

No. 750,965.

PATENTED FEB. 2, 1904.

A. P. GRINNELL.
SHANK STIFFENER FOR SHOES.
APPLICATION FILED APR. 24, 1903.

NO MODEL.

FIG. 1.

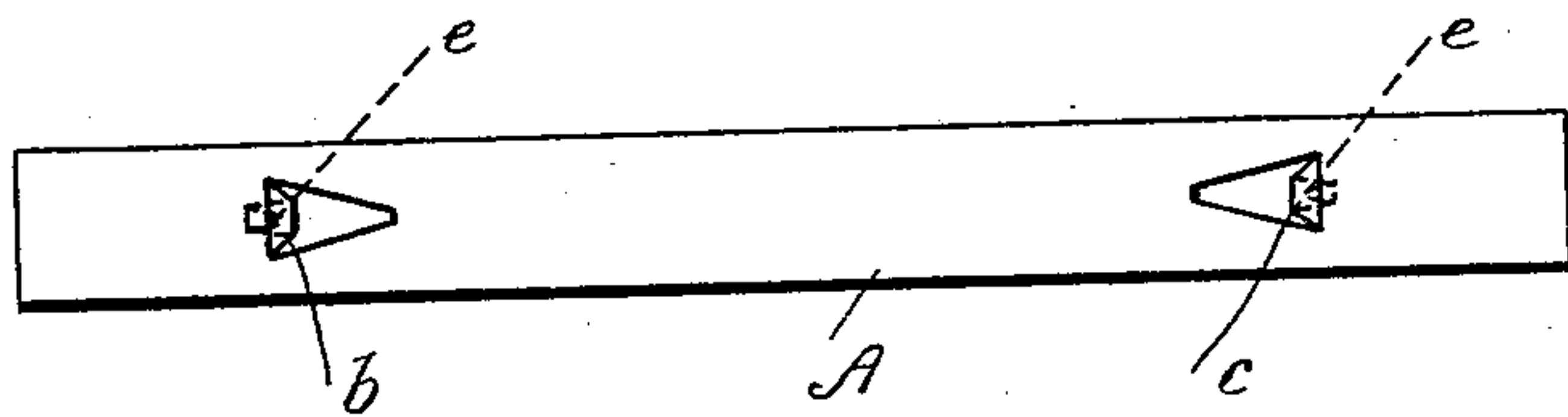
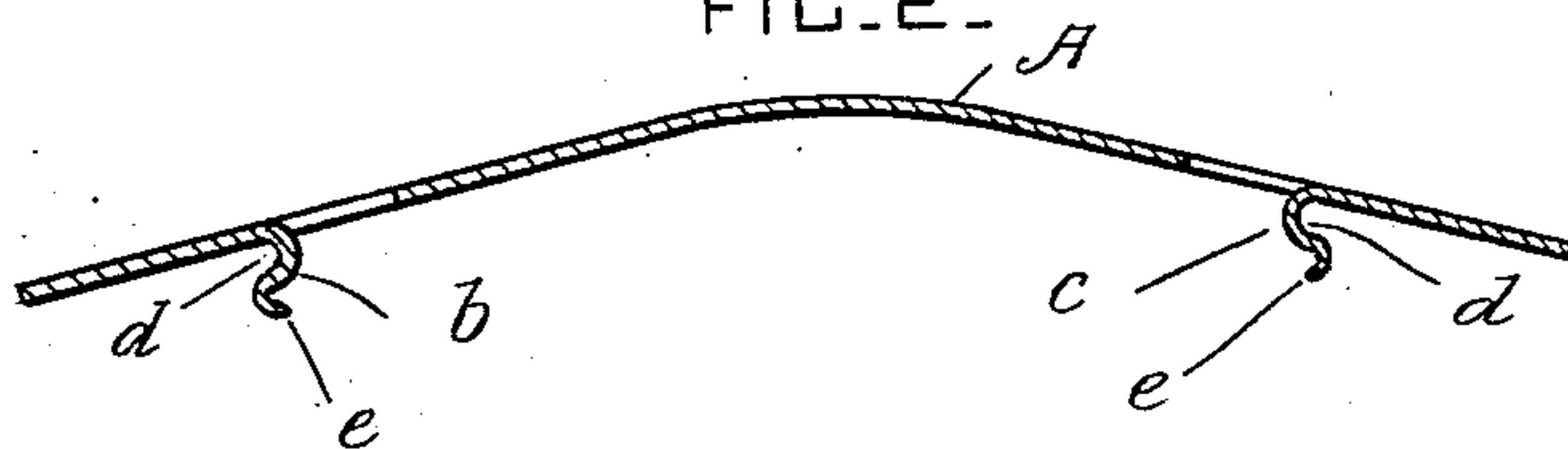


FIG. 2.



WITNESSES

James M. Fisher
Stephen A. Brooks

INVENTOR

Alonzo P. Grinnell.
by Herbert M. Jenner.
Attorney

UNITED STATES PATENT OFFICE.

ALONZO P. GRINNELL, OF LYNN, MASSACHUSETTS.

SHANK-STIFFENER FOR SHOES.

SPECIFICATION forming part of Letters Patent No. 750,965, dated February 2, 1904.

Application filed April 24, 1903. Serial No. 154,161. (No model.)

To all whom it may concern:

Be it known that I, ALONZO P. GRINNELL, a citizen of the United States, residing at Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Shank-Stiffeners for Shoes; 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 shank-stiffeners for stiffening the middle portions of shoe-soles; and it consists in the metallic strip provided with fastening-tangs, as hereinafter fully described and claimed.

In the drawings, Figure 1 is a plan view of the shank-stiffener. Fig. 2 is a longitudinal section through the shank-stiffener.

The shank-stiffener is formed of a strip of sheet-steel or other spring metal, and it is curved at its middle part.

In order to secure the shank-stiffener to the sole, two triangular tangs *b* and *c* are partially punched out of the metal of the strip *A*. These tangs project at the concave side of the shank-stiffener, and they are attached to it by their bases, which are arranged toward the ends of the shank-stiffener. These tangs are formed and fastened by a specially-designed machine at the same operation with the shank-stiffener in position on the sole. Each tang has a rearwardly and downwardly bent main portion *d* and a blunt recurved point *e*. The

tangs are forced into the leather at the time of their formation. The leather is compressed for the time being by the tang and the punch when the punch descends, and a piece of leather is not punched out, because the punch does not descend far enough. The tang is curved and recurved between the punch and the leather, and it catches in the leather. When the punch rises, the tang remains caught in the leather and the leather swells up on each side of each tang, so that it is engaged positively on both sides of the tangs. As the tangs are formed and fastened at one operation their points do not have to be sharp, as when the tangs are formed first and subsequently hammered into the leather and clenched. By arranging the bases of the tangs toward the ends of the shank-stiffener the resilience and curvature of the shank-stiffener assist in holding them in place.

What I claim is—

A shoe-shank stiffener formed of a curved strip of sheet metal having triangular tangs partially punched out of it and arranged with their bases toward the ends of the shank-stiffener and provided with rearwardly-bent main portions and recurved points.

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

ALONZO P. GRINNELL.

Witnesses:

ALICE J. MURRAY,
FREDK. K. DAGGETT.