(No Model.)

J. HARRINGTON.

CHAIR.

No. 360,589. Patented Apr. 5, 1887.

Fig. 1

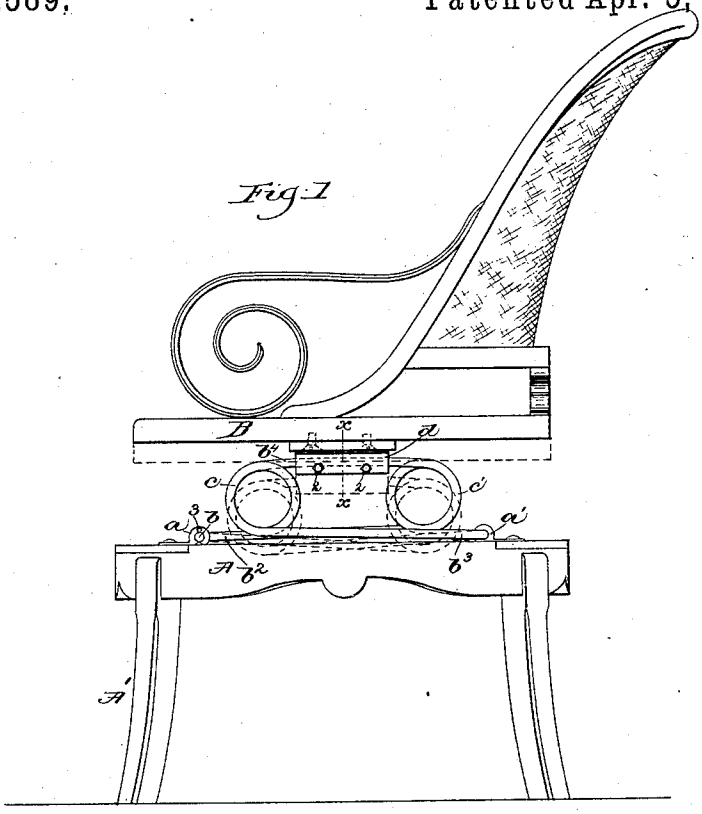


Fig. 4.

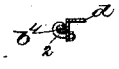


Fig. 2

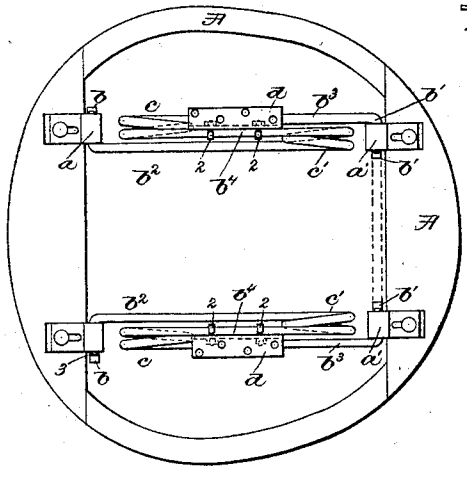
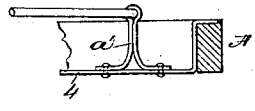


Fig. 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN HARRINGTON, OF COVENTRY, COUNTY OF WARWICK, ENGLAND.

CHAIR.

SPECIFICATION forming part of Letters Patent No. 360,589, dated April 5, 1887.

Application filed May 18, 1886. Serial No. 202,546. (No model.) Patented in France May 23, 1885, No. 169,139; in Belgium May 23, 1885, No. 68,994; in England July 28, 1885, No. 9,055, and in Austria-Hungary September 30, 1886, No. 24,351 and No. 50,397.

To all whom it may concern:

Be it known that I, JOHN HARRINGTON, of Coventry, county of Warwick, England, have invented an Improvement in Chairs, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide for a chair or other seat a spring-support which shall have very great elasticity vertically and sufficient elasticity laterally to avoid any concussion or shock.

Figure 1 in side elevation represents one form of chair-seat which is supported upon my improved spring; Fig. 2, a plan or top view of Fig. 1 with the seat removed; Fig. 3, a modification to be referred to, and Fig. 4 a partial section in the line *x x*.

The base A, of any suitable shape, and supported, preferably, upon suitable legs, A′, has secured to it suitable boxes or bearings, *a a′*, to receive the laterally-extended terminal or end portions, *b b′*, of the arms $b^2 b^3$, forming part of the rod from which my improved spring is formed, the said rod being bent, as at *c c′*, to form coils, the said coils being separated by seat-sustaining portions b^4.

The seat-sustaining plates *d* are herein shown as attached to the portion b^4 of the spring by looped bolts 2 2, on which are screwed suitable nuts, the holder *d* being attached to the under side of the seat B, which may be of any usual or suitable material common to chairs, by suitable screws.

The end portions, *b b′*, of the springs may be held in place in the boxes or bearings *a a′* by pins or keys 3, or in any other well-known manner.

As a modification of my invention, I may make the two springs shown in Fig. 2 of one rod, the portions *b b′* being joined by a part of the rod, as shown by dotted lines, Fig. 2.

In Fig. 3 I have shown the box or bearing *a′* as of a different shape, its foot resting on a metal strap or cross-piece, 4.

I have shown the projections *b b′* as extended from the arms $b^2 b^3$ in opposite directions, and each as turned from one toward the opposite side of the spring-coils made in the rod, such direction of turning of the said ends affording greatest steadiness to the spring at its points of suspension.

It will be noticed that the improved spring herein shown is composed of a steel rod bent to form two coils, (see Fig. 2,) one at one and the other at the opposite side of the longitudinal center of the said rod, and that the two arms $b^2 b^3$ of the spring are extended from one coil backward past the other coil, and each of said arms has a right-angled horizontal projection, *b b′*, to form a pivotal point for the said springs as they rise and fall when in action, the said projections *b b′* turning in suitable boxes or bearings, while the lower edges of the coiled parts *c c′* of the said springs descend below the points of suspension of the said springs.

The springs shown will yield somewhat independently of each other, according to whether the weight near one edge of the chair-seat is greater than near its other edge, and the chair-seat may tip back and forth to a considerable extent, if desired, after the manner of a rocking-chair, as well as rise and fall as an ordinary spring.

I claim—

The combination, with a chair-seat and support below the seat, of springs, substantially as described, each composed of a rod of spring metal bent to form two coils, and leaf-arms $b^2 b^3$, substantially parallel each to the other, which are extended from one coil past the opposite coil and provided with a right-angled projection or pivot, and boxes or bearings for the said pivots, the center portions of the coils of the springs being free to descend below the arms $b^2 b^3$, or their points of suspension, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN HARRINGTON.

Witnesses:

GEO. W. GREGORY,

C. M. CONE.