No. 633,087. Patented Sept. 12, 1899.

S. W. JOHNSON.

CHAIR.

(Application filed Apr. 15, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

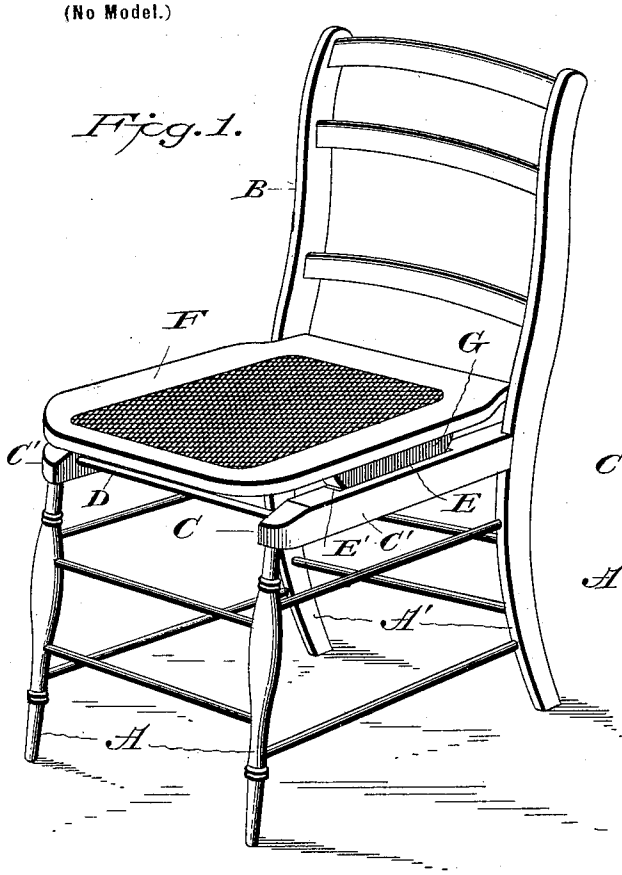


Fig. 2.

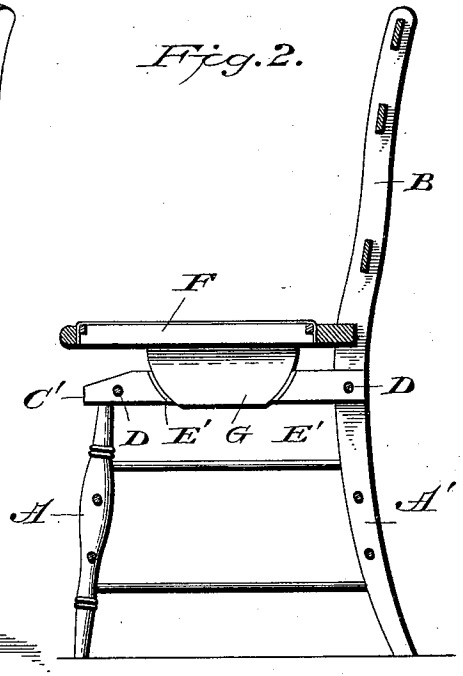


Fig. 3.

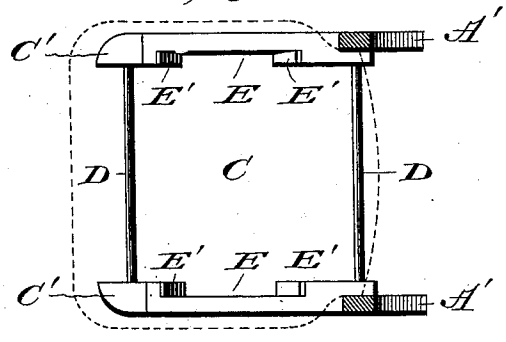


Fig. 4.

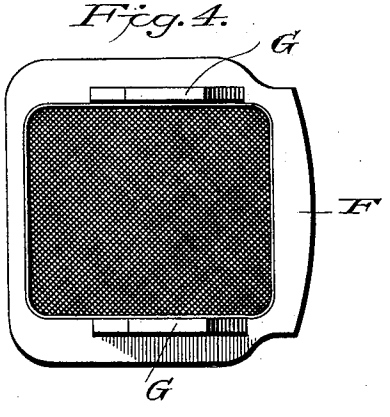
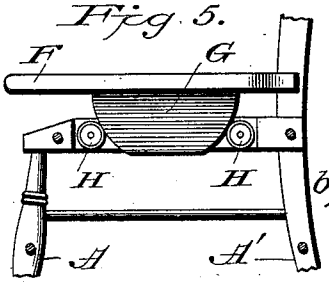


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 6.

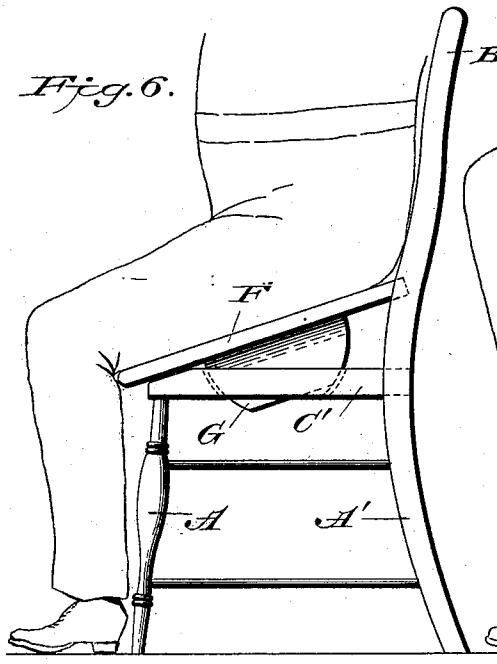


Fig. 7.

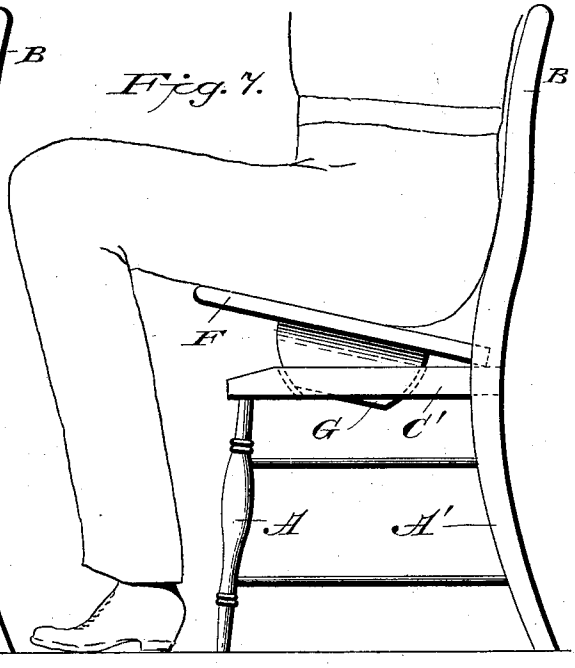


Fig. 8.

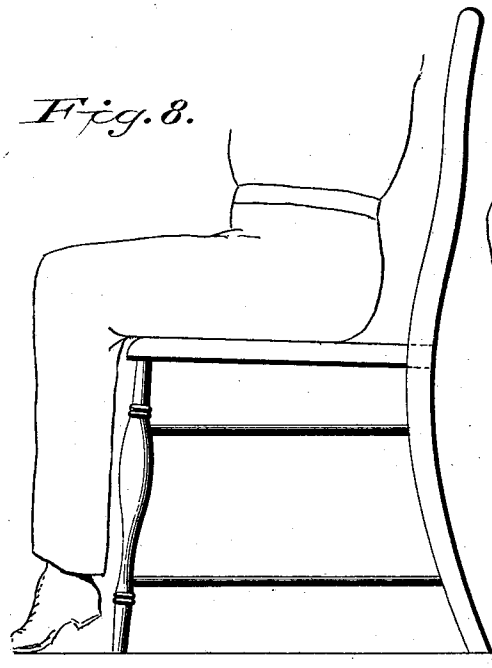
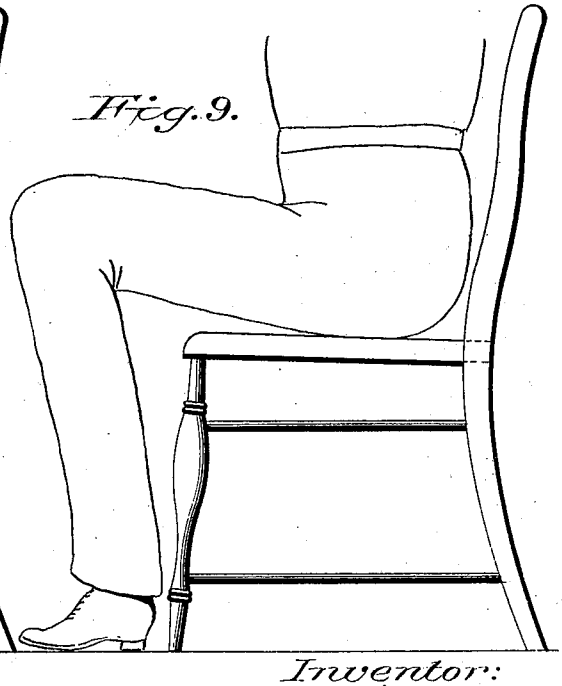


Fig. 9.



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UNITED STATES PATENT OFFICE.

SAMUEL WATSON JOHNSON, OF NEWPORT NEWS, VIRGINIA.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 633,087, dated September 12, 1899.

Application filed April 15, 1899. Serial No. 713,198. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL WATSON JOHNSON, a citizen of the United States, residing at Newport News, in the county of Warwick and State of Virginia, have invented certain new and useful Improvements in Chairs; and I do hereby 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.

This invention relates to improvements in chairs; and the main objects of the invention are to produce a chair that is designed for universal use in the home, the school, the office, &c., and which by its peculiar and novel construction is adapted for use by any and all sizes of persons and to conform to whatever position they may assume, whether for convenience at their vocation or for the purpose of rest and comfort, to so construct the chair as to adapt itself automatically and noiselessly to persons of different sizes and the assuming of different positions, and with all to combine the essential elements of cheapness and simplicity in the manufacture and production of the chair.

Various other objects and advantages of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

Referring to the drawings, Figure 1 is a perspective view of a chair embodying my invention. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a detail of the chair-frame, the seat removed. Fig. 4 is a similar view of the seat in detail. Fig. 5 is a sectional view illustrating a modification wherein rollers are employed. Figs. 6 and 7 are elevations of the chair as occupied by persons of different sizes. Figs. 8 and 9 illustrate the awkward and uncomfortable positions assumed by short and tall persons, respectively, when occupying the ordinary rigid construction of chair now in general use.

Similar letters of reference indicate similar parts in all the figures of the drawings.

In carrying my invention into practice I construct a chair-frame comprising the two front supporting-legs A and the rear supporting-legs A′, the latter being extended upwardly to form the side bars of the chair-back B, all as usual. The front and rear supporting-legs A and A′, as well as the back bars, are connected at proper intervals by the usual rungs, as in the ordinary construction, whereby stability and strength are lent to the frame. In other words, and as will be apparent, the chair is of the usual construction, with the exception that the chair-seat frame is omitted.

In place of the usual seat-frame I substitute an open rectangular frame C, which comprises the opposite side rails or bars C′ and the front and rear transverse connecting rails or bars D, the former bars being preferably rectangular in cross-section and the latter bars being preferably round rungs. Each of the side bars or rails C′ is provided with a curved recess E, which is formed on the arc of a semicircle, the said recesses E of the two side rails or bars agreeing or corresponding each with the other and being preferably, though not necessarily, lined on their upper surfaces with leather, as at E′, or other sound-deadening material.

F designates an independent seat, the rear end of which preferably fits somewhat accurately between the side bars of the chair-back, yet so as to move freely between the same, the said side bars thus constituting a vertical guide for the seat in its movements, as will hereinafter appear.

It will be understood that the seat may be solid, caned, or given any design or style of cover, such forming no part of my invention.

Near the opposite side edges of the seat F and upon its under side are secured in any suitable manner, as by screws, mortising, and tenoning, &c., a pair of arc-shaped supporting-blocks G, the same, it being understood, being formed on the same circle as the recesses E and therefore agreeing therewith, the center of the circle being coincident with the chair-seat F and therefore with the center of gravity of the person occupying the same.

In Fig. 5 is illustrated a slightly-modified construction, the same consisting in a change of form of support for the supporting-blocks G. In the figure referred to, in lieu of the arc-shaped recesses formed in the side rails or bars of the frame C, I employ pairs of loose rollers H, preferably covered with leather, or the rollers may be tight and non-rotatable, as preferred. The former construction, however, I consider the most practicable and

merely illustrate this slight modification in order to show that modifications of the invention may be made without departing from the spirit of my invention or sacrificing to any very great extent the many advantages inherent therein.

The seat having been mounted in position with its supporting-blocks seated in the recesses or on the rollers, as the case may be, it will be observed that the seat is raised or elevated some little distance above the frame C and is therefore capable of being tilted backward or forward to any degree within its limit of movement or that it may be held horizontal. The relative angle of this seat is controlled by the size of the person occupying it and by the position assumed by such person. As before stated, it is my object to adapt the chair for persons of different sizes, and I have illustrated in Figs. 6 and 7 the chair thus adapted and occupied, the first figure mentioned illustrating the chair as occupied by a person abnormally short or a young person and the second figure illustrating the chair occupied by a person abnormally tall. In the former figure it will be seen that the seat tips down at its front end, thus allowing the feet of the person occupying it to rest upon the floor the same as if he occupied a low chair, and in the second figure the front end of the seat tips backward, so that the seat is disposed at the same angle as the leg of the person between the hip-joint and knee, so that the person is as comfortably supported as if he occupied a high chair. It will be noted that the chair-seat will also incline, so as to allow the occupant to stretch his or her legs in an attitude of rest.

A most important feature of my invention resides in the fact that the back of the chair is wholly independent of the seat, so that the back never changes from the vertical, and thus it is that the angle of the body and legs of the person corresponds to the angle formed by the back and seat, so that the back of the person, whatever is the position assumed, is always accurately and perfectly supported.

Another very important feature of my invention resides in the location of the tilting seat with reference to the center of the circle upon the arc of which the supporting-blocks G are formed. This center, as before stated, is coincident with the said seat, or it may be below the same, it being essential to a successful operation of the invention that the said center be not above the said seat. By this relative location with regard to the center of the circle upon the arc of which the supporting-blocks are struck and the tilting seat the latter is adapted to and capable of tilting wholly within the vertical area of the chair-frame, and the weight of the occupant of the chair being above the said center the said seat will follow the position of said occupant, automatically changing with each change of posture and will so remain, it being apparent that the center of the said circle will travel to opposite sides and always be directly in line with the center of gravity of said occupant.

It will be observed that the movements of the seat are entirely automatic and are controlled wholly by the different positions assumed by the occupant and that the seat is maintained in its adjusted positions by the frictional contact between the curved surfaces of the supporting-blocks G and the corresponding recesses E.

Having thus fully described my invention, what I claim is—

1. The combination with a chair-frame, and an independent tilting seat, of opposite arc-shaped supporting-blocks secured to the under side of said seat, said blocks being formed on the arc of a circle the center of which is at or below the said seat, and supporting-rests in the said frame for the said blocks.

2. The combination with a chair-frame having a rigid back, of an independent tilting seat, opposite supporting-blocks secured to the under side of the said seat, the said blocks being formed on the arc of a circle the center of which is at or below the seat, and rests for said blocks located in the chair-frame.

3. The combination with a chair-frame having a rigid back and at opposite sides of its seat-frame having depressed arc-shaped rests, of a superimposed independent tilting seat, and opposite arc-shaped blocks secured to the under side thereof, said rests and blocks being formed on the arc of a circle the center of which is at or below the seat.

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

SAMUEL WATSON JOHNSON.

Witnesses:
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REBECCA T. JOHNSON.