No. 797,040. PATENTED AUG. 15, 1905.

G. J. ADAM.

REVOLVING CHAIR.

APPLICATION FILED OCT. 24, 1901.

Fig. 1.

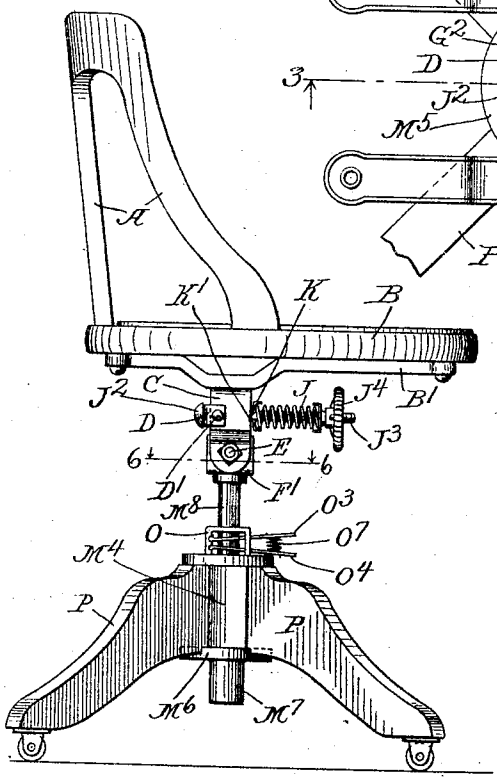


Fig. 2.

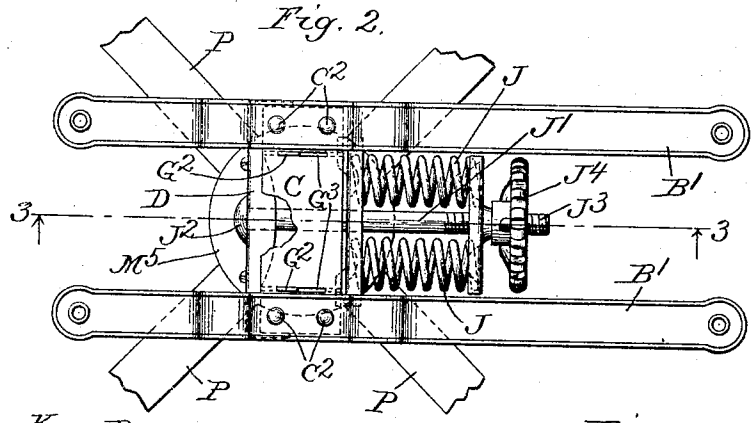


Fig. 3.

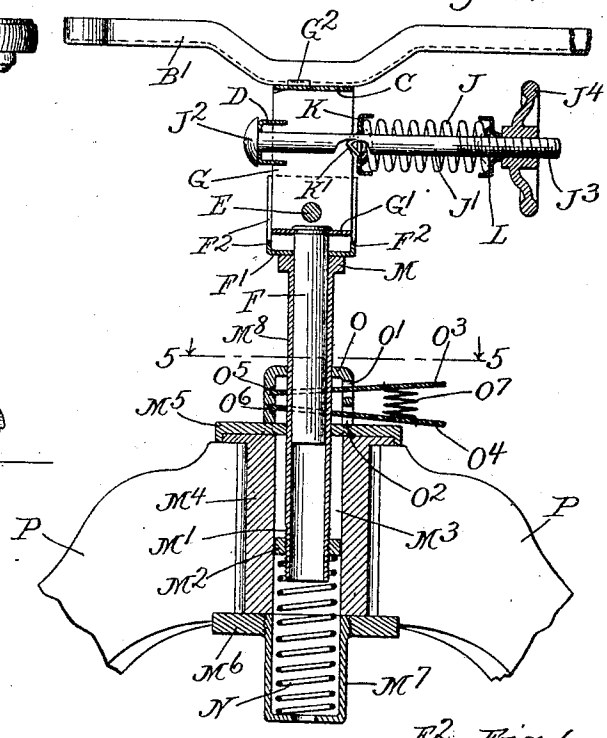


Fig. 4.

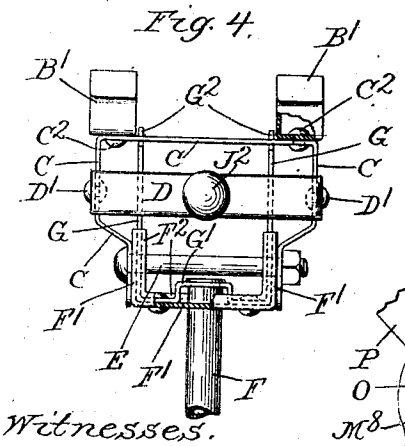


Fig. 5.

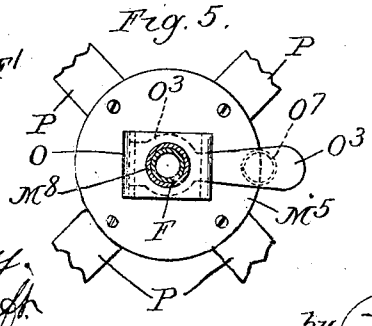
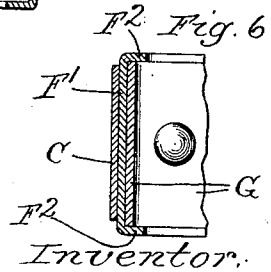


Fig. 6.



Witnesses.

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REVOLVING CHAIR.

No. 797,040 Specification of Letters Patent. Patented Aug. 15, 1905.

Application filed October 24, 1901. Serial No. 79,807.

To all whom it may concern:

Be it known that I, GEORGE J. ADAM, a citizen of the United States, residing at Lansing, in the county of Ingham and State of Michigan, have invented a certain new and useful Improvement in Revolving Chairs, of which the following is a specification.

My invention relates to certain new and useful improvements in revolving chairs.

It relates, among other things, to means for conveniently adjusting the chair vertically and various other minor improvements and details.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation of my improved chair. Fig. 2 is a plan of the tilting head. Fig. 3 is a section on the line 3 3 of Fig. 2. Fig. 4 is a rear elevation of the tilting head. Fig. 5 is a section on the line 5 5 of Fig. 3. Fig. 6 is a detail on the line 6 6 of Fig. 1.

Like parts are indicated by the same letter in all the figures.

A is the chair-back, and B the seat, which is secured on the two sheet-metal arms B′ B′, which are formed with upwardly-opening grooves between the sides of the sheet metal and which are connected together by the yoke C. The two sides of this yoke are secured together by the rear cross-bar D, attached to the yoke sides by the bolts D′ D′. The upper part of the yoke is secured to the bars B′ B′ by the bolts C^2 C^2. These parts together form what I have called the "tilting head," and it is supported, by means of the bolt E, on what I have called the "rotating head," which is located between the lower sides of the yoke of the tilting head.

F is a vertical tube which passes through the U-shaped piece F′, the upwardly-extending arms of which are perforated to receive the bolt E. G is a somewhat similar U-shaped piece with longer upwardly-projecting arms, also perforated to receive the bolt E, and with an upwardly-bent portion G′. The tube F passes through the piece F′ and is secured in the bridge-like piece G′. The arms of the part G pass upwardly and are provided with reduced upper ends G^2, which are received in the slots G^3 G^3 in the yoke C. These slots are longer than the width of the reduced ends, so that the latter have a play in the slots. The U-shaped piece F′ is provided with flanges F^2 F^2, which thus form a secure support for the piece G within the piece F′.

The rotating head consists of the tube F and the parts F′ and G, and the tilting head is pivoted thereon so as to tilt on the bolt E, its tilting action being limited by the movement of the reduced ends G^2 G^2 in the slots G^3 G^3. The tilting springs J J are placed on opposite sides of the bolt J′, which is provided with the head J^2, passes through the bar D, is screw-threaded at J^3, and provided with the hand-wheel J^4. A rocker-bar K, formed, preferably, of sheet metal with upturned edges, receives the inner ends of these springs and has a knife-edge K′, which is received into corresponding slots in the front edge of the arms of the yoke G. The other ends of the springs J J are received in a somewhat similarly-shaped piece L, against the back of which bears the hand-wheel J^4. By operating the hand-wheel a greater or less pressure can be applied to the springs, and as this pressure increases the tilting head is thrown forward until the reduced ends of the part G engage the back ends of the slots G^3 G^3, as shown in Fig. 2. When the weight of the occupant is thrown back in the chair, it acts against the springs to make the chair elastically tilt, and the limit of this action is determined by the length of the slots G^3 G^3, for it must cease when the ends G^2 G^2 engage the forward ends of the slots.

A shoulder M to engage the bottom part of the piece F′ is formed on the tube M^8, which at its lower end is preferably screw-threaded at M′ to receive the washer M^2, which slides vertically in the cylindrical chamber M^3 in the hub M^4. This hub is formed in any desired manner, preferably with the plates M^5 and M^6, and from its lower end projects the pocket M^7, in this case screw-threaded into the plate M^6. In this pocket and bearing against the bottom thereof at one end and against the washer M^2 at the other end is the supporting-spring N, which surrounds the lower end of the tube M^8 and tends to force it upward. It is capable of expansion to practically the full length of the hub and can be contracted to the point where the washer M^2 is practically even with the bottom of the hub. In the latter case the supporting-spring would be compressed within the lower pocket M^7. Rising above the plate M^5 is the part O, through which the tube M^8 freely

travels. It is perforated at O′ O^2 to receive the two clutch members O^3 O^4, which are pivotally attached at O^5 O^6 to the back of the part O and are elastically forced apart at their outer ends by the interposed spiral spring O^7. The tube F is received within the tube M^8 and with the rotating head freely revolves thereon. The clutch-pieces O^3 O^4 are properly perforated and formed so that when they are separated, as indicated in Figs. 1 and 3, the rod M^8 is locked, and when they are pressed together the rod M^8 is free to move therethrough. Radiating from the hub are the chair-legs P P. It will be observed that the upper forward edges of the arms of the part G are parallel with the bottom of the upper portion of the yoke C, so as to form a bearing thereon.

It is evident that the several features of my invention can be modified and greatly altered and some of them dispensed with without departing from the spirit of my invention. I am not intending to do more by my drawings and descriptive matter than to suggest the invention and point out what now appears to me the better form of its several features.

The use and operation of my invention are as follows: The chair-seat is secured to the supporting spider-arms of the tilting head. When the occupant sits in a normal position, the parts are all at rest. If he throws his weight on the forward part of the chair, there is no tilting effect, because the upper part of the yoke C bears firmly upon the upper edges of the arms of the part G. The rear ends of the slots G^3 G^3 also bear against the parts G^2 G^2, and the bar D bears against the rear edges of the arms of the part G. If the occupant leans back in the chair, these parts are all free to separate, and his weigh[t] is received by the springs J J, which are adjusted by means of the hand-wheel to any desired tension. If the occupant desires to rotate the chair, he may do so, for the tube F rotates freely on the tube M^8, the part F′ of the rotating head being supported on the shoulder M. If the occupant desires to raise the chair, he has only to raise or reduce the pressure on the chair and reaching under the seat to compress the spring O^7, forcing the clutches O^3 and O^4 together, thus freeing them from their normal grasp upon the rod M^8, whereupon the supporting-spring N will cause the chair to rise to the desired position. Here it will be locked by simply releasing the clutches. In the same manner the chair can be lowered by releasing the clutches and applying pressure to the chair until it has descended the proper distance.

I have shown practically all of the parts of the device as made of sheet metal usually, but not necessarily, with upturned flanges at the edges. The several parts are properly bolted or riveted together.

I claim—

1. In a revolving chair, a rotating head, comprising two upwardly-turned U-shaped pieces of metal, one within the other, and a vertical rotatably-mounted standard secured thereto.

2. In a revolving chair, a rotating head, comprising two upwardly-turned U-shaped pieces of metal, one within the other, and a vertical rotatably-mounted standard secured thereto, the outer U-shaped piece provided with an upwardly-turned flange, within which the inner sits.

3. In a revolving chair, a rotating head, comprising two upwardly-turned U-shaped pieces of metal, one within the other, and a vertical rotatably-mounted standard secured thereto, the inner U-shaped piece upwardly bent to form a bridge and the standard secured thereto and passing through the lower U-shaped piece.

4. In a revolving chair, a rotating head, comprising two upwardly-turned U-shaped pieces of metal, one within the other, and a vertical rotatably-mounted standard, the inner U-shaped piece upwardly bent to form a bridge and the standard secured thereto and passing through the lower U-shaped piece, and a flange on the lower or outer U-shaped piece.

5. In a revolving chair, a tilting frame, provided with a downwardly-projecting U-shaped yoke-like piece secured to the chair-bottom, and a rotating head, provided with an upwardly-turned U-shaped yoke-like piece, one of said yoke-like pieces inclosed within the other and both of them normally standing in a vertical position, and a pivot-pin, which passes through the arms of both of said yoke-like pieces and thus holds them together, and a vertical standard forming part of said rotating head and thus connected with said yoke-like pieces and placed directly below the pivot-pin.

GEORGE J. ADAM.

Witnesses:
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