

No. 684,844.

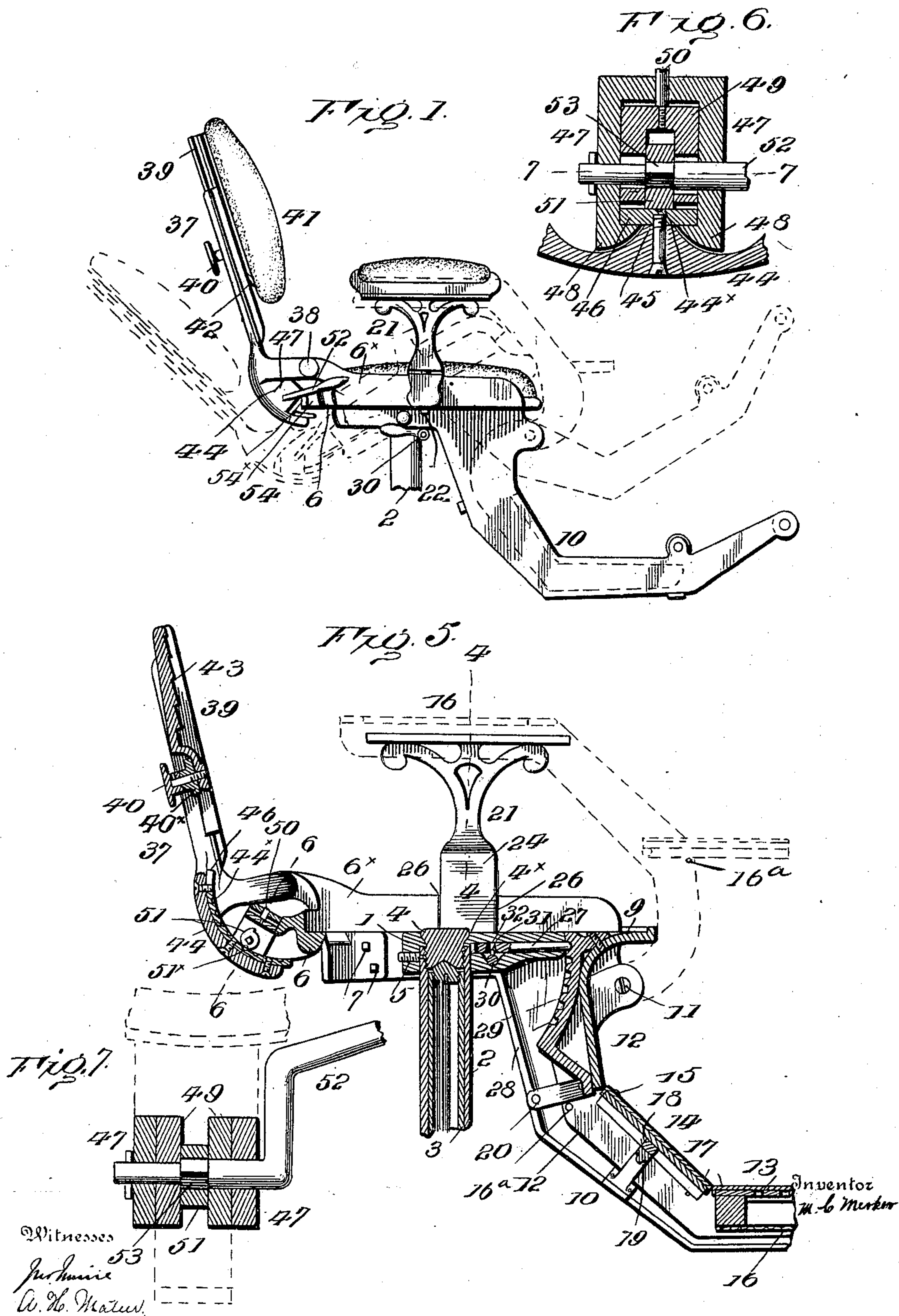
Patented Oct. 22, 1901.

M. C. MERKER.
DENTAL CHAIR.

(Application filed Feb. 26, 1901.)

(No Model.)

2 Sheets—Sheet 1.



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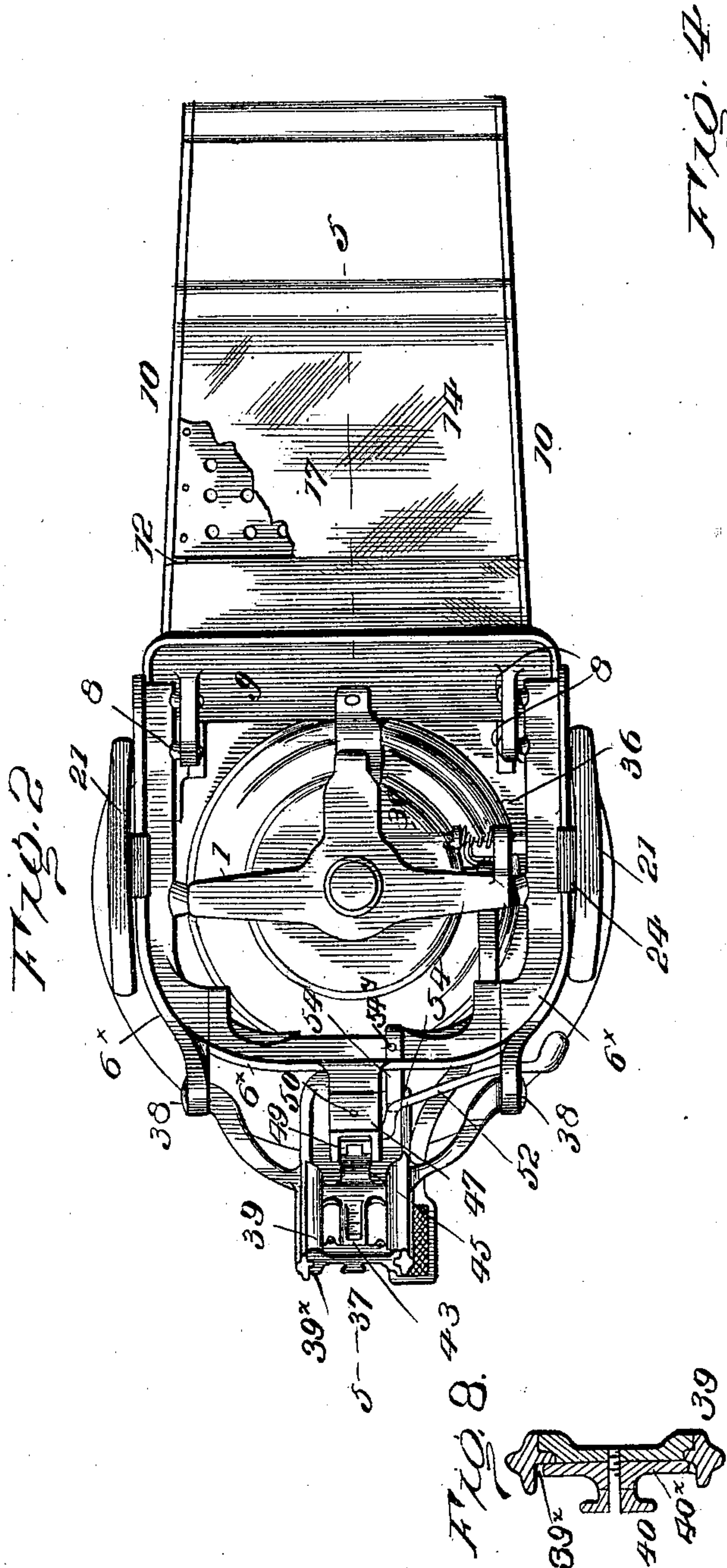
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UNITED STATES PATENT OFFICE.

MONT C. MERKER, OF NEW YORK, N. Y.

DENTAL CHAIR.

SPECIFICATION forming part of Letters Patent No. 684,844, dated October 22, 1901

Original application filed November 9, 1898, Serial No. 695,930. Divided and this application filed February 26, 1901. Serial No. 48,966. (No model.)

To all whom it may concern:

Be it known that I, MONT C. MERKER, a resident of New York, in the county of New York and State of New York, have invented certain
5 new and useful Improvements in Dental 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 pertains to make and use
10 the same.

This application is a division of application Serial No. 695,930, filed November 9, 1898; and the invention relates to dental chairs, and has for its object to increase their economy of
15 construction and efficiency in action and the certainty, ease, and convenience of the operation of various parts.

The invention consists in the construction herein described and pointed out.

20 In the accompanying drawings, Figure 1 is a partial side elevation of the chair. Fig. 2 is a partial plan of the chair, the upholstered seat, back, and head-rest, and head-rest support being omitted. Fig. 3 is a plan of the
25 seat-frame cross-bar partly broken away. Fig. 4 is a section on line 4 4 of Fig. 5. Fig. 5 is a partial section on line 5 5 of Fig. 2. Fig. 6 is a broken section on line 6 6 of Fig. 5. Fig. 7 is a broken section on line 7 7 of Fig. 6.
30 Fig. 8 is a cross-section of the back-frame and its extension.

Numerals 1 denotes the cross-bar of a chair-seat frame, and 2 a seat-frame-supporting tube having a lining 3.

35 4 denotes a screw-plug to secure the bar and tube together, and 5 is a set-screw. The screw-plug 4 has a flaring head 4^x, bearing on the beveled wall of an opening in the bar, as shown.

40 The seat-frame comprises a rear section 6, secured to side sections 6^x by screws 7, said side sections being secured by screws 8 to a front plate 9. The side sections, if preferred, can be made integral with the side members
45 10 of a main foot-rest frame. In and between said side members 10 is pivotally supported at 11 a supplemental frame 12, that carries a platform 13.

50 14 denotes an inclined platform pivoted at 15 to the frame 12. Said frame 12 is adapted to be turned on its pivots 11 and carry the

parts 13 and 14 to a higher plane, as indicated in Figs. 1 and 5, to serve, respectively, as a seat and foot-rest for the use of a child. These devices may be employed whenever it
55 is desirable for a child or small person to occupy the chair. The elevated seat holds a small patient at a convenient height for the operator, and the corresponding foot-rest is at a suitable height for the use of such patient.
60 In such position the platform 13 is inverted, so that a cane-seat 16, suitably attached thereto, is properly disposed for use. The platform 14 when in the elevated situation and turned on its pivots 15 and supported by a stop or
65 stops 16^a is properly disposed to support the feet of a child occupying seat 16.

Each of the platforms 13 and 14 are preferably carpeted, as indicated at 17. The platform 14 has a cross-bar 18, which in its lower
70 situation rests upon an arched bar 19, secured to the side members 10 of the main foot-rest frame. Braces are denoted by 20 connecting the main foot-rest frame and the foot of a rack, to be described, with the front plate 9. Arm-
75 rests are denoted by 21, shown without upholstering except in Fig. 1. They are held and guided in vertical adjustment by rods 22, sliding in sockets 23 in the seat-frame. In Fig. 4 a part 24 of the rest stands on a ledge
80 formed on the upper part of the socket-containing extension of the seat-frame. This denotes an elevated situation of the arm-rest, whereby it is adapted for use with the elevated situation of the child's seat. To lower
85 the rest, it is turned half-way around and the part 24 lowered to stand on an offset 25 of the frame between the retaining-flanges 26. This situation of the rest is shown in Figs. 1 and 5.

The seat-frame is supported to turn on the
90 trunnions at the ends of the cross-bar 1. It is locked in position by a pin 27, which engages any one of the sockets 28 in a rack 29, secured to the front plate 9 of the seat-frame. This pin is withdrawn from the rack 29 to
95 permit the adjustment of the seat about the cross-bar trunnions by means of a rod 30, having a projection 31 situated in a recess 32 in the pin. The pin 27 is normally held to its duty by a spring 36 on the rod 30.

100 The back-frame 37 is supported to turn upon trunnions 38, fixed to the seat-frame. It has

a sliding extension 39, secured in place by a set-screw having a handle 40. The pivoted upholstered back 41 has a pawl 42 pivoted thereto and engaging the teeth of a rack 43 on the sliding extension 39, (see Figs. 5 and 1,) whereby said upholstered back may be held at any angle to which it may be adjusted. The back is pivoted at or near its upper end in any usual or desired manner. The extension 39 is adjustable and slides between the side members of the back-frame and carries the pivoted upholstered back. The said extension is fixed by a set-screw having a handle 40, said screw passing through a part 40^a of the back-frame and screwing into the extension. The extension 39 has grooves between ribs. The outer ribs (indicated by 39^x) are interrupted adjacent the screw, having a head 40, to provide that a fastening-plate 40^x may bear on the ribs of the back-frame situated inside the grooves, whereby the extension 39 may be fixed to the back-frame, as indicated in Fig. 8.

44 denotes a curved extension of the back-frame, which has a rib 45, to which is secured a steel strap or bar 46, which extends laterally beyond the rib on each side, as shown in Fig. 6.

47 denotes the two members of a clamping-yoke, and 48 are hooks carried by the yoke members and engaging the under or outer faces of the bar 46, as shown in Fig. 6.

49 is a seat-frame extension situated between the yoke members and on a level below the seat-frame arms that carry the trunnions of the chair-back frame. The function of the seat-frame extension is to support back-frame-clamping devices operating to fix at will said back-frame when adjusted about the trunnions. 50 is a pin screwed into said frame extension, upon which screw the yoke moves freely.

51 is a cam which can be made to bear upon the contiguous face of the bar 46 and coact with the hooks 48 of the yoke to solidly and quickly grip said bar and fix the back in any desired adjustment. The cam is provided with an operating or clamping lever 52, having an angular portion 53, which closely fits an angular opening in the same. The rod to fit its bearings is reduced in size at its end beside the cam. The lever 52 is normally pressed by a spring 54 (see Fig. 1) to operate the clamp, and the chair-back coöperates by gravity when it is situated back of a vertical central line through the cam. Said spring 54 has in the present instance a turned-up end 54^x. (Indicated by full lines in Fig. 1 and broken lines in Fig. 2.) As indicated in the latter figure, it may be secured to the seat-frame by a bolt 54^y. Backward pressure by the occupant also tightens the clamp, the action of which is instantaneous, without jar, and noiseless. It also permits a large arc of movement and holds the back firmly, even when the latter is lowered to a horizontal plane or lower.

The particular form of the part herein styled a "yoke" is unimportant, provided it is adapted to coöperate with an opposing part, such as the cam, to grip the bar between them. The bar-faces acted on by these gripping devices are continuously smooth surfaces, except for the depression 44^x, to receive a small projection 51^x on the cam, it being the object of this part of my improvement to facilitate the exact adjustment and locking of the back-frame at any and every desired angle within the segment bounded by the curved bar. The projection 51^x is not essential in all cases, but may be used to insure against slip.

Another advantage of the devices for locking the back-frame is that when the frame is adjusted it need not be carried beyond the desired point and returned to it in order to engage a pawl with a rack-tooth, as heretofore, the improved clamp being operative at every point of the curved bar. It is obvious that the back, seat, and platform frames can be tilted together, as indicated by dotted lines in Fig. 1, and that the back-frame can be independently tilted or adjusted.

The supplemental frame carrying both a reversible part adapted to serve either for a platform or a seat and a supplemental part adapted to serve as a child's foot-rest is an economical and easily-manipulated structure.

The reversible arm-rests are important in a chair adapted for large and small occupants.

Other advantages will appear in practical use, and the novel features of construction will be more particularly pointed out herein.

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

1. In a dental chair, the pivotally-supported back-frame having a downward extension provided with a curved bar, a yoke embracing said bar, a seat-frame extension, and means supported in said frame extension operating on said curved bar for forcing said yoke against the bar, all substantially as set forth, whereby the back-frame may be adjusted and the seat and back frames locked together at any point of the bar.

2. In a dental chair, the pivotally-supported back-frame having a downward extension provided with a curved bar having free side edges and a lengthwise continuously-curved surface, a yoke embracing said bar on its rear side, a seat-frame extension, and means supported in said frame extension operating on the front surface of said curved bar for forcing said yoke against the rear surface of the bar, all substantially as set forth, whereby the back-frame may be adjusted and the seat and back frames may be locked together at any point of the bar.

3. In a dental chair, the pivotally-supported back-frame having a downward extension provided with a curved bar, a yoke embracing said bar, a seat-frame extension, and means supported in said frame extension operating

on said curved bar for forcing said yoke against the bar, said means comprising the cam and handle.

4. In a dental chair, the pivotally-supported back-frame having a downward extension provided with a curved bar, a yoke embracing said bar, a seat-frame extension, and means supported in said frame extension operating on said curved bar for forcing said yoke against the bar, said means comprising the cam and handle, and a spring to hold the cam in operative situation for forcing said yoke against the bar.

5. In a dental chair, an adjustable arm-rest combined with a seat-frame having two distinct arm-rest supports situated at different elevations corresponding to situations of the rest at two elevations.

6. In a dental chair, a reversible arm-rest combined with a seat-frame having distinct arm-rest supports situated at different elevations corresponding to opposite situations of the reversible rest, said rest having a guiding-post entering the frame and a supporting arm or post resting on the frame.

7. In a dental chair, a reversible arm-rest combined with a seat-frame having two distinct arm-rest supports situated at different elevations corresponding to situations of the rest at two elevations, said supports consisting of a ledge on the exterior of the seat-frame extension and the frame-offset 6^x.

8. In a dental chair, the seat-frame, the main foot-rest frame, the supplemental frame pivoted in said first-named frame and having in it a foot-platform provided on its under side with a seat, and having also a supplemental pivoted table filling the space between the side bars of the main foot-rest frame, and a stop bearing on said table at approximately

its mid-length and supporting it in its elevated situation when turned on its pivots, all substantially as described, whereby said platform and table may be used as a child's seat and foot-rest respectively.

9. In a dental chair, the seat-frame, the main foot-rest frame, the supplemental frame pivoted in said first-named frame and having in it a foot-platform provided on its under side with a seat, and having also a supplemental pivoted table filling the space between the side bars of the main foot-rest frame, and a stop bearing on said table at approximately its mid-length and supporting it in its elevated situation when turned on its pivots and the arched bar supported on the main foot-rest frame and bearing on the under side of the table in its lower situation.

10. In a dental chair, the tilting seat-frame, the cross-bar having a forward extension provided with a recess, the recessed pin movable horizontally in said bar-extension recess, the rod journaled in said extension and provided with a projection situated in the pin-recess, and a rack carried by the seat-frame whereby the latter when adjusted can be fixed, said rod being adapted to move the pin by rotation of the rod.

11. In a dental chair, the cross-bar having a central opening, the seat-supporting tube the nut seated in said opening and screwing into said tube, whereby the tube is fixed to the cross-bar and its upper end closed.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MONT C. MERKER.

Witnesses:

G. W. BALLOCH,
BENJ. R. CATLIN.