

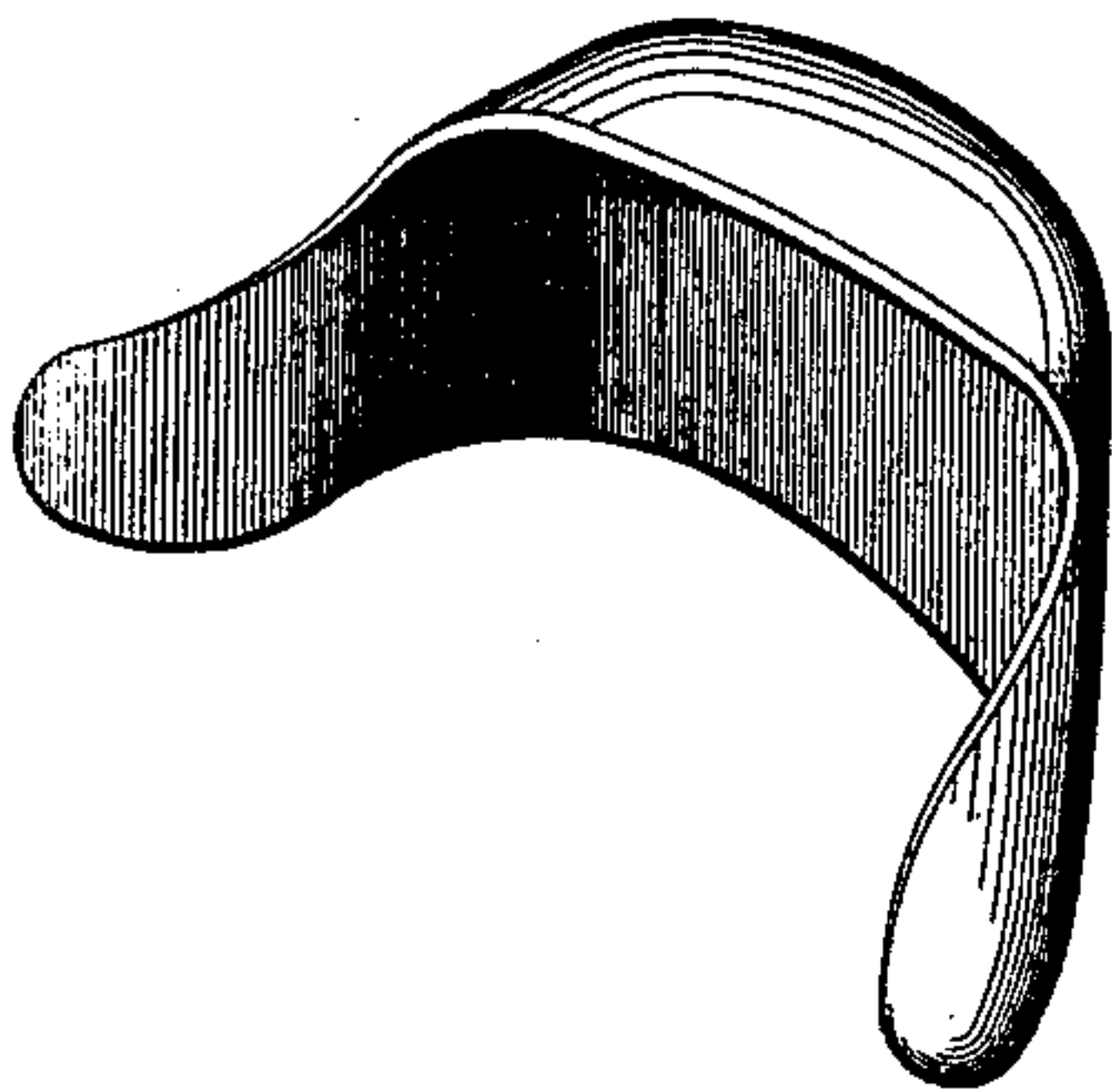
D. SCRYMGEOUR.

PROCESS OF FORMING HEEL-STIFFENERS AND OTHER ARTICLES  
IN THE MANUFACTURE OF BOOTS AND SHOES.

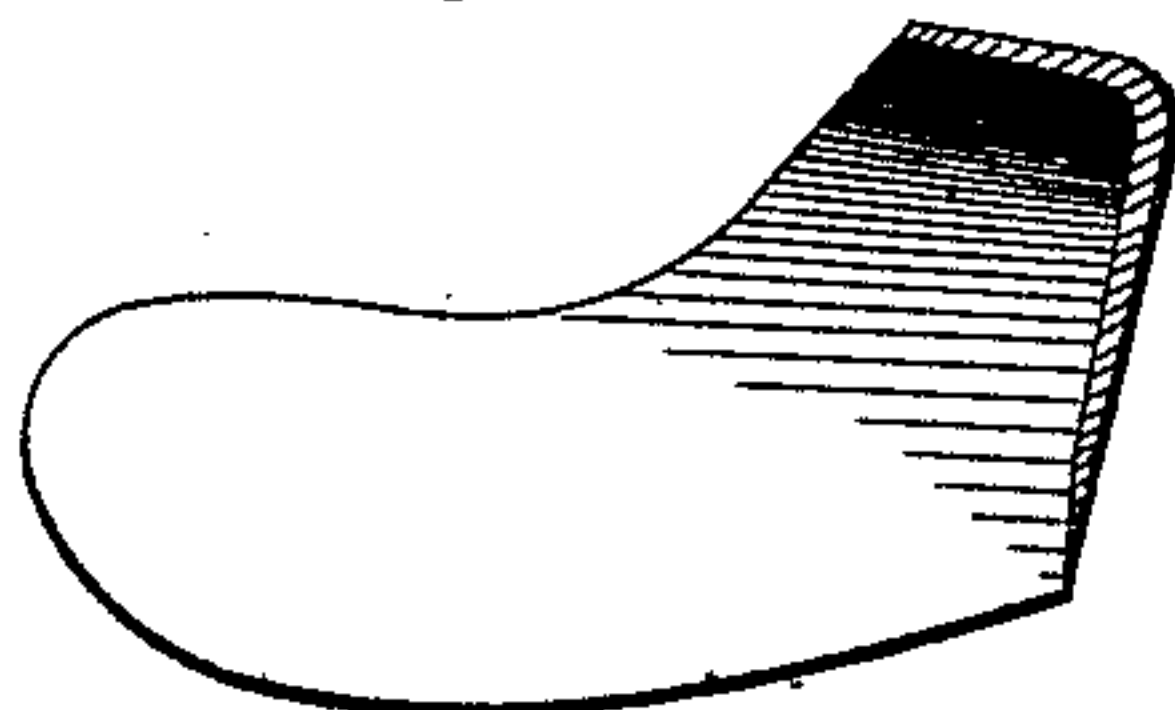
No. 176,556.

Patented April 25, 1876.

*Fig. 1.*



*Fig. 2.*



*Witnesses.*  
*J. H. Cunneen.*  
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# UNITED STATES PATENT OFFICE.

DAVID SCRYMGEOUR, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN PROCESSES OF FORMING HEEL-STIFFENERS AND OTHER ARTICLES IN THE MANUFACTURE OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **176,556**, dated April 25, 1876; application filed February 21, 1876.

*To all whom it may concern:*

Be it known that I, DAVID SCRYMGEOUR, of Boston, Suffolk county, Massachusetts, have invented an Improved Manufacture of Boot and Shoe Stiffening, of which the following is a specification:

The purpose of this invention is to provide counters, insoles, box-toe stiffenings, outer toe-tips, &c., for use in the manufacture of boots, which shall possess the qualities of lightness, cheapness, and capability of being provided in any suitable shape.

The drawings accompanying this specification represent in Fig. 1 a perspective view, and in Fig. 2 a section of a box-toe stiffening made in accordance with my invention.

In carrying my invention into practice in the manner in which I produce the articles embraced by it, I provide myself with a hollow mold, whose exterior surface is reticulated, whether by means of a covering of wire-cloth or otherwise, and is of the shape, or approximating the shape, of the intended article. With this mold I combine an air-pump, or other means of exhausting air from its interior, and after immersing it in a vessel containing paper-pulp of the proper consistency, exhaust the air from its interior, by which the water within the pulp surrounding the mold is extracted, and a certain amount of such pulp deposited upon the exterior of said mold, to be subsequently removed and dried, or partially dried. The pulp should be made from strong long-staple stock, and prepared with a long fiber, and should, preferably, be well shaken or disturbed before immersing the vacuum-mold, in order to interlace or interweave the fibers and produce very strong material. In this manner I obtain in pulp the desired article, but in a rough and partially-finished condition. I next provide myself with a mold in which to press the article thus obtained into a completed state, such mold being cast in iron, or otherwise properly made. The article

is now subjected to heavy pressure in the mold, which completes the operation.

For some uses the pulp may be the only material employed; but in others a suitable water-proof substance is to be added to the pulp to withstand the moisture to which boots and shoes are liable in out-of-door wear.

In the manufacture of outer toe-tips for boots and shoes under my invention, a proper coloring material is, in most cases, to be incorporated in the pulp to convert it into a deep, black shade to render it less conspicuous upon a leather boot or shoe, while for cloth or light-colored boots it may be left in its original color, or tinted to any shade.

I am enabled to produce with equal facility and advantage insoles, counters, box-toes, and tips and heels.

By forming the desired article upon the reticulated mold or former, I am enabled not only to interlace or interweave the fibers of the pulp in a manner to impart great strength, but I am also enabled to vary the thickness of the article at different points—making it thin in places to avoid bulkiness, and thicker in others to obtain stiffness and strength. I am also enabled to avoid the wrinkling and other objectionable results which follow an attempt to mold the hereinbefore-described article from a sheet of dry paper or paper-board or leather, and as sharp corners are no barrier under my method, I am able to produce articles of any desired shape or size.

I claim—

The process of making molded shoe-stiffenings and analogous articles, as specified, by first forming the article from pulp on a vacuum-mold, and subsequently pressing the same in a finishing-mold, substantially as set forth.

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Witnesses:

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W. E. BOARDMAN.