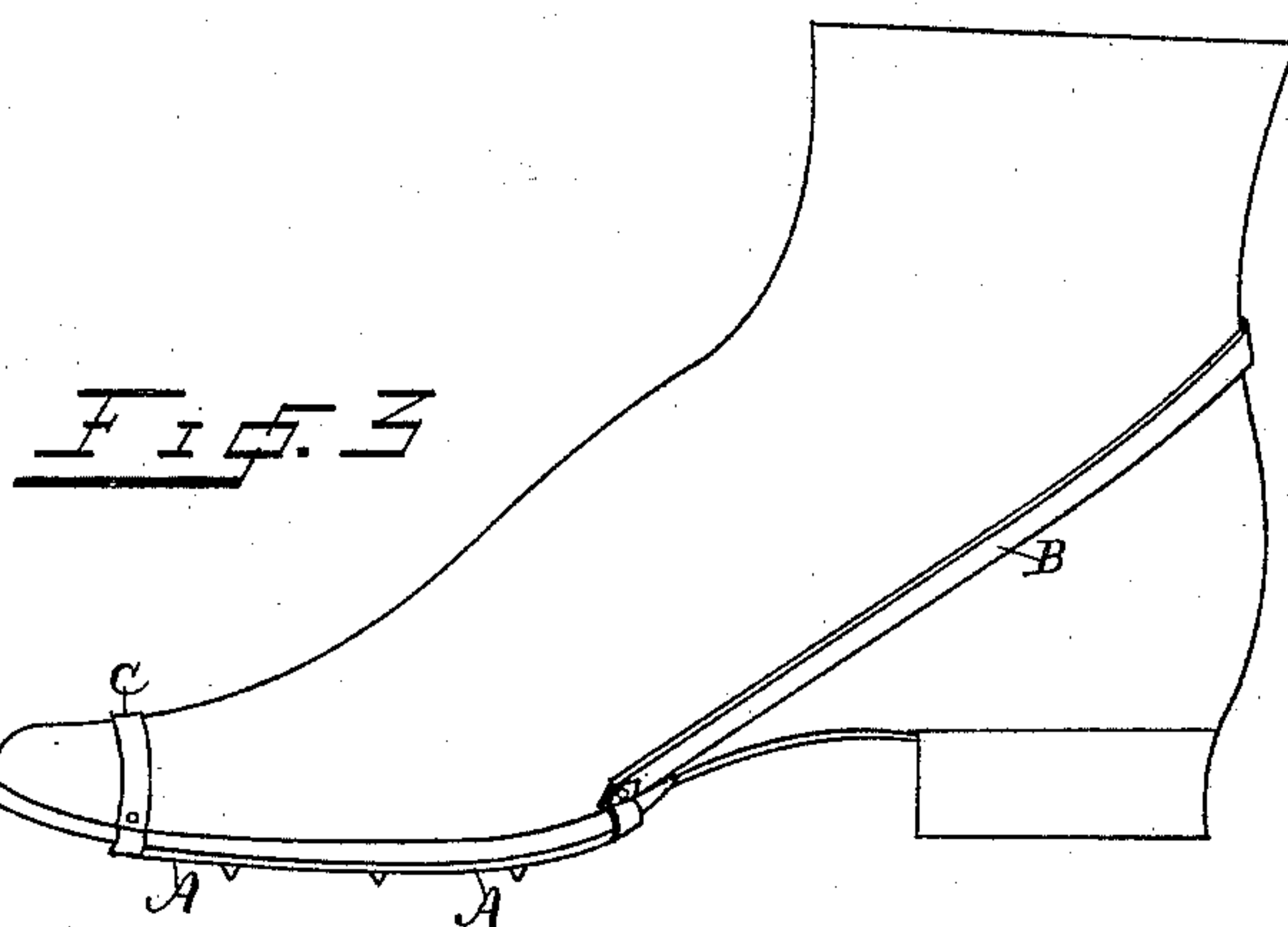
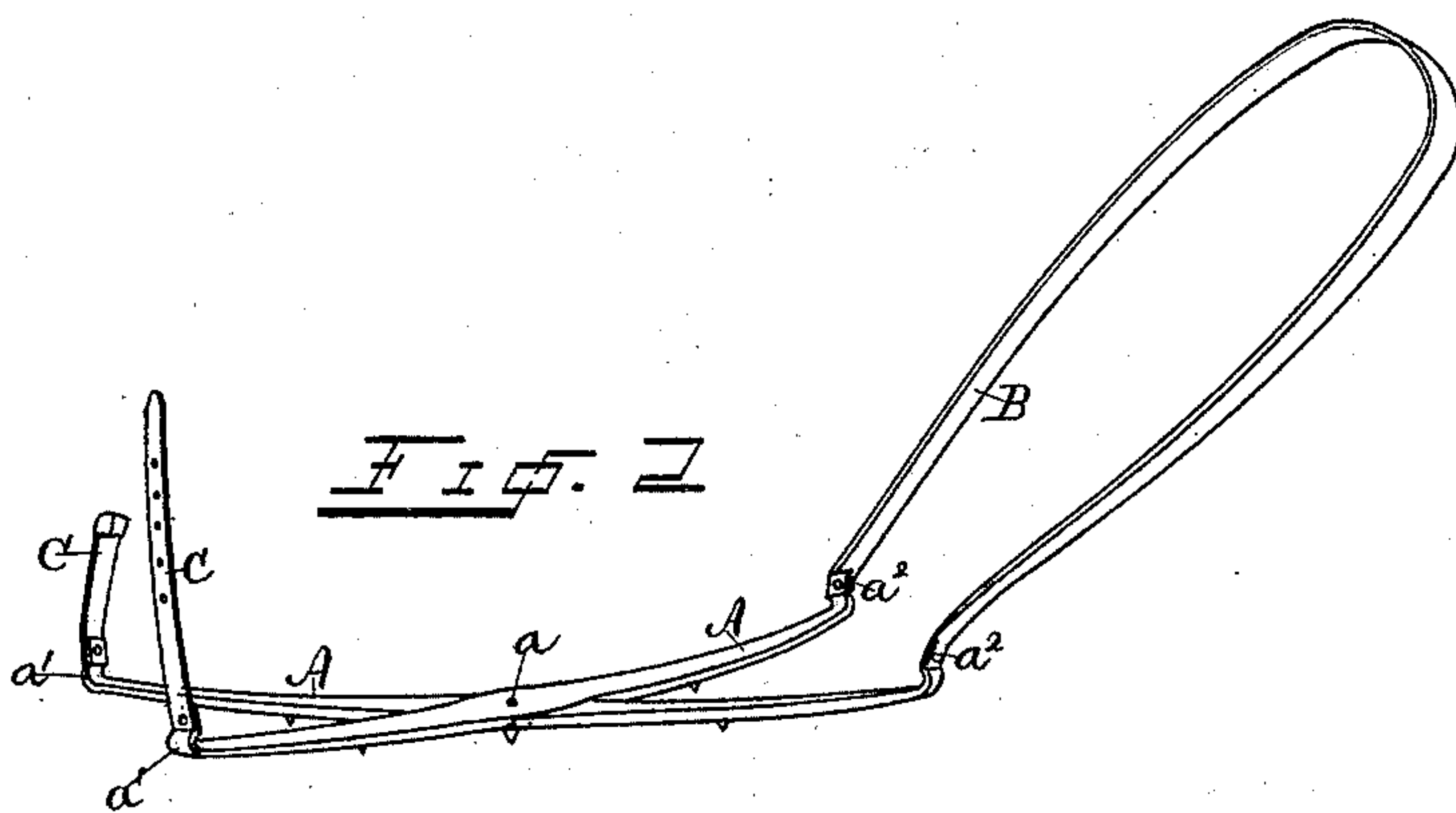
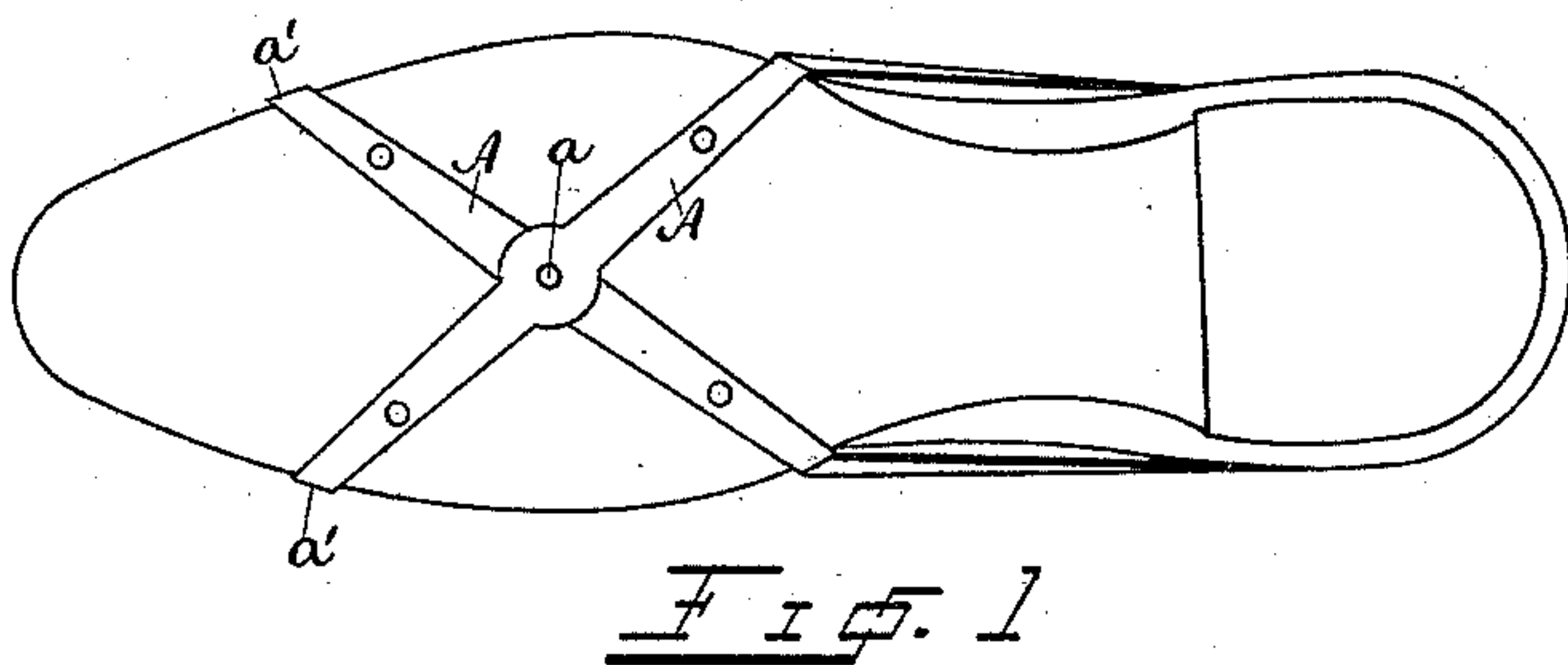


(No Model.)

M. STEINER.
ICE CREEPER.

No. 405,381.

Patented June 18, 1889.



Witnesses

S. H. Robbins.
J. J. Perrin.

Inventor

Martin Steiner

By *his* Attorneys

Hullock & Hullock

UNITED STATES PATENT OFFICE.

MARTIN STEINER, OF ERIE, PENNSYLVANIA.

ICE-CREEPER.

SPECIFICATION forming part of Letters Patent No. 405,381, dated June 18, 1889.

Application filed November 27, 1888. Serial No. 291,973. (No model.)

To all whom it may concern:

Be it known that I, MARTIN STEINER, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Ice-Creepers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to ice-creepers; and it consists in certain improvements in the construction thereof, as will be hereinafter fully set forth, and pointed out in the claim. My invention is illustrated in the accompanying drawings as follows:

Figure 1 shows the bottom of a shoe with one of my creepers in place thereon. Fig. 2 is a perspective view of my device detached from the shoe. Fig. 3 is a side view of a shoe having one of my creepers thereon.

The construction and operation of the device is as follows, reference being had to the letters of reference marked on the drawings:

A A are two spike-bars, which cross each other and are pivoted together at the point of crossing, as seen at *a*. The ends of these bars are turned up and the attaching-straps are attached to these turned-up ends. To the forward ends *a' a'* are attached the toe-straps C C, and to the rear ends *a² a²* is attached the heel-strap B. The forward ends *a' a'* are turned not only upward, but inward, so as to grip the sole of the shoe. The toe-straps are made to buckle, so that they can be properly adjusted to fit the shoe. The heel-strap B is made of rubber or other elas-

tic matter, and is attached by its ends to the spike-bars.

When the device is in position on the shoe, the elastic strap B exerts a constant pull upon the bars A, and as they are pivoted together this strain tends to draw their ends together, and this causes the bars to act as a clamp upon the sole of the shoe.

I am aware that creepers have been made with a sole-plate having buckling toe-straps and an elastic heel-strap, and I am aware that spike-bars have been used that were pivoted, but not in the form of an X, nor did such bars connect with an elastic heel-strap. Elastic heel-straps have heretofore been used simply to avoid the inconvenience of buckling the heel-strap; but I use such a strap for still another purpose—namely, to serve as the means for holding the bars A in compression against the sides of the shoe-sole. Therefore

What I claim as new is—

In an ice-creeper, the combination of the cross-bars A A, pivoted together at their point of intersection and having their ends *a' a²* turned up to form jaws, the spikes upon the under surfaces of said bars, the toe-straps adjustably connecting the front ends of said bars, and an elastic heel-strap connecting the rear ends of the same, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

MARTIN STEINER.

Witnesses:

JNO. K. HALLOCK,
WM. P. HAYES.