Jan. 2, 1934. B. J. MARTIN 1,941,907

SEAT ATTACHMENT FOR DENTAL CHAIRS AND THE LIKE

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Fig. 2.

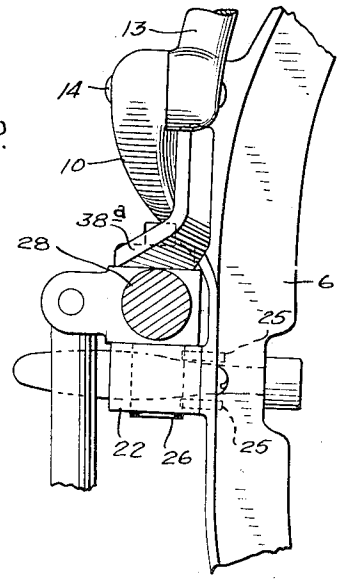


Fig. 1.

Fig. 3.

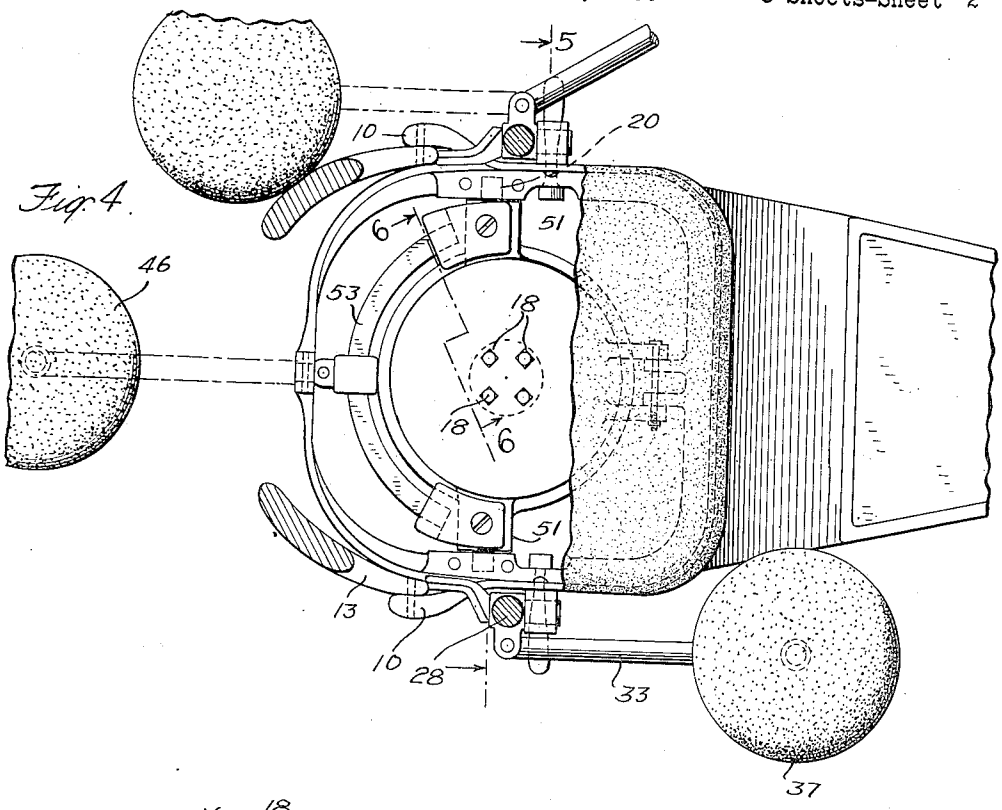
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SEAT ATTACHMENT FOR DENTAL CHAIRS AND THE LIKE

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Fig. 4.



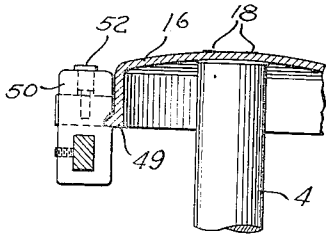


Fig. 6.

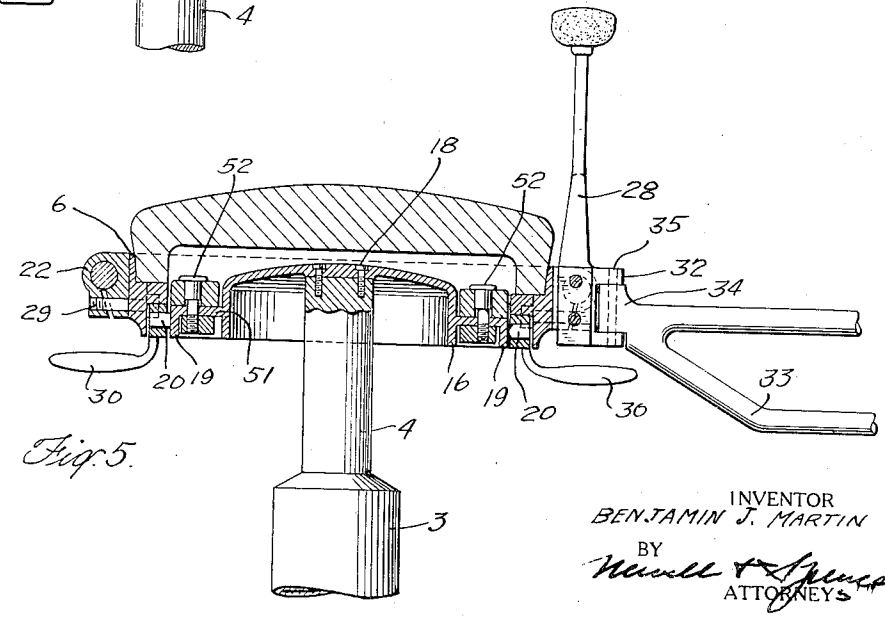


Fig. 5.

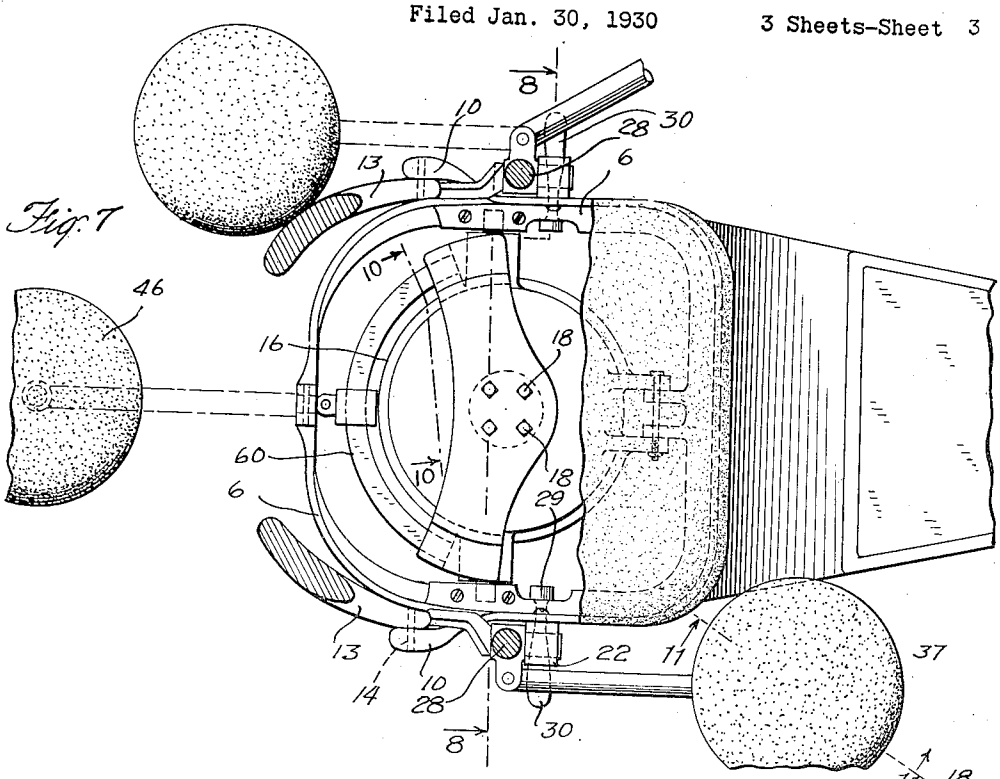
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Fig. 7



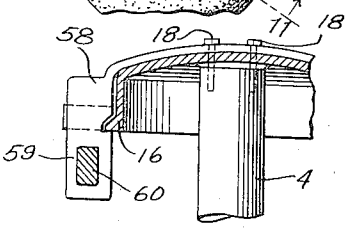
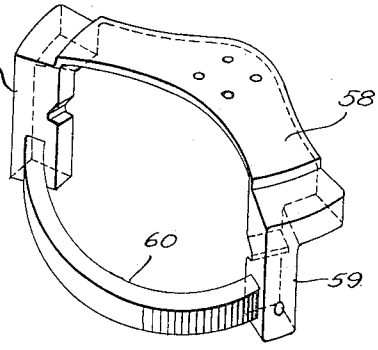


Fig. 10

Fig. 9.



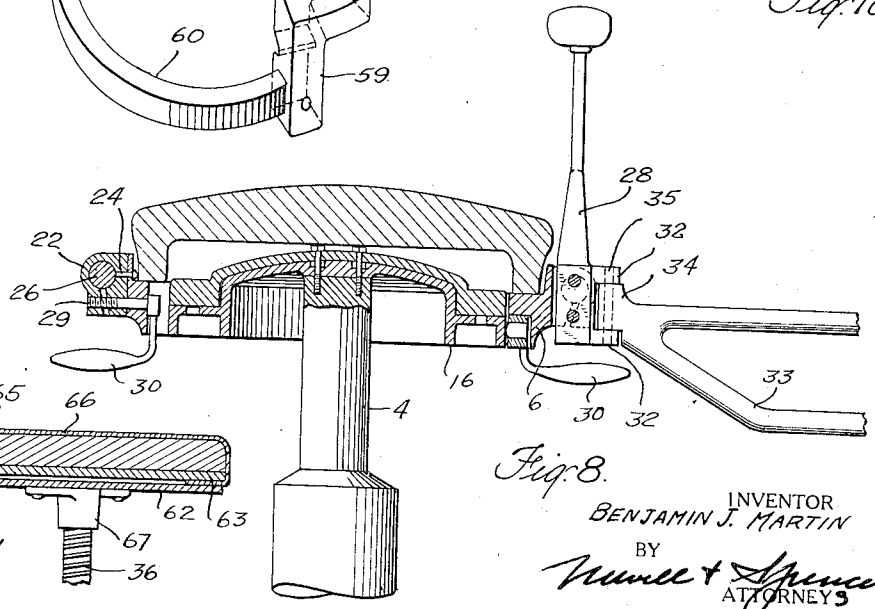


Fig. 8.

Fig. 11.

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UNITED STATES PATENT OFFICE

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SEAT ATTACHMENT FOR DENTAL CHAIRS AND THE LIKE

Benjamin J. Martin, Beechhurst, N. Y.

Application January 30, 1930. Serial No. 424,487

8 Claims. (Cl. 155—81)

This invention relates to dentists' chairs and the like, and more particularly to the construction and arrangement of auxiliary seat attachments therefor.

An object of the invention is to provide one or more seat attachments which may be readily applied to and removed from chairs of standard construction.

Another object is to adapt the attachment to a standard chair with but little change therein.

Dentists' chairs as usually constructed have a vertical movement and also a tilting movement about a horizontal axis. A clamp is usually provided which holds the chair body in its different tilted positions. It is therefore a further object of this invention to so attach the auxiliary seat or seats that while it or they moves or move up and down with the chair body, the weight of a person occupying an auxiliary seat will not tend to unduly unbalance the chair in any of its positions.

A still further object of the invention relates to the seat construction.

The construction and arrangement of parts whereby these and other objects are accomplished, as well as further features and advantages of the invention, will become apparent from the following detailed description and claims when taken in connection with the accompanying drawings, in which

Figure 1 is a side elevation of a dental chair of usual construction having my attachments applied thereto;

Figure 2 is an enlarged partial plan view looking in the direction of the arrows 2—2, Figure 1;

Figure 3 is a modification of the parts connected with the auxiliary seat attachment;

Figure 4 is a top plan view of the chair seat; partly broken away, to show the framework underneath the seat;

Figure 5 is a section on the line 5—5 of Figure 4;

Figure 6 is a section on the line 6—6 of Figure 4;

Figure 7 is a view similar to Figure 4 but showing a modified form of the bracket arrangement for supporting the rear auxiliary seat;

Figure 8 is a section along the line 8—8 of Figure 7;

Figure 9 is a perspective view of the frame and track for supporting the rear seat;

Figure 10 is a section along the line 10—10 of Figure 7; and

Figure 11 is a section along the line 11—11 of Figure 7.

The dental chair which I have shown to illustrate my invention is of a standard construction and includes, as shown in Figure 1, a stationary base 1 into which telescope movable base sections 2, 3 and 4. Vertical movement of the chair is controlled in the usual and ordinary manner by levers 5 and 7.

The chair body includes a seat frame 6 and formed integral therewith or secured thereto in any suitable and well known manner are frame pieces 8 supporting a foot rest 9. The seat frame is also provided on either side thereof with ears 10, Figures 1, 4 and 7, and there is also provided a back 11 pivoted at 12, Figure 1, to the seat frame, said back also being provided with side pieces 13 pivoted at 14 to the ears 10.

The chair body is arranged to be tilted to different positions about a horizontal axis and for this purpose a circular flanged plate 16 is secured to the upper movable base portion 4 by screw bolts 18, shown in elevation in Figure 5 and in top plan view in Figure 4. As shown in Figure 5 the flange 19 of this plate carries pivots 20 at two opposite points near the central line of the chair seat. The seat frame 6 is provided with the usual sockets into which the pivots 20 fit for permitting the chair body to be tilted. Dental chairs of standard construction also include a bracket 22, Figures 1, 2, 5 and 8. As shown in Figure 8 this bracket is secured to a flange extending upwardly from the seat frame 6 by a screw bolt 24. The bracket is also provided with two dowel pins 25, shown in Figure 2, which pass through holes in the flange of the seat frame. The bracket 22 is apertured as shown in Figure 8 for the reception of a stub shaft 26 formed on the lower portion of an arm rest supporting member 28. A bracket 22 is provided on each side of the chair for supporting the arm rests and as shown in Figure 8, these are split to thereby form a clamp for holding the arm rests securely in place. A clamp screw 29 passes through the seat frame 6 and into the bracket as shown at the left in Figure 8. A handle or lever 30 is secured to the head of the screw 29 whereby it may be operated to control the clamp action. Not only does the clamp screw 29 act to vary the pressure on the stub shaft 26 but it also assists the bolt 24 to bind the bracket 22 to the frame 6.

All of the construction heretofore described is that which is found in dental chairs of standard make, and it is in connection with these standard parts and with comparatively little change in any of them, that my invention is adapted

to be so combined as to give a most advantageous arrangement in the way of adjustability for different positions of the operator when at work on a patient seated in the chair.

As shown in Figure 7, three auxiliary seats are provided, one at each side of the chair and one at the rear. It is obvious, of course, that all three may be applied at the same time, or one or two. Since both of the side auxiliary seats have the same construction and are attached in the same way, it will suffice to describe one of them.

Referring to Figures 1 and 8, the member 28 is modified for the purpose of my invention and as herein shown is supplied with spaced ears 32. A seat supporting frame 33, has an apertured end 34 which fits between the ears 32, the ears also being apertured to receive a pivot pin 35. The frame 33 has its right hand end, Figure 1, screw threaded interiorly for the reception of a screw 36 secured to the auxiliary seat 37. A set screw 38 may be provided to hold the seat from turning. Adjustment of the seat of course may be conveniently effected by loosening the screw and turning the seat one way or the other.

As the parts are shown in Figure 1 the seat 37 is in its inoperative position. In its operative position it will be moved more nearly in line with the members 28. It is to be noted that the bracket 22 is secured to the flange of the seat frame 6 by the screw 24 which is not very large. The heavier screw 29 of the clamp, however, serves more firmly and adequately to unite the bracket 22 to the frame 6. The weight of an operator, however, on the seat 37 might tend to strain unduly the bracket so an additional element of rigidity is provided. This element in the present embodiment of the invention consists of an angle piece of metal 38*a* secured to the member 28 by bolts 39, Figure 1, said element resting behind and engaging one of the ears 10 of the seat frame.

By reference to Figure 4 it will be noted that the members 28 on opposite sides of the chair are substantially in line with the pivots 20 about which the chair body may be tilted. It is usual in chairs of this type to provide a clamp for holding the chair body in its various tilted positions, such clamp structure being indicated in dotted lines, Figure 4. This clamp need not be of great power since the chair structure is so balanced that a comparatively light clamp is all that is needed. If, therefore, the pivotal point of the auxiliary seat was at a position such that the weight of the operator would tend to exert a considerable moment about the axis of tilt of the chair, there might be danger of unbalancing the chair and this might be serious. The present arrangement provides for a construction whereby the chair balance is not materially affected.

It is also to be noted that the auxiliary seat 37 is attached directly to the chair and partakes of its movement.

To attach the auxiliary seat structure to the body of the chair, the supporting member 28 is manipulated to insert the stub shaft 26 in the aperture of the bracket 22, and the angle piece 38*a* is then placed in position and secured to said supporting member by the bolts 39.

In the construction described the members 28 are modified by the addition of the spaced ears 32 and with such a construction it is not possible to swing the arm rest supports 28 about the stub shaft 26 so that they may be lowered out of the way if desired. Since it is frequently convenient to have the arm rests out of the way I have shown in Figure 3 an arrangement whereby this may be done. The bracket 28*a* instead of having the stub shaft 26 integral therewith is made in two parts. The lower part 40 is provided with spaced lugs 42 similar to the lugs 32 of the construction shown in Figure 1, and this lower part also carries the stub shaft 26 which passes through the bracket 22, the latter being identical in construction with the form shown in Figure 1. The element 38*a* is also of the same construction as shown in Figure 1 and is attached directly to the lower portion 40. The member 28*a* is pivotally connected to the portion 40 by a screw threaded bolt 43 operated by a clamp 44, the loosening of which permits the arm 28*a* and its carried arm rest to be swung to any convenient position. The frame 33 is pivoted in the same manner as shown in the construction of Figure 1.

In addition to the auxiliary seats 37 I may also provide another auxiliary seat 46 which is connected to the movable portion 4 of the chair base and therefore partakes of its movement but is not connected with the seat frame 6. One method of attachment is shown in Figures 4, 5 and 6.

The plate 16 which is secured to the section 4 by the screws 18, Figures 5 and 6, is flanged as shown at 49, Figure 6, and two brackets 50 situated about 180° apart are secured to arms 51 projecting radially from the plate 16, by screws 52. An arcuate track 53 connects the brackets 50 and the frame supporting the seat 46 is pivoted at 55 to a carrier 56 slidable on the track. The track 53 is preferably constructed on an arc having its center located substantially at the axis of the chair or at the common axis of the vertically movable base sections 2, 3 and 4. By adjusting the slide 56 along the track the auxiliary seat may be adjusted so that it may be placed in operating position on either side of the chair and also the operative position of the auxiliary seat with relation to the chair may be varied to suit different requirements.

In Figures 7 to 10 there is shown a somewhat modified construction whereby the rear seat 46 is supported. Instead of providing brackets such as 50, I provide a frame piece 58 having depending portions 59 to which the track 60 is secured. Reference has already been made to the screw bolts 18 which hold the plate 16 in place. These screw bolts 18 or similar screw bolts of somewhat greater length, if required, are utilized for securing the frame member 58 in place, as clearly shown in Figures 7 and 10.

The invention further contemplates a novel construction of the auxiliary seat and this construction is best shown in Figure 11, which is a sectional view taken on the line 11—11 of Figure 7. Two circular plates 62 and 63 are suitably apertured for the reception of bolts 64, any desired number of which may be provided. The apertures for the bolts in the plate 63 may be non-circular in shape so that the bolts will not turn when the nuts for securing them are screwed to place. In assembling the seat the bolts are first placed in position extending through the plate 63 and on top of said plate is placed the lining 65 for the seat, which preferably consists of rubber sponge. A cover 66, preferably of leatherette or similar flexible sheet material, is then applied over the lining and its margin drawn under the outer fan of plate 63. The plate

63 may be made of wood and the margin of the cover 66, after being drawn under the outer face of said plate, may be attached thereto by a series of tacks. The plate 62 is then applied over the margin of the cover the bolts being engaged in the openings therefor in said plate, and the nuts are applied to the bolts and secured home thereby causing the plates 62 and 63 to clamp securely the margin of the cover and hold the same in position. The plate 62 is secured by screws to a head 67 which turns with the screw 36.

In cases where the auxiliary seat 37 is used this seat may be quickly and easily attached to the chair, and the use thereof does not require any change in the chair construction. In applying one of the seats 37 to a chair of standard construction such as that shown in the drawings, the clamping screw 29 on the side of the chair to which the auxiliary seat is to be applied is actuated to loosen the clamp bracket 22 with relation to the stub on the arm rest which is engaged within said clamp bracket. The arm rest is then removed from the chair, and the supporting member 28 is placed in position with the stub shaft 26 thereon engaged in the opening in the clamp bracket, and the clamping screw 29 is then actuated to clamp the stub shaft therein. The angle piece 38*a* is then applied to the supporting member 28 in position to extend over the ear 10 and is secured to said supporting member by the bolts 39.

In detaching the seat from the chair the reverse operation is performed.

Figures 4 and 7 show on the left hand side of the dental chair the seat 37 in operative position at the side of the back of the chair. This position of the seat at the side of the chair back is that which is usually required by the dentist when operating upon a patient. The dentist when operating usually places his feet on the floor and rests most of his weight upon the auxiliary seat. Figures 4 and 7 show the auxiliary seat 37 at the right of the dental chair in inoperative position. When the dentist after using the seat wishes to stand on his feet in operating on a patient and to throw the seat out of operative position, this may be quickly and easily done without using the hands merely by a lateral motion of the body against the seat.

It will be noted that the auxiliary seat 37 is mounted to swing about a fixed axis located at the side of the chair so that it gives a firm steady support for the dentist while operating. The seat is also adjustable to various positions at the side of the chair.

The auxiliary seat 46 also may be quickly and easily applied to a dental chair, and the use of this seat does not require any substantial change in the standard chair construction. In the construction shown in Figures 4, 5 and 6 the only change required in the chair construction for the use of the seat attachment is the provision of the holes in the arms 51 for the insertion of the screws 52. The seat attachment may be applied to the chair merely by placing the brackets 50 in a position to be attached to the arms 51 and securing the same in position by the screws 52.

In the construction shown in Figures 7, 8 and 9 the auxiliary seat may be attached to the chair merely by taking out the screw bolts 18 which hold the plate 16 to the upper base section 4, applying the frame piece 58 over said plate and securing said frame piece and the plate to the upper base section 4 by a series of screw bolts somewhat longer than the screw bolts 18.

The construction shown in Figures 4, 5 and 6 and that shown in Figures 7, 8 and 9 have the advantage that the auxiliary seat is attached to the base of the chair so that when he auxiliary seat is in use no additional strain is placed on the seat frame of the chair.

It will be noted that in each embodiment of the invention the auxiliary seat is mounted on a part of the dental chair which is adjusted vertically with the main seat of the chair so that the adjustment of the main seat does not change the vertical position of the auxiliary seat with relation to the main seat.

It is to be understood that the invention is not limited to the particular construction and arrangement of parts of the illustrated embodiments of the invention but that the invention may be embodied in other forms within the scope of the claims.

Having explained the nature and object of the invention and having specifically described the invention in its preferred forms, what is claimed is:

1. A chair having its seat frame supported for pivotal movement about a horizontal axis and an auxiliary seat supported on said frame at a point substantially in line with said axis for pivotal movement therewith about said axis.

2. A chair having a seat frame, a bracket secured to said frame, an arm rest support mounted on said seat frame bracket, and an auxiliary seat supporting member carried by said arm rest support.

3. A chair having a seat frame, ears projecting from said frame, a bracket secured to the seat frame adjacent one of said ears, a member for supporting an arm rest carried by said bracket, an auxiliary seat supporting member carried by said arm rest member and a part secured to the arm rest member and engaging said seat frame ear.

4. A dental chair or the like having a main seat frame, a clamp attached to said seat frame, a bracket having a stud fixedly secured in said clamp by the clamping action of the clamp, an arm pivoted on said bracket, and an auxiliary seat mounted on said arm.

5. A chair having a seat frame, a bracket secured to said frame, and an arm rest support mounted on said seat frame bracket, said support being provided with portions on which an auxiliary seat is pivotally mounted.

6. A chair having a seat frame, a bracket secured to said frame, an arm rest support mounted on said seat frame bracket, and an auxiliary seat having a supporting arm pivotally mounted on the bracket, said bracket being provided with ears for supporting the pivoted arm.

7. A dental chair or the like having a frame, a bracket attached to the chair frame, a fixed support, clamping means detachably securing said support on said bracket, an arm pivoted directly on said support to swing about a fixed axis, an auxiliary seat mounted on said arm, and means for supporting the seat on the arm to cause the seat to swing with the arm about said fixed axis.

8. A dental chair or the like comprising in combination a main seat frame, a main seat carried by said frame, a clamp mounted on the main seat frame, a stud fixedly secured in the clamp by the clamping action thereof, a support carried by said stud, and an auxiliary seat mounted on said support.

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