Feb. 19, 1924. 1,484,371

C. A. BROWN

REVOLVING CHAIR

Filed April 5, 1920

Fig. 1.

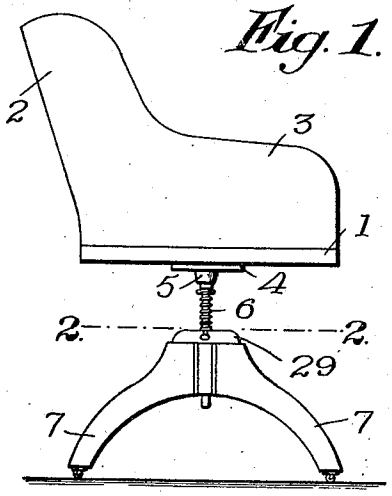


Fig. 2.

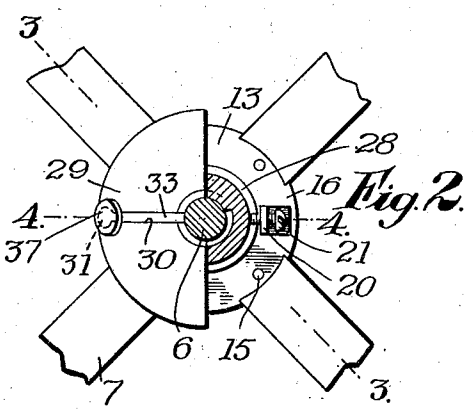


Fig. 3.

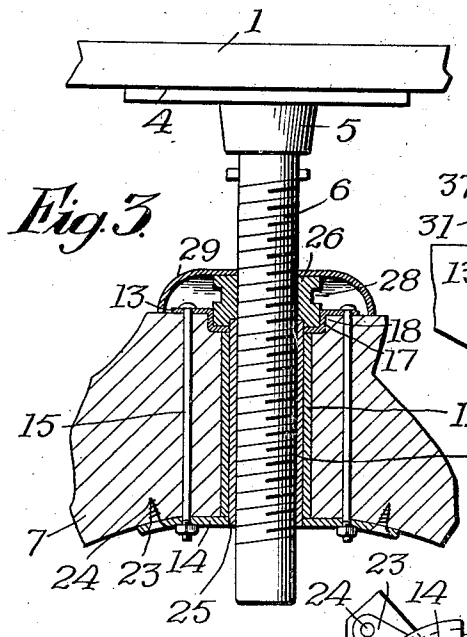


Fig. 4.

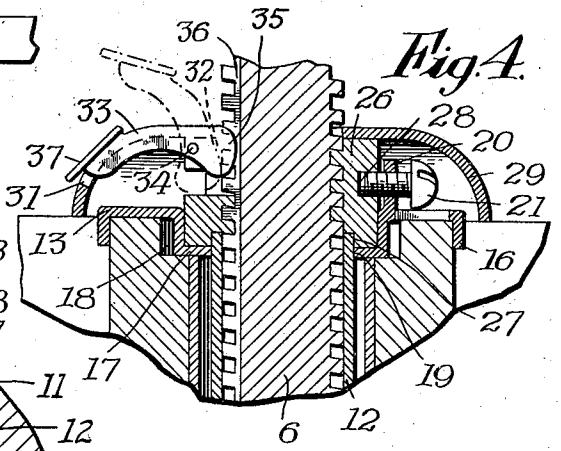
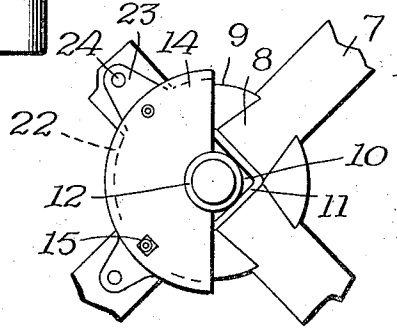


Fig. 5.



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Patented Feb. 19, 1924. 1,484,371

UNITED STATES PATENT OFFICE.

CHARLES A. BROWN, OF GARDNER, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO HEYWOOD-WAKEFIELD COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

REVOLVING CHAIR.

Application filed April 5, 1920. Serial No. 371,369.

To all whom it may concern:

Be it known that I, CHARLES A. BROWN, a citizen of the United States, residing at Gardner, in the county of Worcester and Commonwealth of Massachusetts, have invented a new and useful Improvement in a Revolving Chair, of which the following, together with the accompanying drawings, is a specification.

My invention relates to revolving chairs that are capable of being adjusted vertically and it has for its object to provide certain improvements in the hub structure and in the means for adjusting the height of the chair seat.

Revolving chairs, as heretofore constructed, have usually comprised a base provided with a hub casting for receiving a threaded spindle carried by the seat and have employed a nut coacting with the spindle for vertically adjusting the chair. Various means have also been provided for locking the nut against turning on the spindle, so as to prevent vertical movement of the chair seat after it has once been adjusted, without interfering with the rotation thereof. The users of such revolving chairs have heretofore been subjected to considerable annoyance when adjusting the same, owing to the fact that the locking member usually receives some of the lubricant used on the spindle and consequently is covered with dust and dirt.

By my invention, I propose to improve the above described general construction by eliminating the relatively heavy and expensive cast iron hub and substituting therefor a hub made up entirely of pressed metal parts which may be manufactured in quantity at small cost and are readily assembled on the chair. I further propose to inclose the working parts of the spindle and the nut in a dust proof cover, which not only serves to keep the dust and dirt from the working parts, but also prevents the lubricant from getting on the hands of the user when adjusting the chair.

In the accompanying drawings,

Fig. 1 is a side view of a chair constructed in accordance with my invention.

Fig. 2 is a plan view along the line 2—2, Fig. 1, half of the hub cover being removed to show the details of the hub.

Fig. 3 is a transverse sectional view along the line 3—3, Fig. 2.

Fig. 4 is an enlarged sectional view along the line 4—4, Fig. 2.

Fig. 5 is a plan view looking at the bottom of the parts shown in Fig. 3.

Like reference characters refer to like parts in the different figures.

Referring first to Fig. 1, the chair comprises a seat 1 which supports a back 2 and arms 3. A seat iron 4 is secured to the bottom of the seat 1 and is formed with a downwardly extending projection 5, within which is received one end of a threaded spindle 6. The spindle 6 extends downwardly into the base of the chair, which is supported upon legs 7 in the usual manner.

Referring now to Figs. 2 and 5, the legs 7 are provided at their upper extremities with dovetail portions 8, between which are fitted filler blocks 9 to form a generally cylindrical hub having a rectangular opening 10 inclosed by the ends of the dovetail portions 8. A rectangular casing 11 is disposed in the opening 10, and a cylindrical bushing 12 fits closely within the casing 11. The casing 11 and the bushing 12 are preferably pressed from sheet metal, the joined edges of these members being spot welded together.

The several portions of the hub are held together between the caps 13 and 14, by bolts 15 passing through the dovetail portions 8 of the legs 7. As best shown in Fig. 2, the upper hub cap 13 is substantially circular in form and is provided around its outer periphery with a plurality of spaced bent-over flanges 16 extending between the legs 7 and holding the filler blocks 9 in position. The cap 13 is provided with a depressed portion 17, which extends into an annular seat 18 formed at the top of the hub. The depressed portion 17 is provided with a central opening 19 which receives the upper end of the bushing 12, which extends beyond the casing 11 and projects above the bottom surface of the depressed

portion 17. The cap 13 is further provided with an upwardly extended punched-out tongue 20 which carries a stud 21, the purpose of which will be hereinafter described.

As best shown in Fig. 5, the lower hub cap 14 is provided with a plurality of spaced bent-over flanges 22 extending between the legs 7 and adapted to hold the filler blocks 9 in position, in the same manner as the flanges 16. The cap 14 is further provided with projecting wing portions 23 between the flange portions 22, which are bent downwardly to conform to the curvature of the legs 7. The legs are secured to the wings 23 by screws 24. The cap 14 is provided with a central opening 25 which receives the lower end of the bushing 12 which projects beyond the casing 11.

The spindle 6 is supported in the bushing 12 by an internally threaded nut 26, the lower portion of which is received in the recessed portion 17 of the upper hub cap 13, and is provided with a groove 27 for receiving the upper end of the bushing 12. The projecting end of the bushing 12 forms a cup in the recessed portion 17 for the retention of a sufficient amount of heavy grease to lubricate the bearing surfaces of the nut. The nut 26 is further provided with a peripheral groove 28 which receives the end of the stud 21, and thereby secures the nut 26 to the hub cap 13 without interfering with its rotation.

A bell-shaped cover 29 is provided with a central opening for the reception of the spindle 6 and is secured to the top of the nut 26 in any suitable manner, such as by spot welding. As best shown in Figs. 2 and 4, the cover 29 is provided with a slot 30 which extends from the spindle 6 radially across the cover and terminates in a circular opening 31 near the periphery of the cover. The nut 26 is provided with a slot 32 which registers with the slot 30 in the cover, and a latch lever 33, pivotally mounted on a pin 34, is adapted to move in the slots 30 and 32. The latch lever 33 is provided at one end with a locking portion 35 that is adapted to be received in a longitudinal slot 36 provided on the spindle 6 when the lever is in a substantially horizontal position, as shown in Fig. 4. The other end of the lever 33 is provided with a cap 37 that covers the opening 31 in the cover 29. The form of the latch lever 33 is such that its upper surface is just flush with the top of the cover 29 when in its horizontal position. When the locking portion 35 of the lever 33 is located in the slot 36 of the spindle 6, relative rotation between the nut and the spindle is prevented, but when the lever 33 is moved to the position shown in dotted lines, the locking portion 35 is then entirely disposed in the slot 32 in the nut 26 and the spindle 6 may be turned to adjust the vertical position of the seat 1.

From the foregoing, it is apparent that I have provided an extremely rigid hub construction for the base of the chair, as all parts comprising the same are secured together between the hub caps 13 and 14. The bushing for the spindle, together with its inclosing casing, and the hub caps are all readily pressed from sheet metal, thereby reducing the weight and cost of manufacture of the chair, as compared with those in which a solid cast iron hub is employed.

The cover attached to the nut completely incloses the working portions of the hub, which are covered with lubricant and effectively serves to keep the bearing surfaces free from dust and dirt. The latch lever conforms to the surface of the cover when in its normal position and presents no projecting portions which might catch on the clothing of the user of the chair and also serves to close the slot within which it moves. When it is desired to adjust the vertical position of the seat 1, it is only necessary to lift the latch lever by means of the cap 37 and this may be done without any possibility of soiling the fingers with the lubricant contained in the depressed portion 17. After the chair has been adjusted to the desired position, it may be locked by turning the spindle until the slot 36 again registers with the locking portion 35 of the latch lever. In case it is desired to remove the spindle from the hub, it is only necessary to turn the cap 29 until the opening 31 registers with the head of the stud 21, so that a suitable tool may be inserted through the opening 31 in order to unscrew the end of the stud from the groove 28 in the nut. The spindle 6 together with the nut and cover may then be withdrawn by lifting the seat 1.

While I have shown my invention in its simplest and preferred form and as applied to a particular construction of a chair, it is not so limited but is susceptible of various modifications within the scope of the appended claims.

I claim:

1. In a revolving chair, a plurality of legs converging to form a hub, a hub cap having an annular depression extending into a recess in said hub, a threaded spindle attached to the chair seat and carrying a nut seated in the depression of the hub cap, and a bushing extending through the hub into the cap and projecting above the lower surface of the depression for the retention of lubricant therein.

2. In a revolving chair, a threaded spindle attached to the chair seat, a nut carried by the spindle and rotatably supported by

the hub of the chair, a locking member pivotally mounted on said nut for preventing relative rotation between the nut and the spindle, a stud carried by the hub to secure the nut thereto, and a cover inclosing both the locking member and the stud, the said cover being provided with an opening to permit movement of said locking member therein and to give access to said stud.

Dated this 26th day of March, 1920.

CHARLES A. BROWN.

Witnesses:
B. M. COBURN,
E. H. BLACK.