Jan. 3, 1928. 1,654,787

F. E. CASE

ARM REST

Filed Aug. 30, 1922 2 Sheets-Sheet 1

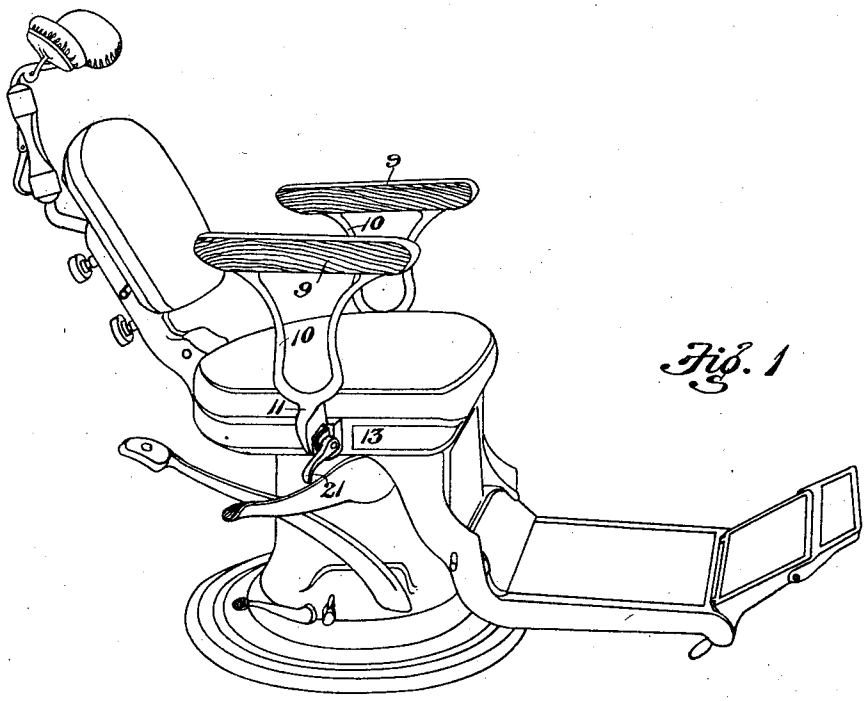
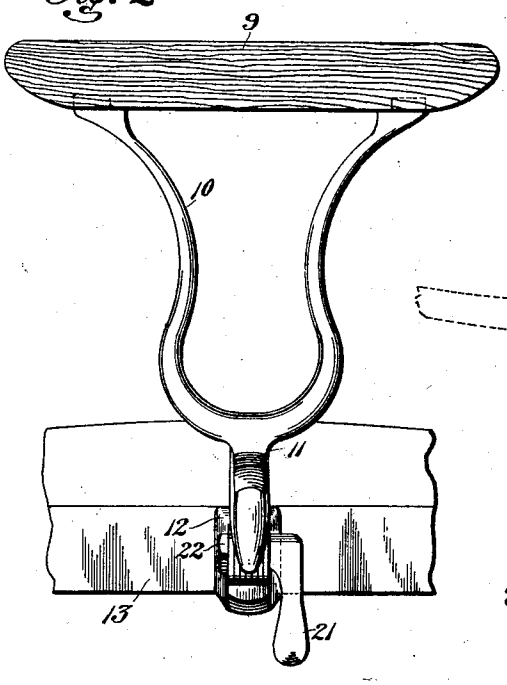


Fig. 1

Fig. 2



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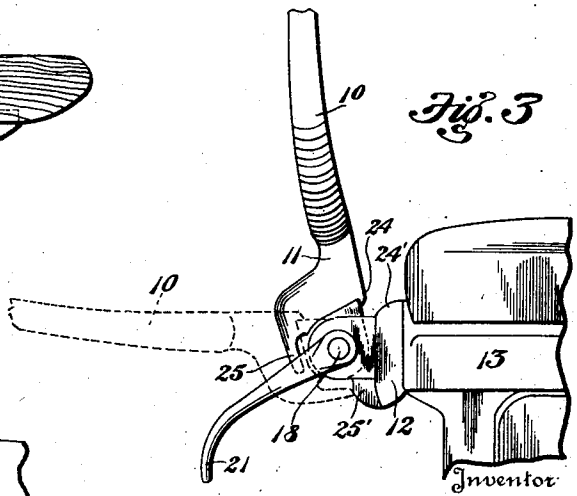

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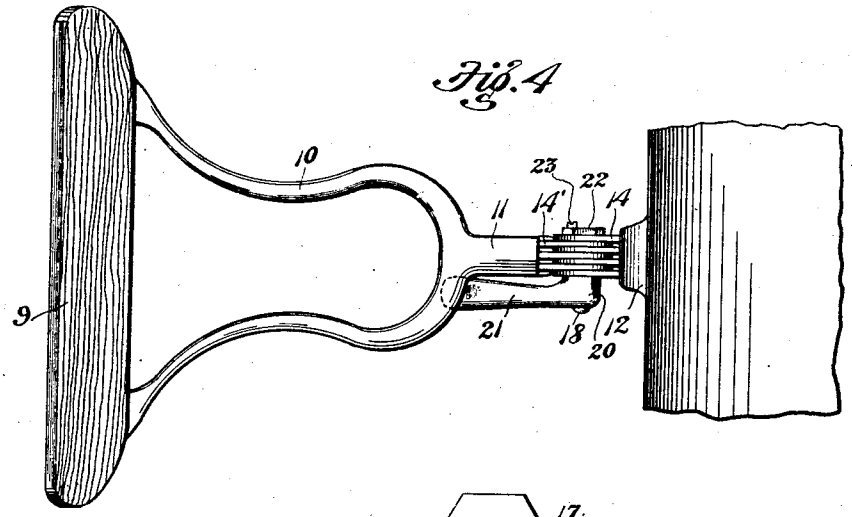
Fig. 4



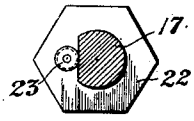


Fig. 8

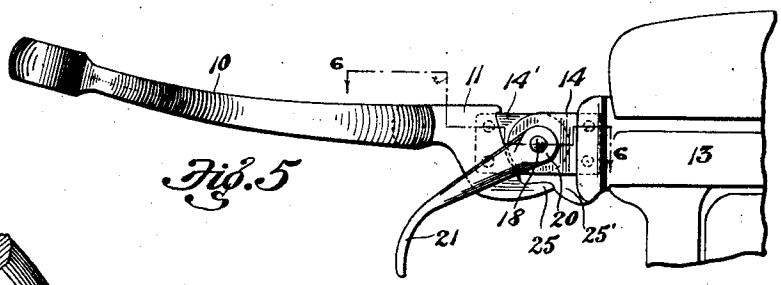


Fig. 5

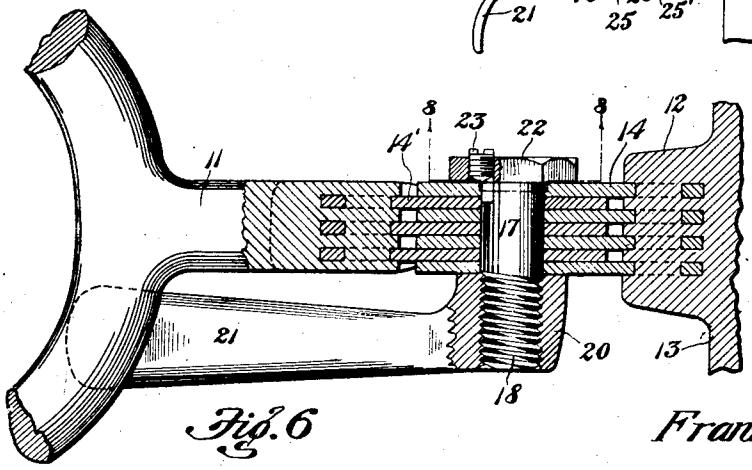


Fig. 6

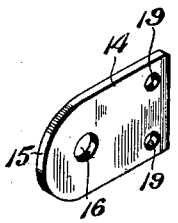


Fig. 7

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Patented Jan. 3, 1928. 1,654,787

UNITED STATES PATENT OFFICE.

FRANK E. CASE, OF CANTON, OHIO, ASSIGNOR TO THE HARVARD COMPANY, OF CANTON, OHIO, A CORPORATION OF OHIO.

ARM REST.

Application filed August 30, 1922. Serial No. 585,313.

The invention relates to arm rests for dental chairs and the like; and the object of the improvement is to hinge the arm rest to the side of the chair in such a manner that it can be swung outward and downward from the chair from upright into prone position, and can be securely sustained in any desired position of adjustment.

A hinged joint between the stem end of an arm rest bracket and the side frame of a chair is necessarily subject to severe strains, because of the long leverage between the joint and the arm rest proper; and difficulty has been experienced in providing a joint which can be clamped to securely hold it from turning, and which is also strong enough to prevent a breaking of the joint, especially when the arm rest is swung outward and downward into prone position to serve as a seat or leg support for a dentist or other operator.

These difficulties are overcome by forming the joint proper with a plurality of overlapping laminations having the outer ends of alternate laminations secured to the seat frame and arm rest bracket respectively, by making the laminations out of rolled steel strips with axial apertures in their overlapped ends for a clamping pintle bolt and with corresponding apertures in their outer ends for engagement with the seat frame and arm bracket, and by casting the outer ends into the seat frame and arm bracket so that solid metal will extend continuously through the corresponding apertures therein.

The invention is illustrated in the accompanying drawings, forming part hereof, in which—

Figure 1 is a dental chair showing the improved arm rests thereon;

Fig. 2, a side elevation of the arm rest and a portion of the chair seat;

Fig. 3, a fragmentary front elevation of a portion of the chair seat and arm rest, showing the latter upright in full lines and in prone position by broken lines;

Fig. 4, a plan view of the arm rest in prone position;

Fig. 5, a front elevation of the same;

Fig. 6, a fragmentary plan section on line 6—6, Fig. 5;

Fig. 7, a detached perspective view of one steel strip lamination; and

Fig. 8, a fragmentary section of the clamping bolt on line 8—8, Fig. 6.

Similar numerals refer to like parts throughout the drawings.

The arm rest 9 is formed or secured on a bracket 10 having a stem 11 on its lower end, by which it is hinged to a lug 12 formed on the side of the seat frame 13.

The hinged joint comprises two series of overlapping laminations 14 and 14′, the ends of the laminations 14 of one series being secured by casting into the seat lug 12, and the ends of the laminations 14′ in the other series being secured by casting into the arm lug 11.

Each lamination 14 and 14′ is made of a strip of rolled steel metal having its hinged end 15 rounded with an axial aperture 16 therein for receiving the pintle shank 17 of a clamping bolt 18; and being provided with apertures 19 in its other end, which receive the metal of the stem 11 or the lug 12 when the same is cast upon the ends of the strips.

The nut 20 of the bolt 18 is provided with a manually operated handle 21 by means of which it is clamped upon the joint, and the head 22 of the bolt is preferably provided with a set screw 23 for engaging the edge of the axial aperture in the contiguous strip to prevent a turning of the bolt when it is clamped upon the joint.

The bolt is properly adjusted before the set screw is turned inward, so that the joint will be clamped by swinging the nut handle downward toward a depending position, as shown in the drawings, and will be released by swinging it upward and outward whenever it is desired to adjust the arm rest, after which the set screw may be turned inward to hold the bolt in its adjusted position; and in the same manner the bolt can be readjusted from time to time, to take up any wear there may be in the contiguous parts.

The clamping action of the bolt upon the multiplicity of contiguous faces of the overlapping laminations, multiplies the frictional resistance of the joint according to the number of laminations; and the making of the laminations out of rolled steel strips gives them greater strength than if they were cast integral with the seat lug and arm stem.

At the same time, the casting of the lug and shank around the ends of the strips, and the entrance of the metal through the apertures in the ends of the strip connects the

parts together as strongly and rigidly as if they were made integral with each other.

Suitable abutments 24 and 24′ are formed on the upper sides of the arm stem and seat lug for stopping an inward movement of the arm rest over the seat; and likewise suitable abutments 25 and 25′ are provided on the underside of the stem and lug to positively stop the arm when it is swung downward and outward into prone position, to serve as a seat or leg rest for a dentist, as shown in Fig. 5 of the drawings.

I claim:

1. A hinged joint for the seat frame and arm bracket of a chair, or the like, comprising a series of steel strips rigidly secured to the one, a series of contiguously overlapping steel strips secured to the other and a pintle bolt and manually operated means thereon for clamping the overlapped strips together.

2. A hinged joint for the seat frame and arm bracket of a chair, or the like, comprising a series of steel strips rigidly secured to the one, a series of contiguously overlapping steel strips secured to the other, there being apertures in the overlapping ends of the strips, a pintle in the apertures, and manually operated means for clamping the strips together.

3. A hinged joint for the seat frame and bar bracket of a chair, or the like, comprising a series of steel strips rigidly secured to the one, a series of contiguously overlapping steel strips secured to the other, there being axial apertures in the overlapping ends of the strips, a pintle in the axial apertures, manually operated means for clamping the strips together, and means for stopping the arm bracket in prone position.

4. A hinged joint for the seat frame and arm bracket of a chair, or the like, comprising a series of steel strips having ends cast into one, a series of contiguously overlapping steel strips having ends cast into the other, there being corresponding apertures in the cast ends of the strips entered by the cast metal, and a pintle bolt and manually operated means thereon for clamping the overlapping ends together.

FRANK E. CASE.