No. 706,991.

Patented Aug. 12, 1902.

T. M. McKEE & S. B. SAFFELL.

AUTOMATIC ADJUSTABLE CHAIR.

Application filed Sept. 30, 1901.

(No Model.)

Fig. 1.

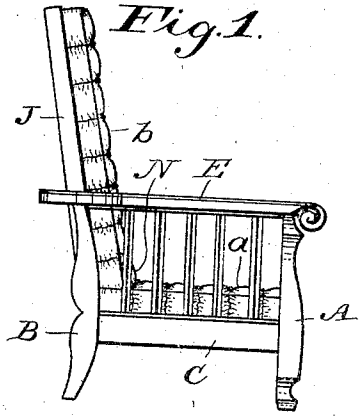


Fig. 2.

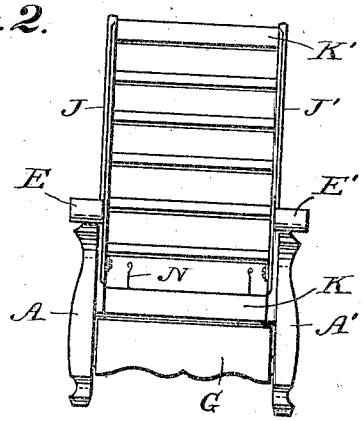


Fig. 3.

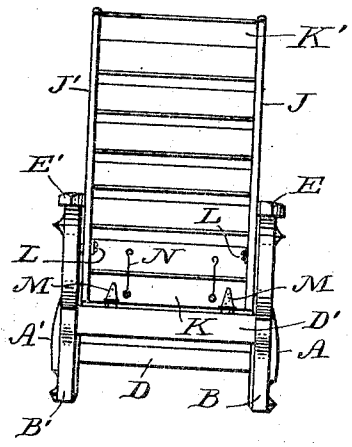


Fig. 4.

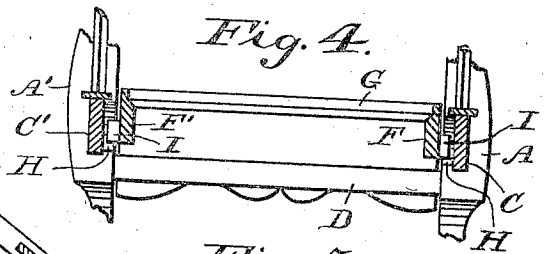


Fig. 5.

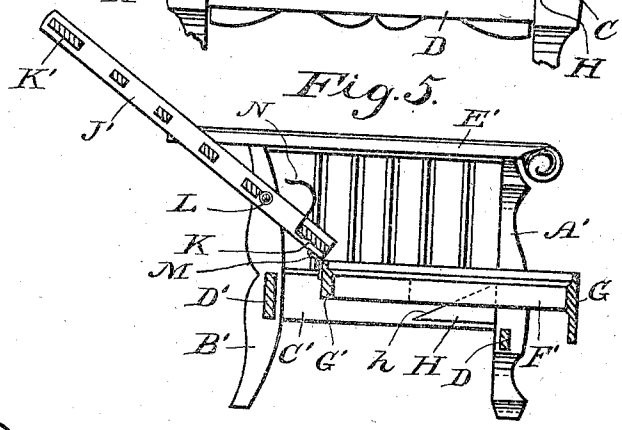


Fig. 6.

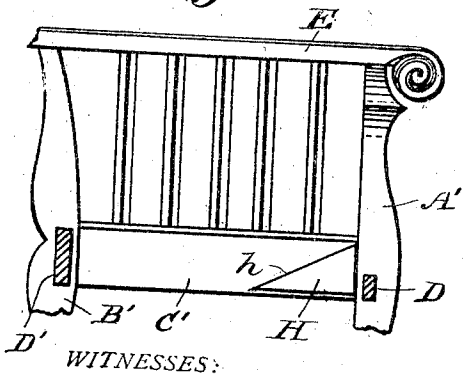
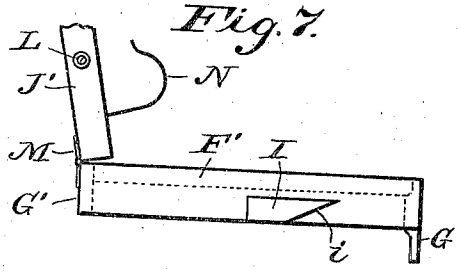


Fig. 7.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC ADJUSTABLE CHAIR.

SPECIFICATION forming part of Letters Patent No. 706,991, dated August 12, 1902.

Application filed September 30, 1901. Serial No. 77,039. (No model.)

To all whom it may concern:

Be it known that we, THOMAS M. McKEE and SILAS B. SAFFELL, citizens of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented certain new and useful Improvements in Automatic Adjustable Chairs; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Our invention relates to a chair that is designed to be used in either upright or reclining positions, the object of the invention being to provide a chair of this character which may be quickly adjusted to any of the various positions within its range and at the same time be free from complicated and expensive attachments that might require skill in the operation thereof, a further object being to provide an automatic adjustable chair that may be cheaply produced and be durable and economical in use.

The invention consists in a gravity-operated seat-frame moving horizontally and vertically and a pivoted chair-back hinged to and supporting the rear part of the seat-frame; and the invention consists of the novel parts and the combination and arrangement of parts, as hereinafter particularly described and claimed.

Referring to the drawings, Figure 1 is a side elevation of a chair embodying our invention, showing cushions thereon and in an upright position; Fig. 2, a front elevation, the cushions being omitted; Fig. 3, a rear elevation; Fig. 4, a fragmentary transverse vertical sectional view looking forwardly, showing the forward portion of the seat-frame in the main frame; Fig. 5, a longitudinal vertical sectional view showing the back in a reclining position and the manner in which the rear part of the seat-frame is supported on pivots; Fig. 6, a fragmentary longitudinal vertical sectional view of the main frame, and Fig. 7 a fragmentary side elevation of the seat and back frames.

Similar reference characters in the different figures of the drawings indicate like parts.

In carrying out our invention practically we have constructed the chairs substantially as shown simply and inexpensively; but it is obvious that if they should be desired we may adopt more expensive elements in the details of construction within the scope of our invention, as experience may indicate. The main frame is designed to permit the free movement of the back and the seat frame between the two sides thereof, and it comprises two forward legs A A′ and two rear legs B B′, all extending sufficiently high for supporting the arm-rests. Longitudinal rails C C′ connect the forward legs with the rear legs, and transverse rails D D′ connect the right side legs with the left side legs. Arm-rests E E′ are secured to the upper ends of the legs and extend rearwardly beyond the rear legs. The seat-frame is constructed separately and then mounted in the main frame, and it comprises sides F F′ and ends G G′, connected rigidly together, the end G preferably extending below the sides as an apron to screen the opening above the rail D when the seat is elevated. The forward part of the seat-frame is supported and also elevated and depressed by means of blocks H, having each an inclined smooth upper face *h* secured to the side rails C C′, a block to each rail near the forward end thereof, the most elevated parts of the faces being forward of the lower parts thereof and near the forward legs A A′, and by means of blocks I, each having an inclined smooth lower face *i*, secured to the sides F F′ of the seat-frame, a block to each side near the forward end thereof, the more elevated parts of the faces being forward of the lower parts thereof, the faces *i* being designed to slide upon the faces *h*, as well as to rest thereon at proper times. These faces may be lubricated when composed of wood or similar material by well-known means. It is obvious, however, that rollers may be sub-

stituted for the blocks I to operate upon the faces *h*. The seat-frame is suitably recessed to receive the cushion *a*, and, if desired, cross-slats or a floor may be provided for supporting a soft cushion or one without a frame.

The chair-back comprises sides J J′ and ends K K′, forming a frame which is suitably recessed to retain the cushion *b* laterally, and suitable slats may extend from side to side between the ends or from end to end between the sides for supporting the body portion of the cushion. The sides J J′ are connected to and supported by the rear legs B B′ by means of pivots L, situated suitably between the rail D′ and the arm-rests E E′ and at a suitable distance above the end K, any suitable form of pivot being employed. Hinges M connect the end G′ of the seat-frame to the end K of the back-frame, or suitable pivots may be substituted for the hinges used herein demonstratively rather than arbitrarily. Spring-clasps N are secured to the end K for supporting the lower end of the cushion *b*.

It will be seen that inasmuch as the back-frame is pivoted to the upper portions of the rear legs the back may rock forwardly and backwardly, and as the rear part of the seat-frame is pivoted to the back-frame the seat-frame must rise and fall at its rear with the rising and falling motion of the lower part of the back-frame, and as the forward part of the seat-frame is supported upon inclined surfaces it also must rise and fall as well as move forwardly and backwardly.

In practical use one may sit upon the seat and the weight of the person will cause the seat to gravitate to its lowest permissible level. If now the person lean against the back and employ the upper portion thereof as a lever, which it is designed to be, by means of the person's shoulders the chair-back may be pushed back to any desired angle in controllable graduations and cause the seat to be elevated and to also move forward, thereby retaining the use of the full area of the cushion-surface. The arms of the person may rest upon the arm-rests E E′ in controlling the movements, and particularly in regaining an upright posture.

Having thus described our invention, what we claim as new is—

1. An automatically-adjustable chair comprising a main frame provided with inclined supports having smooth surfaces, a seat-frame having the forward part thereof supported on the inclined supports, a back pivoted to the rear part of the seat-frame and thereby supporting the same, and pivots connecting the back to the main frame and thereby supporting the back and the rear part of the seat-frame, whereby the seat may be employed as a gravity force in operating the back and the back may be employed as a lever in operating the seat-frame.

2. In an adjustable chair, a main frame, a back pivoted near its lower end to the main frame, a seat-frame pivoted at its rear part to the lower end of the back, inclined supporting members attached to the main frame near the forward parts thereof and supporting the forward part of the seat-frame, whereby the forward part of the seat may be caused to rise and fall and also to move longitudinally in unison with the rear part thereof.

3. In an adjustable chair, the combination of the main frame provided with the blocks having the inclined upper faces, the pivots connected to the upper portions of the rear legs, the back connected to said pivots above the lower end thereof, the seat-frame having the forward end thereof mounted on said blocks, and the pivots connecting the lower end of the back to the rear part of the seat-frame, whereby an operator sitting on the seat may automatically cause the seat to recede and the back to rise, and also by leaning against the back cause the same to recede and the seat to rise.

4. In an adjustable chair, the combination of the main frame, the back pivoted to the rear legs of the main frame, the seat pivoted to the back, the inclined ways at the front part of the main frame, and the blocks attached to the seat-frame and bearing on said inclined ways.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS M. McKEE.
SILAS B. SAFFELL.

Witnesses:
WM. H. PAYNE,
E. T. SILVIUS.