

(No Model.)

C. L. HIGGINS.

DEVICE FOR EXPANDING ARTICLES OF FLEXIBLE MATERIAL.

No. 300,365.

Patented June 17, 1884.

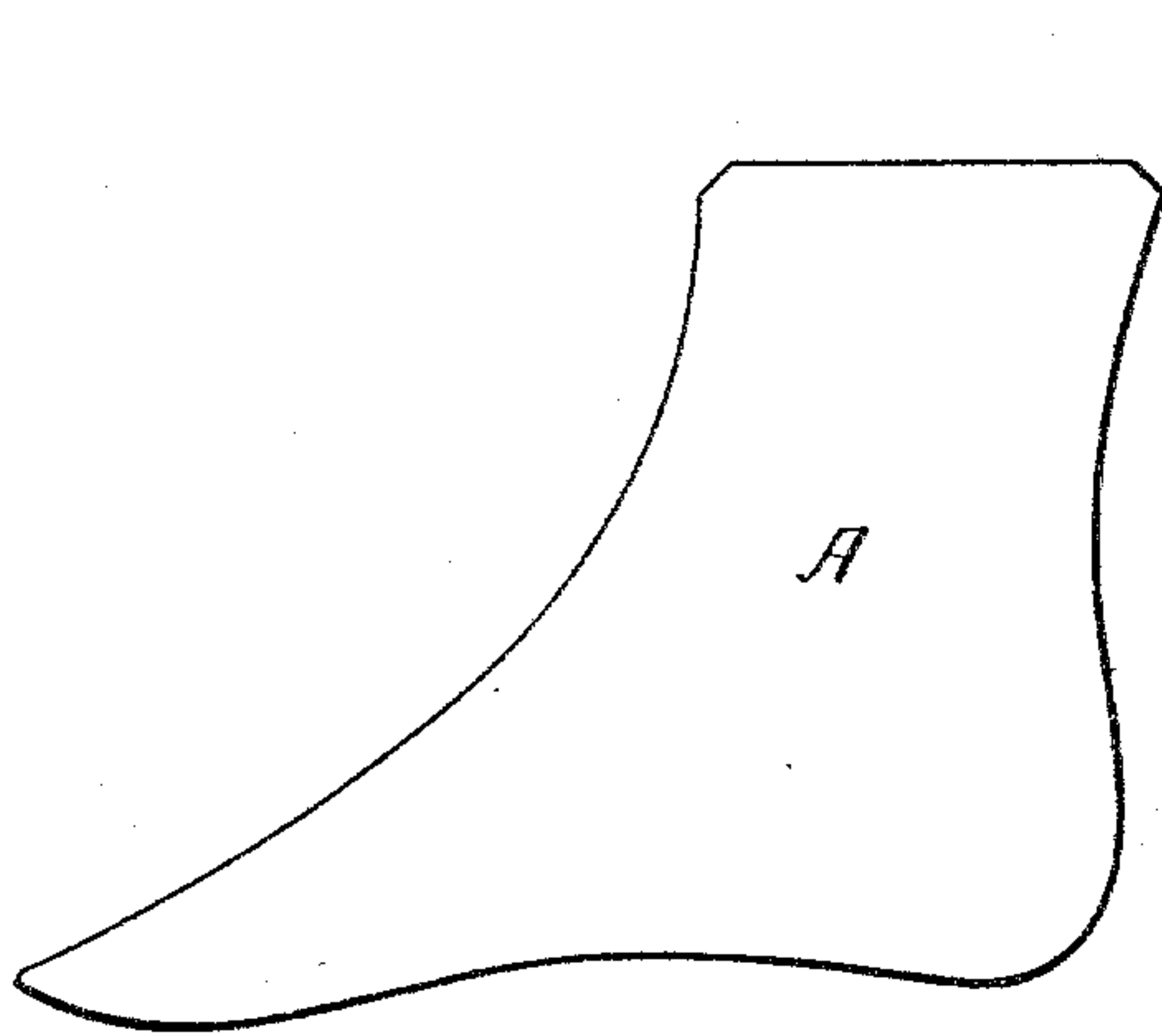


Fig. 1.

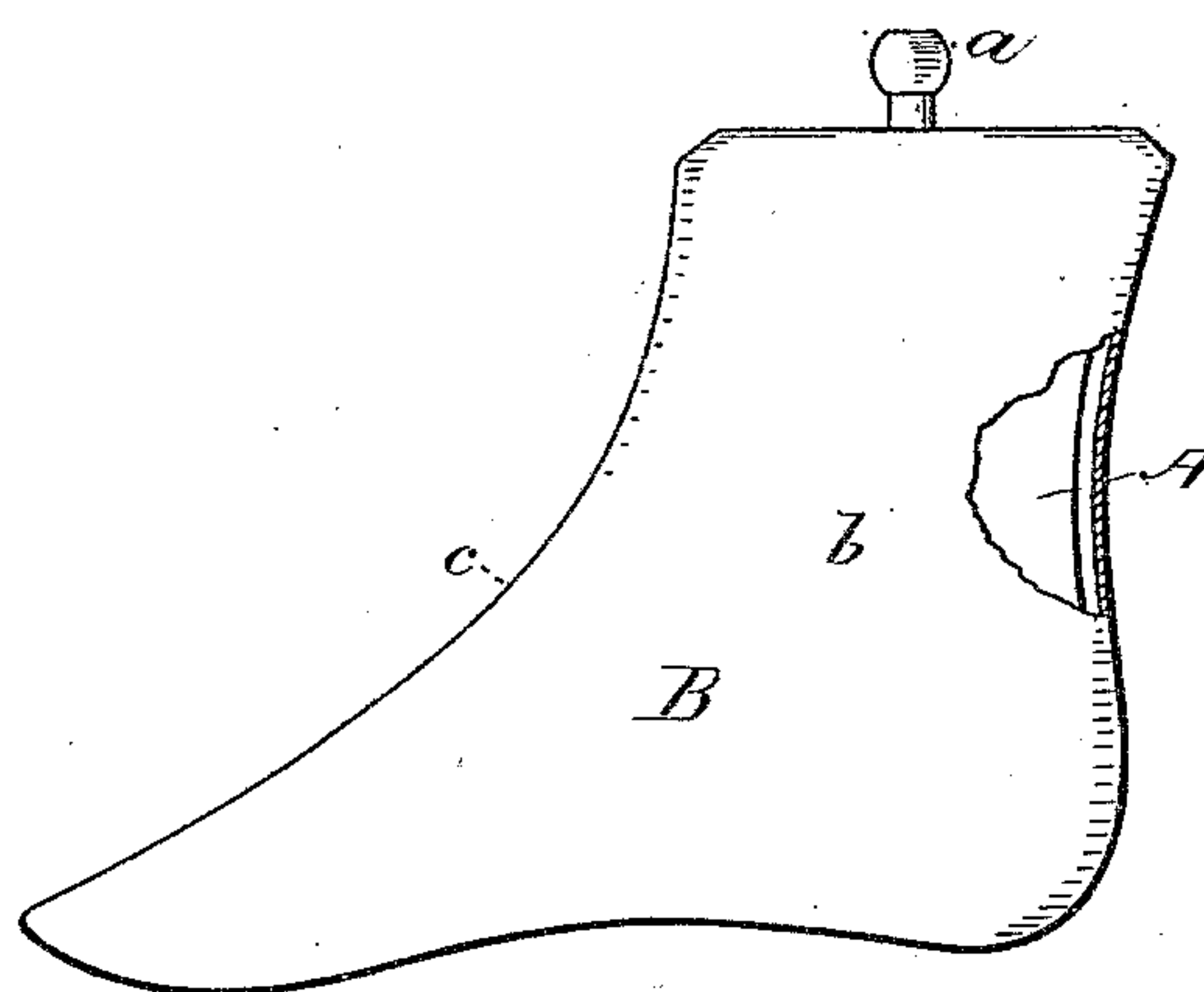


Fig. 2.

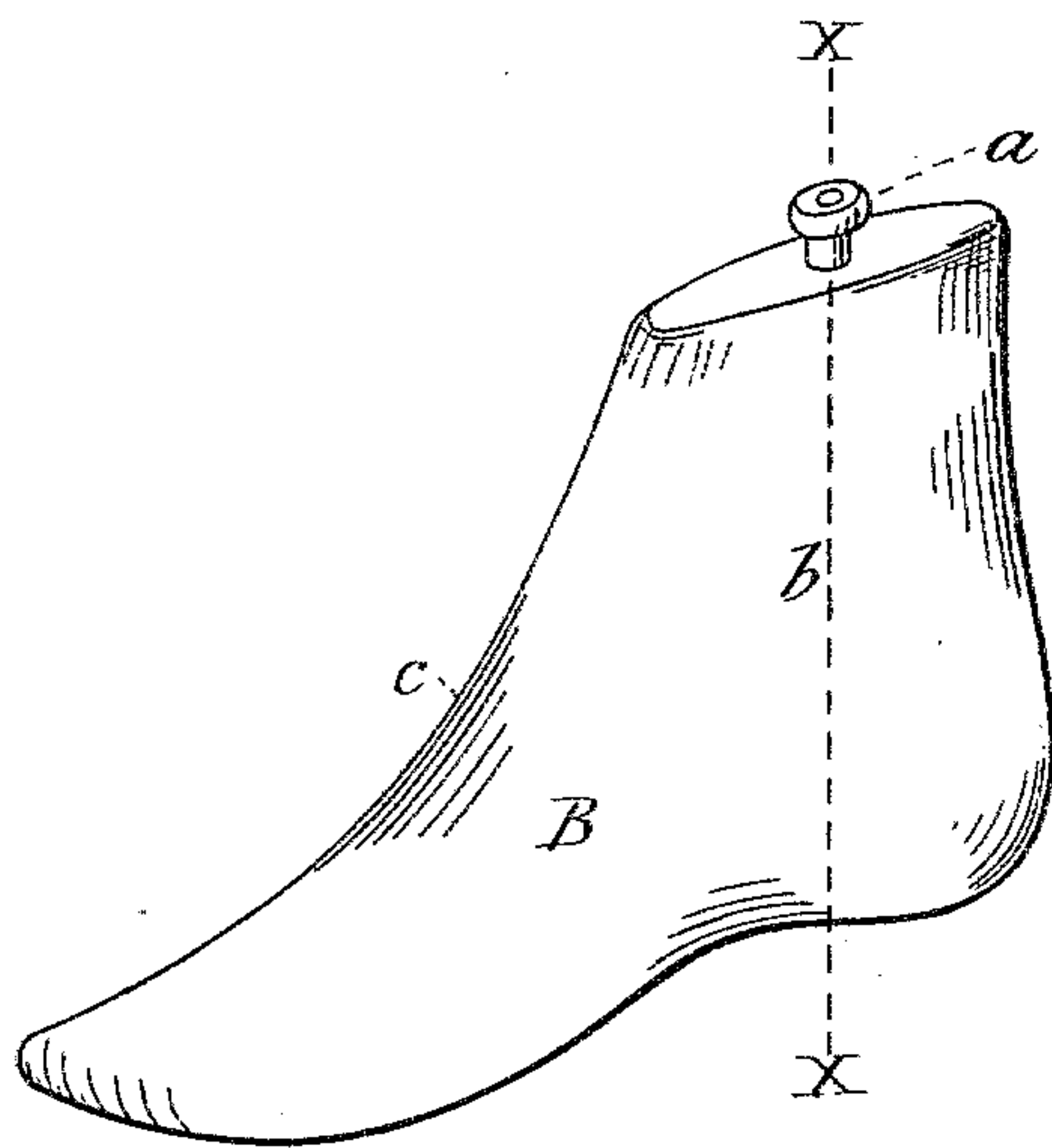


Fig. 3.

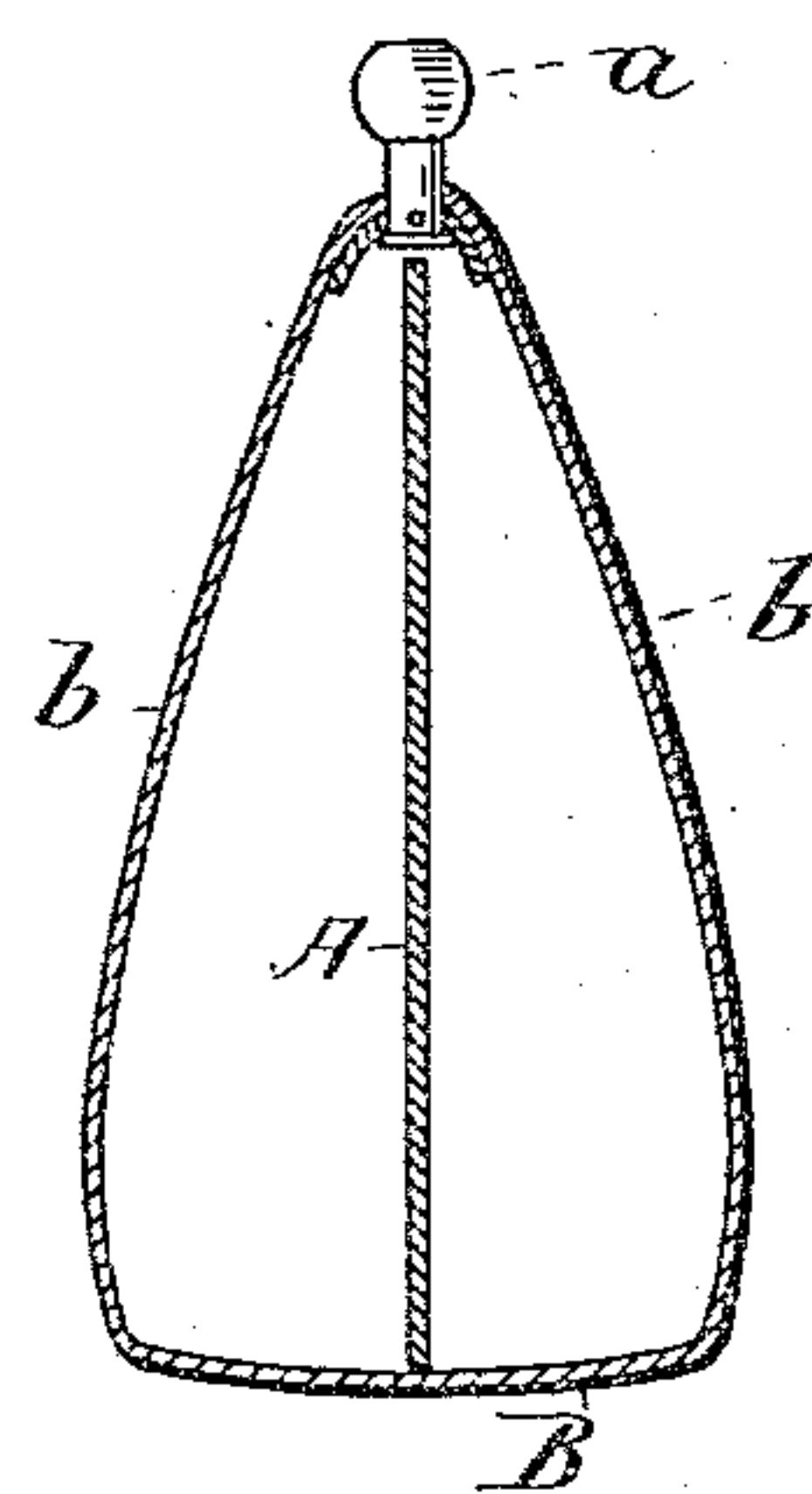


Fig. 4.

WITNESSES

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# UNITED STATES PATENT OFFICE.

CHARLES L. HIGGINS, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR TO JOHN E. WHEELER, TRUSTEE, OF LYNN, MASSACHUSETTS.

## DEVICE FOR EXPANDING ARTICLES OF FLEXIBLE MATERIAL.

SPECIFICATION forming part of Letters Patent No. 300,365, dated June 17, 1884.

Application filed April 14, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES L. HIGGINS, a resident of Montreal, Province of Quebec, Canada, and a subject of Victoria, Queen of Great Britain, have invented a certain new and useful Improvement in Devices for Expanding Articles of Flexible Material, of which the following is a specification.

My present invention is intimately connected with the inventions secured to me by Letters Patent No. 291,188 and No. 291,729, and dated, respectively, January 1 and 8, A. D., 1884, and is designed to more perfectly and efficiently perform the work, or aid in performing it, than is otherwise possible; and it consists, essentially, in inserting a form inside the flexible inflator in such a manner as to aid the locating of the inflator and to resist the tendency of spherical formation, and a better adaptation of the external surface of the inflator to the natural conformation of the article expanded.

In order to better explain the working and practical benefits of my invention, I illustrate its use in connection with a rubber bag or flexible inflatable form, and refer to the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts.

Figure 1 is the outline of the form used. Fig. 2 is a side elevation of an inflator, with a portion broken away to show a part of the form therein inserted. Fig. 3 is an inflator distended. Fig. 4 is a sectional view of the distended inflator and form, taken on the line *x x* of Fig. 3. The tube *a* communicates with the interior of the inflator.

A is the form, which is preferably of some flexible material, made of the general shape of a shoe upon its central line. The form is made thin and is inserted inside the inflator.

While the device represented in my former patents aforesaid answers the purposes intended very well, I found that the tendency of the inflator was to take a spherical form when

distended, and when inserted in a shoe for the purpose of showing its form it rounded out the sides of the upper of the shoe which were contiguous to the points *b b* of the inflator. This naturally detracted somewhat from the symmetry of the outline of the shoe. I further found that in the case of light shoes the tendency was to draw in the front of the shoe contiguous to the point *c* of the inflator. As the inflator is inserted in the shoe before it is distended, it is sometimes difficult to properly insert and adjust the point in the toe of the shoe. All of these defects or objections I am able to overcome by placing inside the inflator the form shown and described. The form by the process of inflation automatically adjusts itself upon the central line of the shoe, and the result is that the inflator invariably adapts itself easily to the entire internal surface of the upper, and, being distended, it does not draw any part of the shoe out of its natural form or symmetry.

While I have described this form as applied to a shoe, I do not intend to confine it to this alone, as it is of equal efficiency when used in inflators used to distend or give fullness or shape to other articles, the form used of course to be varied in shape according to the circumstances of each case.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. The form A, in combination with the elastic inflator B, arranged and adapted as described, and for the purposes specified.

2. In a device for giving shape to flexible hollow articles by elastic pressure, a narrow form held within the device, having the general outline of the article, substantially as and for the purposes set forth.

CHARLES L. HIGGINS.

In presence of—

JOHN E. WHEELER,  
BOWDOIN S. PARKER.