

(No Model.)

2 Sheets—Sheet 1.

G. H. TUTTLE.
FOLDING CHAIR.

No. 510,735.

Patented Dec. 12, 1893.

Fig. 2

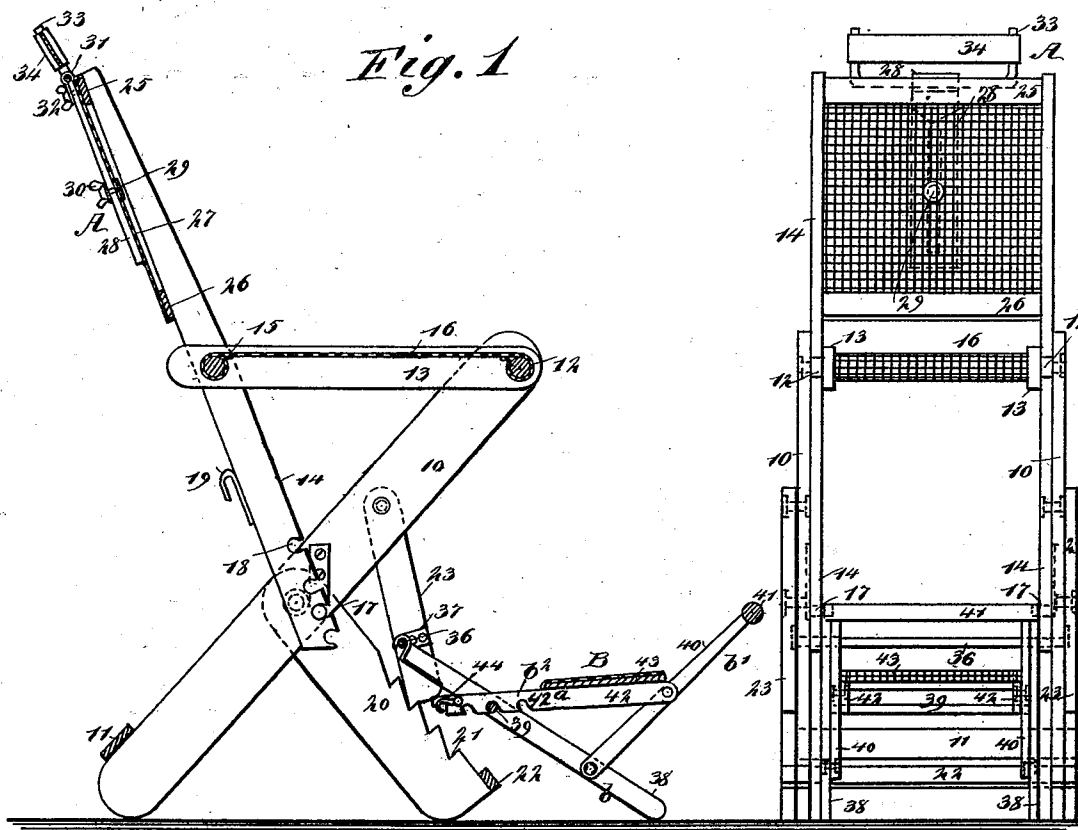
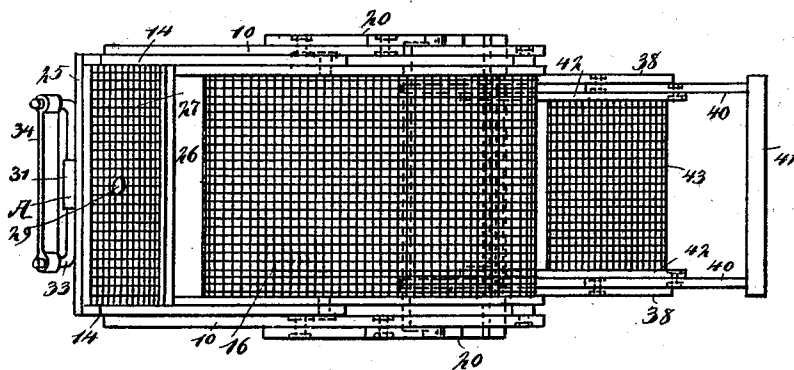


Fig. 1

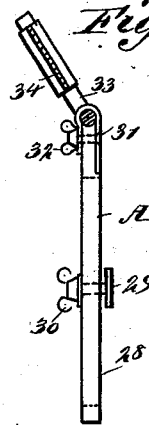
Fig. 3



WITNESSES:

C. Neveu
G. Sedgwick

Fig. 4



INVENTOR

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BY *Munn & Co*
ATTORNEYS.

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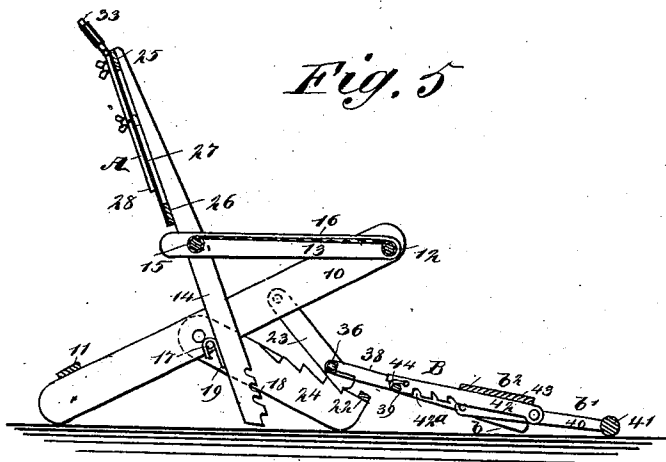


Fig. 5

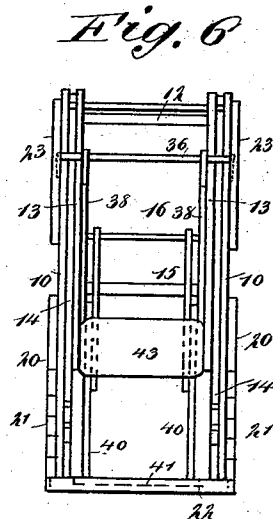


Fig. 6

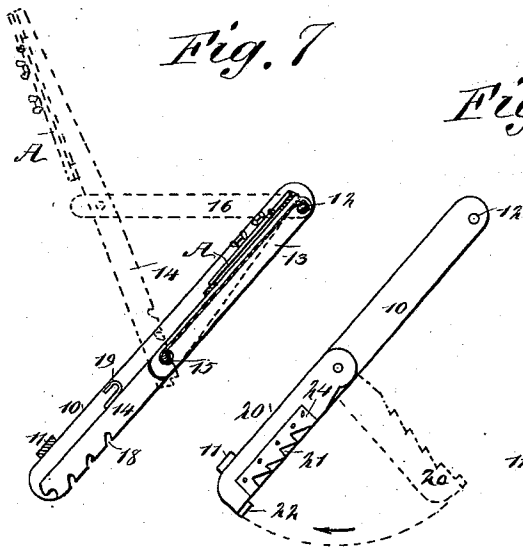


Fig. 7

Fig. 9

Fig. 8

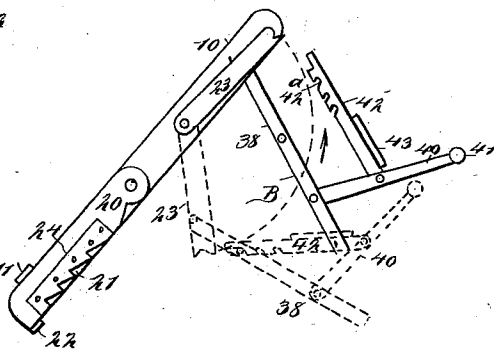


Fig. 10

Fig. 11

WITNESSES:

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UNITED STATES PATENT OFFICE.

GUTIE H. TUTTLE, OF SHORTER'S DEPOT, ALABAMA.

FOLDING CHAIR.

SPECIFICATION forming part of Letters Patent No. 510,735, dated December 12, 1893.

Application filed May 5, 1893. Serial No. 473,069. (No model.)

To all whom it may concern:

Be it known that I, GUTIE H. TUTTLE, of Shorter's Depot, in the county of Macon and State of Alabama, have invented a new and useful Improvement in Folding Chairs, of which the following is a full, clear, and exact description.

My invention relates to an improvement in folding chairs, and especially to an improvement in dental chairs.

The object of the invention is to provide a dental chair which will be exceedingly simple and durable in its construction, and likewise economic, and which when not required for use may be folded in such manner as to occupy comparatively little space.

A further object of the invention is to provide a folding chair comprising a back, seat, support for the seat and a foot rest, the back and the foot rest being independently adjustable so that the chair may be placed in a position to suit the patient, or to place the patient in the best position to be operated upon.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth and pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical section through the improved chair, the chair being in the elevated position. Fig. 2 is a front elevation of the chair in the position shown in Fig. 1. Fig. 3 is a plan view thereof. Fig. 4 is a detail view, partly in edge view and partly in section, of the head rest. Fig. 5 is a central vertical section through the chair, representing the chair in its lowest position. Fig. 6 is a plan view of the chair when folded. Fig. 7 is a sectional view illustrating the manner in which the back and seat are folded in the body of the chair. Fig. 8 is a side elevation of the body, illustrating the manner in which the foot rest is folded in the body, the foot rest being in its first folding position. Fig. 9 is a side elevation, illustrating the manner in which the seat supporting rack is folded upon the body. Fig. 10 is a side elevation illustrating the second folded position of the foot rest; and Fig. 11 is a side elevation illus-

trating the seat-supporting rack and the pawl adapted to engage therewith folded upon the body.

In carrying out the invention each portion of the chair is duplicated with the exception of the seat, the cushion upon which the feet of the patient rest, the section of the back against which the patient reclines, and the head rest.

The chair is preferably made of hard wood; that is to say, such material is employed wherever it is possible to use it with good effect. The body of the chair comprises two parallel body bars 10, connected at their lower ends by a batten 11, or the equivalent thereof. A rod 12, is passed through the upper ends of the body bars and is secured thereto, and upon the said rod a slight distance from each body bar the forward end of a seat-supporting bar 13, is pivoted. The seat-supporting bars are parallel, and each is pivotally connected near its rear end with parallel back bars 14, a rod 15, being passed from one back bar to the other near their centers and secured to said back bars; and the rear ends of the seat-supporting bars 13, are pivoted upon the said back rod.

The seat proper 16, may be made of carpet or of any approved material, and the material is attached in any suitable or approved manner to the front and rear seat rods 12 and 15, as shown in Figs. 1 and 5. The back bars 14, are widest at their lower ends and are preferably made to taper upon their forward edges in direction of the top.

It will be understood that the seat bars 13, are located adjacent to the inner faces of both the body and the back bars. Each body bar, at a point near its central forward edge is provided upon its inner face with a pin 17, and the forward lower edge of each back bar is provided with recesses 18, any one of which is capable of receiving the pins of the body bars. Thus according to the recess 18 in which a pin 17 is located the back will be raised or lowered, or given an upright or rearward inclination.

In order that the lower end of the back bars may virtually touch the floor when the chair is in its lowest position, as shown in Fig. 5, a hook 19, is placed upon the rear edge of each back bar in such position that when the back bars are virtually upon the floor the hooks will be engaged with the pins 17.

Whenever the back of the chair is adjusted the body bar is usually adjusted also in order to keep the seat parallel with the floor. The adjustment of the body bar is accomplished by pivoting to the outer face of each body bar a rack bar 20, as the said bars are provided with teeth 21 in their forward faces. The rack bars are connected by means of a batten 22, located preferably upon their upper faces at their lower ends, and the teeth of the rack bars are engaged by pawls 23, one of which is pivotally connected with the outer face of each body bar between its upper end and its pivotal connection with the racks. Thus by causing the pawls to engage with the upper teeth in the rack the seat is elevated, and when engagement is made with the lower teeth of the rack the seat will be lowered. In order to protect the teeth in the rack bar, a plate 24, correspondingly notched is countersunk in the outer side face of each rack bar, as shown in Figs. 8, 9, 10 and 11.

The back proper, is formed upon the upper section of the back bars by connecting the upper portions of said bars with a cross piece or bar 25, and providing a second cross piece or bar 26 above the connecting rod 15 upon which the seat is pivoted; and the two bars may serve as means of attachment for a strip of carpet 27, or any other approved material.

The back is provided with an adjustable head rest A, the said head rest being vertically adjustable and also laterally adjustable. The head rest comprises a shank 28, which is made of wood or of metal, and is provided with a slot extending longitudinally through it to receive an adjusting screw 29, which is passed through the supporting section of the back, as shown in Figs. 2 and 3, and the said screw is provided at its rear end with a wing nut 30, or the equivalent thereof.

The upper portion of the shank A is provided with a clip 31, capable of being contracted by means of a set screw 32. The clip supports a yoke 33, and the yoke carries a band 34 of elastic material extending from one member to the other. The yoke and band constitute the body portion of the head rest, the head of the patient being adapted to rest upon the band, and the body portion of the head rest may be carried at any desired angle to the shank, or may be adjusted in vertical alignment with it in order that the entire head rest when the chair is to be folded, may be dropped down until the upper portion of the body of the rest is slightly below the top of the back section. The body of the head rest may be locked in whatever position it may be placed by means of the set screw 32.

The pawls 23, adapted as a portion of the support for the body of the chair, are connected near their lower ends by means of a rod 36; the said rod is located near the rear edges of the pawls, but is secured upon their inner faces, and the rod 36, is provided at each end with projections 37, extending at right angles from the body, and said projec-

tions are countersunk in the inner faces of the pawls, as shown in Fig. 1. The rod 36, is adapted as a support for the foot rest B. This foot rest consists of a body section *b*, a body extension section *b'*, and a foot-supporting section *b*². The body section of the foot rest consists of two parallel bars 38, and the said bars at their upper ends have a hinged or pivotal connection with the connecting rod 36 of the pawls. The bars of the body section are connected preferably between their centers and upper ends by means of a rod 39, and the lower ends of the side bars 38, constituting the body section *b* of the foot rest, are adapted to rest upon the floor. The extension section *b'* of the body of the foot rest consists of two parallel arms 40, which are pivotally connected with the inner faces of the body section side bars 38, as shown in both Figs. 1 and 5; and the outer ends of the arms 40, are connected by a cross bar 41, which bar is preferably made in the shape of a rung.

The foot-supporting section *b*² of the foot rest comprises two parallel rack bars 42, which are pivotally connected with the inner faces of the arms 40 of the extension section *b'*, the attachment of the bars being made to the inner faces of the arms. The rack bars 42, are provided in their lower forward edges with a series of recesses 42^a, adapted to receive the rod 39 in the body section of the foot rest, and according to the recess 42^a in which the rod 39, is introduced will the foot rest supporting section be rendered horizontal or more or less inclined forwardly or rearwardly. The foot-supporting section is completed by connecting the rack bars 42 by a board 43, having preferably a cushioned upper face.

In order that the foot rest may be folded, as shown in Fig. 5, that is in its lowest position and with all of its members practically in longitudinal alignment, a hook 44, is placed upon the rear end of each rack bar to engage with the connecting bar 39 of the body of the foot rest when the latter is to be carried to its extreme lower position. The extension section *b'* of the foot rest is adapted to be carried to practically a vertical position and held in that position by causing the forward notch in the foot-supporting section to engage with the connecting bar in the body section; the rung of the extension section in that event will constitute a support for the feet of children.

The chair is adapted to be folded, as heretofore stated, entirely between the body bars 10; therefore it may be stored away in the least possible amount of space, and assuming the chair to be in the position shown in Fig. 1, when it is to be folded the operation is as follows: The head section of the head rest is placed and locked in vertical alignment with its shank section, and the shank section is lowered and locked in the lower position, as shown in Fig. 7; the back bars are then disengaged from the body pins 17, and they together with the seat will fold down between

the body bars, assuming the position shown in positive lines in Fig. 7, in which it will be observed that a seat bar will extend practically parallel with and upon the inner side of the back bar 14, the back bars at their lower ends being forward of the rear batten 11 of the body, thus preventing the back bars from having a rearward movement. Next the body rack bars 20, are folded downward parallel with and upon the outer faces of the body bars 10, as illustrated in Figs. 8, 9, 10 and 11. The foot rest is now folded in place, and this is done by carrying the body locking pawls 23 upward parallel with and against the upper outer faces of the body bars 10, as shown in Fig. 8, and at the same time the rack bars of the foot rest are disengaged from the connecting rods of the body of said rest, and the parts will then have assumed the position shown in positive lines in Fig. 8, their first position being indicated by dotted lines in the same figure. Next the body side bars 38 of the body section of the foot rest are folded downward between the body bars 10 and adjacent to the seat bars 13. The extension section of the foot rest is next carried downward, being folded between the side bars of the body section, and finally the foot-supporting section b^2 , is folded in an upright position between the arms of the extension section and the side bars of the body section of the foot rest, thus making a flat and compact object, as illustrated in Fig. 6. Wherever possible, the bolts, pivots or equivalent fastening devices employed are countersunk in order that one part will work smoothly upon and against the other. It will be observed that when the parts of the chair are in folded position, the rear battens or connecting bars 11 of the body prevent the folded parts from moving in a rearward direction, while the body pins 17 prevent the back and seat from having a forward movement in the body when folded, and the same action with regard to the foot rest is obtained by causing the extension section of the foot rest when folded, to be located back of the connecting bar or batten 22 of the body racks.

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

1. In a chair, the combination with the legs, pins secured thereto, and a seat having a pivotal connection with the legs, of back bars pivotally connected with the seat and provided at their lower ends with recesses adapted to engage the pins on the legs, substantially as and for the purpose set forth.

2. In a folding chair, the combination, with the body bars, an adjustable support for holding the same at various inclinations, and a seat having a pivotal connection with the said body bars, of back bars pivotally connected with the seat and having a detachable and vertically adjustable connection with the body bars, substantially as described.

3. In a folding chair, the combination, with the body bars, the seat pivotally connected therewith, and the back bars pivoted to the seat and having an adjustable connection with the body bars, of rack bars pivoted to the body bars, and pawls likewise pivoted to the body bars and adapted for engagement with the rack bars, substantially as described.

4. In a folding chair of the character described, the combination, with body bars, a seat section pivoted between the body bars, and a back section pivoted to the seat section and adjustably connected with the body bars, of rack bars pivoted to the body bars, pawls likewise pivoted to the body bars and adapted for engagement with the rack bars, and an adjustable folding foot rest pivotally connected with the said pawls, as and for the purpose specified.

5. In a folding dental chair, the combination, with a body section, a seat pivoted within the body, a back section pivotally connected with the seat, an adjustable section between the back section and the body, and an adjustable head rest connected with the back, of rack bars pivotally connected with the body, pawls pivotally connected with the body and engaging with the rack bars, and a folding adjustable foot rest, comprising a body section having a pivotal connection with the said pawls, an extension section pivotally connected with the body section of the foot rest, and a foot supporting section pivotally connected with the extension section and having adjustable connection with the body section of the foot rest, as and for the purpose set forth.

6. In a chair of the character described, the combination, with side bars, a seat section pivotally connected with the inner upper faces of the side bars of the body, a back section with which the rear of the seat section is pivotally connected, the connection between the seat and back sections being at the inner faces of the side bars of the latter, and an adjustable and removable connection between the back bars and the side bars of the body, of rack bars pivotally connected with the outer faces of the body bars, pawls likewise pivoted to the outer faces of the body side bars and adapted for engagement with the teeth of the rack bars, and a foot rest, the same comprising a body section pivotally connected with the pawls, an extension section pivotally connected with the inner faces of the side bars of the foot rest body, and a foot-supporting section the side bars of which are pivotally connected with the inner faces of the extension side arms, the said foot-supporting section having adjustable and removable connection with the body section of the foot rest, as and for the purpose set forth.

GUTIE H. TUTTLE.

Witnesses:

AMOS G. TUTTLE,
JAMES S. WARREN.