No. 777,941. PATENTED DEC. 20, 1904.

F. DE FONTES.

CHAIR.

APPLICATION FILED JUNE 28, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

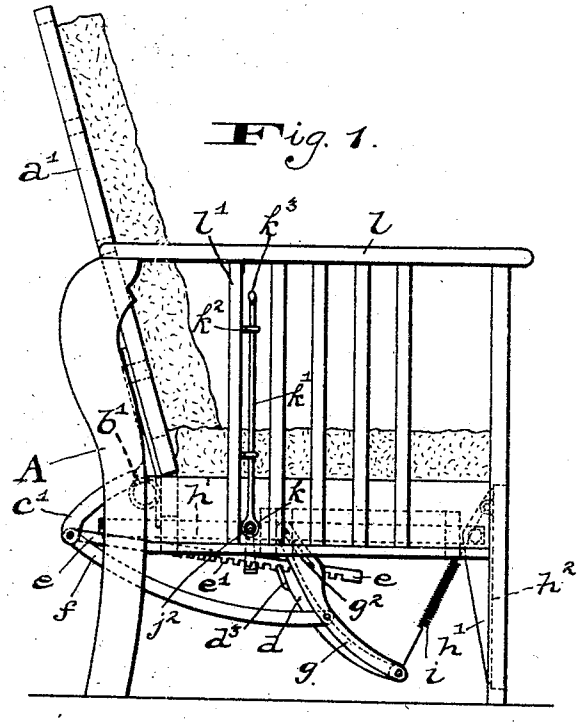


Fig. 3.

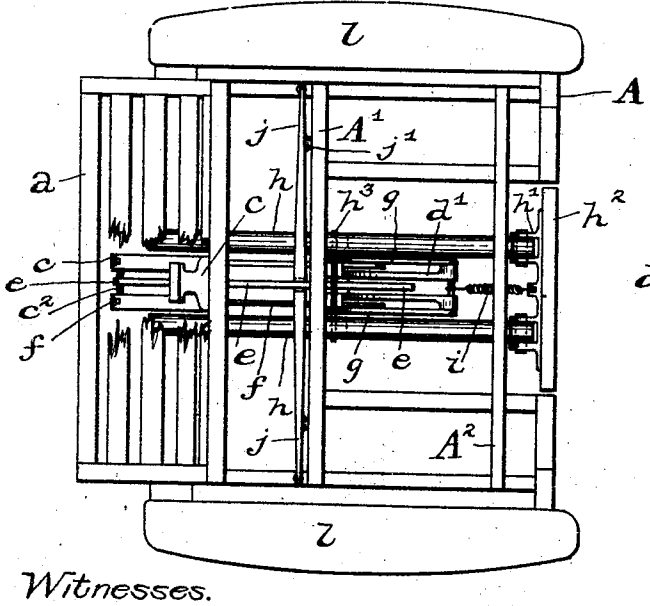


Fig. 2.

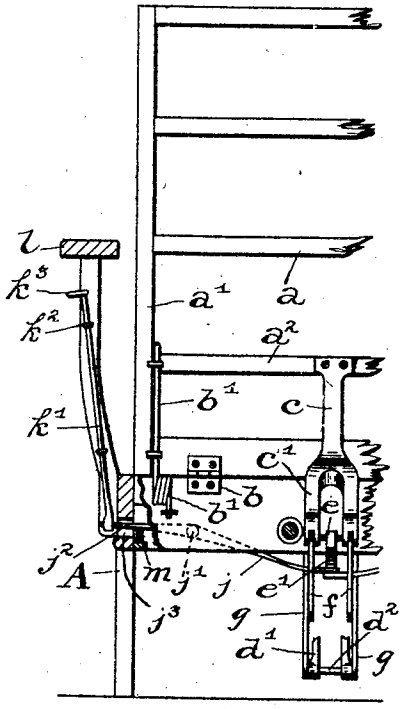
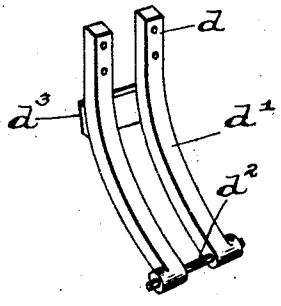


Fig. 6.



Witnesses.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

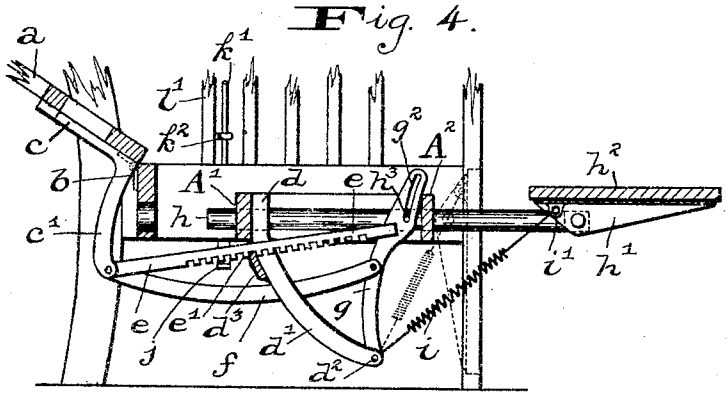
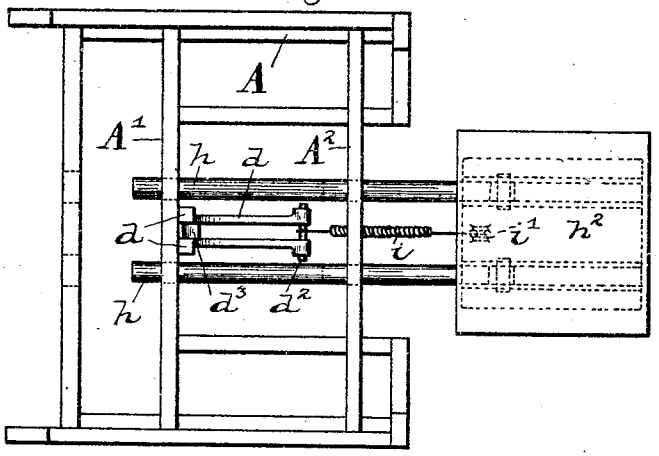


Fig. 5.



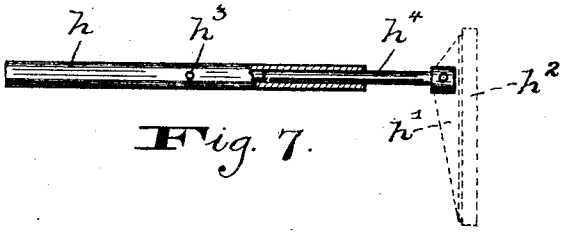


Fig. 7.

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No. 777,941. Patented December 20, 1904.

UNITED STATES PATENT OFFICE.

FRANCIS DE FONTES, OF BALTIMORE, MARYLAND, ASSIGNOR OF THREE-FOURTHS TO WILLIAM H. GREENE, DANIEL H. DOYLE, AND MERRILL H. CALER, OF BALTIMORE, MARYLAND.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 777,941, dated December 20, 1904.

Application filed June 28, 1904. Serial No. 214,511.

To all whom it may concern:

Be it known that I, FRANCIS DE FONTES, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Chairs, of which the following is a specification.

My invention relates to improvements in chairs.

One object of the invention is to provide an improved construction whereby the inclination of the back may be readily adjusted—that is, inclined more or less with respect to the seat.

Another object of the invention is to provide a chair with an adjustable back and a foot-rest and to connect and simultaneously adjust the same.

With these and other objects in view the invention is illustrated in the accompanying drawings, in which—

Figure 1 illustrates a side elevation of a chair provided with my improved construction and shows the parts in the normal position. Fig. 2 illustrates a rear and sectional elevation of a portion of the same. Fig. 3 illustrates a plan view of the same, a portion of the back being broken away. Fig. 4 illustrates a central vertical section through the lower portion of the chair and shows the back and foot-rest in the extreme operated positions. Fig. 5 shows a plan view of the chair-frame with the foot-rest projected, but omitting the back and the connecting parts. Fig. 6 illustrates a detail perspective view of the stationary bracket. Fig. 7 shows one of the tubes and telescoping rod.

In the drawings, A designates the framework of the chair, provided with horizontal guide-bars A′ and A^2. It is to be understood that the ordinary cushions for the seat and back usually employed in chairs of the character shown are to be employed and have merely been omitted in some of the figures for the sake of clearness. The back a is connected at its lower end to the frame by means of hinges b, so that its upper end may be swung through an arc of a circle to incline it more or less, as desired. A coiled spring b' has one end secured to the vertical side rails a' of the back, and the other end of said spring is secured to the frame of the chair. This spring serves to keep the back in its normal or ordinary position.

A bracket c is secured at its upper end to the rear of one of the cross-bars a^2 of the back, and the lower end of said bracket is bifurcated and is provided with two outwardly and downwardly curved arms c'.

A bracket d is secured at its upper end to the guide-bar A′, and said bracket comprises two downwardly and forwardly curved parallel arms d', which are rigidly connected at their lower ends by a pin d^2 and near their upper ends carry a horizontal stationary plate d^3.

A bar e is pivotally supported at one end on a pin c^2 between the curved arms c', and the lower surface of said bar is provided with a series of teeth or a rack e'. The outer end of this bar e passes between the parallel arms d' of the stationary bracket d and over the top edge of the stationary plate d^3, and the teeth or rack e' on the lower surface will rest upon and engage said plate d^3. Two parallel bars f each has one end pivotally connected to one of the curved arms c' of the bracket c, and the other end of each of said bars is pivoted to a vertically-swinging lever g. These levers g are pivoted at their lower ends to a pin d^2, which extends horizontally through the lower ends of the bracket-arms d', and said levers have position on the outer sides of said arms and are arranged to swing through a vertical plane. The upper end of each lever g is provided with a slot g^2 for a purpose to be presently described.

Two tubes h extend horizontally through holes in the guide-bars A′ and A^2, which serve as bearings, and at their front ends said tubes each receive a rod h^4, which snugly fits the tube and telescopes therein, and a swinging bracket h' is pivoted at the ends of said rods and supports a foot-rest h^2. The upper slotted ends of the levers g each have position at

the side of one of the tubes h, and a pin h^3 extends horizontally through both of the tubes and also through the slots in said two levers.

It has heretofore been explained that the levers g and the curved arms c' on the back of the chair are connected by levers f, and the connection of the levers g with the tubes h has just been described. It will therefore be seen that when the back a is lowered to increase its inclination with respect to the seat the arms c' will move downward through an arc of a circle and will impart a forward movement to the parallel bars f. This forward movement of said bars will throw the upper ends of the levers g toward the guide-bars A^2 and as they are thus moved will impart a horizontal movement to the tubes h, rods h^4, and foot-rest h^2. It is desirable and one of the features of the invention that when the back is elevated the foot-rest will have a pendent or vertical position at the front of the chair, but as the back is moved from a vertical to an inclined position it causes the foot-rest to be projected and also swung from the vertical to a horizontal position, as seen in Figs. 4 and 5. This movement of the foot-rest from a vertical to a horizontal position is accomplished by means of a spring i, one end of which is attached to a lug i' on the under side of the foot-rest, while the other end of said pin is connected to the pin d^2 between the bracket-arms d'. As the tubes and foot-rest are moved forward the spring will offer sufficient resistance at the upper side of the foot-rest above the pivot-point to cause it to be turned from a vertical to a horizontal position, and when turned to this position the further forward movement of the tubes and foot-rest will merely cause the spring to yield and stretch. When the reverse movement of the tubes takes place, the spring will be gradually relieved, and the foot-rest being pivoted eccentrically, so that the greatest weight will be beyond the tubes, this preponderance of weight will cause the foot-rest to assume its original or normally vertical position.

It will be understood from the foregoing description that the bar e is pivoted at its rear end to the pin c^2 and that the forward end projects between the arms c' and is held against lengthwise movement in either direction by the teeth e' engaging the edge of the plate d^3. In order, therefore, to adjust the back and foot-rest, it is necessary that the forward end of the bar e be elevated to disengage the teeth from the plate d^3. This elevation of the bar is accomplished by means of mechanism now to be described, and as it is desirable that the operation of elevating the bar e may be accomplished from either side of the chair the lever mechanism to be described is duplicated and a single description is deemed sufficient.

A lever j is pivoted at j' to the rear side of the guide-bar A′, and said lever extends in substantially a horizontal direction from the side of the chair-frame to a point just beneath the bar e. The outer end j^2 of this lever j projects through a slot j^3 in the chair-frame and fits into a perforation k in the lower end of a vertical operating-rod k'. This operating-rod k' extends from the slot j^3 to a point adjacent the arm l and passes through screw-eyes or staples k^2, attached to one of the vertical stationary side rods l' of the chair. The upper end of the operating-rod k' is preferably provided with a bend or knob k^3, by which it may be grasped when operated. A spiral spring m has position beneath the outer end j^2 of the lever and serves to keep said end and the operating-rod k' normally raised. It will be readily understood that by depressing the operating-rod k' and outer end j^2 of the lever j the inner end of said lever will be elevated and will also raise the bar e from engagement with the plate d^3.

Referring particularly to Fig. 7, it will be seen that, if desired, the foot-rest may be projected, without operating the back and tubes h, merely by partly withdrawing the telescoping rods h^4 from within the tubes. The spring i will yield sufficiently to permit this movement. This construction also enables the entire removal of the foot-rest, if desired.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a chair the combination with a frame provided with a seat, of a back pivoted with respect to said seat; a bracket secured to and moving with said back; a bracket secured beneath the seat and provided with downwardly-projecting stationary arms; swinging levers each pivotally connected at its lower end to one of the arms of said stationary bracket; a sliding foot-rest support; means for connecting the upper ends of said swinging levers to said foot-rest support, and a rod connecting each of said swinging levers with the bracket on said back.

2. In a chair the combination with a frame provided with a seat, of a back pivoted with respect to said seat; a bracket secured to said back and moving therewith, said bracket having two downwardly-curved arms; a stationary bracket secured beneath the seat and having two downwardly-projecting stationary arms; a plate carried by the arms of said stationary bracket; swinging levers each pivotally connected at its lower end to one of the stationary arms of said bracket and the upper end of each lever having a slot; a foot-rest support beneath said seat; a pin extending through the slot in each lever and loosely connecting the same to said foot-rest support; a bar pivotally connected at one end to the bracket on said back and having its free end extending between the arms of said stationary bracket, said free end also having a rack to engage the plate on said arms, and a rod connecting each swinging lever with one of

the downwardly-curved arms of said movable bracket on the back.

3. In a chair the combination with a frame, of a back-bracket secured to the back and movable with respect to said frame; a foot-rest support also movable with respect to said frame; a foot-rest pivoted eccentrically to said support and normally hanging vertically therefrom; lever mechanism connecting the foot-rest support and the back, and means to swing the foot-rest from the normal vertical position toward a horizontal position when the back is inclined.

4. In a chair the combination with a frame, of a back pivoted with respect to said frame; a bracket secured to and movable with said back; two parallel tubes; rods movable lengthwise in the ends of said tubes; a foot-rest pivoted to said rods; a lever coacting with each of said tubes; a bar connecting each of said levers with the bracket on the back and mechanism for locking the back, and tubes against movement.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS DE FONTES.

Witnesses:
CHARLES B. MANN, Jr.,
FELIX R. SULLIVAN.