

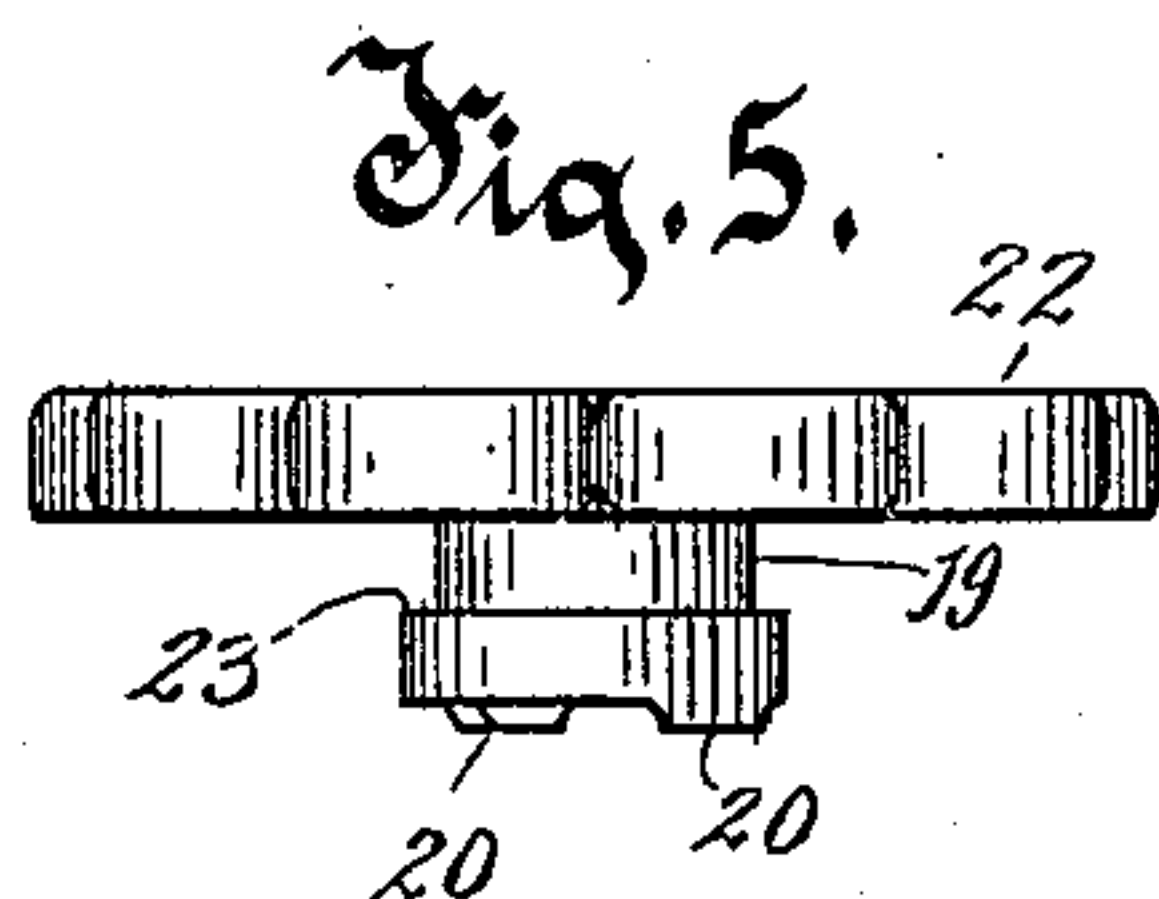
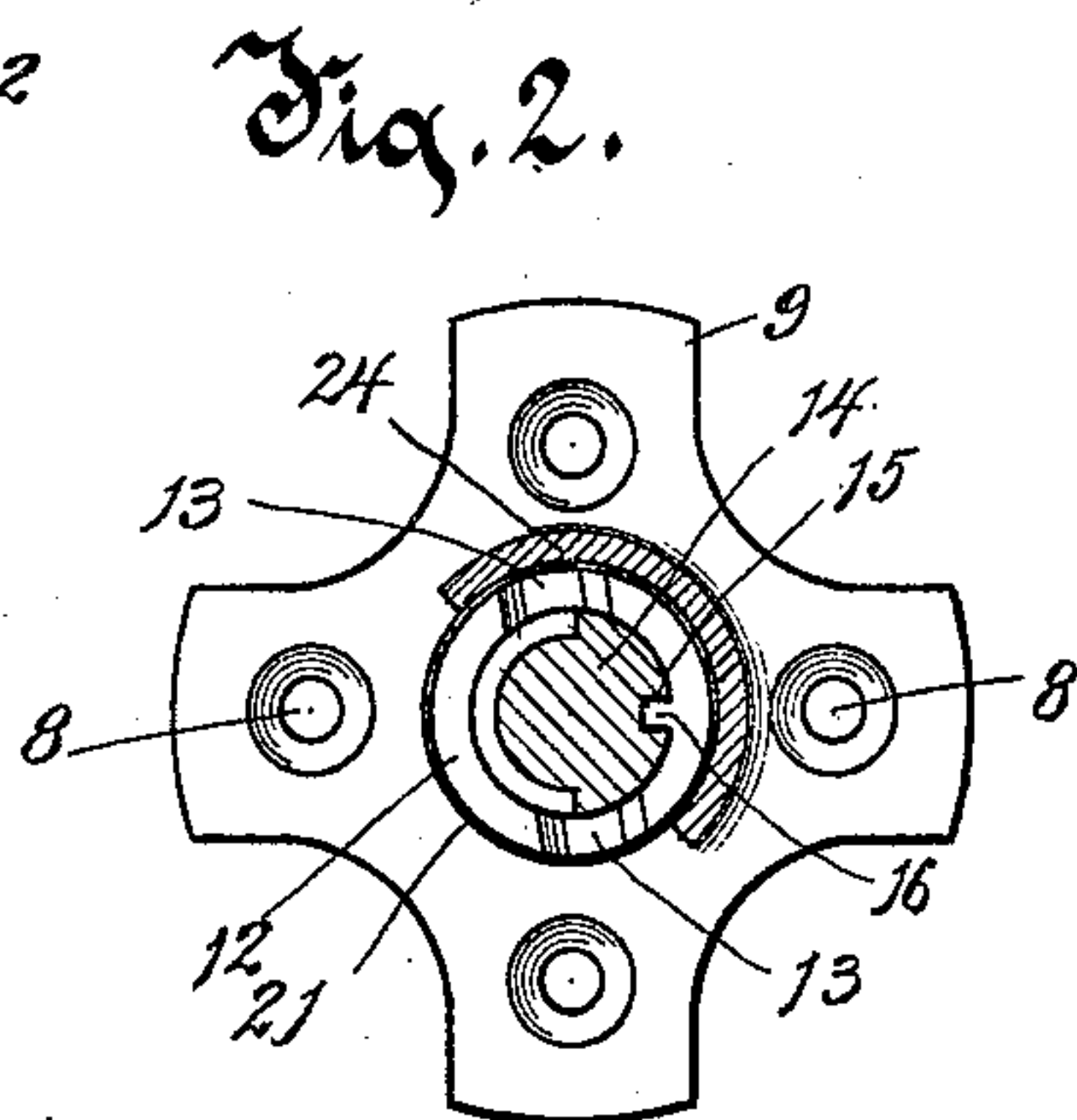
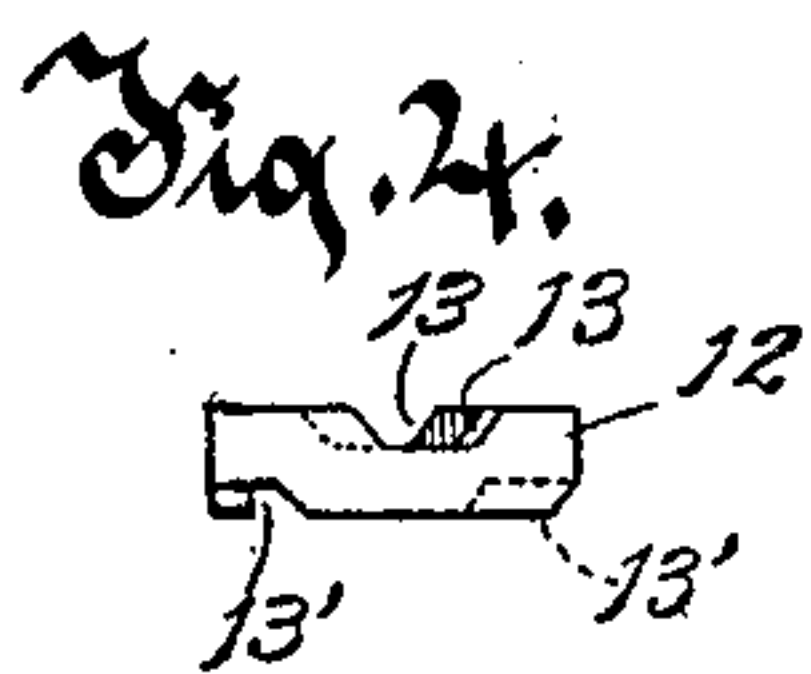
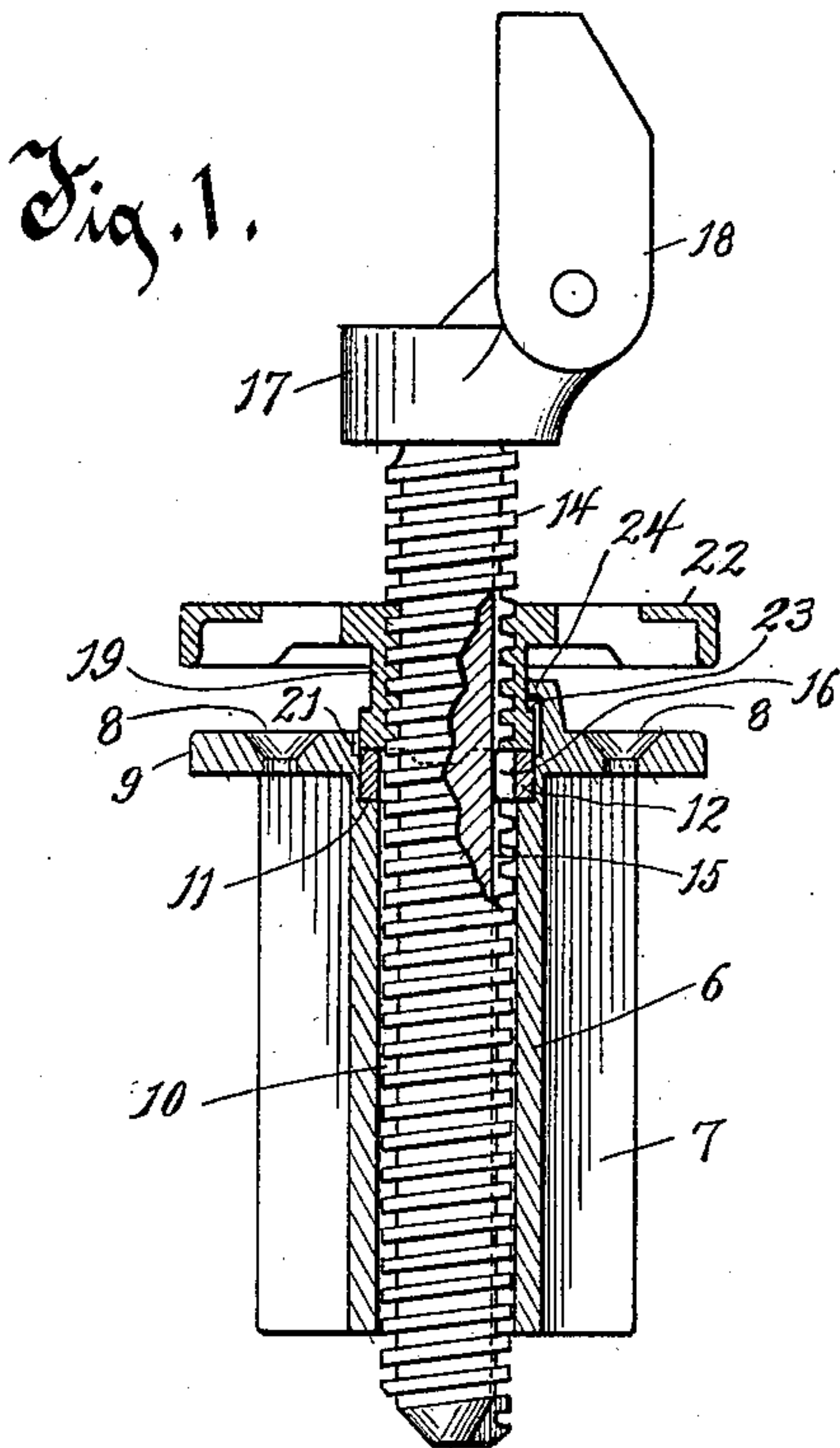
No. 629,676.

Patented July 25, 1899.

J. M. GERMANSON.  
REVOLVING CHAIR.

(Application filed Apr. 14, 1899.)

(No Model.)



Witnesses.

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# UNITED STATES PATENT OFFICE.

JULIUS M. GERMANSON, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE  
WESTERN MALLEABLE AND GREY IRON MANUFACTURING COMPANY,  
OF SAME PLACE.

## REVOLVING CHAIR.

SPECIFICATION forming part of Letters Patent No. 629,676, dated July 25, 1899.

Application filed April 14, 1899. Serial No. 712,992. (No model.)

*To all whom it may concern:*

Be it known that I, JULIUS M. GERMANSON, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and useful Improvement in Revolving Chairs, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

My invention has relation to improvements in revolving chairs.

The invention consists particularly in certain improvements upon Letters Patent of the United States issued to James M. Morgan for improvements in revolving chairs, No. 537,988, dated April 23, 1895.

The primary object of the present invention is to simplify and cheapen the cost of the chair-iron covered in the aforesaid Letters Patent; and with this primary object in view the invention consists of the devices and parts or their equivalents, as hereinafter more fully pointed out.

In the accompanying drawings, Figure 1 is an elevation of a chair-iron constructed in accordance with my improvements, parts being in section and parts broken away. Fig. 2 is a plan view of the top of the hub, the segmental angular lug thereof being in horizontal section. Fig. 3 is a plan view of the combined hand-wheel and nut. Fig. 4 is a detail view of the collar, and Fig. 5 is an elevation of the hand-wheel and nut.

Referring to the drawings, the numeral 6 indicates the hub of the chair-iron, which is provided with the usual grooves 7 for receiving the upper portions of the legs (not shown) on which the hub is supported, said legs being held in place by means of screws passed through openings 8 in the top portion or flange 9 of the hub. The hub is provided with a central vertical plain or unthreaded opening 10 throughout its length, and at the upper end of this opening the bordering wall thereof is cut away to form a shoulder 11, which is located just below the upper extremity of the opening. Resting upon this shoulder is a collar 12, said collar provided in its top edge at diametrically opposite points with recesses or depressions 13 13. Similar recesses or depressions 13' 13' may be formed on the lower

edge of the collar, so that the collar may be placed into the hub with either edge downward. A screw-spindle 14 is adapted to be passed through the collar and through the central vertical opening of the hub, and this screw-spindle is provided lengthwise thereof with a groove 15, with which groove a lug 16, extending inwardly from the collar 12, is adapted to engage. The upper end of the screw-spindle is provided with the usual head 17, to which the flange 18 by which the spindle is attached to the chair-seat is connected. A nut 19 engages the spindle, and the lower end of this nut normally extends a very slight distance into the upper end of the opening 10 of the hub and rests upon the upper edge of the collar 12, said lower edge of this nut being provided at diametrically opposite points with lugs 20 20, which normally engage the recesses 13 13 or 13' 13' of the collar. The extreme upper end of the opening 10 is enlarged somewhat in diameter, as indicated at 21, so that the circumferential edge of the lower end of the nut will not contact with the wall of the opening, thereby decreasing friction to the minimum. The upper end of the nut is formed or provided with a hand-wheel 22 for convenience in turning the same. Beneath this hand-wheel the nut is cut out annularly to form a lower shoulder 23. The top portion or flange 9 of the hub has extending upwardly therefrom and preferably integral therewith an angular lug 24, the inwardly-extending portion thereof extending inwardly into the cut-out portion of the nut and at a slight distance above the shoulder 23, the distance being such as to permit the nut to be raised, so that the lugs 20 thereof are brought out of engagement with the recesses or depressions 13 13 or 13' 13' of the collar and to bear on the edge of said collar. While I prefer to provide a lug 24 of segmental shape, yet this specific construction is not absolutely necessary, inasmuch as two lugs could be provided with advantage, extending at different points from the top portion 9.

In the operation of the invention when the chair-seat is revolved by a person occupying the seat the screw-spindle 14, through the engagement of the lug 16 of the collar with



the groove 15 of the spindle, carries with it the collar 12, and by reason of the fact that the depressions or recesses of said collar are normally engaged by the lugs 20 of the nut said nut is also carried with the spindle, with the result that the three parts referred to are revolved together, the collar and the lower extremity of the nut revolving freely in the upper portion of the opening of the hub. It follows from this that the nut is normally held to the screw in the rotation of said screw, and consequently there is no vertical movement at all of the parts, although the free rotation of the chair-seat is provided for. Whenever it is desired to adjust the chair-seat vertically, said seat is held against rotation by one hand, while the other hand grasps the hand-wheel and rotates the nut 19. The forcible rotation of the nut carries the lugs 20 thereof out of engagement with the recesses of the collar 12 and said lugs therefor with the continued rotation ride around on the upper edge of the collar. By this continued rotation of the nut the screw-spindle is either raised or lowered in accordance with the direction in which said nut is turned. The angular lug 24 serves the function of permitting of the disengagement of the lugs 20 from the recesses of the collar 12, but yet prevents said nut from movement longitudinally on the screw-spindle. As the nut is held against longitudinal movement, it of course follows that the spindle must move vertically, said spindle being prevented from turning by reason of the engagement of the lug 16 with the groove 15 of said spindle.

In the Morgan patent, No. 537,988, dated April 23, 1895, and referred to at the outset of this specification the shoulder corresponding to the shoulder 11 of the present application was arranged in the bordering wall of the opening of the hub, near the lower end of said opening, and in place of the collar 12 a long sleeve was inserted in the hub and rested upon said lower shoulder. The adjusting-nut also extended quite a distance into the opening of the hub in order to engage the upper edge of this long sleeve. Furthermore, the nut was provided with an annular groove which was engaged by a screw, the groove being of sufficient width to permit of a vertical play of the nut equal to the vertical extent of the projection on the lower edge of said nut. It will also be noted that in said Letters Patent the lower end of the nut is shown as provided with only one projection adapted to engage a single recess or depression at the upper edge of the sleeve. The construction just outlined has been found in practice open to objections, the most serious of which is the wobbling and rattling which are necessarily incidental to such construction. With a long sleeve such as shown in said patent and with a nut extending for a distance into the hub if the parts were fitted tight enough to prevent wobbling or rattling

so much friction would be engendered as to seriously interfere with the free revolving of the chair and would also create considerable wear. In my construction this difficulty is successfully overcome by forming the shoulder in the upper portion of the opening of the hub, whereby a long solid bearing is formed throughout practically the whole length of the opening, thus taking away any chance of shaking. From the fact that in the patent referred to the nut extends for a considerable distance into the bore of the hub an adjusting-screw must necessarily be employed, extending laterally through the hub and entering an annular groove in the nut, in order to provide for a slight vertical play of the nut. By my improved construction the screw can be entirely omitted and the same function secured by means of the angular lug extending upwardly from the top portion of the hub. In my construction the collar is provided with the two recesses or depressions and the lower end of the nut with the two lugs or projections, for the reason that one depression and one engaging lug would not work successfully in this form of construction owing to the fact that a collar such as 12 would necessarily tilt upon the disengagement of a single lug from a single recess or depression.

A construction of chair-iron of the form herein shown and described is capable of being manufactured much cheaper than the form covered in Letters Patent No. 537,988, dated April 23, 1895, inasmuch as it is not necessary to provide for accurately fitting the nut into the bore of the hub, and consequently lathework is thereby avoided and simplicity of construction also thereby secured.

In my form of construction by providing a segmental angular lug 24 I secure greater simplicity in adjusting the parts of the chair-iron together. For instance, the nut can first be turned onto the spindle such a limited distance that the end of the spindle will not project through the nut. The nut can now be inserted under the inwardly-extending lip of the segmental lug. By now holding the spindle against rotation and turning the nut said spindle will be turned down into the hub. This arrangement obviates the necessity of employing a lug or lugs detachably secured to the top of the hub and screwed down to place after the parts have been secured together.

What I claim as my invention is—

1. The combination, of a hub having a vertical opening, the wall of the opening at or near the upper end of said opening being provided with a shoulder, a loose collar supported on the shoulder, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, a nut engaging the spindle and supported on and releasably engaging the collar, means for normally releasably locking the spindle, collar, and nut



to revolution together, and means adapted, when the nut is independently turned, for causing the spindle to have vertical movement in the collar, while the nut is held against vertical movement on the spindle.

2. The combination, of a hub having a vertical opening, the wall of the opening at or near the upper end of said opening being provided with a shoulder, a loose collar supported on the shoulder, said collar being provided with depressions or recesses in its edge, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, a nut engaging the spindle and supported on the collar, and provided with lugs normally fitting the recesses of the collar to thereby lock the nut to said collar, said nut adapted to have a slight vertical play in order to disengage the lugs from the recesses, and means for normally holding the collar to rotation with the spindle, and means adapted, when the nut is released from the collar, and when said nut is turned independently, for causing the spindle to move vertically in the collar.

3. The combination, of a hub having a vertical opening, the wall of the opening at or near the upper end of said opening being provided with a shoulder, a loose collar supported on the shoulder, said collar provided with an inwardly-projecting lug, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, said spindle provided with a groove which is engaged by the lug of the collar, a nut supported on and releasably engaging the collar, whereby the spindle, collar, and nut are normally rotatable together, and means for preventing vertical movement of the nut on the spindle.

4. The combination, of a hub having a vertical opening, the wall of the opening at or near the upper end of said opening being provided with a shoulder, and said hub having an angular lug or lugs projecting upwardly from the upper portion thereof, a loose collar supported on the shoulder, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, a nut supported on and releasably engaging the collar, said nut provided with a shoulder above which the angular lug or lugs is or are adapted to project to such an extent as to provide for a slight vertical play of the nut, means for normally releasably locking the spindle, collar, and nut to revolution together, and means adapted, when the nut is independently turned, for causing the spindle to have vertical movement in the collar, while the nut is held against vertical movement on the spindle.

5. The combination, of a hub having a vertical opening, the wall of the opening at or near the upper end of said opening being provided with a shoulder, and said hub having a

segmental, angular, lug projecting upwardly therefrom, said lug being integral or adapted to be held in permanent connection with the top of the hub, a loose collar supported on the shoulder, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, a nut supported on and releasably engaging the collar, said nut provided with a shoulder above which the segmental angular lug projects to such extent as to provide for a slight vertical play of the nut, means for normally releasably locking the spindle, collar, and nut to revolution together, and means adapted, when the nut is independently turned, for causing the spindle to have vertical movement in the collar, while the nut is held against vertical movement on the spindle.

6. The combination, of a hub having a vertical opening, the wall of the opening near the upper end of said opening being provided with a shoulder, a loose collar supported on the shoulder, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, a nut extending for a slight distance into the upper end of the opening of the hub, and releasably engaging the collar, means for normally releasably locking the spindle, collar, and nut to revolution together, and means adapted, when the nut is independently turned, for causing the spindle to have vertical movement in the collar, while the nut is held against vertical movement on the spindle.

7. The combination, of a hub having a vertical opening, the wall of the opening near the upper end of said opening being provided with a shoulder, a loose collar supported on the shoulder, a screw-threaded spindle passing through the collar and extending freely into the opening of the hub, a nut extending for a slight distance into the upper end of the opening of the hub, but free from contact with the bordering wall of said opening, and releasably engaging the collar, means for normally releasably locking the spindle, collar, and nut to revolution together, and means adapted, when the nut is independently turned, for causing the spindle to have vertical movement in the collar, while the nut is held against vertical movement on the spindle.

8. The combination, of a hub having a vertical opening, the wall of the opening near the upper end of said opening being provided with a shoulder, a loose collar supported on the shoulder and provided with depressions or recesses in its edge, and also provided with an inwardly-extending lug, a screw-threaded spindle passing through the collar, and extending freely into the opening of the hub, said spindle provided with a vertical groove engaged by the inwardly-extending lug of the collar, a nut engaging the spindle, said nut having its lower end extending into the open-



ing of the hub for a limited distance sufficient  
to cause the lower end of the nut to engage  
the collar, said lower end of the nut provided  
with depending lugs which normally engage  
5 the depressions or recesses of the collar, and  
an angular lug extending upwardly from the  
top of the hub, and engaging over a shoulder  
formed on the nut, said lug extending a suf-

ficient distance above the shoulder to permit  
a slight vertical play of the nut. 10

In testimony whereof I affix my signature  
in presence of two witnesses.

JULIUS M. GERMANSON.

Witnesses:

A. L. MORSELL

W. J. POTTER.