F. CHICHESTER.
Tilting-Chair.

No. 217,584. Patented July 15, 1879.

Fig. 2.

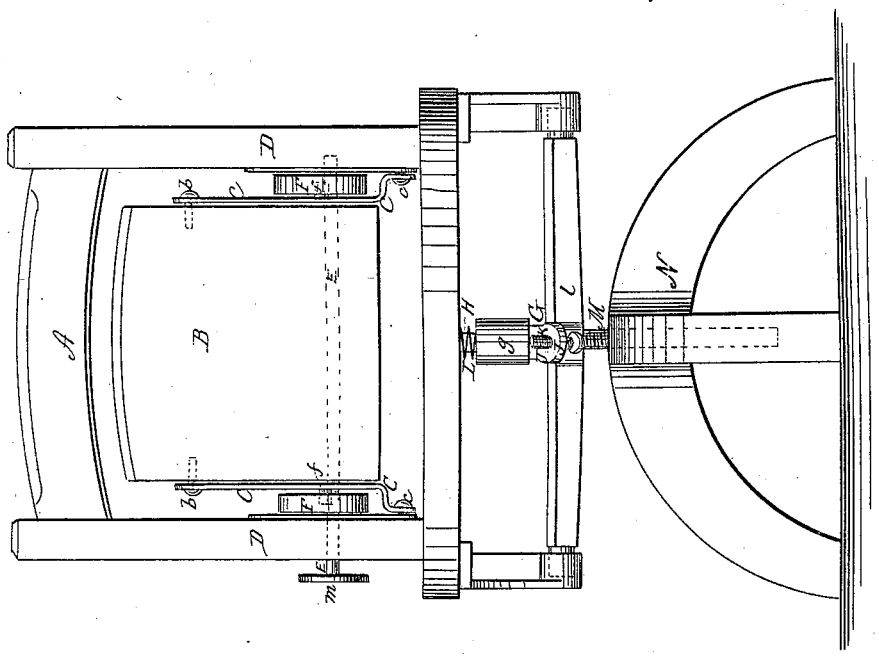
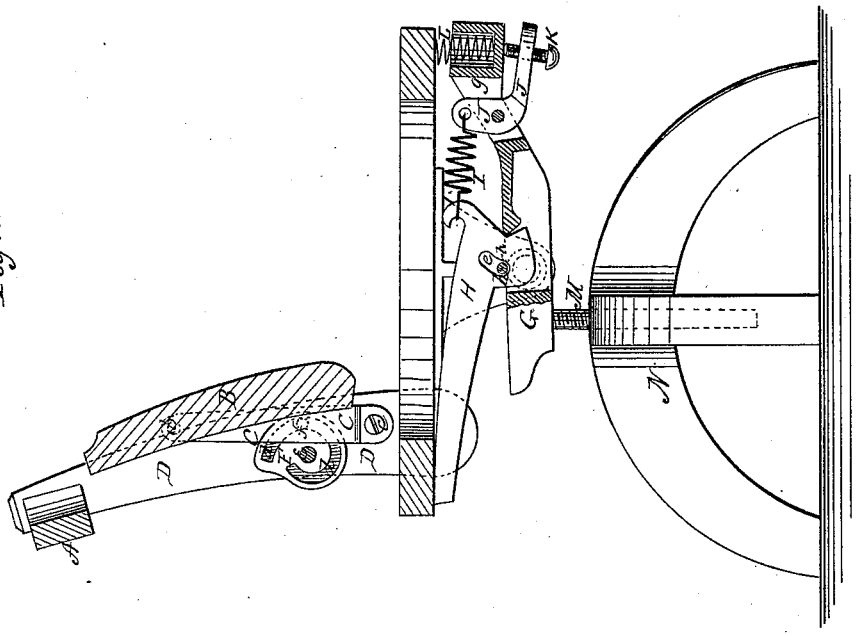


Fig. 1.



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atty.

UNITED STATES PATENT OFFICE.

FRANKLIN CHICHESTER, OF MILWAUKEE, WISCONSIN.

IMPROVEMENT IN TILTING CHAIRS.

Specification forming part of Letters Patent No. **217,584**, dated July 15, 1879; application filed December 3, 1878.

To all whom it may concern:

Be it known that I, FRANKLIN CHICHESTER, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented a new and Improved Chair; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making part of this specification.

This invention is in the nature of an improvement in chairs; and the invention consists in a chair with an adjustable back-panel, the adjustable back-panel being provided with one or more revolving cams, whereby the panel may be protruded or retracted, and retained in the desired position by the revolving cams; and the invention also consists in a chair provided with a lever and coiled spring, in combination with a lever and adjusting-screw, whereby the spring may be adjusted to the required degree of tension in tilting the seat of the chair; and the invention further consists in a chair with a tilting seat constructed with a slotted lever secured to the spider of the chair by means of a slot and pin, in combination with a coiled spring, connecting one end of the slotted lever to a bell-crank lever pivoted to the front arm of the spider, and a spring between the front of the seat-frame and the end of said front arm of the spider.

In the accompanying sheet of drawings, Figure 1 is a side view of my chair partly in section, and Fig. 2 a front view of same.

Similar letters of reference indicate like parts in the two figures.

This invention relates more particularly to chairs designed to support the back of the occupant when using the sewing-machine or when otherwise engaged.

To this end the back A of the chair is provided with an adjustable panel, B. This panel has secured to two of its edges plates C C by pivots *b b*, as is shown in Fig. 2. These plates are pivoted to the back posts, D, at *c c*, as is shown in Figs. 1 and 2. Fitted to these back posts, and within suitable bearings, is a shaft, E, onto which are fixed cams F, which cams are placed between the back posts, D, and the plates or arms C. These cams are each made with a scroll cam-slot, *d*, and into these slots enter pins *f*, which are fastened to the plates or arms C.

Since it may be desirable to not only have the back-panel of the back adjustable, but that the seat of the chair may tilt to afford comfort and support to the occupant, the seat of the chair is pivoted to a spider, G, and to the center of the spider is likewise pivoted, at *h*, a lever, H, having a slot, *e*, formed therein. The rear end of this lever H supports the under part of the rear of the seat-frame, and the other end of this lever has secured to it a spiral spring, I, which spring is also secured to a bell-crank lever, J, pivoted in the fore-arm, *g*, of the spider. This bell-crank lever has fitted to it an adjusting screw, K, which, at its point, bears against the under side of the end of the fore-arm *g* of the spider. In the upper portion of this end of the fore-arm *g* is placed a spring, L, against which the front of the seat-frame bears.

Having now described the construction of my chair, its operation is as follows: The occupant of the chair, when leaning forward to operate a sewing-machine or work at a table, necessarily inclines the back from the back of the chair and leaves it without support. That the back of the occupant may, when in this position, be supported, the shaft E is turned by the wheel *m*, or by any convenient means, and the cams F are caused to turn, and as the cams turn the scroll cam-slots *d*, by acting on the pins *f*, force out the upper end of the plates or arms C from the back posts, D, and with them the back-panel B, which, being secured to the upper ends of the plates or arms C by the pivots *b*, causes the panel to assume a position parallel to the back posts. The panel, being in this way protruded, affords a support for the back of the occupant when inclined from the back of the chair, as before stated, and the panel B may be protruded to a greater or less extent or be retracted between the back posts, forming an ordinary back, as circumstances may require, and in whatever position the panel is it remains fixed and offers a firm support, and being pivoted, as before described, it will yield somewhat to the back of the occupant of the chair.

In tilting the seat backward the seat-frame

bears down the end of the lever H and against the resistance of the coiled spring I, thereby preventing its too sudden tilting, the tension of the spring keeping the rear end of the lever H always in contact with the rear part of the seat-frame. By providing the lever H with a slot, *e*, the chair is enabled to have a forward tilting motion on its pivots, for the reason that as the chair is tilted forward, the under part of the seat, coming in contact with the end of the lever H, forces the lever down (the slot *e* acting as a guide) until the upper end of the slot comes in contact with the pivot *h*. This movement of the lever permits the chair to move forward on its pivots. If it were not for the slot *e* it is clear that the end *s* of the lever would be an obstacle to this forward tilting of the chair. The force of the recovery of the coiled spring I facilitates the forward tilting; and since the tendency of this coiled spring is to tilt the seat forward suddenly, the spring L in the upper part of the end of the fore-arm *g* receives and cushions the front of the seat-frame.

The degree of tension or force to be exerted by the coiled spring I may be regulated by the set-screw K by the screwing or unscrewing of which this coiled spring is rendered more or less yielding through the operation of the bell-crank lever J.

The chair may be made to tilt without the slot *e* formed in the lever H, in which case the chair could only tilt backward and not incline forward from a horizontal position, and the spring L under the front of the seat-frame could be dispensed with. The seat-frame is pivoted at its sides to the transverse bar *l* of the spider, and the spider may or may not be provided with an elevating and swiveled screw, M, supported by a pedestal, N.

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

1. A chair with an adjustable back-panel, in combination with revolving cams F F, shaft E, and plates or arms C C, having pins *f* inserted therein and engaging with the cams F F, whereby the back-panel is protruded and retracted, substantially as and for the purpose described.

2. In a tilting chair, the fore-arm *g* of the spider G, having affixed to it a bell-crank lever, J, in combination with a lever, H, coiled spring I, and adjusting-screw K, substantially as and for the purpose described.

3. In a tilting chair, a lever, H, having a slot, *e*, formed therein and a pin, *h*, through the slot, in combination with a coiled spring, I, a bell-crank lever, J, an adjusting-screw, K, and a spring, L, substantially as and for the purpose described.

FRANKLIN CHICHESTER.

Witnesses:
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