H. HOWSON.

Spring for Tilting-Chair.

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

FIG. 1.

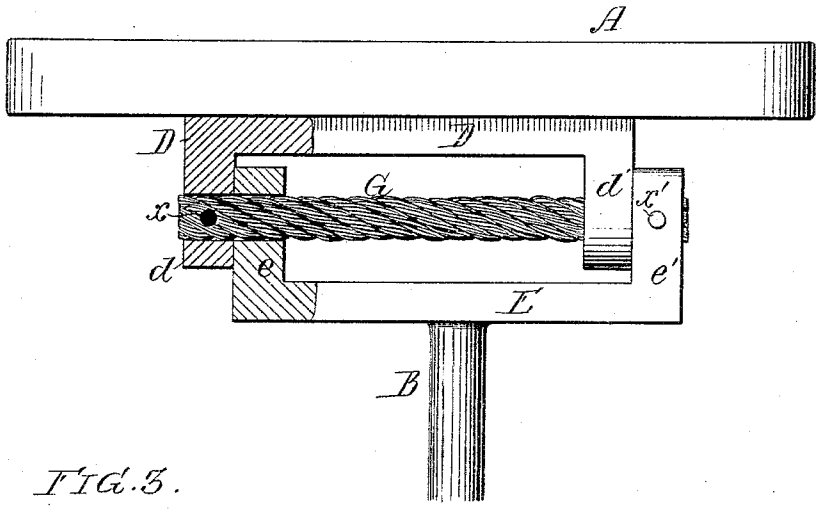
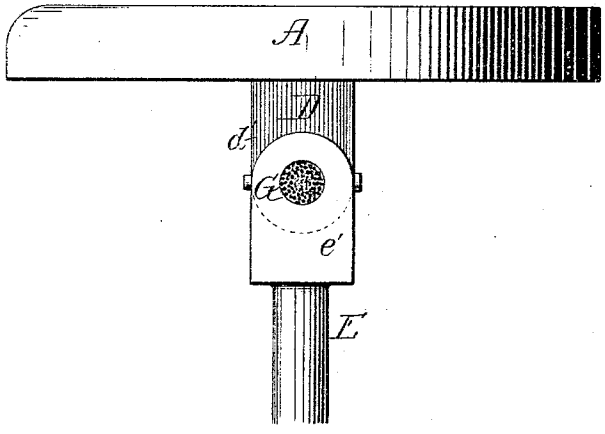


FIG. 3.



FIG. 2.



Witnesses,
Henry Howson Jr.
Harry A. Crawford

Inventor,
Henry Howson
by his attorneys
Howson and Son

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

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.