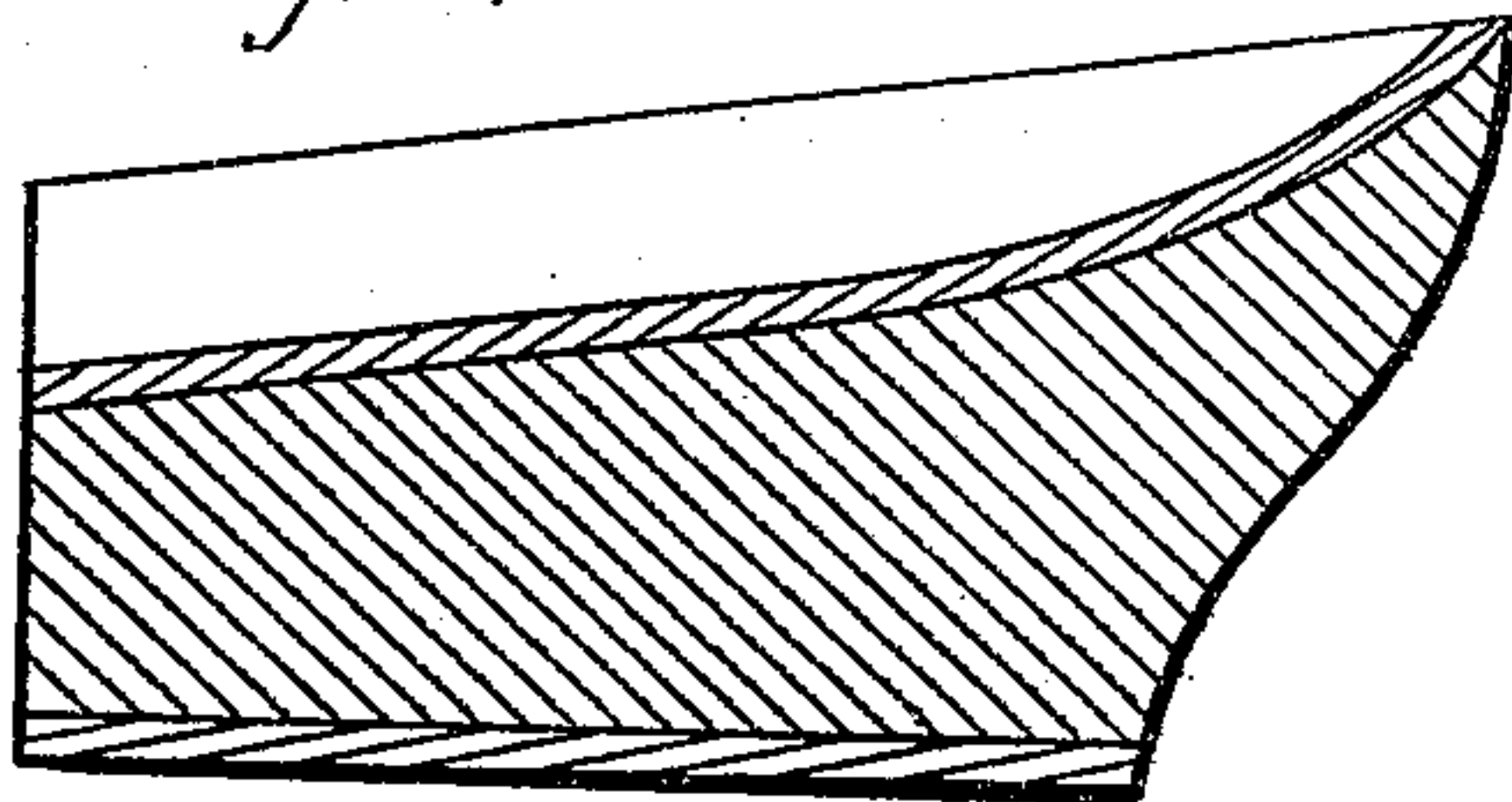


J. SAMUELS.  
HEELS FOR BOOTS AND SHOES.

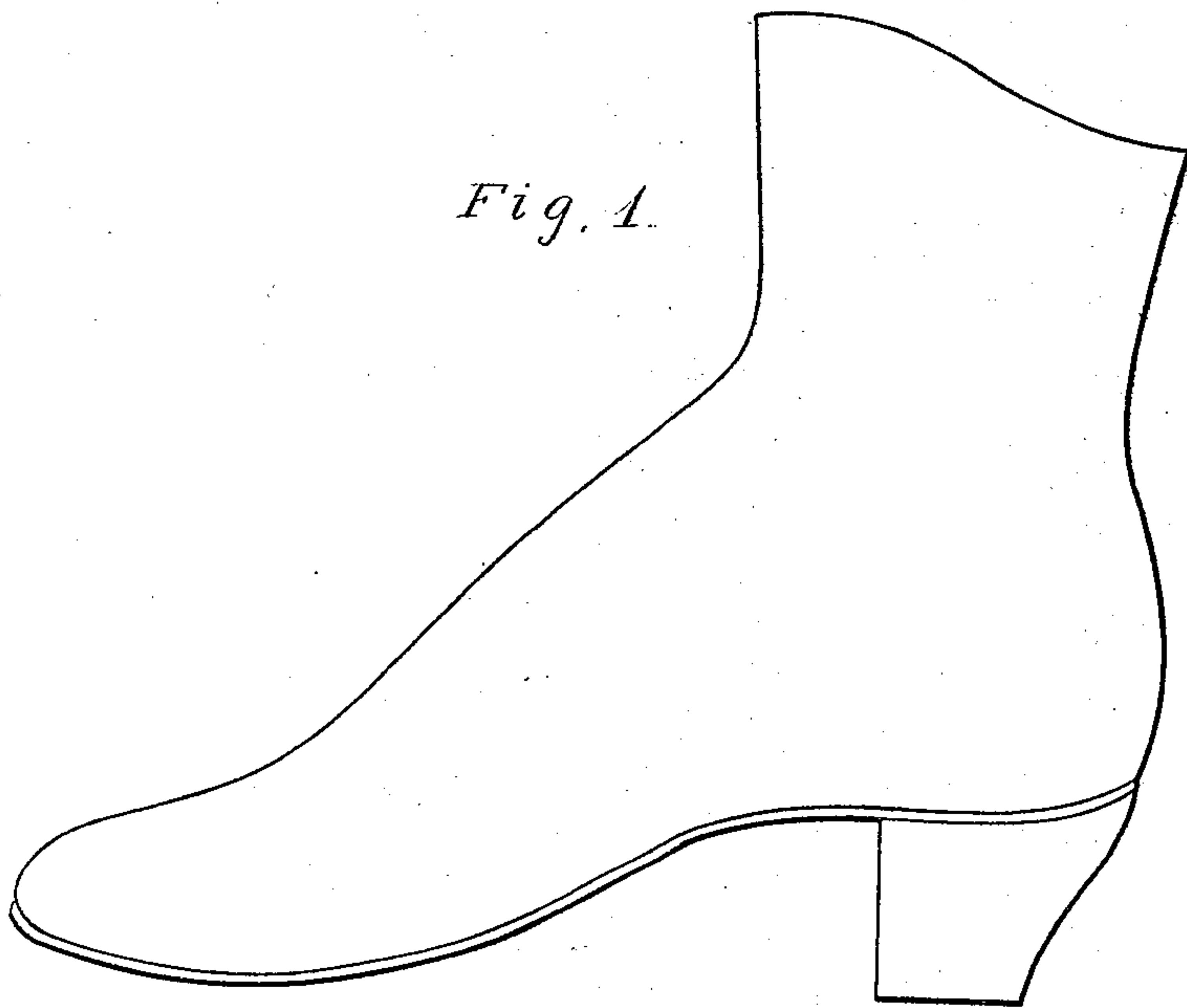
No. 177,015.

Patented May 2, 1876.

*Fig. 2.*



*Fig. 1.*



WITNESSES

*Villette Anderson*  
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INVENTOR

*James Samuels,*  
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ATTORNEY

# UNITED STATES PATENT OFFICE.

JAMES SAMUELS, OF VINELAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO  
MARY TURNBULL, OF CAMDEN, NEW JERSEY.

## IMPROVEMENT IN HEELS FOR BOOTS AND SHOES.

Specification forming part of Letters Patent No. **177,015**, dated May 2, 1876; application filed  
March 25, 1876.

*To all whom it may concern:*

Be it known that I, JAMES SAMUELS, of Vineland, in the county of Cumberland and State of New Jersey, have invented a new and valuable Improvement in Composition Heel for Boots and Shoes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a side view of the shoe with the heel attached, and Fig. 2 is a sectional view of the heel.

This invention has relation to the manufacture of shoes and boots; and it consists in the formation of the heels thereof by molding a composition of gutta-percha and cotton, or other finely-divided base of the character hereinafter described.

It is found that in the manufacture of shoes the construction of the heel is a complicated and expensive matter, when it is made of leather. Leather heels are heavy, also, and objectionable on that account. Wooden heels are unyielding and frail, being easily broken, even in the manufacture. Composition heels as ordinarily made, when covered with delicate satin or other fine material, as in the construction of dancing-gaiters, are apt to stain the covering, and generally have too much weight and too little elasticity.

The process of making my heels is as follows: Gutta-percha, preferably of the poorest quality, is cut up into benzine and heated over a fire. When the gutta-percha is dissolved, a quantity of cotton about equal in weight to the benzine and cutta-percha is dropped into the solution and moved about until the cotton is completely saturated. Then it is taken out of the solution and dried to evaporate the benzine, the gutta-percha being left on the cotton in a pure state, and the mass being of the proper consistency. The mass thus obtained is rolled into sheets, and cut with molds or dies into any shape desired.

Shellac, rosin, or leather can be used instead of cotton, or with it, in combination

with the gutta-percha dissolved in benzine. When either of the latter articles—that is to say, shellac, rosin, or leather—is employed, it is reduced to a powdered or finely-divided state before being mixed with the solution of gutta-percha. The resulting mass is afterward, as above described, rolled into sheets and molded into heels. Sometimes ground bituminous coal is used to give a bright black finish to the heel. This ingredient is mixed with any of the other substances mentioned. The coal employed is preferably the same which is used in the process of vulcanizing rubber.

In some cases a piece of leather is designed to be set on the top of the heel; but this is usually dispensed with, and the composition heel attached directly to the sole of the shoe.

After the heel is finished it can be covered with the most delicate fabric, and there will be no permeating stain. Satin and white kid may be used to cover it.

These heels are easily and cheaply made, being simply molded out of the composition while in a warm, soft state, and if the soft coal-dust has been used the heels come out of the molds blackened and polished. These heels can be used for shoes of all descriptions; but they are chiefly intended as a substitute for wooden heels in dancing-shoes, being light and more durable, and requiring less work in the manufacture.

What I claim as new, and desire to secure by Letters Patent, is—

The process of forming boot and shoe heels by dissolving gutta-percha in benzine, adding to the solution about an equal weight of cotton, coal, rosin, shellac, or other finely-divided body substance, allowing the benzine to evaporate, rolling the residue into sheets, and cutting out the heels by dies, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JAMES SAMUELS.

Witnesses:

ALLEN H. GANGEWER,  
CHAS. F. VAN HORN.