M. E. STOCKWELL.

TILTING DEVICE FOR CHAIRS.

APPLICATION FILED JUNE 17, 1907.

912,505.

Patented Feb. 16, 1909.

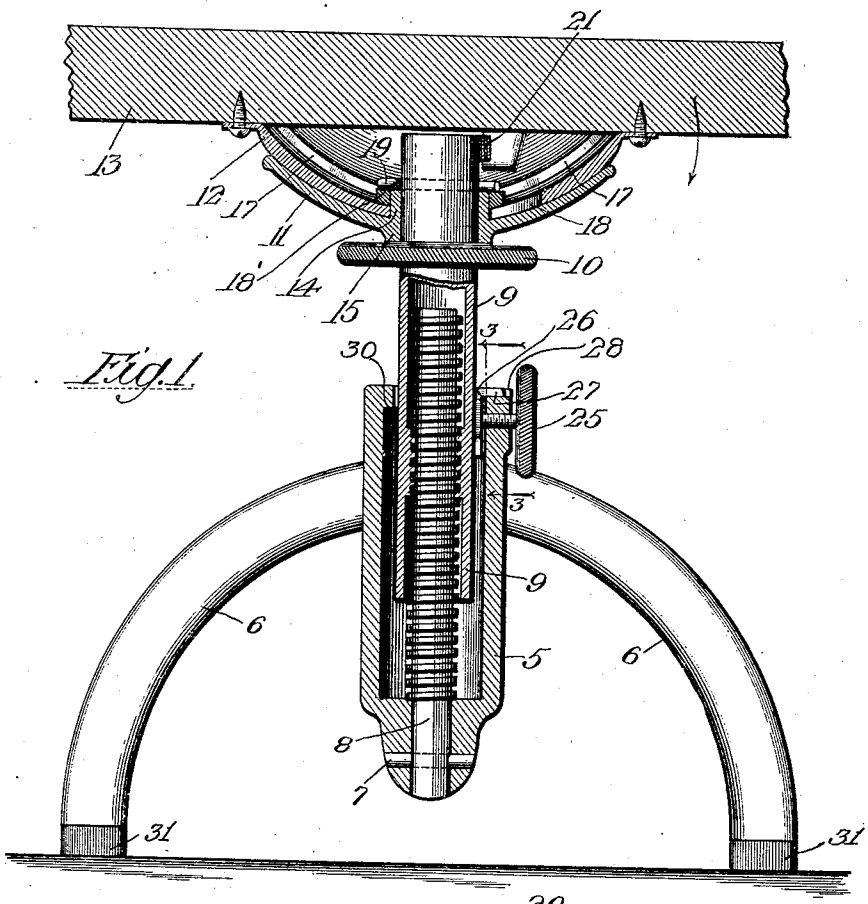


Fig. 1.

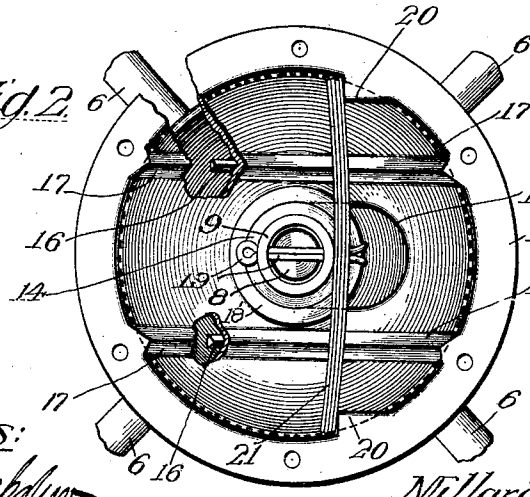


Fig. 2.

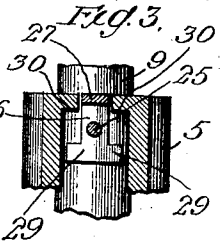


Fig. 3.

Witnesses:

Wm. K. Enderton

M. A. Jones

Inventor:

Millard E. Stockwell.

By Mason & Thurston

Attorneys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MILLARD E. STOCKWELL, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO ACME DOOR AND GLASS COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION OF CALIFORNIA.

TILTING DEVICE FOR CHAIRS.

No. 912,505. Specification of Letters Patent. Patented Feb. 16, 1909.

Application filed June 17, 1907. Serial No. 379,306.

To all whom it may concern:

Be it known that I, MILLARD E. STOCKWELL, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented new and useful Improvements in Tilting Devices for Chairs, of which the following is a specification.

My invention relates to tilting devices more particularly designed for office furniture, such as typewriter chairs, stools etc., and a special object thereof is to provide a device that is not dependent upon the use of coiled or other springs to accomplish the tilting movement of the chair seat.

Another and important object is to provide a device whereby the inclination of the chair seat from the horizontal is maintained by the friction created in the tilting members by the weight of the person occupying the chair.

A further object is to provide means for returning the chair seat to its normal position after use by an occupant.

I accomplish these objects by means of the device described herein and illustrated in the accompanying drawings, in which:—

Figure 1 is a central vertical section through a chair equipped with my improved device. Fig. 2 is a plan view of my improved device detached from a chair. Fig. 3 is a sectional detail of the bearing block taken on line 3—3 of Fig. 1.

Referring to the drawings, 5 designates a vertically disposed cylindrical sleeve or standard, provided with the usual legs 6. Centrally disposed in standard 5 and rigidly secured in the bottom thereof by a transversely disposed pin 7, is a threaded stud 8. Revolubly mounted in standard 5 and in screw threaded engagement with stud 8 is a cylindrical supporting sleeve 9 preferably provided near its upper end with a knurled adjusting nut 10.

My improved tilting device preferably consists of two annular cup-shaped members, a lower stationary member 11, and an upper tilting member 12 which is adapted to be rigidly secured to the bottom of the chair seat 13 by means of screws or other suitable securing means. Member 11 is cup-shaped on its upper face and is preferably provided with a centrally disposed bearing sleeve 14 which is adapted to engage the upper end of supporting sleeve 9, the lower annular shoulder 15 of sleeve 14 bearing against the upper face of adjusting nut 10. The upper face of member 11 is preferably provided on either side of bearing sleeve 14 with a V-shaped rib 16, both ribs lying parallel to each other. These ribs are adapted to engage similarly formed grooves 17 formed on the under face of member 12 which has a centrally disposed elongated aperture 18 through which passes the upper end of sleeve 14. This member is adapted to rest within member 11 as illustrated in Fig. 1, and the V-shaped grooves 17 are adapted to register with and engage the ribs 16 on the upper face of member 11, thereby permitting the tilting movement of the upper member in but one direction. Sleeve 14 of the stationary member is provided with a metallic washer 18′, the upper face of which is flush with the upper end of sleeve 14, a cotter pin 19 passing through the upper end of sleeve 9 adjacent the upper faces of the sleeve 14 and washer 18 serves to retain the two members in engagement.

At the edge of the depression in member 12 and diametrically opposite each other are two square shouldered bearing lugs 20, which are adapted to form a seat for the ends of a flat spring 21 preferably formed of a plurality of leaves. The central portion of spring 21 bears against the outer face of the upper end of sleeve 9. The purpose of spring 21 is to return the tilting member 12 to its normal position after the occupant has relinquished the seat. The length of the elongated aperture 18 will determine the extent of movement of member 12, which may be increased or diminished for various forms of chairs.

In Fig. 1, I have illustrated a means of preventing the rotation of sleeve 9, which consists in this instance of a knurled hand screw 25 which passes through the upper end of standard 5 and engages a bearing block 26. Block 26 is provided with a right angled lug 27 which engages a notch 28 in the upper end of standard 5. The face of supporting block 26 which engages with the face of sleeve 9 is concaved so as to form a bearing surface and hold sleeve 9 in frictional engagement when block 26 is forced inwardly by hand screw 25. The lower end of block 26 is provided with two lugs 29 which are adapted to contact with shoulder 30 so as to prevent block 26 from withdrawal. By the above described means sleeve 9 is prevented from rotating and the block 26 being interposed between sleeve 9 and the end of hand

screw 25 all marring of the sleeve is obviated. The head 27 of block 26 prevents its displacement when screw 25 is withdrawn, and lugs 29 prevent its withdrawal.

The bottom of legs 6 are provided with composition leather plugs 31 which prevent the metallic legs from marring the floor and at the same time obviate any unusual sounds when the chair is moved.

It will be observed from the foregoing description that I have provided a tilting device for chair seats that is positive in its action and which eliminates the use of coiled springs, thereby obviating the danger of accident resulting from breakage of such springs while the chair is occupied.

Having described my invention what I claim as new and desire to secure by Letters Patent is:—

1. A device of the class described, comprising an adjustable support, a concave non-tilting member revolubly secured to said support, a convex tilting member movably secured to said non-tilting member, said tilting member having lugs formed integrally therewith, said tilting member being provided with a plurality of grooves on its under face, a plurality of ribs formed on the upper face of said non-tilting member for engagement with the grooves in said tilting member, whereby the movement of the tilting member is limited to one direction, and resilient means interposed between the support and the lugs on the tilting member, said means adapted to return the tilting member to its normal position after a tilting operation.

2. A tilting device for chairs, stools and like furniture, comprising a rigid frame, a vertically disposed hollow standard rigidly secured to said frame having a vertically disposed threaded stud rigidly secured in the bottom thereof, a hollow interiorly threaded sleeve adapted to engage said threaded stud, a concave non-tilting member revolubly and detachably secured to said last named sleeve, a plurality of V-shaped ribs formed on the upper face of said non-tilting member, a convex tilting member having a plurality of V-shaped grooves formed on its under face adapted to engage the ribs formed on the non-tilting member, whereby the movement of the tilting member is limited to one direction, and a flat spring interposed between the tilting member and the upper end of the hollow sleeve adapted to return the tilting member to its normal position after an operation.

3. In a revolving furniture construction, a frame, a hollow standard having a vertically disposed threaded stud rigidly secured in the bottom thereof and on its inner face with an annular lip, a hollow interiorly threaded sleeve adapted to engage said threaded stud, a bearing block interposed between said standard and said sleeve, said block being provided with a head adapted to rest on the upper end of said standard and its lower end provided with lugs adapted to contact with the lip formed on the standard, and a hand screw mounted on said standard, the end of said screw adapted to bear against the outer face of said bearing block.

4. In a furniture construction, a spherical concave supporting member, a spherical tilting member in frictional engagement with said supporting member, means to limit the movement of said tilting member to one direction, and resilient means to return said tilting member to its normal position under its own weight.

5. In a furniture construction, a spherical concave supporting member, a spherical convex tilting member in frictional engagement with said supporting member, ribs on the frictional surface of one of said members engaging with grooves in the other member, and resilient means to normally hold said tilting member in its normal position.

6. In a furniture construction a spherical concave supporting member provided with grooves therein, a spherical convex tilting member in frictional engagement with said supporting member, ribs on the frictional surface of said tilting member for engagement with the grooves in said supporting member, and a spring acting between the two said members to normally hold said tilting member in its normal position.

In witness that I claim the foregoing I have hereunto subscribed my name this 6th day of June, 1907.

MILLARD E. STOCKWELL.

Witnesses:

EDMUND A. STRAUSE,

JANET C. BARKELEW.