

P. PENN.
Springs for Vehicles.

No. 139,809.

Patented June 10, 1873.

Fig. 1.

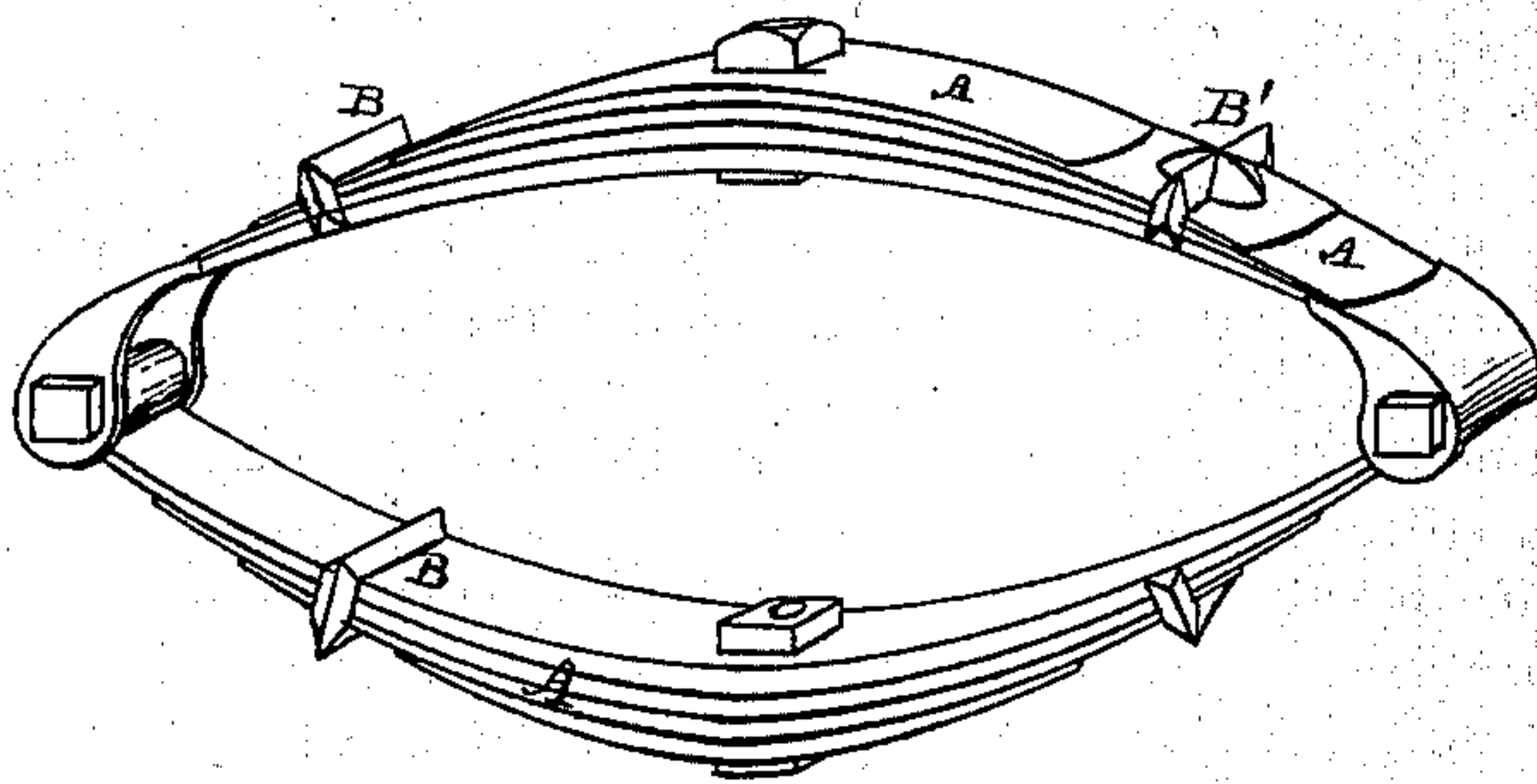
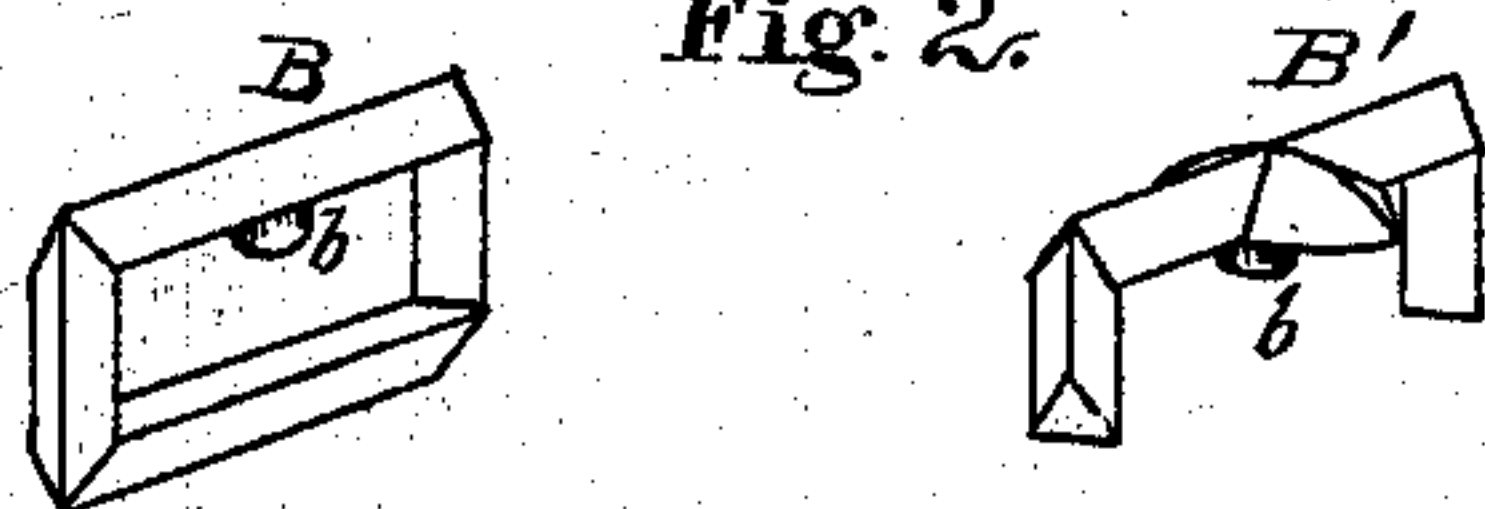


Fig. 2.



Witnesses

Geo. W. Tibbitts
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UNITED STATES PATENT OFFICE.

PETER PENN, OF CLEVELAND, OHIO.

IMPROVEMENT IN SPRINGS FOR VEHICLES.

Specification forming part of Letters Patent No. **139,809**, dated June 10, 1873; application filed October 8, 1872.

To all whom it may concern:

Be it known that I, PETER PENN, of Cleveland, county of Cuyahoga and State of Ohio, have invented an Improvement in Elliptic Springs, of which the following is a specification:

This improvement consists in the arrangement of a clip, embracing the leaves of the spring in such a manner that the leaves cannot slip sidewise or become separated. They also render it unnecessary to pierce but one leaf of the spring, so that the spring is not weakened as in the ordinary method of punching and beading the leaves; and this constitutes an important feature of my invention, as it does away with the slots and bead, which weaken the spring and are liable to become so much worn as to be useless.

The following is a description of its construction and operation:

Referring to the drawing, Figure 1 is a perspective view of a spring having my improvement attached. Fig. 2 is a detached view of two forms of the above-mentioned clip.

A A are the leaves of an ordinary elliptic spring, bolted together at the middle. B B', Fig. 2, is a clip for placing on the spring to prevent them slipping. The usual manner of doing this is to cut or punch slots near the ends, in each leaf, and press up a bead to play in said slots; but this is objection-

able, because the cutting or punching weakens the metal and does not prevent the leaves from being separated or lifted up from one another at the ends. The clips B overcome these objections. They are cast in malleable iron, and may pass entirely around the leaves, as seen at B, Fig. 1, or may pass around three sides only and have the ends turned under, as at B', Fig. 1. On the inside of the clip is cast a rivet, *b*, for securing it to one of the leaves. The clip is secured to the next to the uppermost leaf by riveting it near the end of said leaf, and embraces all the other leaves.

These clips may be made plain or ornamental, are very effectual for the purpose, and are applicable for coach, carriage, buggy, wagon, or sulky springs of whatever shape, either elliptical, side, half, or platform springs of two or more leaves.

I claim—

The combination, with an elliptic spring, of a clip, B B', having a stud, *b*, for the purpose of holding the leaves of the spring in place without the usual beads and slots, all as set forth.

PETER PENN.

Witnesses:

GEO. A. KOLBE,
AUG. G. KIEL.