof and pivotally connected in any desired manner. Upwardly and forwardly curved arms 13 are secured to the front corners of the seat and have pivotal connection at their upper ends with the side bars of the leg-rest, and these arms have inwardly-

extending lips to embrace the upper and lower sides of the seat, so as to secure firm connection therewith, thereby relieving in a measure the fastenings between the arms and seat of excessive strain.

Friction-plates 14, preferably of circular outline, are let into the side bars of the leg-rest and are secured thereto and have a tubular portion 15, which projects through the side bars, so as to come flush with the outer side thereof, said plates being transversely apertured in line with the opening of the tubular portion 15, so as to admit of the passage therethrough of a bolt or screw 16, by means of which the arms 13 are pivotally connected with the leg-rest. The tubular portion 15 is disposed at the front or outer edge of each plate 14 so as to provide an extended surface for frictional engagement between the arms 13 and plates 14, which is essential for securing the chair positively when moved to an adjusted position. Clamp-nuts 17 are mounted upon the outer threaded ends of the bolts or screws 16 and engage with the outer ends of the tubular portions 15 and when turned up draw the arms 13 against the friction-plates 14, so as to prevent any movement of the chair when adjusted. These clamp-nuts are milled or knurled, so as to enable a firm grip being had thereon when loosening or tightening them.

The leg-rest comprises side bars 18 and a cross-bar 19, connecting the side bars a short distance from their lower ends, and this leg-rest has pivotal connection at its upper end with the front ends of the arm-rests by means of the side bars 18 and brackets 20, said brackets being secured to the lower side of the arm-rests and having their front ends forked and receiving the upper ends of the side bars 18, which are pivoted thereto in the usual way. A frame 21 has pivotal connection with the side bars 18 about opposite the lower edge of the cross-bar 19 and has outwardly-extending pins 22 near its upper end to overlap the side bars 18 and limit the inward movement of the frame at its upper end. This pivoted frame 21 is held in a normal position by coil-springs 23, mounted upon the pivots thereof and having their ends secured to the frame and leg-rest. The lower end of the pivoted frame 21 comes in rear of the foot-rest 24 and may engage with the rear edge thereof and can be moved inwardly at its lower end to clear the foot-rest when it is required to adjust the latter so that the foot-rest can be moved up or down without interference. The outer edge portion of the pivoted frame is cut away below the cross-bar 19 to admit of the foot-rest irons 25 passing between the side bars 18 and the end bars of the pivoted frame.

The frame 21 is designed to receive the upholstering, thereby leaving the side bars 18 clear, so that the foot-rest can be adjusted vertically and the chair rendered more lasting, because the side bars not being covered are not easily marred or subject to wear.

The foot-rest 24 has adjustable connection with the leg-rest, so that it can be moved up or down to accommodate the occupant. Irons 25 are secured to the foot-rest and extend in the rear thereof and have lateral extensions to engage with the rear side of the bars 18, and these lateral extensions are apertured to receive rubber blocks 26, which engage with the rear side of the bars 18 with sufficient force to hold the foot-rest in an adjusted position, said bars 18 being confined between the lateral extensions of the irons 25 and the rear edge of the foot-rest. The lateral extensions 27 project above the irons 25 and are about in the plane of the foot-rest 24, and upon the application of pressure upon the foot-rest the side bars 18 are gripped between the rear edge of the foot-rest and the parts 27 with a force proportionate to the downward pressure exerted upon the foot-rest, as will be readily understood. When it is required to adjust the elevation of the foot-rest, the latter can be moved up or down with respect to the leg-rest in any desired manner, either by grasping the foot-rest near its inner edge or by means of rods 28, the latter being secured to the foot-rest and having handles at their upper ends extending within convenient reach of the occupant, so as to enable the foot-rest to be moved without requiring the occupant to leave the chair.

It will be understood that any suitable material will be utilized in the construction of the chair and that the several parts may be straight or curved, according to the finish and design of the manufacturer, and the several parts—such as the arm-rests, seat, back, foot-rest, and leg-rest—may be upholstered or left plain, according to the requirement and use for which the chair is designed.

By having the arms 13 curve forwardly and upwardly and the bars 18 curve or extend forwardly at their juncture with the said arms the pivotal point between these parts is brought above and forward of the front edge of the seat, whereby the leg-rest is moved outward when the chair is adjusted to a reclining position, so as to support the extremities of the limbs.

Having thus described the invention, what is claimed as new is—

1. In a folding and convertible chair, the combination of a stand formed of legs crossed and pivoted together at their point of crossing, arm-rests having pivotal connection at their rear ends with the upper ends of the front legs, notched plates secured to the front ends of the arm-rests, headed studs applied to the upper ends of the rear legs to make detachable connection with the notched plates of the arm-rests, a leg-rest having pivotal connection with the arm-rests forward of the interlocking connection thereof with the rear legs, a back-rest having pivotal con-

nection a short distance from its lower end with the arm-rests and front legs, and a seat having pivotal connection with the lower end of the back-rest and with the leg-rest a short distance from its upper end, substantially in the manner and for the purpose specified.

2. In a folding and convertible chair, the combination of a stand comprising crossed legs pivoted together at the point of crossing, arm-rests having interlocking connection with the rear legs, brackets firmly secured to the rear ends of the arm-rests and having their pendent ends cleft to receive the upper extremities of the front legs which are pivoted thereto and having the inner cleft portions extended and deflected inwardly, a back-rest, and plates secured to the back-rest and having pivotal connection with the inner deflected extensions of the cleft brackets, substantially as shown for the purpose specified.

3. In combination, a leg-rest, a foot-rest having adjustable connection therewith, a frame pivoted to the leg-rest and adapted to have its lower end come in the rear of the foot-rest, springs interposed between the pivoted frame and leg-rest to hold the pivoted frame in a normal position, and laterally-extending pins applied to the pivoted frame and adapted to engage with the front edge of the side bars of the leg-rest to limit the rearward movement of the upper end of the said pivoted frame, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ELMER ELLSWORTH ALLEN.

Witnesses:
RICHARD H. GREGORY,
A. STANLEY HALEY.