(No Model.)

2 Sheets—Sheet 1.

J. M. MORGAN.

REVOLVING CHAIR.

No. 526,045. Patented Sept. 18, 1894.

Fig. 1.

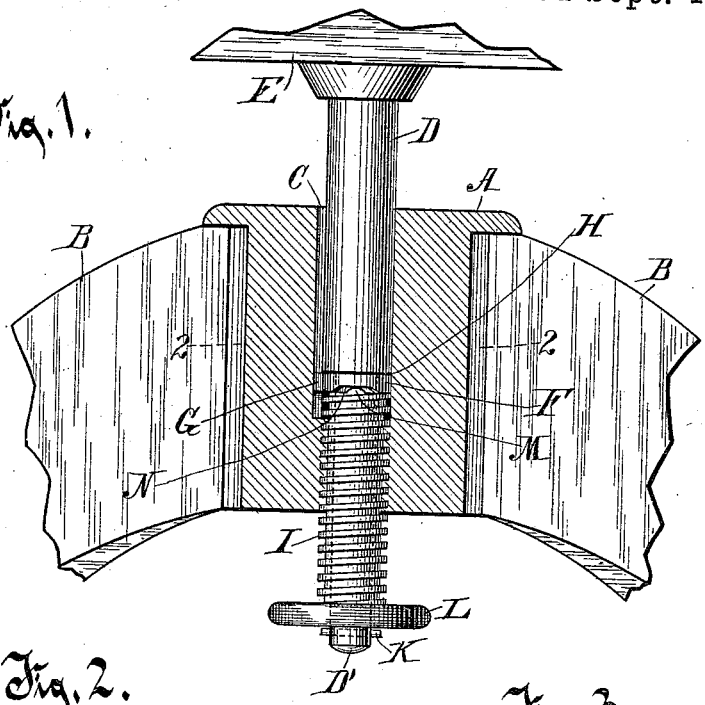


Fig. 2.

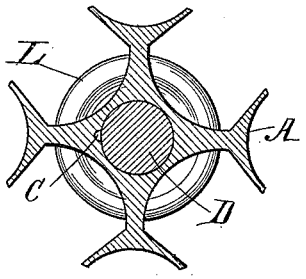


Fig. 3.

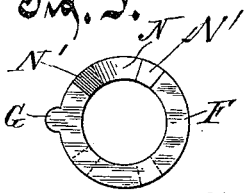


Fig. 4.

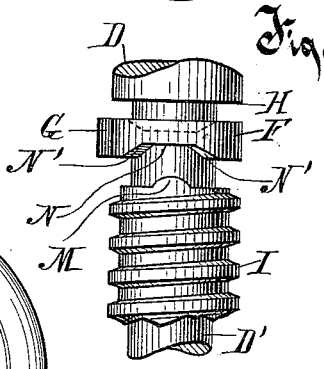
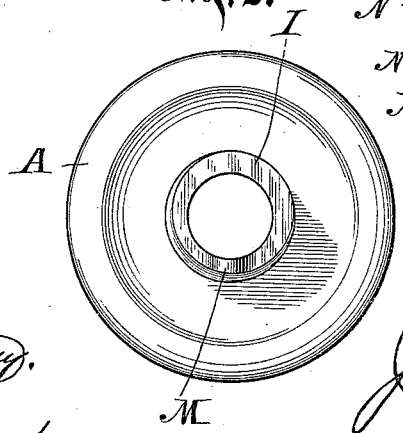


Fig. 5.



Witnesses.

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(No Model.) 2 Sheets—Sheet 2.

J. M. MORGAN.

REVOLVING CHAIR.

No. 526,045. Patented Sept. 18, 1894.

Fig. 6.

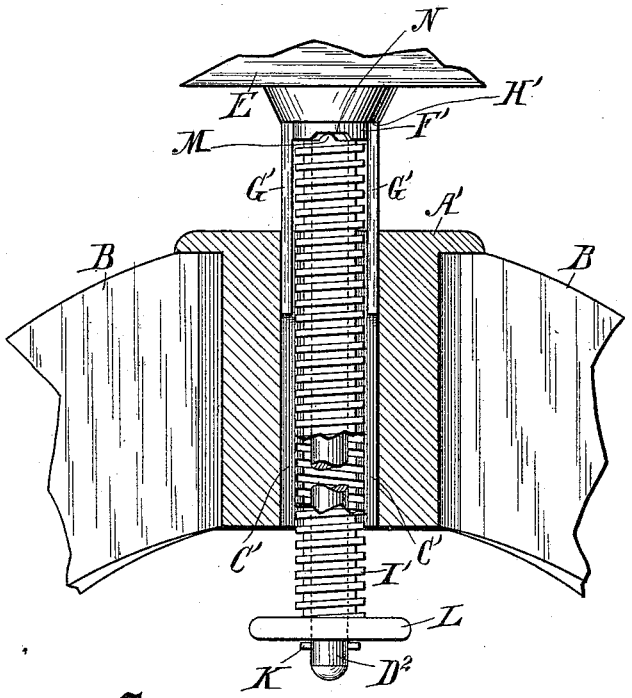


Fig. 7.

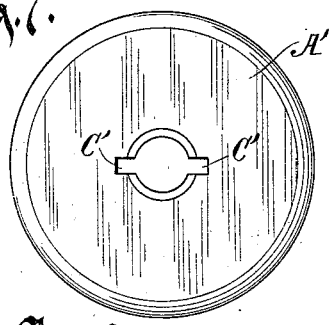
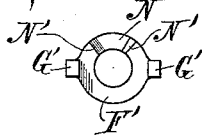


Fig. 8.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES M. MORGAN, OF PORT WASHINGTON, WISCONSIN.

REVOLVING CHAIR.

SPECIFICATION forming part of Letters Patent No. 526,045, dated September 18, 1894.

Application filed December 8, 1893. Serial No. 493,090. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. MORGAN, of Port Washington, in the county of Ozaukee 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 relates to improvements in a revolving chair, in which the seat is provided with a fixed depending spindle, the seat being adjustable vertically by means of a spindle-supporting screw turning in a suitable hub, the invention being an improvement on, and an addition to the structure and invention shown in my application for a patent on revolving chairs, filed September 28, 1893, Serial No. 486,728.

The object of the invention is, in a revolving chair of the class above mentioned, to provide means for releasably locking the device adapted to adjust the seat vertically.

The invention consists in the devices and their combinations, hereinafter described and claimed, or their equivalents.

Figure 1, is an elevation of my improved devices, a chair hub to which they relate and in which they operate, being in central vertical section. Fig. 2, is a transverse section of the hub and spindle therefor, on line 2—2 of Fig. 1, looking downwardly, showing also the hand wheel fixed on the adjusting screw. Fig. 3, is an under side view of a bearing and locking plate or ring. Fig. 4, is an elevation of fragments of the chair spindle and the adjusting screw, with the bearing and locking ring, the parts being somewhat separated or disassembled, for better illustration of details. Fig. 5, is a top plan view of the hub and the adjusting screw therein. Figs. 6, 7 and 8 show a modified form of device.

The metal nut or hub A is so constructed as to receive the ends of the legs B, on which it is supported. The hub is provided with a central vertical aperture, the upper portion of which has a smooth surface, and the lower portion of which is provided with a screw thread. At one side of the upper or smooth portion of the aperture and continuous therewith, there is a small vertical groove C co-extensive vertically with the smooth portion of the aperture in the hub.

A cylindrical spindle D affixed to and projecting downwardly from the spider or chair seat E, fits movably in the upper or smooth portion of the vertical aperture through the hub A. A contracted or diametrically smaller portion D′ of the spindle projects axially downwardly through and beyond the screw threaded portion of the aperture in the hub. An annular flat plate or ring F, provided with a laterally projecting tongue G receives therethrough the contracted part of stem D′ of the spindle, and receives thereon the bearing of the annular ledge or shoulder H on the spindle D, that exists at the point of the sudden contraction of the spindle to the stem D′ thereof. This ring F is of such size as to fit movably in the upper or smooth portion of the vertical aperture in the hub, the tongue G entering the groove C and preventing the revolution of the ring, but permitting it to move freely vertically therein.

A screw threaded sleeve or hollow screw I turns in the screw threaded part of the vertical aperture in the hub against the ring F, and supports the ring and the spindle and its load, adjustably thereon. The stem D′ passes loosely through the hollow screw I and the spindle is secured detachably in the screw by the removal pin key K. The screw I is provided with a rigid end wheel L for conveniently rotating it.

It will be understood that the spindle D and its load is readily raised or lowered in the hub A by rotating the screw I, and that the spindle D can revolve freely in the hub on the bearing ring F, independently of the supporting and adjusting screw I. However, it is found that when the parts have become a little worn or if the stem D′ fits a little too snugly in the hollow screw I, that there is friction enough, at times between the spindle stem and the screw, and especially under a considerable load, to rotate the screw in the direction that runs it down when the spindle is revolved in that direction. To obviate this an automatic releasable locking device is provided, which consists of a tongue or boss M projecting longitudinally from the screw, at its upper extremity, which boss normally enters a recess N formed in the adjacent end of the ring F. This recess N is preferably provided with inclined, oblique, or curved end walls N′ N′.

This construction prevents the running down of the screw I under a load by the mere friction thereagainst of the revolving stem D′, as the contact of the boss M against the oblique shoulders N′ of the non-revoluble ring F, is sufficient to prevent the revolution of the screw under any such slight stress as would be produced on it by the friction of the stem D′. The screw I can nevertheless be readily revolved for the purpose of adjusting the seat vertically, the boss M in such case slipping from the recess N on the inclined shoulders N′ and rotating with sufficient freedom for this purpose beneath the ring F, notwithstanding the irregularity in its under or bearing surface by reason of the recess N. A corresponding opposite and reverse recess is indicated in the ring F, which is preferably provided so that the ring can be put on the stem D′ either end uppermost without consideration or attention.

In the modified form of device shown in Figs. 6, 7 and 8, the hub A′ is provided with a central vertical aperture that is screw-threaded preferably its entire length, and is provided with lateral vertical grooves C′. The hollow screw I′ extends through the hub, and the annular bearing plate or ring F′ rests on the top of the hollow screw, and is provided with rigid depending guide rods or legs G′, which register with and enter and travel vertically in the grooves C′. These legs unite with the ring F′ through lateral projections, which projections and the legs serve the purpose of the tongue G in the other form of device. The spindle D^2 is of equal diameter throughout its length and fits revolubly in the hollow screw I′. The shoulder H′ rests loosely on the ring F′. The boss M on the screw I′ and the recess N in the ring F′ are substantially the same as in the other form of device.

It will be noted that the locking device is so constructed as to prevent the rotation of the screw in either direction under the mere friction of the rotating spindle, but will yield to power applied directly to said screw. As the chief annoyance in such chairs comes from the running down of the screw, and as there is little liability of its running up under the friction of the screw revolving in that direction, such theoretical result has not been referred to, but only the real annoyance. The running down of the screw has been particularly mentioned, as provided against.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

In a revolving chair, the combination with a hub and a hollow adjusting screw turning therein, said screw being provided with a longitudinally projecting boss, of a seat-spindle revoluble in and supported on the hollow screw, and a non-revoluble bearing ring or plate interposed between the end of the screw and a shoulder of the spindle, which ring is provided with a recess adapted to receive and its end walls to engage releasably the boss on the screw, substantially as described.

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

JAMES M. MORGAN.

Witnesses:
HENRY W. LYMAN,
H. L. COE.