Sept. 26, 1961 R. W. JOHNSTON 3,001,823

DENTAL CHAIR SEAT

Filed April 24, 1959 2 Sheets-Sheet 1

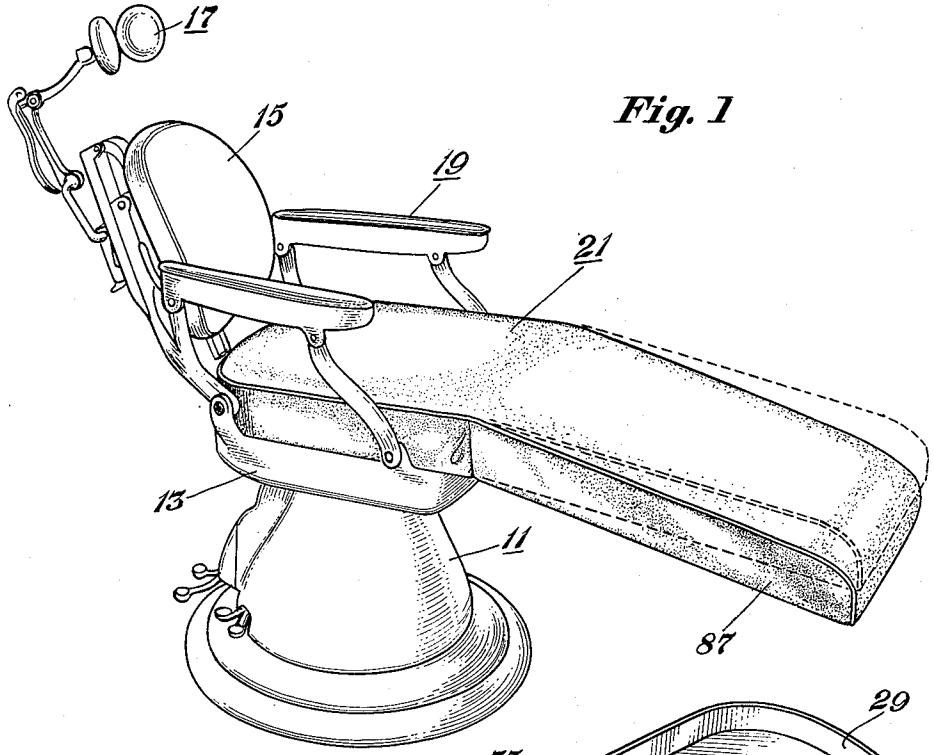

Fig. 1

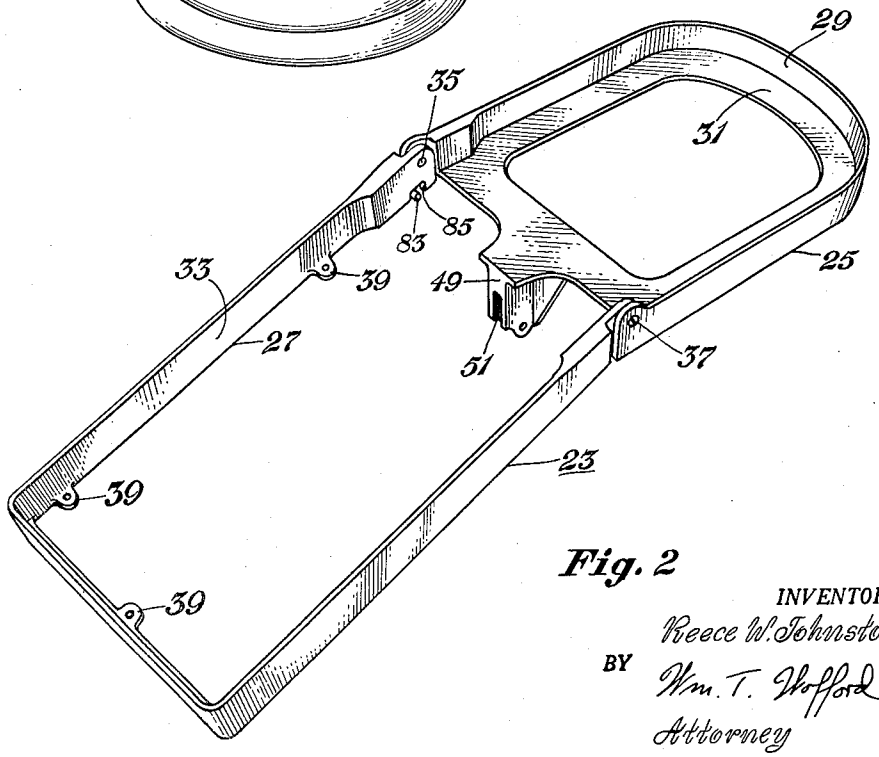

Fig. 2

INVENTOR.
Reece W. Johnston
BY Wm. T. Wofford
Attorney

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DENTAL CHAIR SEAT

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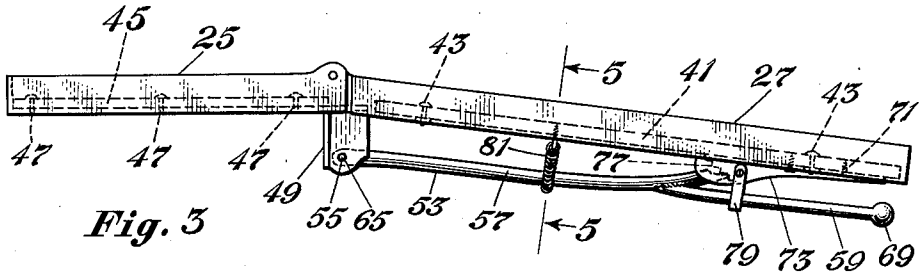

Fig. 3

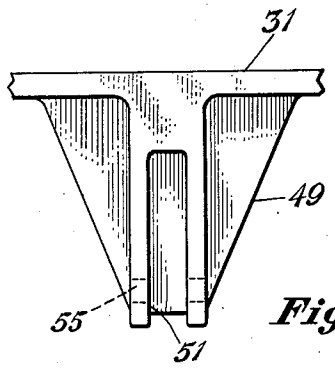

Fig. 4

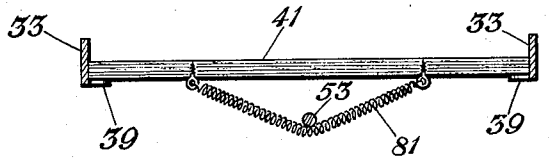

Fig. 5

Fig. 6

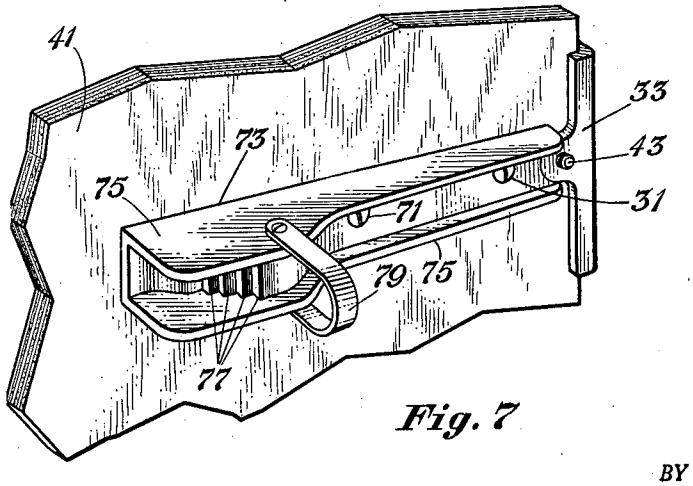

Fig. 7

INVENTOR.
Reece W. Johnston
BY
Wm. T. Woffard
Attorney

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3,001,823

DENTAL CHAIR SEAT

Reece W. Johnston, 3040 Glen Garden Drive N., Fort Worth, Tex.

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2 Claims. (Cl. 297—433)

My invention relates to dental chair seats, and more particularly to dental chair seats of the type having an adjustable leg rest.

Dental chair seats of the prior art of which I am aware provide a seat, with a step platform and foot rest depending from and extending forwardly of the seat support structure. Such chairs do not provide the degree of patient comfort to be desired, and particularly are not ideal for cases where the patient must assume a more or less reclining position for a substantial period of time. Some dental chair seats have been built with the seat and a leg rest as a unitary structure, where the seat surface is continued forwardly and tapers, or curves, downwardly from a point about where the average size patient's knees would be. Such unitary seat and leg rest structures have not proved to be entirely satisfactory, because they cannot accommodate the specific comfort requirements of individual patients.

It is accordingly the general object of my invention to provide an improved dental chair seat which will obviate the disadvantages above-mentioned.

Another object of my invention is to provide a dental chair seat which is capable of accommodating the specific comfort requirements of the individual patient.

Another object of my invention is to provide a dental chair seat which incorporates an adjustable leg rest.

Another object of my invention is to provide a dental chair seat which is readily adaptable to conversion of conventional type dental chair seats.

Another object of my invention is to provide a dental chair seat incorporating simple, economical, and effective structure.

These and other objects are effected by my invention, as will be apparent from the following description taken in accordance with the accompanying drawings, forming a part of this application, in which:

FIG. 1 is a perspective view showing a dental chair seat in accordance with a preferred embodiment of my invention;

FIG. 2 is a perspective view showing a frame for a dental chair seat in accordance with my invention;

FIG. 3 is a side elevational view of the dental chair seat frame of FIG. 2, and including the leg rest adjusting mechanism;

FIG. 4 is an enlarged fragmentary detail view showing the pivot support for the leg rest adjust lever;

FIG. 5 is a section view taken at lines 5—5 of FIG. 3;

FIG. 6 is a perspective view showing the leg rest adjust lever; and,

FIG. 7 is an enlarged fragmentary perspective view showing details of the leg rest adjust step bracket.

Referring now to the drawings, the dental chair shown by FIG. 1 is a conventional chair which has been modified to incorporate the dental chair seat of my invention. The pedestal 11, the seat base 13, back rest 15, head rest 17, and arms 19 of the chair are conventional, and, as such, do not per se form any part of my invention. It is the chair seat indicated generally by reference 21, which is the subject of the present invention.

The chair seat 21 comprises a frame 23, made up of a seat portion 25, and a leg rest portion 27. The frame parts are made of metal, preferably cast aluminum. The frame seat portion 25 is generally U-shaped in plan, with the peripheral portion of the U bounded by an upstanding flange portion 29, and with the flange portion being

bridged by a bottom web portion 31, having a large central opening therein. The open ends of the flange portion extend slightly beyond the web for a purpose to be hereinafter described.

The frame leg rest portion 27 is made up of an upstanding substantially rigid band 33 in the form of an open ended rectangle, with the open end roughly half the length of a side. The open ends of the frame leg rest portion are pivoted at 35, 37 to the open ends of the frame seat flange portion 29. The frame leg rest band 33 is provided with a plurality of inwardly extending bolt ears 39 located at spaced intervals on the lower edge of its inner wall. A piece of plywood 41 or other suitable sheet material is fitted into the enclosure formed by the band and is secured to the bolt ears by means of bolts 43, as shown by FIG. 3. Another piece of plywood 45 is fitted to the enclosure formed by the flange 29 of the frame seat portion 25 and fixed to the web 31 thereof by means of bolts 47, as shown by FIG. 3.

Integral with the under side of the frame seat web 31 at its central forward end portion, and depending therefrom, is a lever pivot support member 49 made up of a block provided with a downwardly opening slot 51 for receiving one end of a leg rest adjust lever 53 and providing a pivot at 55 for same. The leg rest adjust lever 53 includes a brace portion 57 and a handle portion 59. The brace portion 57 is a stiff metal rod having a flattened portion 61 at one end with an opening 63 therein for receiving a pivot pin 65. The brace portion 57 is curved upwardly at its other end portion and terminates in a tongue 67, for a purpose to be hereinafter described. The leg rest adjust lever handle 59 is a stiff rod integrally fixed to the under side of the brace 53 adjacent the outer end of same, and extends forwardly beyond the tongue 67 and terminates in a suitable knob 69.

Fixed by means of screws 71 to the underside of the plywood bottom 41 of the leg rest frame portion 27 adjacent the forward end portion thereof, and extending longitudinally and aligned with the leg rest adjust lever 53, is a leg rest adjust step bracket 73. The step bracket is preferably cast aluminum in the general form of a channel having side walls 75 and having an integral bridging block disposed between the side walls 75 adjacent the rear end of the bracket 73, with a plurality of step notches 77 formed on the rear face of the block. These notches 77 cooperate with the tongue 67 of the leg rest adjust lever brace 57. A U-shaped strap 79 has its free ends fixed to the side walls 75 of the bracket 73 adjacent the step notches 77 and depends from the bracket, and functions to limit the downward movement of the adjust lever handle portion 59.

A coil spring 81 extends transversely of said leg rest plywood bottom 41 at a longitudinal position intermediate the length of the adjust lever brace portion 57. The spring ends are fixed to the said bottom, and the spring extends beneath the brace 57, the brace being at about the center of the spring length. The spring 81 functions to urge the tongue 67 of the brace 57 into engagement with bracket step notches 77.

Pivoting movement of the leg rest frame 27 is limited by means of a pin 83 which is fixed to the seat portion flange 29 and extends inwardly therefrom and into a shallow rectangular notch 85 in the lower side of the leg rest portion band 33 adjacent a pivot end thereof. The leg rest frame pivot limiting means allows the frame to move upwardly to a position slightly above the horizontal and downwardly to a position some degrees below the horizontal.

The seat and leg rest are padded with a suitably contoured piece of foam rubber (not shown), which is supported by the plywood bottoms 41, 45. The seat and leg rest are upholstered with a suitable fabric 87, pref-

erably a simulated leather material, such as naugahide.

In the embodiment shown, the leg rest adjust step bracket **73** has four notches **77**, thus providing four leg rest positions. It is apparent that more or fewer notches could be provided, as desired. As can be seen from FIG. 3, the leg rest adjust handle **59** extends to a convenient operating position just underneath the front end of the leg rest. To adjust the leg rest, it is preferable to always begin from its lowest position, since it is then only necessary to lift the front end of the leg rest upward and hear or feel the brace tongue **67** move into the next higher notch **77**. When it is desired to move the leg rest downward, it is necessary to lift the leg rest slightly to free the tongue and then push the adjust lever handle **59** downward to the desired level and then lower the leg rest to allow the tongue **67** to engage the proper notch **77**.

The provision of a dental chair seat having an adjustable leg rest portion in accordance with my invention makes for an optimum degree of patient comfort, since the level of the leg rest can be adjusted to suit the specific comfort requirements for each individual patient. Further, the structure of the dental chair seat of my invention, including the leg rest adjust mechanism, is simple, economical, and effective.

While I have shown my invention in only one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications without departing from the spirit thereof.

I claim:

1. A dental chair seat comprising a seat portion and a leg rest portion, said leg rest portion being substantially longer than said seat portion, means mounting said leg rest portion to said seat portion for pivoting movement about a transverse horizontal axis, a pivot bracket fixed to said seat portion at the front portion of the seat portion bottom and transversely centered thereon, a leg rest adjust lever comprising a brace portion in the form of a stiff rod pivoted at one end about a horizontal axis on said pivot bracket and curved upwardly at the other end portion and terminating in a tongue and a handle portion integrally fixed to said brace at its free end portion and extending forwardly beneath said tongue to a point beneath and adjacent the front end of said leg rest, a step notch bracket fixed to the underside of said leg rest portion and having a plurality of step notches facing and adapted for selective engagement with said tongue, and means for urging said brace upwardly into engagement with a respective one of said notches.

2. A dental chair seat comprising a seat portion and a leg rest portion, said leg rest portion being substantially longer than said seat portion, means mounting said leg rest portion to said seat portion for pivoting movement about a transverse horizontal axis, a pivot bracket fixed to said seat portion at the front portion of the seat portion bottom and transversely centered thereon, a leg rest adjust lever comprising a brace portion in the form of a stiff rod pivoted at one end about a horizontal axis on said pivot bracket and curved upwardly at the other end portion and terminating in a tongue and a handle portion integrally fixed to said brace at its free end portion and extending forwardly beneath said tongue to a point beneath and adjacent the front end of said leg rest, a step notch bracket fixed to the underside of said leg rest portion and having a plurality of step notches facing and adapted for selective engagement with said tongue, and a coil spring extending transversely of said leg rest portion and fixed to the underside thereof and positioned to pass underneath said brace and urge said brace upwardly into engagement with a respective one of said notches.

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