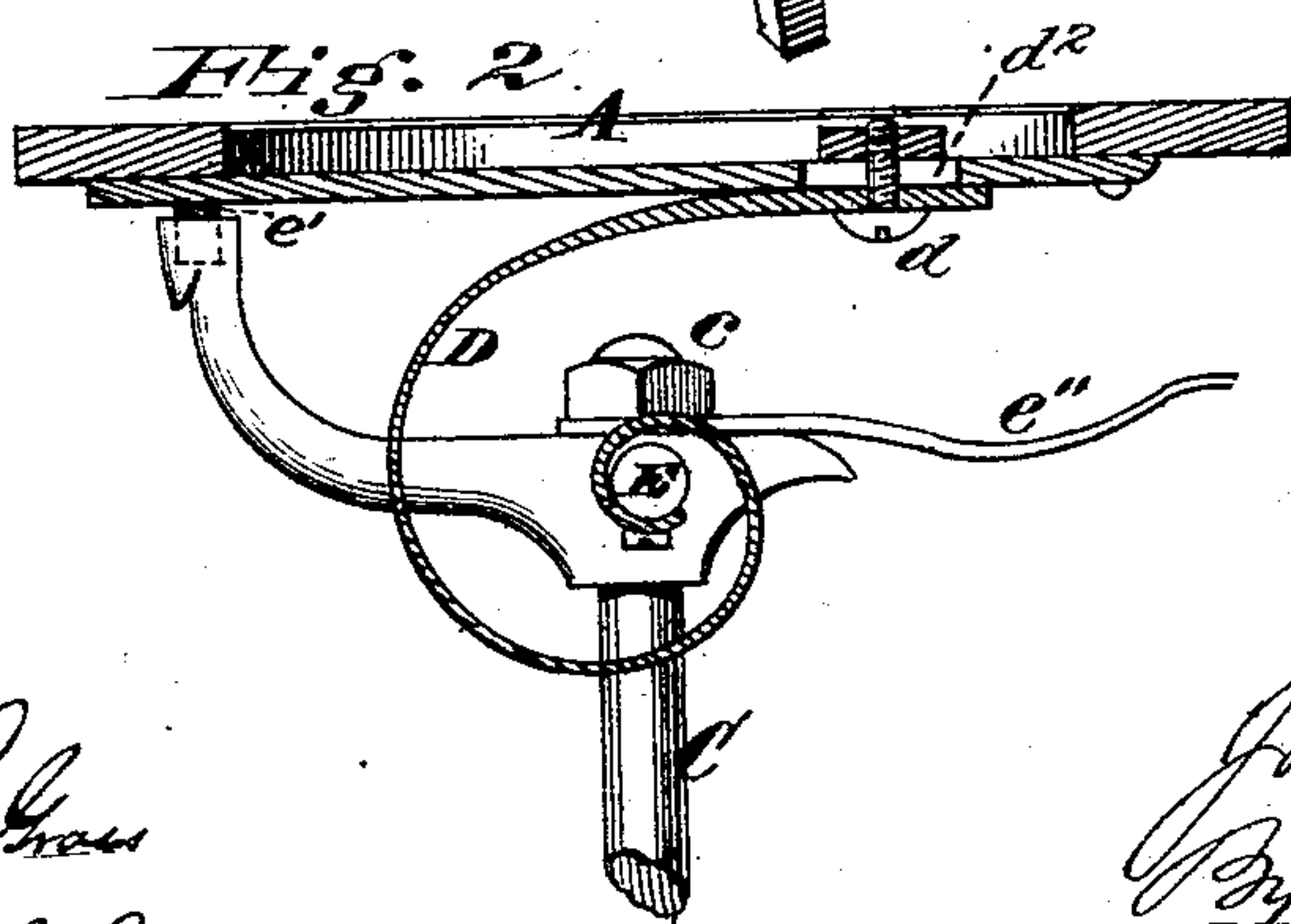
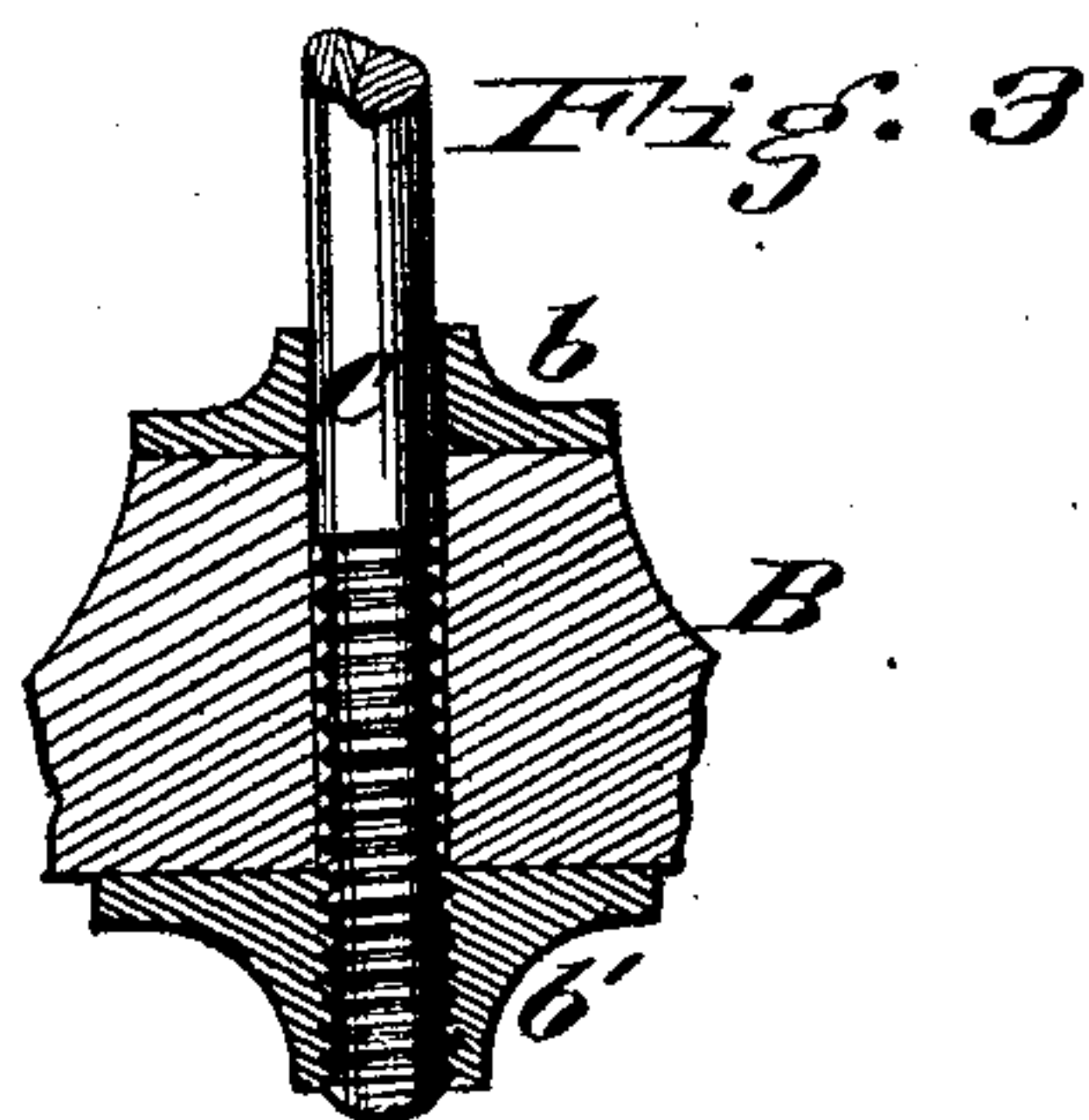
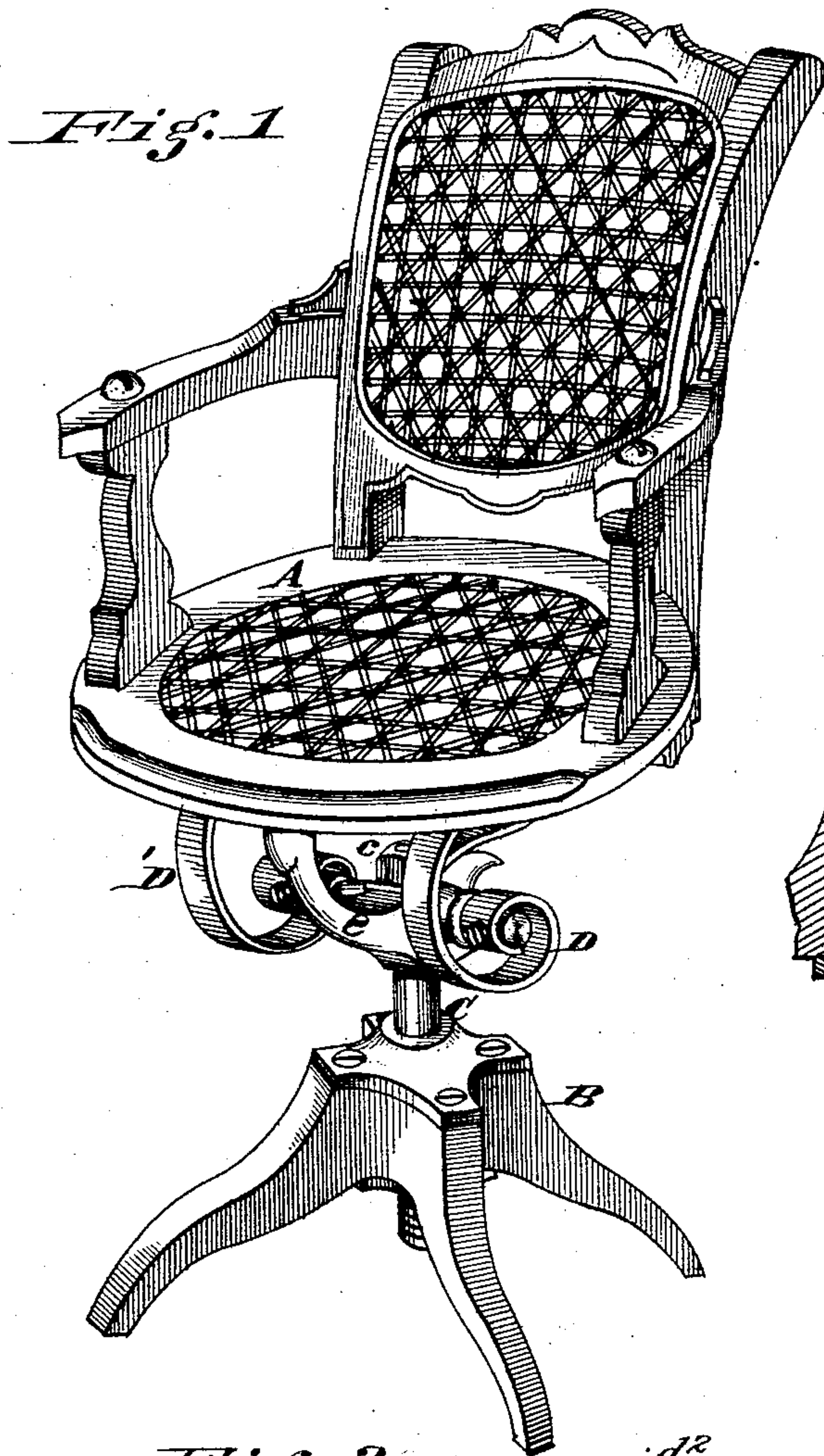


J. LEMMAN.
Pivot-Chair.

No. 163,790.

Patented May 25, 1875.



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UNITED STATES PATENT OFFICE.

JOHN LEMMAN, OF CINCINNATI, OHIO.

IMPROVEMENT IN PIVOT-CHAIRS.

Specification forming part of Letters Patent No. **163,790**, dated May 25, 1875; application filed January 27, 1875.

To all whom it may concern:

Be it known that I, JOHN LEMMAN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain Improvements in Chairs, of which the following is a specification:

This invention relates to that class of spring tilting-chairs the seat of which is mounted to revolve on a stationary base or stand. My improvement consists, first, in attaching the seat solely by means of helical springs to the cross-bar of the spindle which turns in the stand, in such a way that the seat is permitted to rock backward and forward as well as laterally, swing around horizontally, and rise and fall in an elastic manner upon the springs, which also perform the function of hinges, which are consequently dispensed with, the cross-bar of the spindle being provided with stop-arms, projecting one forward and the other rearward, to limit the tilting motions of the seat in either direction. In this connection it is proper to state that I do not claim, broadly, hanging a chair upon helical springs, as I am aware that this is not new, but that my invention is confined to the particular combination I have set forth. Second, in means for adjusting the seat on the helical springs, whereby more or less leverage can be obtained on the springs, and the elasticity of the seat easily regulated to the weight of the occupant.

In the annexed drawings, Figure 1 is a perspective view of my improved chair. Fig. 2 is a vertical section of the operative parts. Fig. 3 is a section of the screw connection.

The same letters of reference are used in all the figures in the designation of identical parts.

A refers to the seat of the chair; B, to the fixed stand; and C to the spindle, upon which the chair revolves, the spindle in this instance having a screw-thread working in a nut in the stand, so that the revolution of the seat will also adjust it vertically. A plain spindle may, however, be used instead in chairs requiring no vertical adjustability. D D' are helical springs, secured with their outer free ends to the bottom of the seat by screws *d*, and at their inner ends to the extremities of the cross-

bar E, to which the spindle C is centrally secured by a nut, *c*. The spindle C has a smooth shank, which plays in the aperture in bearing-plate *b* and a screw-threaded end fitted in nut *b'*. The springs supporting the weight of the occupant of the chair also serve as the hinges upon which the seat rocks, and permit of lateral play of the seat to a certain extent, which last feature is very desirable, because it promotes the ease and comfort of the occupant very materially in providing for a moderate degree of elasticity in every direction. The cross-bar E of the spindle has projecting from its front side a horn, *e*, which limits the motion of the seat in tipping forward, and prevents it from sloping forward in case the occupant rests his weight on the front edge. This horn may be provided with a rubber bumper or anti-rattler, *e'*. The cross-bar E is also provided with a rearwardly-projecting arm, *e''*, to prevent the seat from being tilted too far backward. The screws *d* pass through slots *d*² in the bottom board of the seat, so that the latter can be shifted with relation to the fixed ends of the springs D D'. It is obvious that, by thus adjusting the seat, the leverage of the seat on the springs will be changed; and that, by such adjustment, the elasticity of the seat can be readily regulated to the weight of the occupant.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A pivoted tilting-chair, consisting of the base B, spindle C, having the cross-bar E, and stop-arms *e e''* at its upper end, combined with the helical springs D D', attached at one end to the extremities of said cross-bar, and at the other to the seat-frame A, substantially as specified.

2. In combination with the helical springs D D' and screws *d*, the slotted seat-frame A *d*², substantially as and for the purpose specified.

In testimony of which invention I hereunto set my hand.

JOHN LEMMAN.

Witnesses:

F. MILLWARD,
J. L. WARTMANN.