H. HOWSON.

Spring for Tilting-Chair.

No. 210,779 Patented Dec. 10, 1878.

FIG. 1.

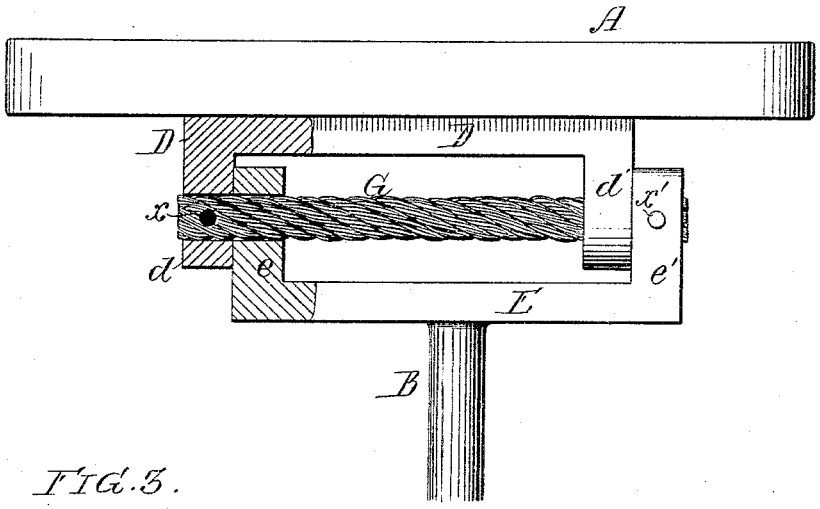
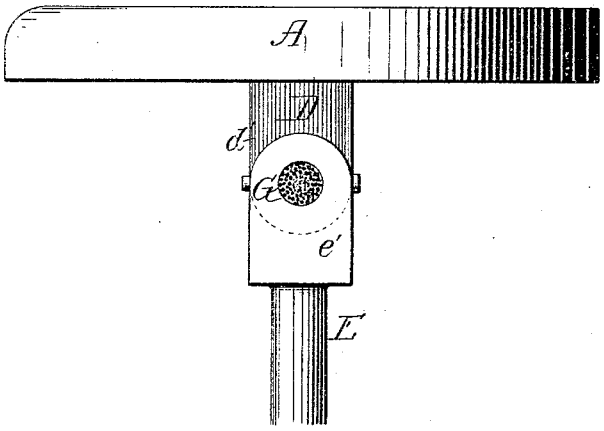


FIG. 3.

FIG. 2.



Witnesses,

Henry Howson Jr.

Harry A. Crawford

Inventor,

Henry Howson

by his attorneys

Howson and Son

UNITED STATES PATENT OFFICE.

HENRY HOWSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE HALE & KILBURN MANUFACTURING COMPANY, OF SAME PLACE.

IMPROVEMENT IN SPRINGS FOR TILTING-CHAIRS.

Specification forming part of Letters Patent No. **210,779**, dated December 10, 1878; application filed August 15, 1878.

To all whom it may concern:

Be it known that I, HENRY HOWSON, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Springs for Chairs, &c., of which the following is a specification:

The object of my invention is to combine with a chair an economical device for permitting the seat of the chair to be rocked, and this object I attain in the following manner, reference being had to the accompanying drawings, in which—

Figure 1 is a front view, partly in section, of the seat and part of the stand of a chair with my improvement; Fig. 2, a side view of the same; and Fig. 3, a modified form of torsion-spring which may be adopted in carrying out my invention.

In Figs. 1 and 2, A represents the seat of a chair, and B the post, the lower portion of which has a screw-thread adapted to an internally-threaded socket of a stand, as in ordinary office-chairs. There are on the under side of the seat two projections or lugs, *d d'*, which, in the present instance, form a part of a plate, D, secured to the said seat; and there are two similar projections or lugs, *e e'*, on a cross-bar, E, secured to or forming a part of the post B; or these lugs *e e'* may be secured to any suitable stand or support when a swivel-seat capable of vertical adjustment is not required.

A torsion-spring, preferably a piece of wire rope, G, similar to that referred to in the Letters Patent No. 203,739, granted to the Hale & Kilburn Manufacturing Company, assignee of Cheney Kilburn, May 14, 1878, is passed through all four lugs, and is secured by a pin or otherwise to the lug *d* of the seat and the lug *e'* of the stand, the rope passing freely through the lug *e* of the stand and the lug *d'* of the seat.

The wire rope G, in addition to the duty which it performs as a torsion-spring, which permits the seat to be rocked, also serves as a support for the seat and as a pivot-pin.

In carrying out my invention I am not restricted to the use of wire rope for a torsion-spring. The latter, for instance, may consist of a rod, Fig. 3, rounded at and near the opposite ends, where it passes through the lugs, and flattened in the middle, where it can yield under torsion.

I do not desire to claim the combination of a torsion-spring with the seat and stand of a chair, nor a torsion-spring which also serves to pivot the seat to the stand; but

I claim as my invention—

The combination of a chair-seat having two lugs or projections, *d d'*, and a stand having two lugs or projections, *e e'*, with a torsion-spring, G, secured at one end to one lug, *d*, of the seat and at the opposite end to the lug *e'* of the stand, and fitting freely in the lug *d'* of the seat and in the lug *e'* of the stand, all as set forth.

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

HENRY HOWSON.

Witnesses:

HARRY A. CRAWFORD,

HARRY SMITH.