(No Model.) 2 Sheets—Sheet 1.

M. D. & T. A. CONNOLLY.

SPRING ATTACHMENT FOR ROCKING CHAIRS.

No. 354,043. Patented Dec. 7, 1886.

Fig. 1.

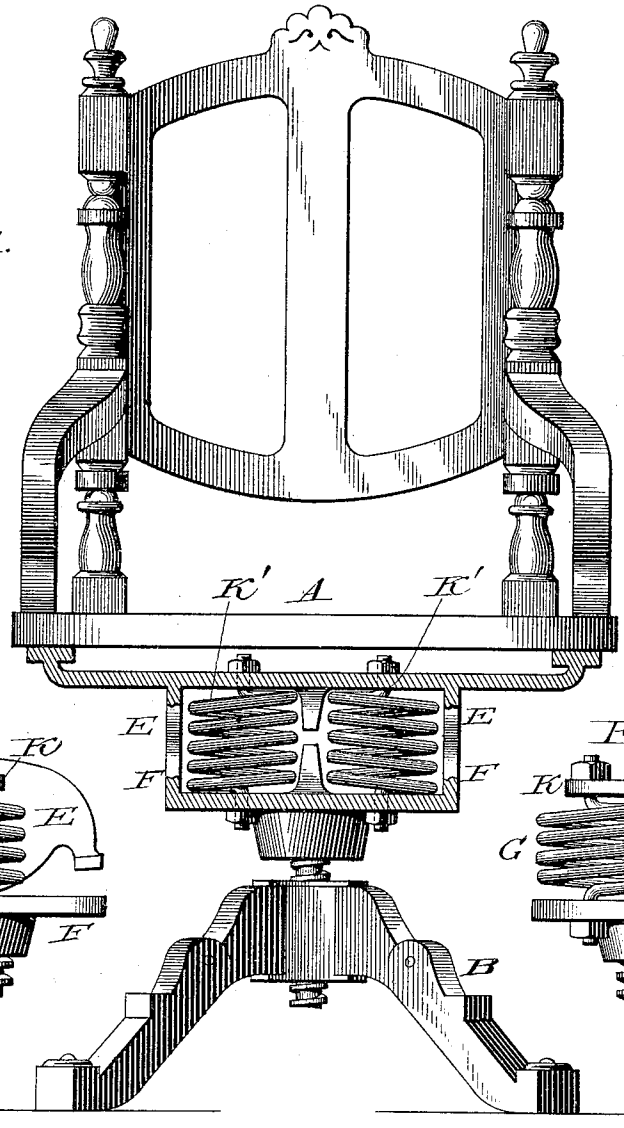


Fig. 2.

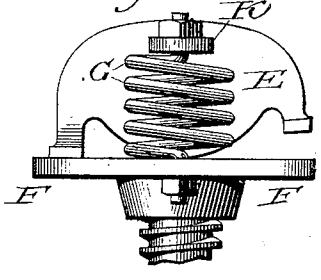
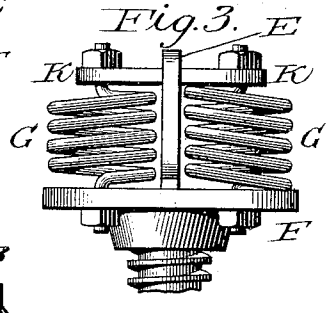


Fig. 3.



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(No Model.) 2 Sheets—Sheet 2.

M. D. & T. A. CONNOLLY.

SPRING ATTACHMENT FOR ROCKING CHAIRS.

No. 354,043. Patented Dec. 7, 1886.

Fig. 4.

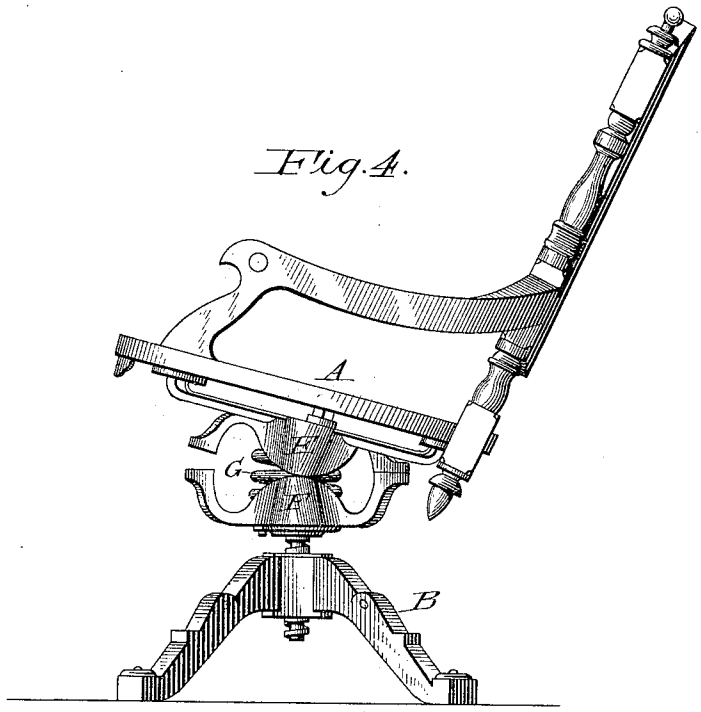


Fig. 5.

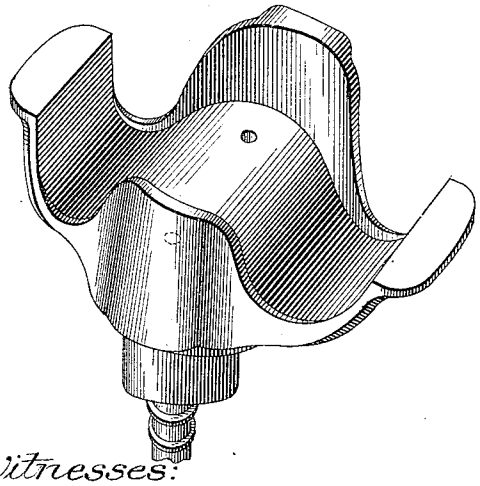
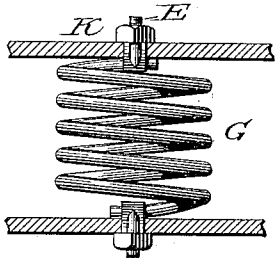


Fig. 6.



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UNITED STATES PATENT OFFICE.

M. DANIEL CONNOLLY, OF PHILADELPHIA, PA., AND THOMAS A. CONNOLLY, OF WASHINGTON, D. C., ASSIGNORS, BY MESNE ASSIGNMENTS, TO THE ROCKER SPRING COMPANY, OF CHICAGO, ILL.

SPRING ATTACHMENT FOR ROCKING-CHAIRS.

SPECIFICATION forming part of Letters Patent No. 354,043, dated December 7, 1886.

Original application filed July 30, 1880, Serial No. 14,470 Divided and this application filed March 23, 1885. Serial No. 159,733. (No model.)

To all whom it may concern:

Be it known that we, M. DANIEL CONNOLLY and THOMAS A. CONNOLLY, citizens of the United States, residing, respectively, at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, and the city of Washington, in the District of Columbia, have jointly invented certain new and useful Improvements in Tilting or Rocking Chairs, (for which we made application for Letters Patent, July 30, 1880, Serial No. 14,470,) of which the following is a divisional specification.

In the accompanying drawings, Figure 1 is a front view, partly in cross-section, of a chair having its base and seat parts connected by two of our springs, each of the springs being secured rigidly at both ends, and the side edges of the boxes, forming the rockers, being parallel and meeting each other at a point about the longitudinal center of the springs; Figs. 2 and 3, side and end views, respectively, showing modifications; Fig. 4, a side elevation of the chair, showing the rocker-boxes cylindrical, and of course showing only one of the springs; and Fig. 5, a perspective view of the lower rocker-box. Fig. 6 shows a modified way of attaching the springs, the end portion of each of the last coils being parallel with the coil next thereto instead of bent. In Fig. 1 the springs are shown inside of the rockers, and in Fig. 3 at the sides of a central rocker.

The object of our invention is to provide a chair consisting of a seat having rockers secured to its under side and a base having a lower support for said rockers, with two connecting springs which shall be of sufficient strength and tension to securely connect the base and seat parts together and hold the rockers in firm alignment with their lower support, so as to prevent the said rockers from slipping forward or backward or sidewise thereon.

In the drawings we have shown our invention as applied to a revolving office-chair provided with rockers secured to the under side of its seat part by a spider and a lower support therefor on its base part; and in these drawings A indicates the chair-seat; B, the base; E, the upper rockers; F, the lower support or rockers on which the upper rockers rest and move, and G the connecting-springs.

The rockers may be of cylindrical box form; or the sides of the boxes, the edges of which form the rockers, may, if desired, be parallel or otherwise arranged. The edges of the upper and lower rockers may be curved reversely—that is, both of the upper rockers from a center above and both of the lower rockers from a center below their line or point of contact; or one, the upper or lower, may be curved and the other present a straight or other line on its edges. It is obvious that in a strict sense only the upper rockers actually rock, the other or lower ones being stationary and serving as one form of the "lower support" for the upper rockers, the other form being the flat plate shown in Figs. 2 and 3.

The two connecting-springs are to be placed and secured in or near the center of oscillation and at off-center points—that is, at the sides of the chair-center, instead of in its front or rear—and to prevent the springs bending or rubbing, the edges of the boxes forming the rockers should be a somewhat greater distance apart than the sum of the two diameters of the two springs. The springs are arranged with their longitudinal axes vertical and their ends rigidly attached to the seat and base parts of the chair, so as to hold the rockers in their proper relative position, and by their resisting the rocking motion in one action or direction and assisting it in the other an easy, comfortable, and agreeable motion is produced, closely resembling that of an old-fashioned rocking-chair, and wholly different from the abrupt jerk of a pivoted tilting chair and the swaying motion produced in a seat oscillating on long plate-springs.

As shown in Figs. 1 and 4 of the drawings, each of the springs is attached directly to the top of the rocker-box *k'*. As shown in Figs. 2 and 3, they are each secured to a bracket, *k*, projecting from the side of the rocker, and, as shown in Fig. 6, they are secured by clamps

or clips. Each of the ends of the wire forming the spring may be parallel with the coil next to it, as shown in Fig. 6, to avoid making any short bend in the metal; and, however the coils end, the connecting devices must always be such as to rigidly secure the springs to the seat and base parts of the chair, respectively.

The two springs, arranged as described, constitute the connection between the seat and base parts of the chair for holding the rockers and their lower support in alignment and proper relative position. It is necessary, therefore, that they be of sufficient dimensions and strength to hold such parts together and prevent lateral and longitudinal slipping of the rockers without the use or aid of guides or similar appliances. The springs, thus forming the connection between the upper and lower parts of the chair, not only dispense with the use of guides, &c., but also regulate or control the rocking motions by their elasticity and strength. When the chair-seat is tilted or depressed in the rear, the upper rocker will roll upon the lower, and the springs will bend, their coils opening slightly in front and correspondingly approaching in the rear, (see Fig. 4,) the motion thus produced being an actual rocking motion upon a changing fulcrum, differing wholly from the motion of ordinary tilting chairs, in which the movement is on a pivot forming a fulcrum of fixed position. The backward rock is resisted by the tendency of the springs to retain their normal position, and the forward motion is assisted by the same tendency, the result being a motion unapproached by that of any tilting or oscillating chair with which we are acquainted.

The essential idea or feature of our invention being the connecting together and holding in proper position of the seat and base parts of a chair having rockers secured to the under side of its seat part, and a base having a lower support therefor, by two spiral springs located at opposite sides of the chair-center, we of course do not wish to be understood as limiting ourselves to special forms or details of construction, or in any way as waiving the use of proper equivalents.

The use of two springs at off-center points is a material improvement over the use of a single spring, for the reason that it is difficult when a single vertical spring is used to secure it to the seat and base parts, so as to prevent the slipping or turning or relative derangement of the rockers and lower support. In such case the spring is practically a pivot, around which it is difficult to prevent the seat part of the chair from turning when the ordinary character of fastening is used, such as are manufactured rapidly and in large quantities as a trade-fitting or article of hardware.

We do not herein claim any special or particular means for effecting the rigid connection of the springs with the upper and lower portions of the chair, our invention being directed to the feature of applying the springs so that they will constitute the connection between the upper and lower portions of a chair for holding the rockers and their lower support in alignment and proper relative position, as pointed out in the claims; nor do we herein claim the use of a single spring as the connecting medium between the upper and lower portions of a chair for holding said parts in alignment and proper relative position, as this feature, with others, is covered by the generic claims of our application filed July 30, 1880, No. 14,470, of which this is a division.

We claim—

1. The combination, in a chair, of a seat having rockers secured to its under side, a base having a lower support for said rockers, and two spiral springs rigidly connected to said parts, respectively, and located and secured at opposite sides of the chair-center, and constituting the connection between the seat and base parts of the chair for holding the rockers and their lower support in alignment and proper relative position, substantially as described.

2. The combination, in a chair, of a seat having rockers secured to its under side, a base having a lower support for said rockers, and two spiral springs rigidly connected to said parts, respectively, and located and secured at opposite sides of the chair-center, and in the center of oscillation of the chair-seat, and constituting the connection between the seat and base parts of the chair for holding the rockers and their lower support in alignment and proper relative position, substantially as described.

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Witnesses:
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