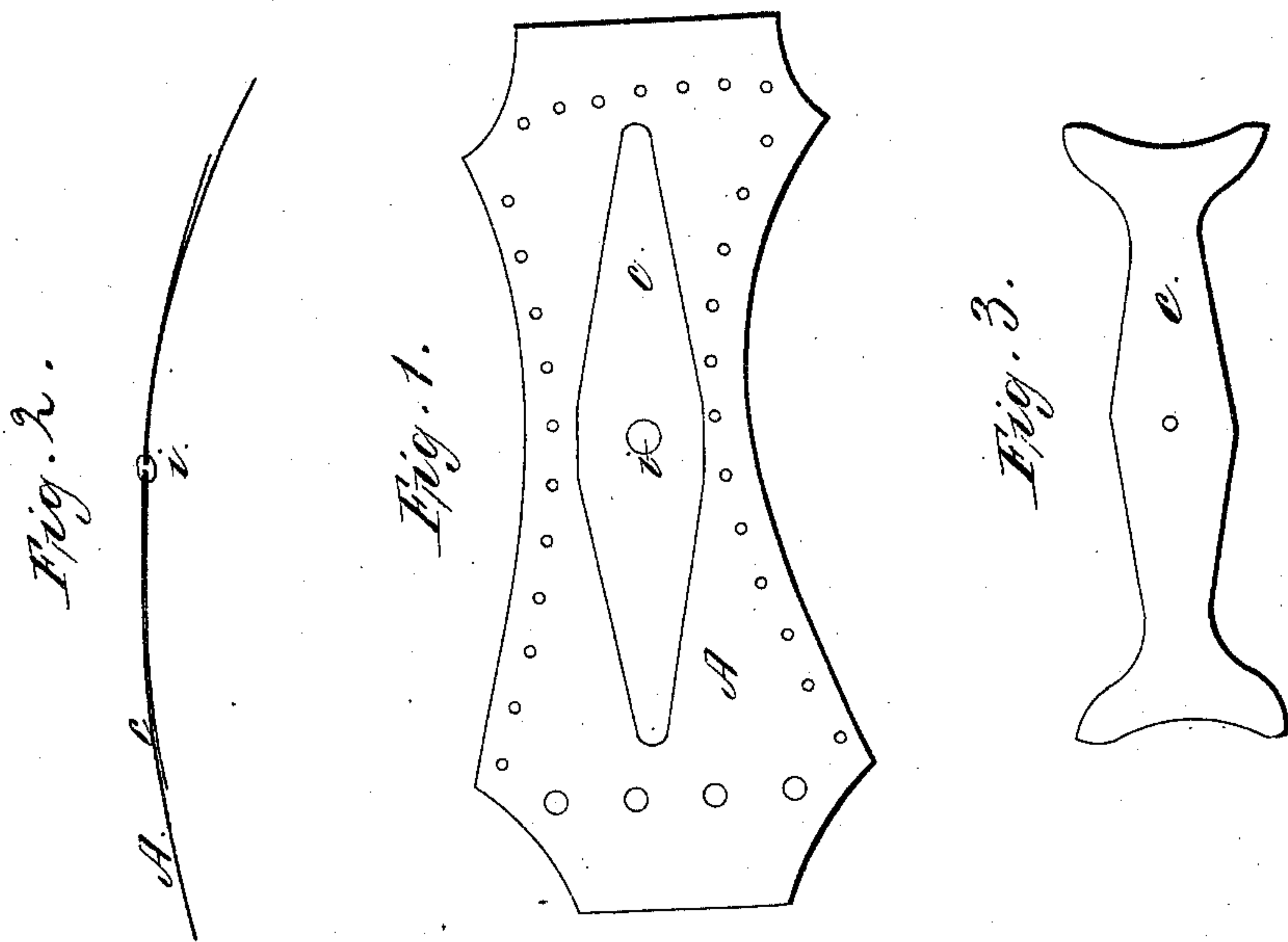


E. Heaton,
Shoe Sole,
N^o 41,701. *Patented Feb. 23, 1864.*



Witnesses:
Hubbard Berke
Rufus Sanford

Inventor:
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By his atty
John E. Earle

UNITED STATES PATENT OFFICE.

EDWARD HEATON, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN METALLIC SHANKS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **41,701**, dated February 23, 1864.

To all whom it may concern:

Be it known that I, EDWARD HEATON, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Metallic Shanks for Boots and Shoes; and I do hereby declare the following to be a full, clear, and exact description of the same, when taken in connection with the accompanying drawings and the letters of reference marked thereon, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a plan or top view of a metallic shank with my improvement attached; Fig. 2, a longitudinal section of the same, and in Fig. 3 a different construction of the same.

My invention relates to an improvement in the shank invented by myself and Joseph L. Joyce, and for which Letters Patent were granted to us bearing date on or about the 8th day of October, A. D. 1861. We have heretofore made these shanks, as described in the said Letters Patent, of a single thin piece of sheet-steel, that metal being the best for the purpose. After the shanks are struck out by means of a press or otherwise, it is necessary to give to them a spring temper, and we have found that this can only be done properly by hammering them. This labor makes the chief item of expense; but in hammering, one part may be strained more than another, which renders them liable to break in wearing.

To avoid this great expense in tempering, as also the liability to break, is the object of my invention, which consists in attaching an auxiliary spring, made from a piece of tempered steel, to the untempered shank to serve as the principal spring for the shank whereby I avoid the necessity of tempering the shank itself, and consequently the liability to break.

To enable others skilled in the art to make

and use my improvement, I will proceed to fully describe it.

A is the shank of the form heretofore used, and as described in the Letters Patent before referred to, is cut from a piece of sheet-steel, and punched, as shown in Fig. 1, for the purpose of attaching to the boot or shoe. This piece has heretofore been tempered by hammering by hand, as and with the result before mentioned.

I use this shank without tempering it, retaining it in the form and condition in which it comes from the several dies used in cutting out, bending, and punching. I attach to this shank an auxiliary spring, *c*, made from steel or other suitable metal. I make them from the waste pieces unavoidably made in cutting out the shanks. I cut them to the proper form (see Fig. 1) and bend them to the required curve, as see Fig. 2. I then temper the spring in the common manner, after which I attach the auxiliary spring to the shank by a rivet, *i*, or other convenient manner. This gives to the shank a better elasticity than can be produced by any temper which can be given to the shank alone.

This spring may be of various forms, to take a bearing upon other points on the shank, (see Fig. 3,) but experience proves the form above described to be the best and cheapest.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

The combination, with a metallic shank, of an auxiliary spring, substantially in the manner and for the purpose specified.

EDWARD HEATON.

Witnesses:

JOHN E. EARLE,
RUFUS SANFORD.