E. E. FISHER.
Oscillating Chair.

No. 196,208. Patented Oct. 16, 1877.

Fig. 1.

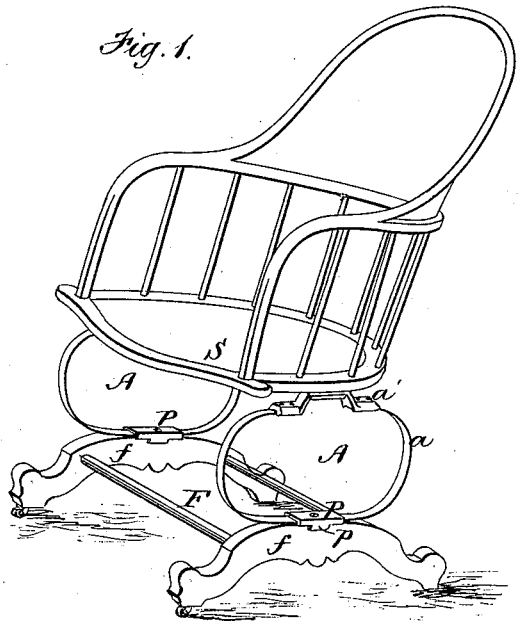

Fig. 3.

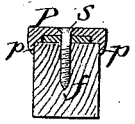

Fig. 2.

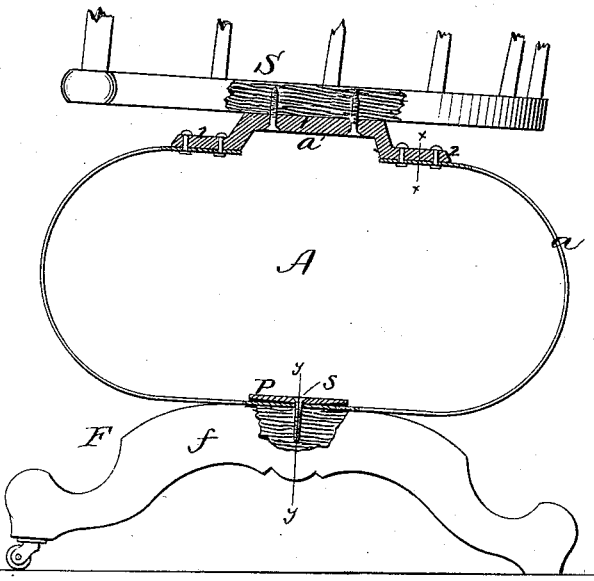

Fig. 4.

Witnesses.
H. E. Brown
D. Remick

Inventor
E. E. Fisher
by his Attys
Wright & Brown

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

UNITED STATES PATENT OFFICE.

EZRA E. FISHER, OF BRATTLEBOROUGH, VERMONT, ASSIGNOR TO HIMSELF AND CHARLES WOOD, OF SAME PLACE.

IMPROVEMENT IN OSCILLATING CHAIRS.

Specification forming part of Letters Patent No. **196,208**, dated October 16, 1877; application filed April 10, 1877.

To all whom it may concern:

Be it known that I, EZRA E. FISHER, of Brattleborough, in the county of Windham and State of Vermont, have invented certain Improvements in Spring-Chairs, of which the following is a specification:

In the accompanying drawing, forming a part of this specification, Figure 1 represents a perspective view of a chair embodying my invention. Fig. 2 represents a side view, showing the spring and attaching devices in section. Figs. 3 and 4 represent sections on the planes of lines *x x* and *y y*, Fig. 2.

This invention relates to that class of springs which are employed in pairs for supporting chair or other seats; and it has for its object to provide a strong, cheap, and simple spring of this class, which is capable of being easily applied to the seat without liability of becoming loosened by continued use, and is capable of sustaining the seat so that it can tilt or rock freely without bumping or striking any part of the chair.

It also has for its object to provide simple and effective means for attaching the spring to the base or foundation frame of the chair or seat.

To these ends my invention consists in the peculiar construction of the spring, and in the means employed for connecting a spring to the base or foundation frame of a chair or other seat, all of which I will now proceed to describe.

In the drawings, S represents the seat, and F the foundation, of a chair or other support for the body. A A represent my improved springs, each of which is composed of two parts, viz., an elastic strip, *a*, which is adapted to be secured to the frame F, and a rigid piece, *a'*, which connects the ends of the strip *a*, and is adapted to be secured to the seat S. The elastic part *a* consists of a single strip of tempered iron or steel, which is bent into an elliptical form, and is securely riveted at its ends to the rigid part *a'*. The latter consists, preferably, of a stout casting, having its central portion 1 raised, and provided with holes for the reception of the screws or bolts by which it is secured to the bottom of the seat S, and its ends depressed or provided with offsets 2 2, which are provided on their under sides with recesses *r*, which receive the ends of the strip *a*, said ends being riveted to the offsets 2, as shown in Fig. 2.

By this construction I produce a spring which is exceedingly strong and elastic, as well as neat, simple, and cheap, and is adapted to be readily and securely attached to the seat which it supports. The rigid part *a'*, being raised at the point where it is attached to the seat, supports the latter so far above the body of the spring as to enable the seat to sway or rock without striking or bumping. The rigid part *a'* also constitutes a secure medium of connection between the ends of the strip *a*, and between the strip *a* and the seat, the screws or bolts which connect the part *a'* to the seat being subjected to much less strain than they would receive if they connected the strip *a* directly to the seat. The part *a'* therefore prevents the seat from bumping when rocked or tilted, and prevents the spring from being disconnected from the seat by continued use or wear.

The foundation-frame F may be of any desired construction. I prefer to make it of two side pieces, *f f*, connected by stretchers. To the upper surfaces of the side pieces *f* I attach the lower portions of the springs A in any desired manner, preferably by means of a screw, *s*, for each spring, the screw passing through the strip *a* at or near its central portion.

P represents a clamping-plate, which is placed over the spring or strip *a* at its point of attachment to the piece *f*. The screw *s* passes through this plate and secures it. The plate P is provided with a recess on its under side adapted to receive the strip *a*, and is also provided with downwardly-projecting lugs *p p*, which bear against the sides of the piece *f*, and prevent the plate and spring from turning laterally on the screw *s*.

If desired, the under surface of the plate P may be made convex longitudinally, or tapered from the center to the ends, as shown in Fig. 2, for the purpose of giving the spring greater freedom of movement. This arrangement enables each spring to be attached by a single screw to the frame F, so that the springs can be readily applied to and detached from the foundation.

It will be seen that by my improvements a very serviceable, durable, and easy spring-chair is produced, which can be easily taken apart and packed for storage or transportation.

The springs A may be supplied to chair-makers as an article of manufacture, and the plates P may be used in connection with other or ordinary elliptic springs without departing from the spirit of my invention.

I claim as my invention—

1. As an article of manufacture, a spring composed of the elastic elliptical strip *a*, adapted to be attached to a base or foundation, and the rigid portion *a'*, having the raised central portion 1 and offsets 2 2, and adapted to be attached to a seat, as set forth.

2. The spring A, composed of the elastic elliptical strip *a* and the rigid portion *a'*, having the raised central portion 1 and offsets 2 2, combined with the seat S, as set forth.

3. The plate P, having downwardly-projecting lugs *p*, combined with the screw *s*, spring A, and foundation-frame F, as set forth.

4. The combination of the springs A, constructed as described, the seat S, the plates P, and the foundation-frame F, all arranged and operating substantially as set forth.

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

EZRA E. FISHER.

Witnesses:

CHAS. S. POND,

WILLIAM S. NEWTON.