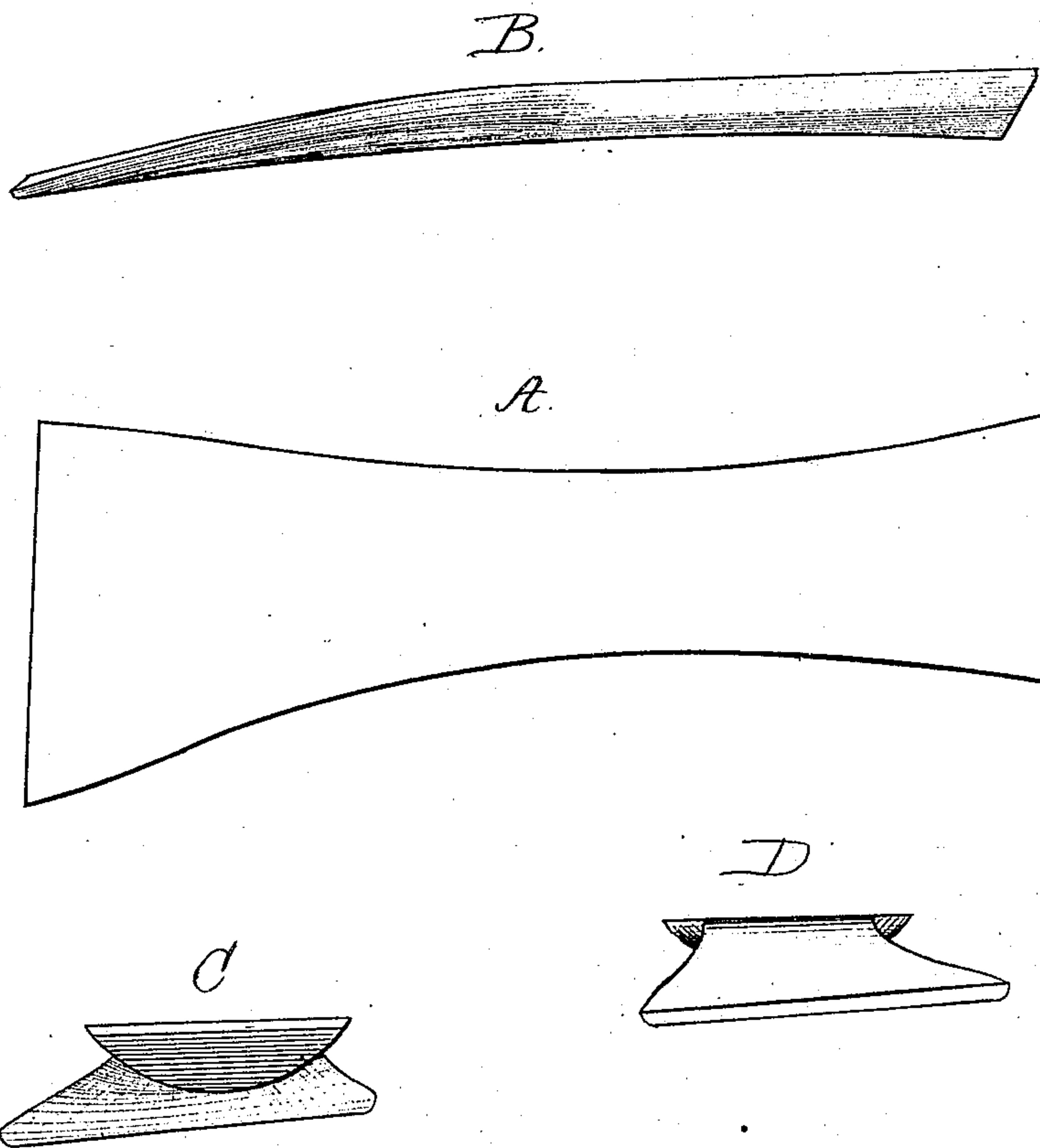


Houghton. Moore & Rogers,

Shank Stiffener.

No. 102401.

Patented Apr. 26. 1870.



G. Houghton, J. Moore & H. Rogers.

by their Atty.

Crosby, Halsted & Gould

Witnesses

J. B. Hilder

M. W. Frothingham.

United States Patent Office.

GEORGE HOUGHTON, OF HUDSON, AND STEPHEN MOORE AND HOMER ROGERS, OF SUDBURY, MASSACHUSETTS.*

Letters Patent No. 102,401, dated April 26, 1870.

IMPROVED SHANK-STIFFENER.

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

To all whom it may concern:

Be it known that we, GEORGE HOUGHTON, of Hudson, and STEPHEN MOORE and HOMER ROGERS, of Sudbury, all in the county of Middlesex and State of Massachusetts, have invented an Improved Shank-Stiffener; and we do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of our invention sufficient to enable those skilled in the art to practice it.

In the manufacture of many kinds of boots and shoes it is customary to place between the insole and wearing sole, through the shank, a long piece called a shank-stiffener, to give the requisite form and rigidity to the bottom of the boot, between the wearing-sole and the heel. This piece is generally made of leather, triangular in section, quite narrow at the center, and flaring from the center to the opposite ends. Sometimes the shank is cut out from artificial leather or leather-board, but whether cut from leather or leather-board, there is a great waste of stock in cutting; and

The object of our invention is to so make the shank as to economize all of the stock used in its formation.

This we accomplish by using a composition or plastic material, which, when in a pulpy or plastic condition, may be molded into form, and which, when molded, will soon become sufficiently rigid, but will possess strength, flexibility, and elasticity enough to adapt it for use as a shank-stiffener; and

Our invention consists in a shank-stiffener made of artificial leather or other composition formed into shape in a suitable mold.

The drawing represents in plan, side elevation, and cross-section, one of our shank-stiffeners, though, as

the drawing can only denote the shape of the stiffener, it will serve merely to illustrate the form of the article to which our invention relates, showing at A the narrow center and widened ends, at B the thickness from center to ends, and at C and D the triangular shape, in cross-section, at the center and at the ends.

A suitable mold having been made, slightly curved in longitudinal section and of irregular width and shape in cross-section from end to end, (the molding surface corresponding throughout with the irregular form of a shank-stiffener,) this mold is filled with the soft pulpy or plastic material of which the shank is to be made, and pressure is then applied to solidify the material and expel the moisture.

We prefer to use pulp like that from which leather-board or artificial leather is manufactured, but common pasteboard pulp will answer the purpose, though not as well. Caoutchouc or the compounds thereof, or other gum-elastic material may be employed, but these materials are too costly for extensive use.

It will readily be seen that by our invention we not only save all waste, but that material very much cheaper than leather may be used.

We claim, as a new article of manufacture, shank-stiffeners made of paper-pulp, formed into shape in a mold, substantially as described.

Executed December 31, 1869.

GEORGE HOUGHTON.
STEPHEN MOORE.
HOMER ROGERS.

Witnesses:

SILAS H. STUART,
LORENZO STRATTON.

*Assignors to Stephen Moore & Homer Rogers.