July 21, 1942. J. J. CANTOR 2,290,672

SURGICAL CHAIR

Filed Jan. 8, 1941

Fig. 1.

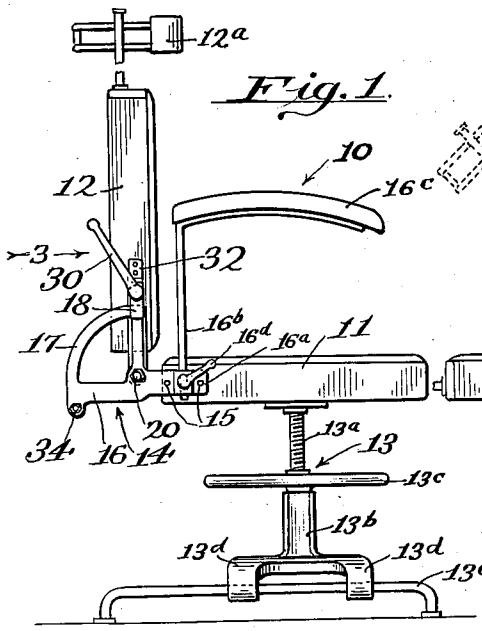


Fig. 2.

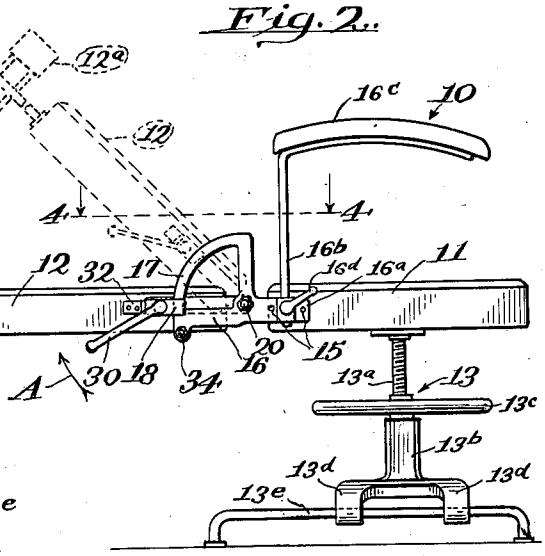


Fig. 3.

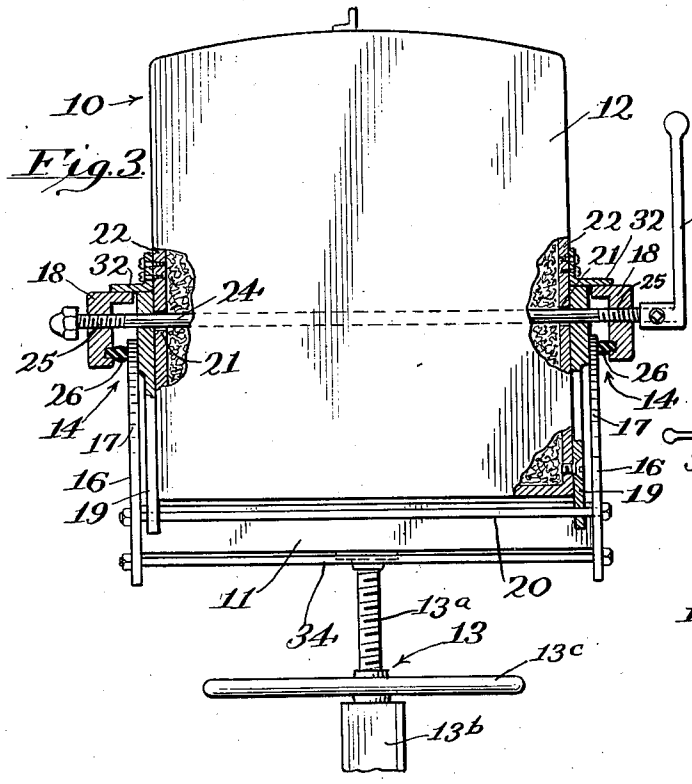


Fig. 4.

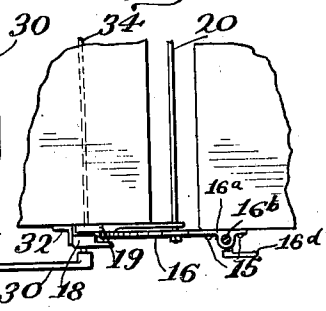
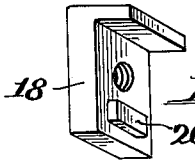


Fig. 5.



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2,290,672

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SURGICAL CHAIR

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Application January 3, 1941, Serial No. 373,655

2 Claims. (Cl. 155—160)

This invention relates generally to chairs more particularly to surgical operation chairs. A main object of the present invention is to provide a chair in which the back may readily be adjusted to various degrees of angularity in relation to the seat and retained in such position.

Another object is to provide a chair constructed in such a manner that when the back is lowered the surfaces of the seat and back will be disposed on the same level.

Other objects and advantages will be apparent from the following description, reference being had to the accompanying drawing in which:

Fig. 1 is a side elevation of an operation chair with its back shown in normal or vertical position;

Fig. 2 is a view similar to Fig. 1 showing the back in lowered or horizontal position;

Fig. 3 is a rear elevation of the upper portion of the chair on an enlarged scale, parts being broken away and shown in section;

Fig. 4 is a fragmentary horizontal section taken on line 4—4 of Fig. 2;

Fig. 5 is a perspective view of the clamping member.

Referring more specifically to the drawing, 10 designates a chair of the type employed by physicians, surgeons, or other practitioners while performing operations.

In this form of chair it is necessary that the back may be tilted to various degrees of angularity and retained in such position while performing an operation.

Chair 10 comprises a seat 11, back 12 and a base member 13 for adjusting the elevation of the seat above the floor, also permitting it to swivel.

Base member 13 consists of a vertically disposed screw threaded shaft 13*a* secured to bottom of the seat 11 and slidably mounted in a standard 13*b*, the height of the seat above the floor level being adjusted by a hand wheel 13*c* threadedly engaging the shaft. The standard 13*b* is in turn mounted to slide horizontally, by means of the integral legs 13*d*, along the floor engaging members 13*e*.

The present invention resides more particularly in a mechanism 14 for rigidly clamping the back 12 in any desired angular position in relation to the seat, and is hereinafter referred to as a clutch mechanism.

Secured to the side walls of the seat 15 and extending rearwardly therefrom are sector brackets 16 that form the rigid members of the clutch, these brackets have curved or arcuate portions 17 that are frictionally engaged by the movable or clamping members 18 of the clutch.

Secured to the side walls of the back 12 are plates 19 that project therefrom and are pivotally mounted on a rod 20 extending between the brackets 16.

Journalled in openings formed in plates 19 and extending through enlarged aligned openings 21 formed in the side walls 22 of the frame of the back 12 is a rock shaft 24 having right and left hand screw threads 25 thereon that threadedly engage the clamping members 18 of the clutch.

Mounted on the face of each clamping member 18 is a block 26 formed of fiber or other similar material that frictionally engages the faces of the sector brackets 16.

Secured to one end of the shaft 24 is a lever 30 for operating the clutch and secured to the side walls of the back 12 and engaging the clamping members 18 are angle irons 32 that serve to hold said members against rotation when the rock shaft 24 is rotated.

Extending between the brackets 16 adjacent their lower ends is a rod 34 that serves to support the back 12 when in a horizontal position as shown in Fig. 2, also to prevent it from becoming disengaged from the sector brackets 17 when the clutch is released.

From the foregoing it will be seen that when the handle lever 30 is raised or turned in the direction indicated by the arrow A in Fig. 2 the clamping member 18 of the clutch will be moved outwardly on the shaft 24 and out of engagement with the curved portions 17 of the sector brackets at which time the back may be tilted to any desired degree of angularity, for example to the position indicated in dotted lines in Fig. 2.

On the other hand when the lever 30 is turned in the opposite direction the clamping members 18 will be moved inwardly toward each other causing the blocks 26 thereon to rigidly clamp the curved portions 17 of the brackets and hold the back in an adjusted position.

Removably mounted in sockets 16*a* formed integral with or secured to the side members of the sector brackets 16 are vertical supports 16*b* that are secured to arm rests 16*c* whereby the elevation of the same may be adjusted or one or both removed from the chair if desired. The arm rests are retained in adjusted position by set screws having handles 16*d* thereon, and the back 12 may be provided with a rest 12*a* for supporting the patient's head.

From the above description it will be observed that the chair adjustment of the chair back is

not confined to pre-determined adjustments, but may be clamped in a variety of positions to suit the surgeon when operating on a patient. Further it will be seen that the back can be adjusted so that the upper surfaces of the back and seat will be disposed, in the same plane.

I claim:

1. A surgical chair construction comprising a seat, a back pivotally connected to said seat, sector brackets secured to said seat and projecting rearwardly therefrom, plates secured to the sides of said back and pivotally connected to said sector brackets, a shaft having threads of opposite pitch on their ends journalled in said plates, and clamping members on the threaded ends of said shaft and contacting with said sector brackets, means to hold said members against rotation on said shaft, a handle on said shaft, whereby when said shaft is rotated in one direction said clamping members will move out of engagement with said sector brackets to permit tilting of the chair back, and when turned in the opposite direction they will be drawn into engagement with the sector brackets to clamp the back in angular relation to the seat.

2. A surgical chair construction comprising a seat, a base member for adjustably supporting said seat, a back piovtally connected to said seat, sector brackets secured to the sides of said seat and projecting rearwardly therefrom, a rod extending between said brackets, for supporting said back when lowered, a shaft through said back having screw threads of opposite pitch on its projecting ends, clamping members engaging the threaded ends of said rock shaft and having friction blocks mounted thereon for engagement with said sector brackets, and means for holding said clamping members against rotation.

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