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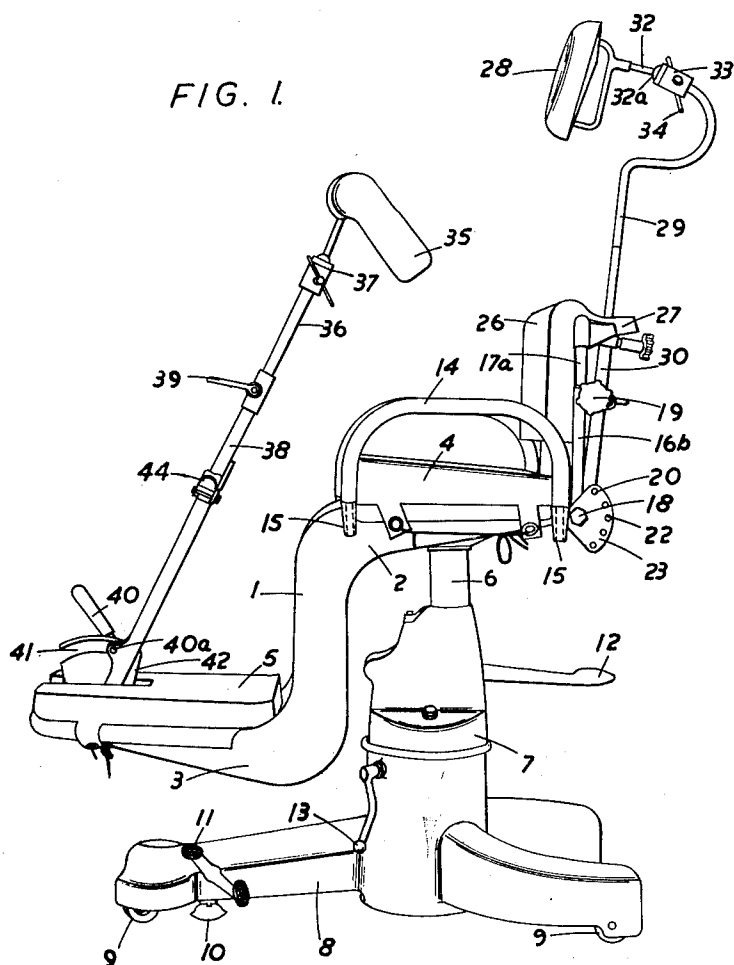
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2,613,725

NEUROSURGICAL OPERATING CHAIR

Filed Aug. 18, 1950

3 Sheets-Sheet 1



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FIG. 2.

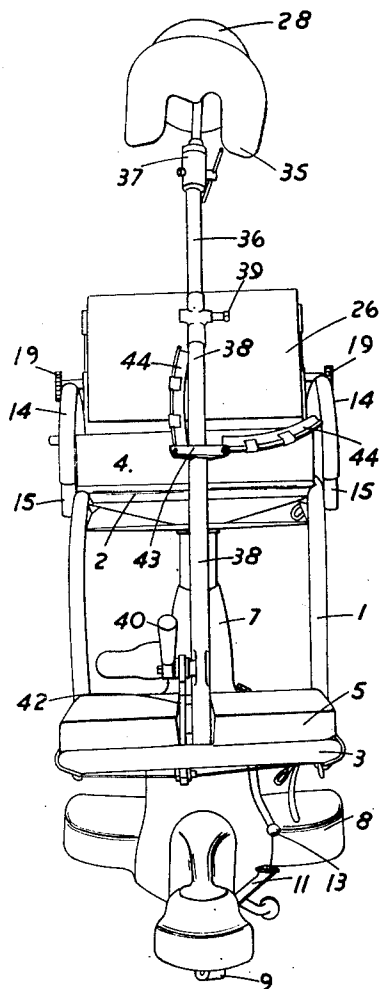
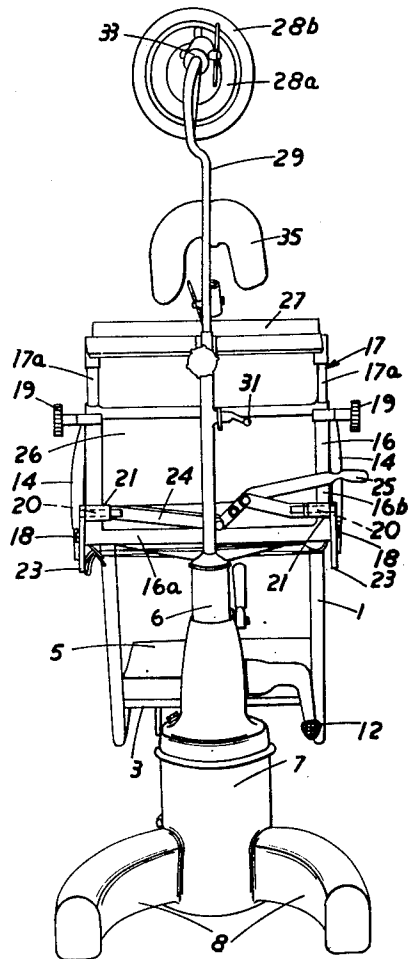


FIG. 3.



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FIG. 4.

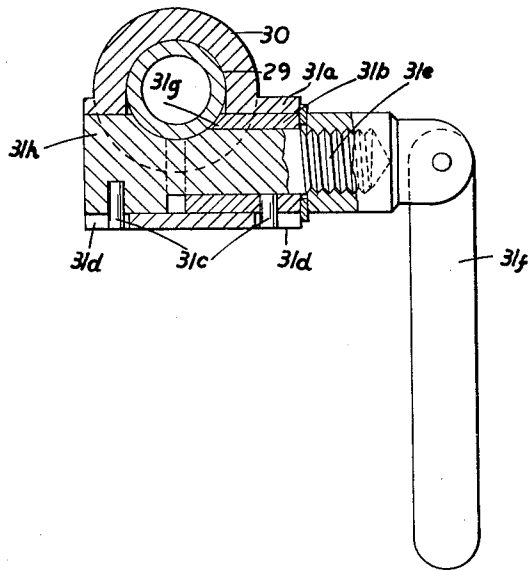
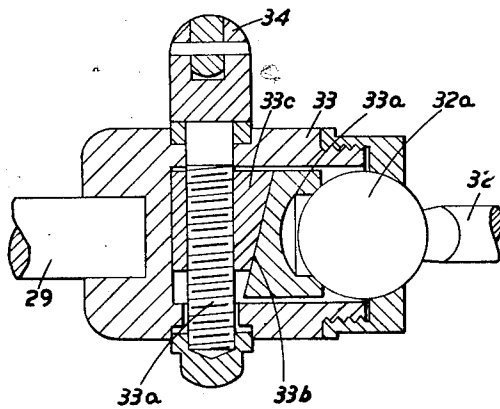


FIG. 5.



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NEUROSURGICAL OPERATING CHAIR

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6 Claims. (Cl. 155—28)

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This invention relates to an improved chair for accommodating patients during neuro-surgical operations.

According to the invention such a chair has removable side members; a hinged back the height of which is adjustable; a removable, universally-mounted, rear head-rest, the whole being rotatable and inclinable, adjustable for height and supported from the said hinged back; a foot-rest; and a removable universally-mounted, front head-rest which is adjustable for height, is inclinable and is supported from the said foot-rest.

The removable arms and hinged back enable a patient to be placed on, or removed from, the chair with greater ease. The height-adjustable hinged back assists in positioning the patient on the chair as desired for the operation whilst the adjustable head-rests permit the surgeon to place the head in the position most suitable to him. Either head-rest may be removed when not in use.

The back can be hinged to the rear of the seat of the chair and can be secured at any one of a number of predetermined positions by means of locking pins which are slidably mounted on the hinged back and which are operable by a system of levers to be engaged in, or disengaged from, any opposed pair of a series of apertures formed in each of two members fixed one on each side of the seat. The back can comprise two tubular side pieces and a back rest supported on pillars which are slidable in the side pieces and can be clamped at any desired position therein.

The rear head-rest is preferably supported by a universal mounting on a pillar which is slidable and rotatable within a tubular member carried by the hinged back and can be clamped at any desired position within the said member.

The front head-rest can be supported by a universal mounting on a pillar which is slidable and rotatable in a tubular member within which it can be clamped at any desired position, the said tubular member being hinged mounted on the foot-rest of the chair and having means by which it can be clamped at any desired inclination.

In the accompanying drawings, which illustrate a preferred embodiment of the invention,

Fig. 1 is a side elevation of a neurosurgical chair,

Fig. 2 is a front elevation,

Fig. 3 is a rear elevation, and

Figs. 4 and 5 are detail views of two clamps employed on the chair.

In the neurosurgical chair illustrated in the drawings, a main frame 1 forms the seat 2 and foot-rest 3 of the chair, these members being normally covered by removable sponge rubber

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pads 4 and 5 respectively. The under-side of the seat portion 2 of the main frame is supported on a pillar 6 which is rotatably mounted on a pedestal 7 having a tripod base 8 mounted on castor wheels 9. The tripod can be provided with a brake consisting of a rubber pad 10 which can be lowered or raised into or out of engagement with a floor by a two armed brake pedal 11. The height of the seat can be made adjustable in known manner; for example, a pillar 6 can be raised within the pedestal 7 by a hydraulic pump operated by a foot-lever 12 and can be lowered by operating the same lever. A second lever 13 allows the pump cylinder to be rotated on the base 8.

The sides or arm rests of the chair are provided by tubular members 14 of inverted U-shape, these members being removably mounted in sockets 15 arranged on each side of the seat 2.

The back of the chair is hinged to the rear of the seat 2. As will be seen in Figure 3, it comprises a frame in two parts 16 and 17 built up from tubular members, the lower horizontal member 16a being internally threaded at its ends to receive pivot screws 18 by which it is pivotally secured to the seat 2. The hollow side pieces 16b of the lower portion 16 of the frame receive side pillars 17a of the upper portion 17 of the frame. These pillars 17a are slidable within their co-operating side pieces and can be secured at any desired height therein by clamping screws 19. The chair back can be arranged at any one of a number of inclinations by means of retractable pins 20 which are supported in housings 21 on the side pieces 16b of the frame, each of which pins can be engaged in any one of a series of holes 22 (Fig. 1) in a quadrant 23 fixed to the seat 2 (Fig. 1). The retractable pins 20 can be engaged in, or disengaged from, their co-operating holes 22 by means of a system of levers 24 (Fig. 3) operable by a handle 25. A rubber covered back rest 26 for the patient and a shelf 27 can be mounted on the upper part 17 of the frame, the shelf being suitable for use as an arm-rest for a surgeon when an operation is taking place in the chair.

A rear head-rest 28 for the patient can be supported on a pillar 29 which has a swan-neck upper portion and is both slidable and rotatable in an inclinable tubular housing 30 mounted on the hinged frame 16, 17. The pillar 29 is completely removable from its tubular housing and can be clamped at any desired position therein by operation of a clamp 31 illustrated in detail in Fig. 4. This clamp 31 has a cylindrical sleeve 31a arranged crosswise on the tubular housing 30. A

cylindrical locking member 31b is slidable in this sleeve on the shank of a member 31h, these two members being held against rotation by means of pins 31c movable in slots 31d formed in the sleeve. The locking member 31h has a threaded extension which protrudes from the sleeve and screws in an internally threaded boss of a drop arm 31f. Consequently, rotation of the drop arm will displace the locking member 31b in its sleeve to force the cut-away portion 31g thereof into or out of clamping engagement with the pillar 29.

The head-rest 28, which may consist of a steel ring 28a (Fig. 3) surrounded by a sponge rubber pad 28b, is supported on a short arm 32 (Fig. 1) terminating in a ball member 32a which is received in a socket of a cooperating clamp 33 on the pillar 29.

The clamp 33 includes, as illustrated in Fig. 5, a ball seating member 33a which provides a universal mounting for the ball member 32a. The rear face of the seating member 33a is inclined as at 33b and is engaged by a wedging member 33c threaded on a spindle 33d which is rotatable by movement of the drop arm 34. Thus, rotation of the arm 34 displaces the wedging member 33c to urge the ball seating member 33a into or out of engagement with the ball 32a so that the head rest can be clamped in any desired position.

A front head-rest 35, which may consist of a U-shaped steel bracket covered with sponge rubber, is supported on a pillar 36 by a universal joint 37 similar in all respects to that of the rear head-rest 28. The pillar 36 can both slide and rotate in an inclinable tubular housing 38 the lower end of which is hingedly attached to the foot-rest 3 of the chair. The pillar 36 can be completely removed from its housing 38 and can be clamped at any desired position therein by operation of a drop arm 39. A locking lever 40 is provided on the housing 38 near the lower end thereof and carries a locking cam or clamp 40a which is movable within an arcuate slot 41 in a plate 42 secured to the foot-rest; thus, the housing 38 can be locked at any desired inclination within limits set by the length of the slot 41.

Two rubber padded arms 44 are hingedly mounted one on each side of the housing 38 on a bracket 43 (see Fig. 2) so that, when the hinged back is suitably arranged, they can provide leg rests for a patient in the horizontal position. These arms can be folded upwards against the housing 28 when not in use.

What I claim is:

1. A chair comprising a seat; two locking plates each formed with a series of spaced apertures and arranged one on each side of the said seat near the rear thereof; a height-adjustable back hinged to the rear of the said seat; a pair of locking pins guided for sideways sliding movement on the said back; a system of levers mounted on the said back and operable to cause the said locking pins to engage in, or disengage from, any opposed pair of the said series of apertures whereby the said back can be secured in any one of a number of predetermined inclined positions; a rear head-rest having a removable, universal and height-adjustable mounting on the said back; a foot-rest supported from said seat; and supported on the said foot-rest, a removable universally-mounted, front head rest which is adjustable for height, and is inclinable.

2. A chair comprising a seat; a back frame having tubular side members hingedly mounted on the said seat; means for securing the said back frame at any one of a number of predeter-

mined inclined positions; a back rest supported on pillars slidable in the said tubular side members; a clamp for securing the said pillars at any desired position in the said tubular side members; a rear-head rest universally-mounted on a removable, inclinable and height adjustable support on the said back frame; a foot-rest supported from said seat; and, a removable front-head rest having a universal mounting on an inclinable and height adjustable support on the said foot rest.

3. A chair comprising a seat; an inclinable back mounted on said seat; means for securing the said back at any one of a number of predetermined inclinations; a rear head-rest; a support pillar on which the said rear head-rest is universally mounted; means for securing the said rear head-rest at a desired position with respect to its support pillar; a tubular member carried by the said back in which member the said support pillar is slidable, rotatable and removable; a clamp for securing the said support pillar at any desired position in the said tubular member; a foot-rest supported from said seat; a front head-rest; a second support pillar on which the said front head-rest is universally mounted; means for securing the said front head-rest at a desired position with respect to its support pillar; a second tubular member inclinably mounted on the said foot rest in which member the said second support pillar is slidable, rotatable and removable; a second clamp for securing the said second support pillar at any desired position in its tubular member; and means for securing the said second tubular member at any desired inclination.

4. A chair as claimed in claim 3 having a leg rest comprising a pair of arms hinged on the said second tubular member at diametrically opposed positions.

5. A chair comprising a seat; side members removably mounted on said seat; a back, the height of which is adjustable, hingedly supported from said seat; a removable, universally-mounted, rear head-rest, the whole being rotatable and inclinable, adjustable for height and supported from said hinged back; a foot-rest supported from said seat; and a removable universally-mounted, front head-rest which is adjustable for height, is inclinable and is supported from said foot-rest.

6. A chair comprising a seat and a foot-rest formed as a unit which is freely rotatable about a vertical axis; side members removably mounted on said seat; a back which is hingedly mounted on said seat and is of adjustable height; a removable, universally-mounted, rear head-rest, the whole being rotatable and inclinable, adjustable for height and mounted on said hinged back; and a removable universally-mounted, front head-rest which is adjustable for height, is inclinable and is supported from said foot-rest.

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