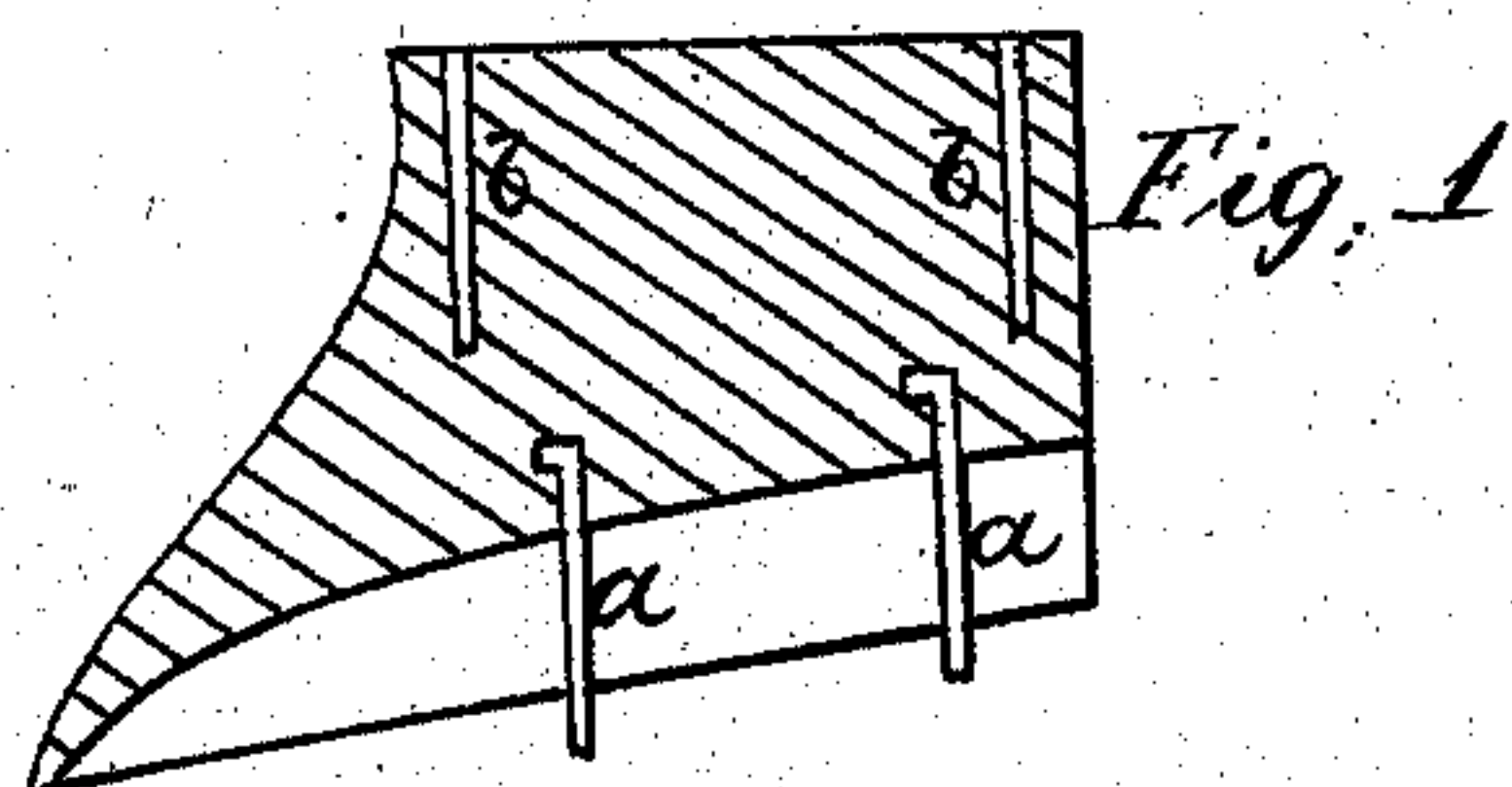


*F. H. Morgan.*

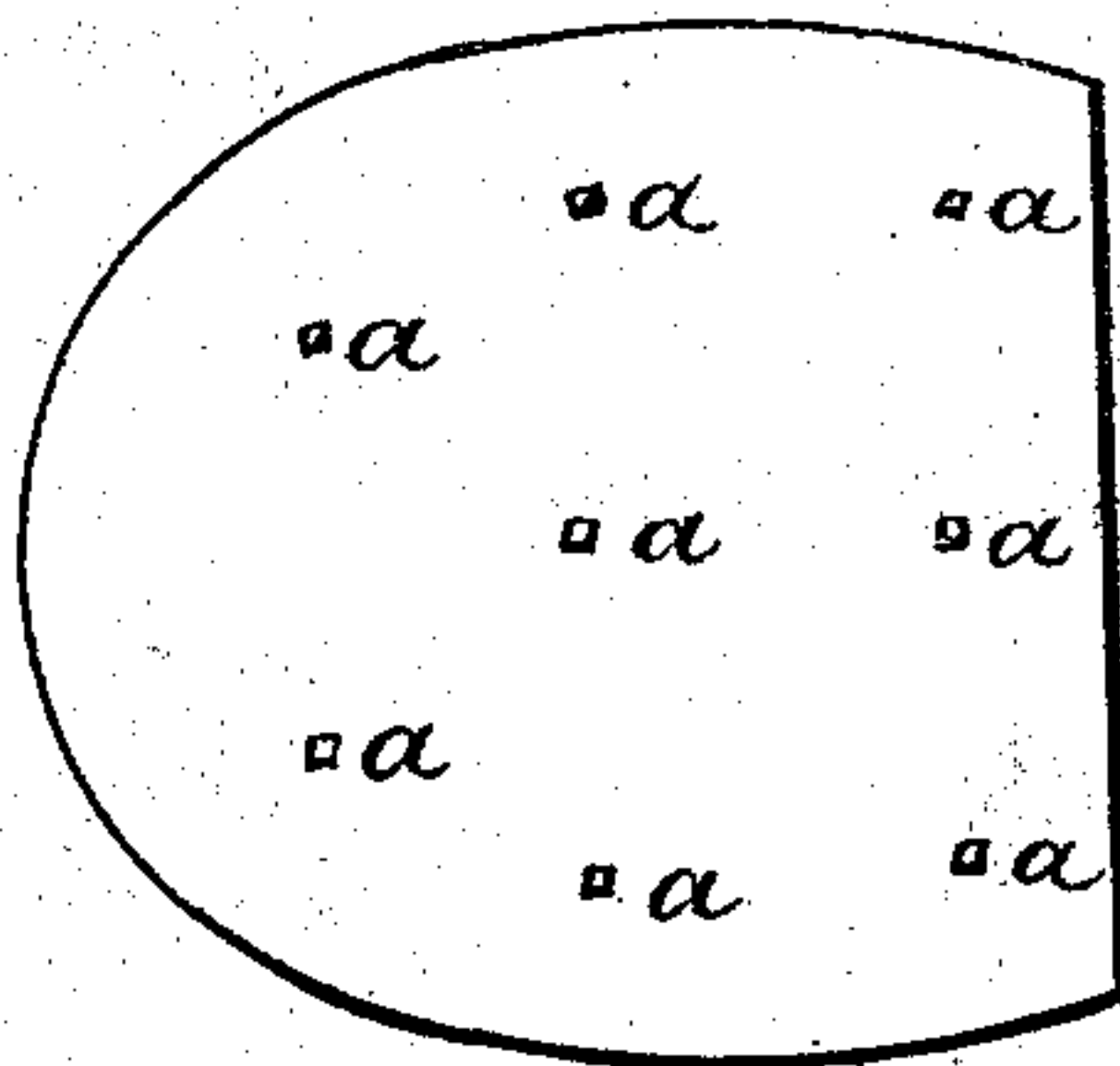
*Attaching Shoe Heels.*

*Nº 90,049.*

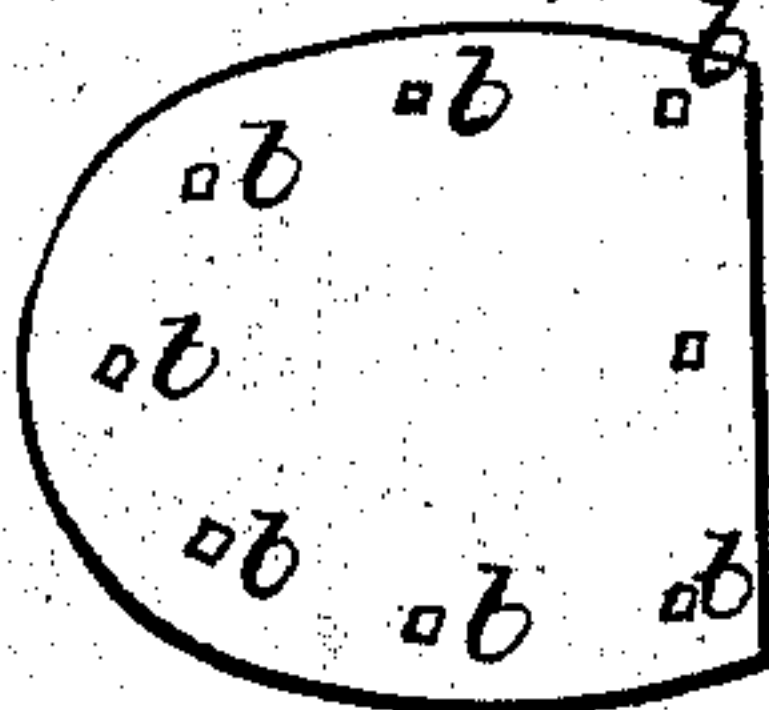
*Patented May 11, 1869*



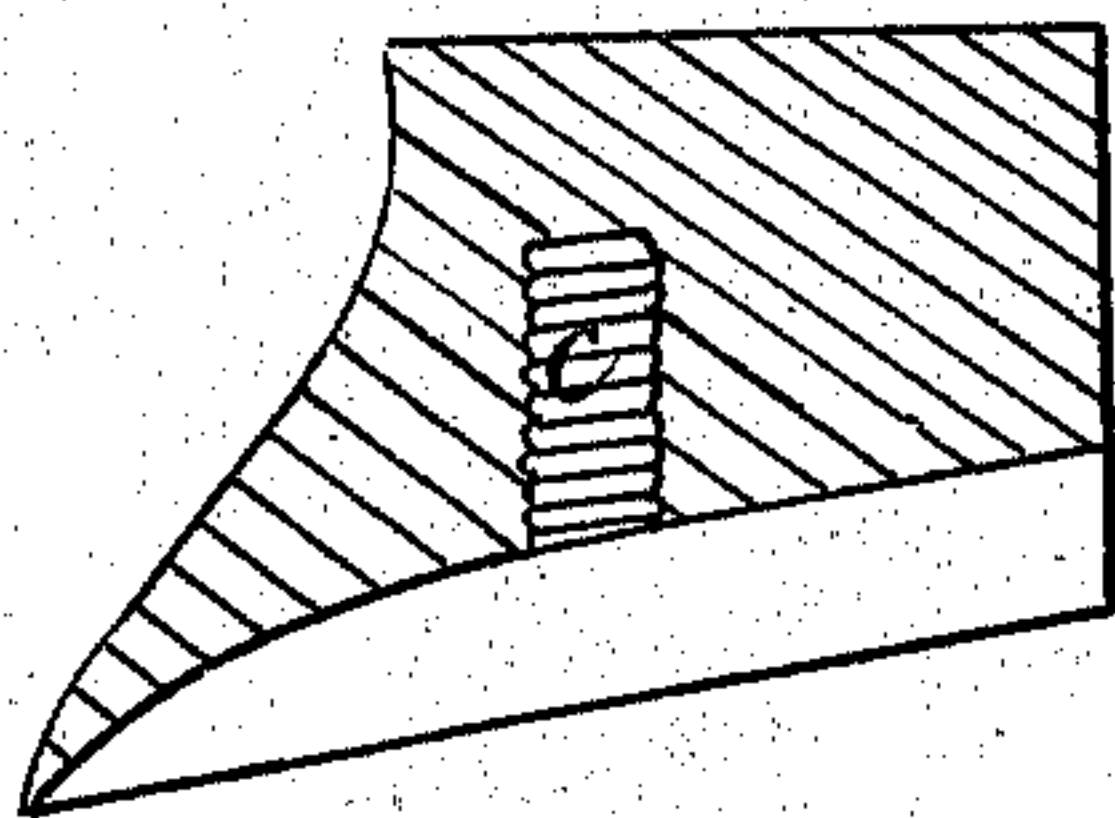
*Fig. 2.*



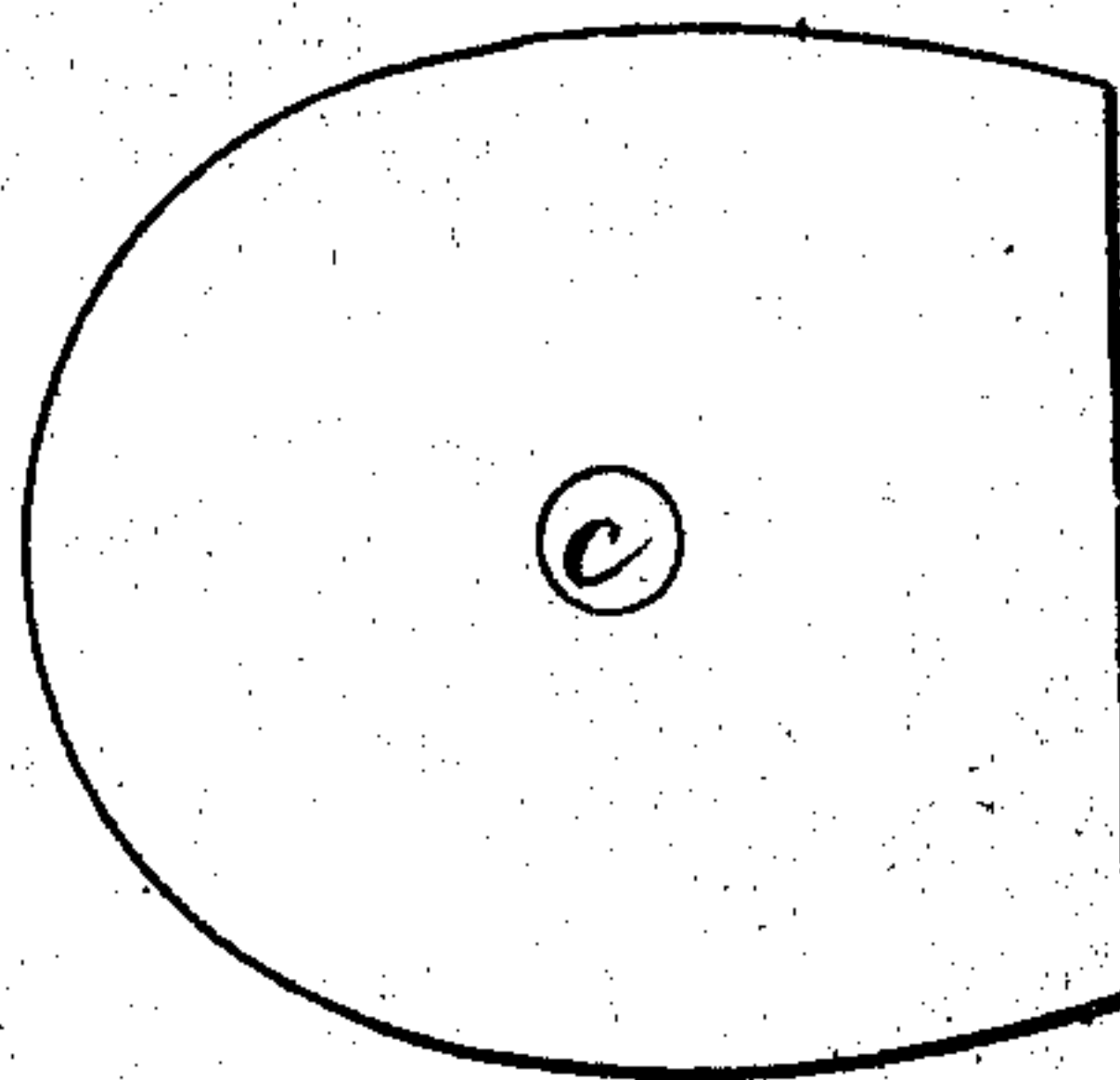
*Fig. 3.*



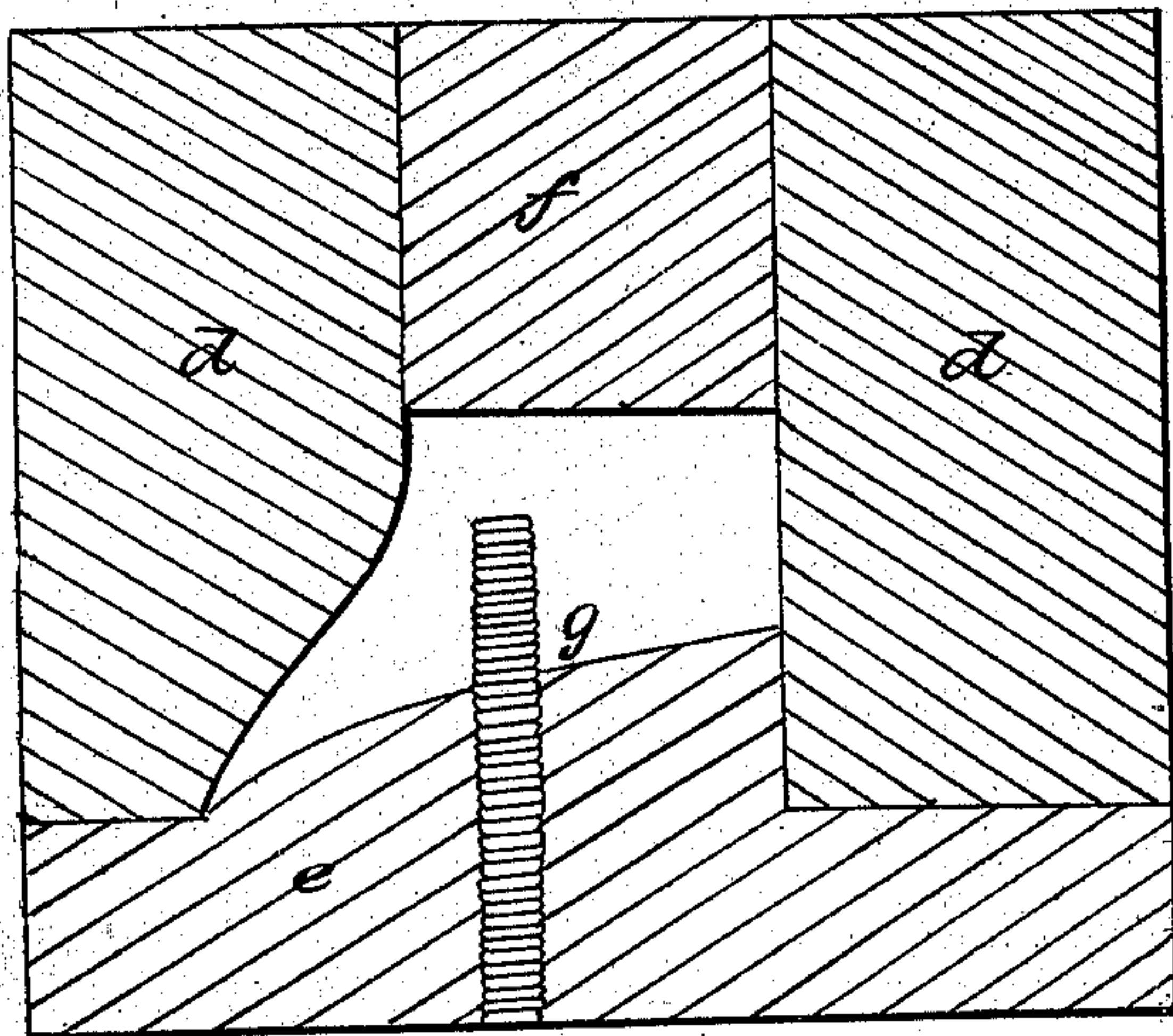
*Fig. 4.*



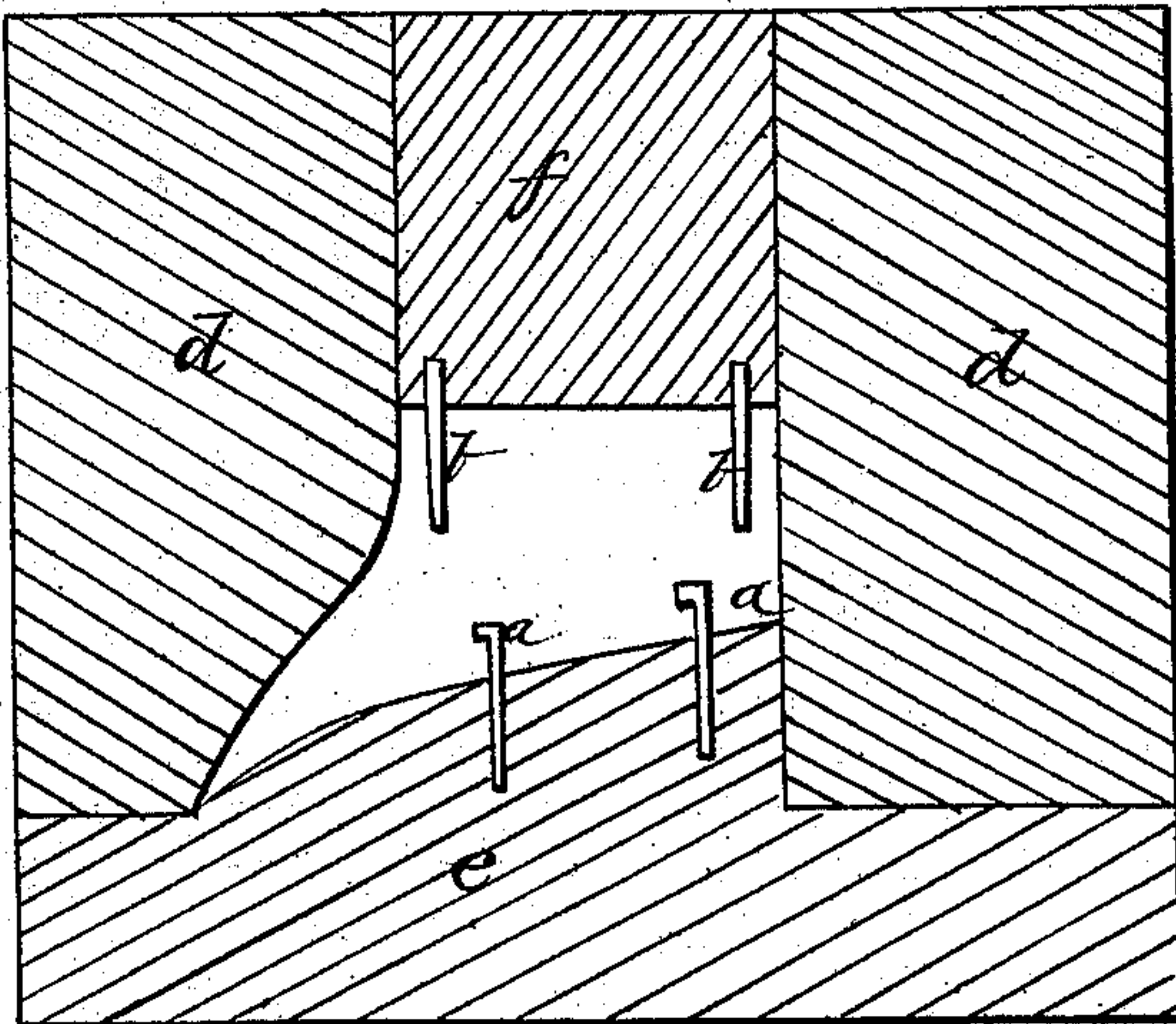
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



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*Stephens Barber*  
*George Porter*

*Inventor,*  
*F. Henry Morgan*



# United States Patent Office.

F. HENRY MORGAN, OF BEVERLY, MASSACHUSETTS.

*Letters Patent No. 90,049, dated May 11, 1869.*

## IMPROVED METHOD OF ATTACHING TO THE SOLES OF BOOTS AND SHOES, HEELS MADE OF VULCANIZED WOOD.

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

*To all whom it may concern:*

Be it known that I, F. HENRY MORGAN, of Beverly, county of Essex, and State of Massachusetts, have invented a new and improved Method for Attaching to the Soles of Boots and Shoes, Heels Made of Vulcanized Wood, and of any substance or concrete requiring to be put into moulds to give them form or solidity, either with or without compression therein, and also of strengthening the heels by pieces of metal, or other material, embedded within them; and I do hereby declare the following is a full and exact description thereof, reference being had to the accompanying drawings, and letters of reference thereon.

The nature of my invention consists in placing within the moulds pieces of metal, or other material which attach the heel to the sole, and also embedding in the composition while within the moulds, and in a plastic state, pieces for strengthening and giving durability to the heel; also placing within the moulds pieces of leather, or other material, to form a tap-lift; also placing within the moulds a screw, so that the composition while in a plastic state, on being put into the moulds, and becoming hard by compression or chemical change, shall embed these pieces permanently and securely therein, excepting the screw, which may be turned out, leaving a matrix or thread in the heel.

In the accompanying drawings, I have represented my improvements, reference being had to the same, in the following description, of which—

Figure 1 represents a cross-section of a heel, showing the pieces of metal, marked *a*, for attaching the heel, and *b*, for strengthening the heel embedded therein.

Figure 2 represents the bottom, or portion of a heel that comes in contact with the sole. *a* represents the pieces of metal for attaching to the sole.

Figure 3 represents the top of a heel, and *b*, the pieces of metal for strengthening the heel.

Figure 4 represents a cross-section of a heel, *c* representing the matrix formed by the screw *g*.

Figure 5 represents the bottom, or portion of a heel that comes in contact with the sole.

Figure 6 represents a cross-section of a mould for forming a heel of vulcanized wood, or when the substance requires compression.

*d* represents the body of the mould.

*e* is the bottom of the mould.

*f* is a plunger or compression-piston.

The bottom of the mould *e* has holes, in which are placed pieces of metal *a*, Figure 7, or other material, or a screw, *g*, fig. 6, which project into the cavity of the mould so far as it is desired to embed them within the heel.

The piston *f* having been removed, the mould is filled with the composition. The pieces for strengthening the heel *b* can then be placed in the composition while plastic, and the piston applied, and the material compressed to the required density.

When it is desired to attach a leather tap-lift to the face or bottom of the heel, the pieces *b* can be sunk into holes in the piston *f*, thus causing them to project beyond the top of the heel, and the leather pressed on them after they are removed from the mould, or the leather tap-lift may be placed within the mould, and compressed with the material forming the body of the heel.

The pieces *a*, for attaching the heel, are to be of suitable length to pass through the sole of a boot or shoe, and to rivet within.

The matrix *c* is for attaching the heel by a screw, or its equivalent, passing from within the boot or shoe through the sole.

Having thus described my invention,

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

1. Introducing into moulds for the formation of heels, when constructed as described, pieces of metal, or other material, by which the heel can be attached to the sole of a boot or shoe.

2. Introducing into moulds for the formation of heels, when constructed as described, pieces of metal, or other material, for strengthening and giving durability to heels.

3. Introducing into moulds for the formation of heels, when constructed as described, a screw, or its equivalent, to produce a matrix, by which to attach them to the soles of boots or shoes.

4. Heels for boots and shoes, constructed as herein described, as a new article of manufacture.

F. HENRY MORGAN.

Witnesses:

STEPHEN BAKER,  
GEORGE PORTER.