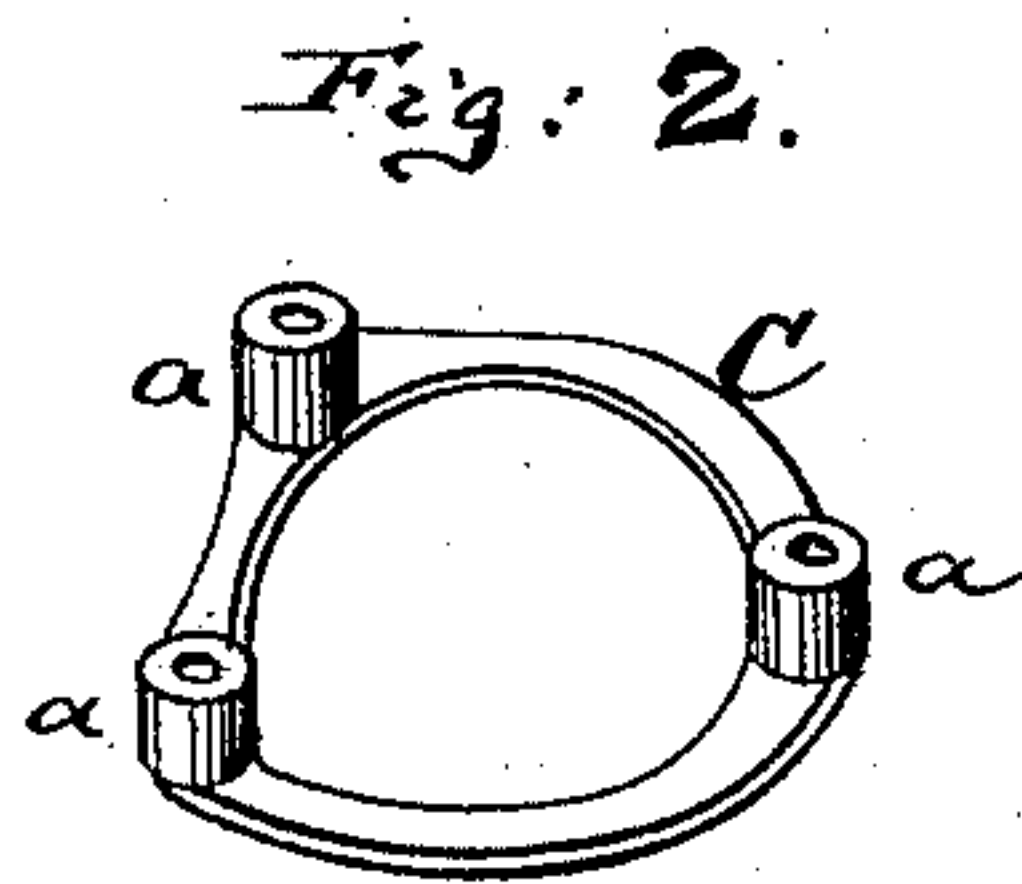
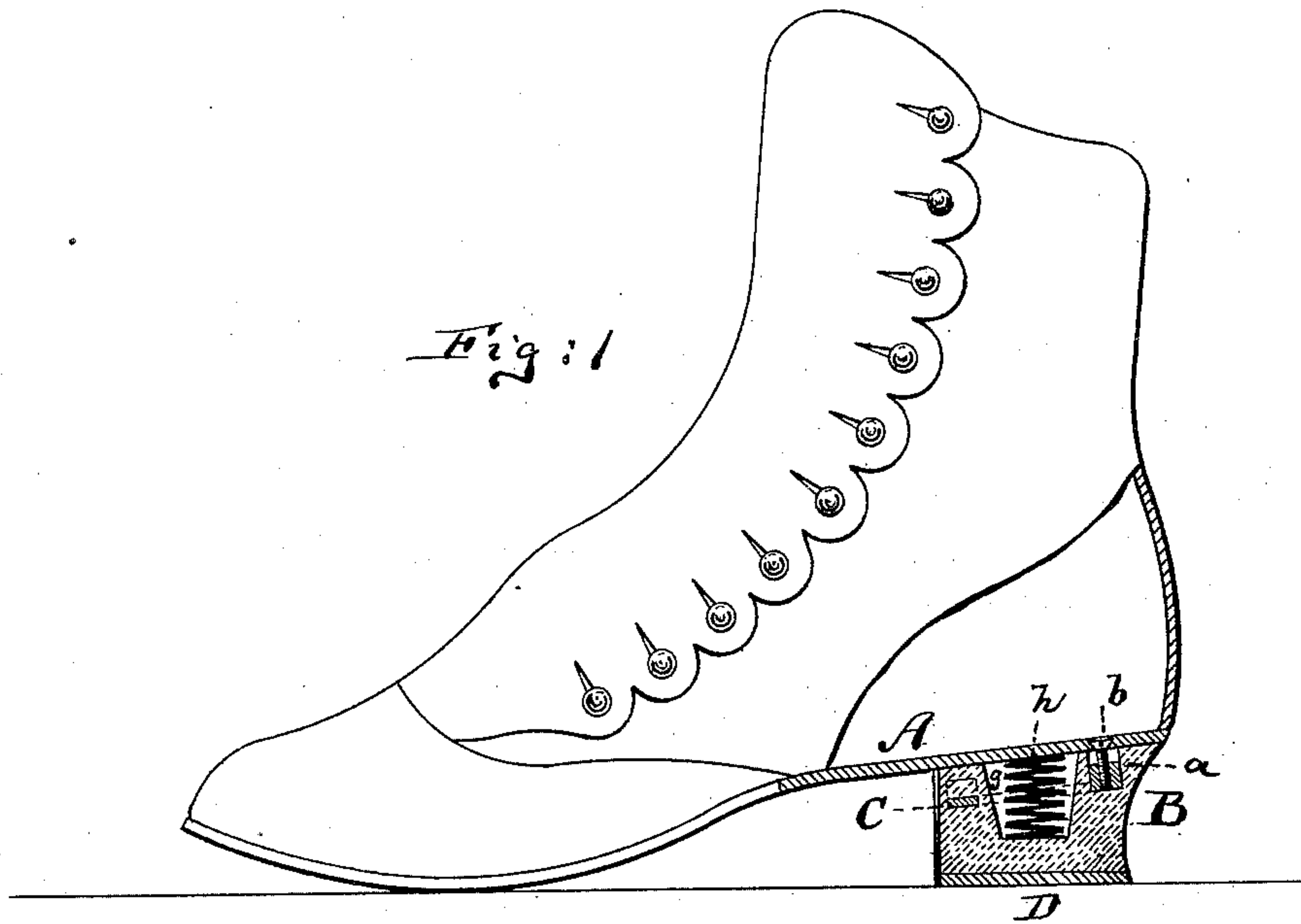


H. PENNIE.
Rubber Heels.

No. 232,900.

Patented Oct. 5, 1880.



Witnesses:

John C. Dunbridge.
William H. C. Smith.

Inventor:

Henry Pennie
by his attorney
A. B. Briesen

UNITED STATES PATENT OFFICE.

HENRY PENNIE, OF BROOKLYN, NEW YORK.

RUBBER HEEL.

SPECIFICATION forming part of Letters Patent No. 232,900, dated October 5, 1880.

Application filed August 8, 1879.

To all whom it may concern:

Be it known that I, HENRY PENNIE, of Brooklyn, Kings county, New York, have invented certain Improvements in Rubber Heels for Boots and Shoes, of which the following is a specification.

Figure 1 is a side view, partly in section, of a shoe provided with one of my improved heels; Fig. 2, a detached perspective view of the frame.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to improvements on rubber heels for boots and shoes, and has for its object to provide a secure and rigid attachment of the rubber heel to the leather sole of the shoe; also, to prevent the rigid fasteners which I found necessary from destroying the elasticity of the heel.

My invention consists, principally, in molding the rubber of the heel around metallic spuds that are united into a frame and screw-threaded to receive the fastening and connecting screws.

The invention also consists in further details, which are hereinafter more fully pointed out.

In the accompanying drawings, the letter A represents the leather sole of an ordinary boot or shoe.

B is the heel, made of india-rubber or equivalent elastic gum. Said heel is externally of the usual form of heels, but may be shaped as necessity, convenience, or fancy may dictate.

Within the rubber heel is contained a frame, C, of metal or equivalent substance, of annular form, which frame has a series of upwardly-projecting spuds or pillars, *a a*, of which three are shown in Fig. 2 of the drawings; but any other suitable number may be used in one heel. These spuds or pillars are provided with female screw-threads and adapted to receive the screws *b*, that unite the heel to the sole A.

The frame C, with the spuds *a*, is placed into the mold in which the rubber heel is molded, and is entirely surrounded with, and in turn surrounds, the rubber serving to anchor the spuds *a* securely within the rubber heel, and to thus provide a safe fastening for holding the heel attached to the shoe or boot.

The screws *b* are inserted from above through holes in the sole A, and have their heads sunk into said sole, which heads may be further covered and entirely concealed by a piece of cham-
ois-skin or otherwise.

The treading-face of the heel I provide with a detachable treading-plate, D, of leather or equivalent material.

The rubber of the heel extends above the upper ends of the spuds *a*, thus preventing direct contact between the spuds *a* and sole A.

A cavity, *g*, is left in the upper part of the heel, within the compass of the frame C, to save material and enhance the elasticity. The cavity extends farther into the heel than the screws *b*, and thus assists in increasing the elasticity of the heel throughout, which it could not do if, instead of an annular, a solid frame, C, were used. This cavity is made the receptacle of a spiral spring, *h*, as shown, which adds to the elasticity and strength of the heel.

I claim—

1. A rubber heel made of one single piece of rubber separate from the shoe, and containing within said rubber, so as to be entirely concealed therein, the open frame C, having the threaded spuds *a*, substantially as described.

2. A rubber heel secured detachably to the sole of a completed shoe or boot by metallic fasteners *b*, and provided within the rubber of the heel with an open frame having metallic spuds *a*, all constructed so that the rubber of the heel projects beyond and above the spuds, substantially as specified.

3. The rubber heel B, containing metal frame C, which connects with the fastening-screws *b*, and made with a cavity, *g*, within the said frame C, all arranged so that said cavity extends farther into the heel than the screws, substantially as specified.

4. The annular frame C, made with two or more projecting hollow pillars or spuds, *a*, each of said hollow pillars or spuds being threaded on its inner side, substantially as and for the purposes specified.

HENRY PENNIE.

Witnesses:

A. V. BRIESEN,
W. G. E. SCHULTZ.