

W.T. Clement.

Manufacture of Hoes.

PATENTED

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Fig. 1.

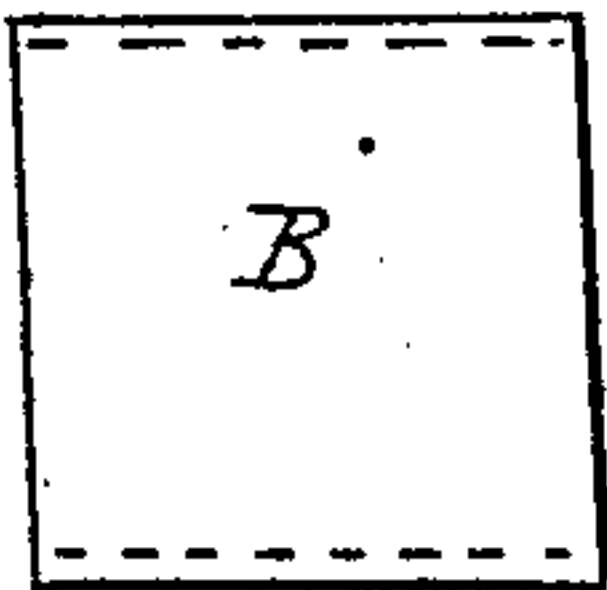


Fig. 2.

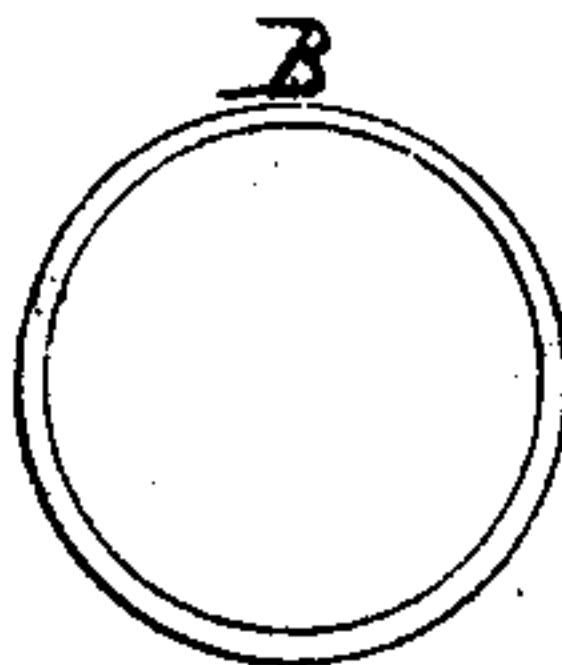


Fig. 8.

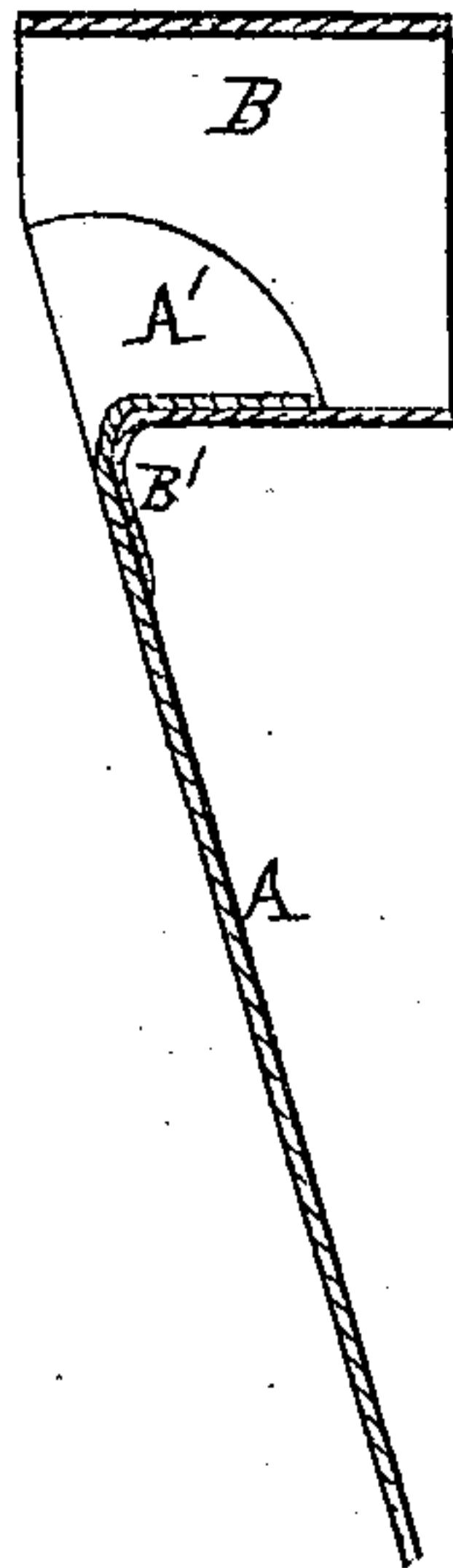


Fig. 3.

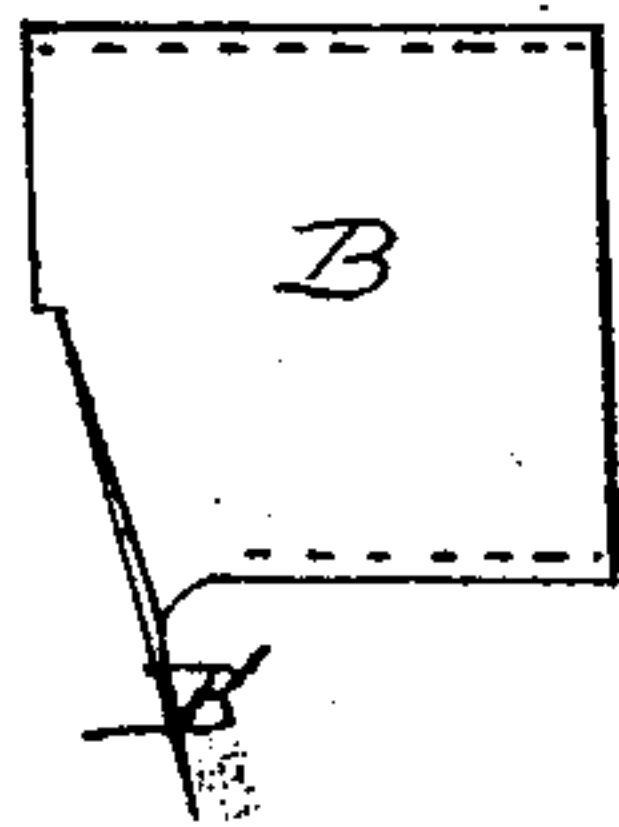


Fig. 4.

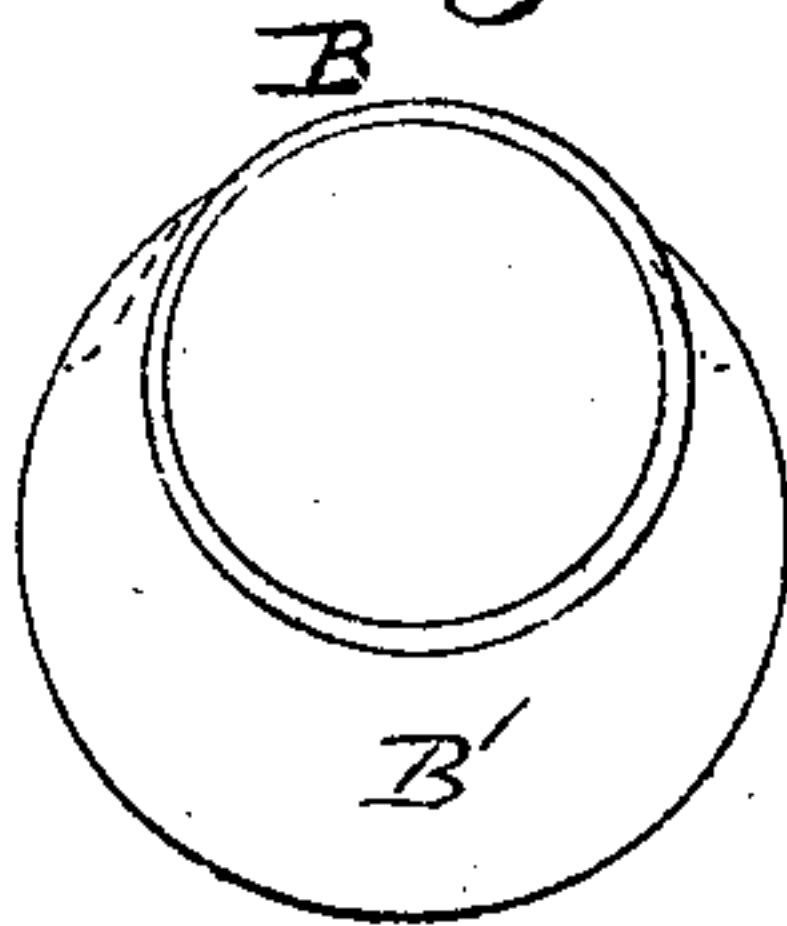


Fig. 5.

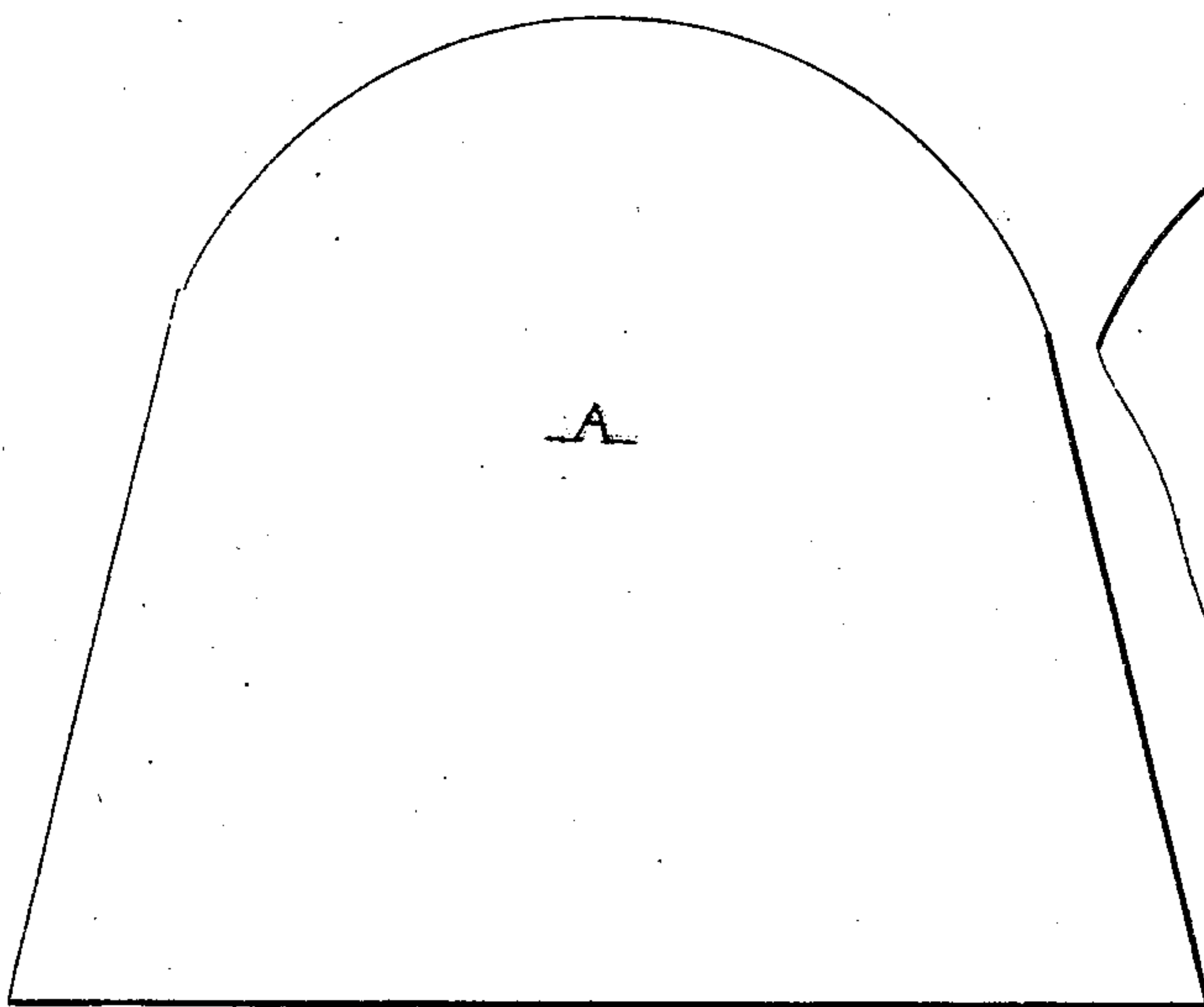


Fig. 6.

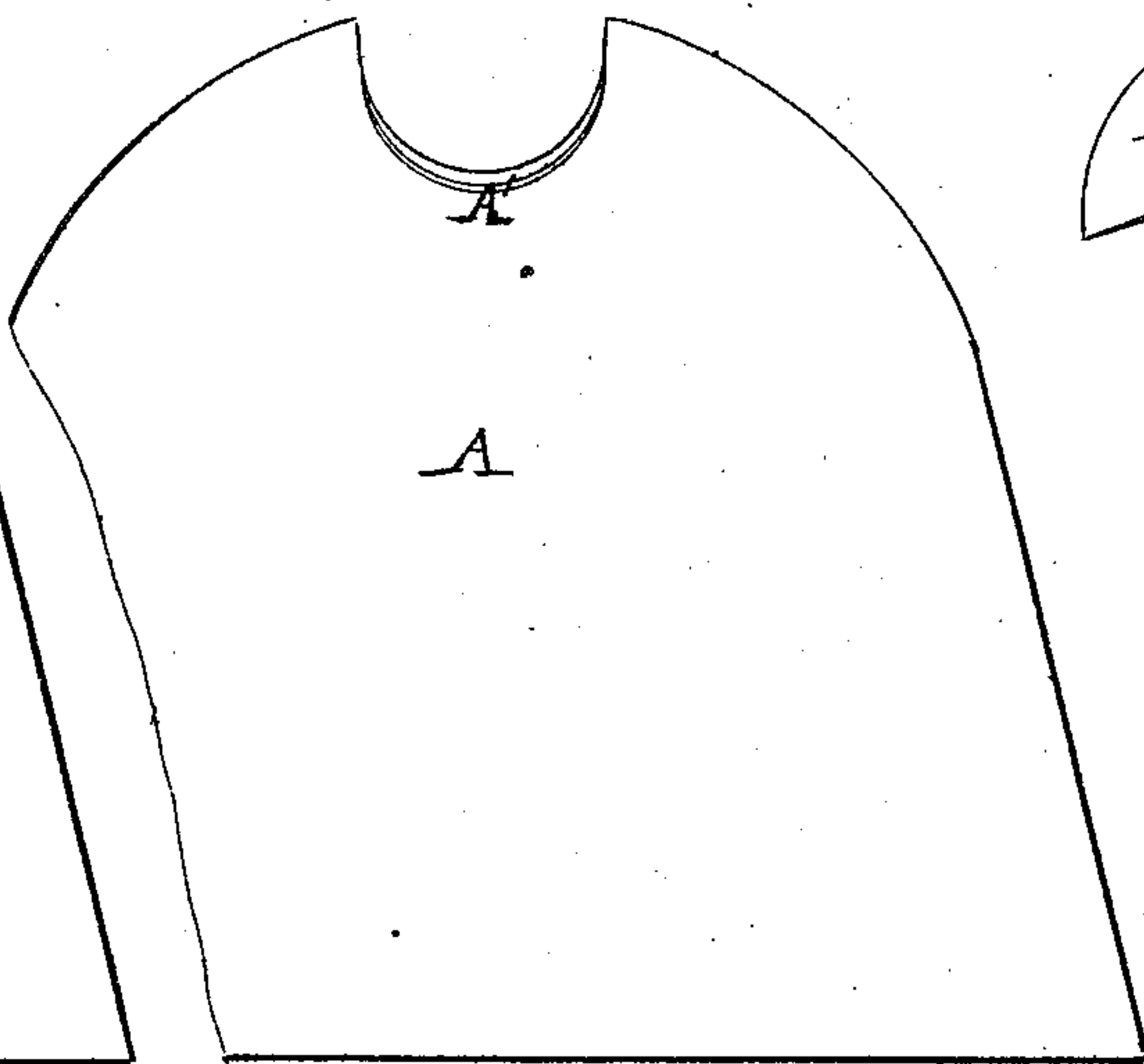


Fig. 7.



Witnesses.

*Wm. C. Day*  
Galler. S. Shovee

Signature.

*W. T. Clement*  
By his attorney  
*J. S. [Signature]*

# United States Patent Office.

WILLIAM T. CLEMENT, OF NORTHAMPTON, MASSACHUSETTS.

*Letters Patent No. 73,437, dated January 21, 1868.*

## IMPROVEMENT IN THE MANUFACTURE OF HOES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM T. CLEMENT, of Northampton, in the county of Hampshire, and State of Massachusetts, have invented certain new and useful Improvements in the Manufacture of Hoes; and I do hereby declare that the following is a full and exact description thereof.

My invention relates to that class of hoes which receive the handle within a socket or eye open at both ends. It includes most of the several varieties of stub-hoes, planters' hoes, and those hoes, under various names, which are used in very heavy work. The eye requires to be long, so as to afford a very firm hold on the handle, which is fitted tightly therein, by wedging or otherwise. A difficulty is experienced in making eyes of sufficient length, without a very great expense in the forging. Several plans have been proposed, and patents have been taken for welding, brazing, or otherwise attaching eyes separately, formed usually of cast iron; but these have all been more or less open to objection.

My invention overcomes most of the difficulty, allows the hoe to be produced very light and strong, and at a very moderate expense of labor or material.

I will first describe what I consider the best means of carrying out my invention, and will afterwards designate the points which I believe to be new. The accompanying drawings form a part of this specification.

Figure 1 is a side view, and

Figure 2 an edge view of the tube or socket B, without the flange or lip B'.

Figure 3 is a side view, and

Figure 4 an edge or face view of the same after the flange is produced.

Figure 5 is the blade, cut or formed to the proper outline, before the place for the eye is prepared.

Figure 6 is a face view of the blade prepared.

Figure 7 is a longitudinal vertical section through the same.

Figure 8 is a longitudinal vertical section through the blade A and tube B, after being applied together.

Similar letters of reference indicate like parts in all the figures.

A is a blade of steel, or of wrought iron, or of the two materials soldered together in the ordinary manner. It may be produced by forging, rolling, or otherwise, and may be of uniform thickness. A' is a broad lip, which is turned up by hand or otherwise, while that edge of the blade A is at a high temperature. It is curved to match the inner surface of the eye. A good form is indicated in the drawings. Ordinarily the edge will be less regular and smooth than is here represented. I prefer to draw the extreme edge very thin. This lip stands at the same angle, relatively, to the plane of the blade A, as the handle is designed to stand in the hoe. B is a tube of wrought iron. It may be lap-welded or butt-welded, such as is formed for gas-pipe, or it may be produced in any other convenient form which will allow its cheap and uniform production from wrought iron. B<sup>1</sup> is a broad flange or lip, turned up on one side, and drawn to a thin edge, as represented. This flange stands at the same angle, relatively, to the axis of the tube B, as the blade of the hoe is intended to stand relatively to the handle. The parts A A' and B B' are now applied together and welded in the position indicated in fig. 8, and if the edges of A' and B' have been previously made thin, the eye is finished smoothly and perfectly, with very little labor. The metal in my eye stands without strain, and there is a just sufficient thickening of the material at the points of junction between the eye and the blade, to afford requisite strength. I can, by properly modifying the sizes, fit the parts B B' inside, instead of outside of the part A', if preferred.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

I claim the within-described method of manufacturing hoes, consisting in the production of wrought-iron eyes B B', and previously-prepared blades A A', and in welding them together in the manner substantially as herein set forth.

W. T. CLEMENT.

Witnesses:

C. A. MAYNARD,

S. T. SPAULDING.