April 28, 1942. A. E. JONES 2,281,037

CHAIR

Filed March 18, 1940

Fig. 1.

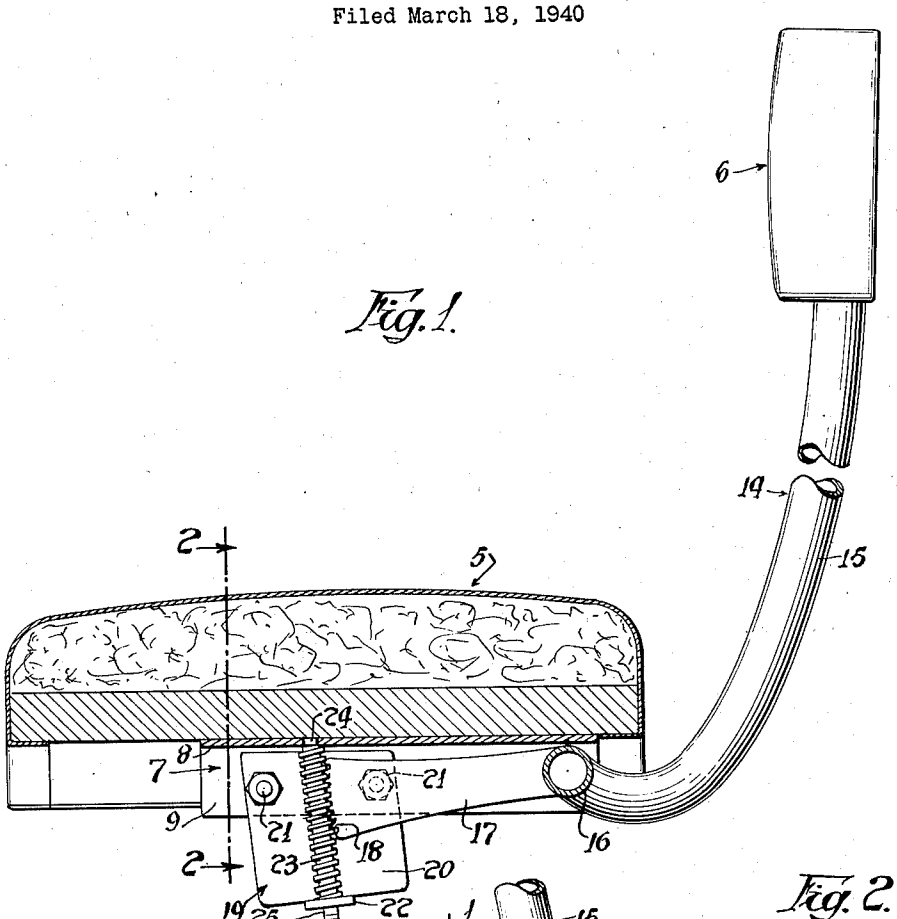
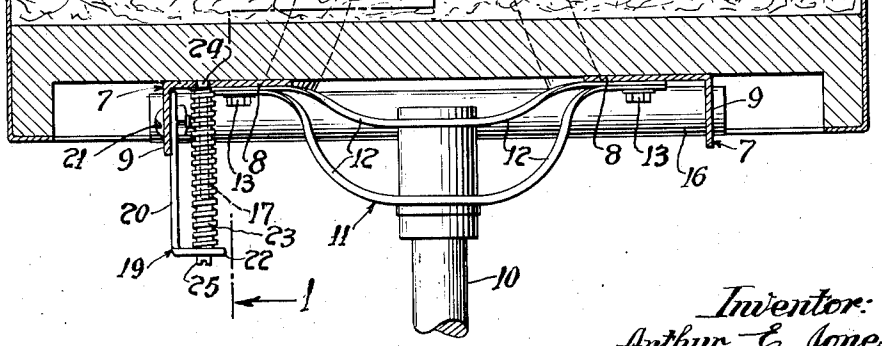


Fig. 2.



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Patented Apr. 28, 1942

2,281,037

UNITED STATES PATENT OFFICE

2,281,037

CHAIR

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Application March 18, 1940, Serial No. 324,585

3 Claims. (Cl. 155—161)

This invention relates to improvements in chairs and it consists of the matters hereinafter described and more particularly pointed out in the appended claims.

The invention is more particularly concerned with chairs such as used in offices and similar places and which include a backrest support having a horizontal pivotal connection with the seat whereby the backrest may be adjusted forwardly and rearwardly with respect to the seat.

One of the objects of the present invention is to provide a chair having a backrest which may be readily adjusted forwardly or rearwardly with respect to the said seat and which is positively held in the adjusted position.

Another object of the invention is to provide a backrest adjustment structure for chairs, which is free of squeaks and rattles, which is of simple construction and which may be readily manipulated even by inexperienced persons.

Also, it is an object of the invention to provide a backrest adjustment which has its parts so correlated and positioned under the seat as to be substantially unnoticeable so as not to detract from the appearance of the chair.

The above mentioned objects of the invention, as well as others, together with the advantages thereof, will more fully appear as the specification proceeds.

In the drawing:

Fig. 1 is a vertical section, from front to rear, of a seat portion and associated backrest portion of a chair embodying the invention, the plane of the section being indicated by the line 1—1 of Fig. 2.

Fig. 2 is a vertical section, from side to side of the seat portion of the chair shown in Fig. 1, as taken on the line 2—2 of Fig. 1.

Referring now in detail to that embodiment of the invention illustrated in the drawing, 5 indicates the seat and 6 indicates the backrest of the chair. An angle bar-like member 7 is fixed to the bottom of the seat toward each side thereof. The horizontal flange 8 of both members 7—7 face toward each other and are fixed to the bottom of the seat, as will soon appear, and the vertical flange 9 of both of said members face downwardly.

The seat is supported by a center post or spindle 10 which carries a spider 11 at its top end. The spider includes laterally extending arms 12, having end portions each engaged with the underside of the horizontal flange 8 of each member 7. Bolts or screws 13 pass through the arms 12 and flanges 8, into the seat bottom to hold the parts in operative relation. The seat post or spindle is adapted for operative swivelling engagement in the usual barrel of the base of the chair, which is not shown herein.

14 indicates the means by which the backrest 6 is operatively connected to the seat 5 as a whole for support thereby. As herein shown, said means consists of a pair of laterally spaced posts or arms 15 at the back of the seat and the backrest 6 is operatively secured to the top ends of said posts or arms. The bottom end of said arms are curved forwardly and are suitably attached to a tubular shaft 16. This shaft is journalled at its ends in suitable openings in the flange 9 of both members 7—7 toward the rear of the seat.

An arm 17 is fixed at its rear end to the shaft 16 at a point spaced inwardly from the flange 9 of the member at the right hand side of the seat. This arm 17 extends forwardly from the shaft and terminates in a segmental rack 18. Toward the forward end of the last mentioned member 7 there is provided a bracket 19 of substantially an L-shape, when viewed from the front end of said member 7. The bracket 19 includes a vertical flange 20 that is fixed directly to the flange 9 of said member by bolts 21 and a bottom end horizontal flange 22. This flange extends inwardly toward the median line of the seat considered from the front to the rear.

A screw-like worm 23 is disposed in a substantially vertical position so as to engage the teeth of the rack 18. This screw-like worm has reduced diameter end portions 24 and 25, the former of which is journalled in the flange 8 of the member 7 and the latter of which is journalled in and extends through a suitable opening in the flange 22. That part of the screw 23 which extends through the flange 22 is provided with a means whereby said screw may be manipulated for turning in one direction or the other. In the present instance said means is illustrated as a cross slot in the bottom end extremity of the screw, to receive a screw driver.

When the screw 23 is turned in one direction or the other, it is apparent that by reason of its engagement with the rack 18 of the arm 17, said arm is caused to swing upwardly or downwardly about the axis of the shaft 16 to which it is attached. As the arm 17 and the arms 15—15, which carry the backrest 6, are fixed to the shaft 16, it is apparent that the backrest 6 is caused to swing forwardly or backwardly with respect to the seat, within a limited range. Thus the back-

rest may be moved into the desired position with respect to the rear edge of the seat.

It is pointed out that the teeth of the rack 18 and the threads of the screw 23 are operatively engaged at all times and therefore the screw, through the rack and the arm 17, holds the backrest against undesired movement when in its adjusted position. Thus the chair may be moved about from one place to the other, by grasping the backrest, without altering the adjustment. The screw 23 and rack 18 on the arm 17 also provides a squeak-proof engagement and one in which no rattles can develop to produce objectionable noises.

The bracket 19 being a part separate from the associated angle bar member 7, makes assembly of the screw a simple matter and whereby the screw may be properly engaged with the rack. As said bracket 19 is disposed inwardly from the associated side of the seat, as well as inwardly from the front of the seat, and as it is relatively short vertically, it is substantially unnoticeable.

While in describing the invention I have referred in detail to the form, arrangement and construction of the parts involved, the same is to be considered only in the illustrative sense so that I do not wish to be limited thereto except as may be specifically set forth in the appended claims.

I claim as my invention:

1. A chair embodying therein a seat, a back rest supporting means, means providing a pivotal connection between said supporting means and said seat, an arm fixed at one end to a part of said pivotal connection means and extending therefrom in the direction of the sides of the seat, and formed at its other end with teeth arranged on an arc concentric with the axis of said pivotal connection, a member having a helical thread engaged with said teeth for swinging said arm about said pivotal connection, and a member depending from the seat and having means cooperating therewith in providing bearings in which the ends of said member with the helical thread are journalled.

2. A chair embodying therein a seat, back rest supporting means, means providing laterally spaced vertical flanges on the underside of said seat, a shaft journalled at the rear of and below the seat and in said flanges and to which said back rest supporting means is operatively attached, an arm fixed at its rear end to said shaft and extending forwardly therefrom and having teeth on its forward end, a screw-like member beneath said seat and engaged with said teeth, means providing a bearing for the top end of said screw-like member, and means depending from one of said flanges and providing a bearing for the bottom end of said screw-like member.

3. A chair embodying therein a seat, back rest supporting means, laterally spaced means on the underside of said seat and each including a vertical flange, a shaft journalled at its ends in said flanges and to which said back rest supporting means is operatively attached, an arm fixed at its rear end to said shaft and extending forwardly therefrom, and having teeth on its forward end, a substantially vertically disposed screw engaged with said teeth, and a bracket depending from one of said means and coacting therewith in providing bearings in which the ends of said screw are journalled for a turning movement.

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