

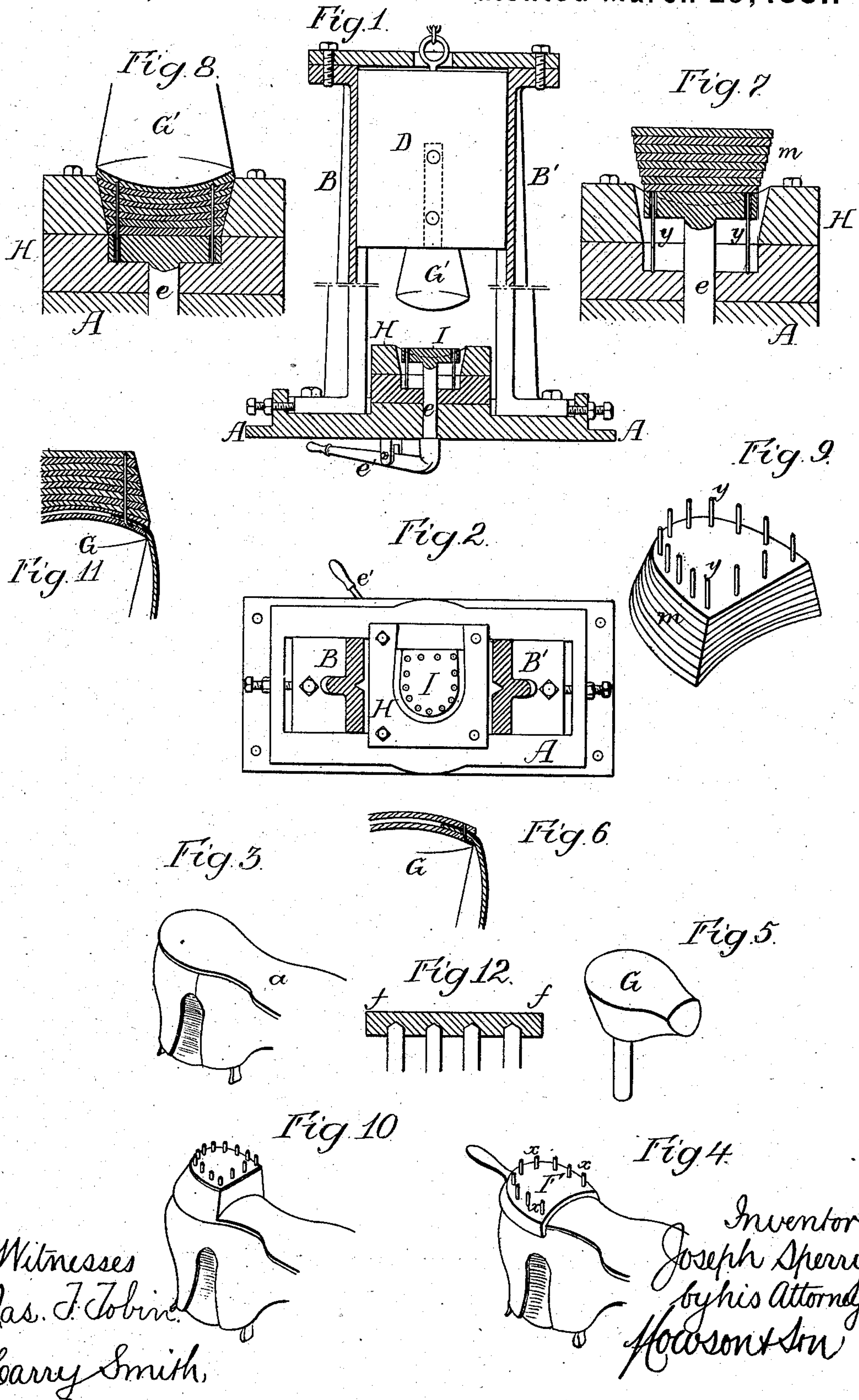
(No Model.)

J. SPERRY.

Manufacture of Boots and Shoes.

No. 239,568.

Patented March 29, 1881.





# UNITED STATES PATENT OFFICE.

JOSEPH SPERRY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO WILLIAM SPERRY, OF SAME PLACE.

## MANUFACTURE OF BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 239,568, dated March 29, 1881.

Application filed June 2, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH SPERRY, of Philadelphia, Pennsylvania, have invented certain Improvements in the Manufacture of Boots and Shoes, of which the following is a specification.

The object of my invention is to facilitate and economize the manufacture and attachment of the heels of boots and shoes; and this object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings.

In carrying out my invention I use a drop-press, (illustrated in Figures 1 and 2 of the accompanying drawings,) A being the base of the press; B and B', two standards secured to the base and serving as guides for a weight, D, to which different styles of dies may be attached. The base is also arranged for the reception of the heel-dies referred to hereinafter, and these dies may be removed and replaced at pleasure.

The first operation is to secure the seat for the heel to the upper and insole. The sole *a*, Fig. 3, can be stitched by a machine to the upper and insole, excepting at the rear, where it has to form the seat for the heel; and in order to secure this part I use a flanged plate, F, Fig. 4, adapted to the heel, and having a number of holes, into each of which I insert a pin,

*x*. The shoe is then placed on an anvil, G, Fig. 5, which is fitted to the base of the drop press, and the weight is permitted to fall on the whole of the pins, which are simultaneously driven into the sole and upper as far as the plate F will permit. This plate is now removed, and an operative then proceeds to hammer the pins down to the level of the sole, the pins, owing to the presence of the anvil, being clinched on the under side, as shown in Fig. 6, and riveted on the outside, thereby securing the rear portion of the sole to the upper and insole, and forming a secure seat, ready for the reception of the main heel. I now attach to the weight D of the drop-press a die, G', having a convex face, as shown in Fig. 1, and adjust to the bed of the drop-press a counter-die, H, which I prefer to make in two parts, as best observed in the enlarged sectional views, Figs. 7 and 8. The lower portion of the inside of this die has vertical sides for the

reception of the follower I; but the upper portion has inclined sides to conform to the shape of the heel, the recess of the die being open at the front, as shown in Fig. 2. The follower I is attached to a pin, *e*, which passes through the base, and rests below upon one arm of a lever, *e'*. The follower, which has near its edge a number of holes, being elevated, as shown in Fig. 7, a series of pins, *y*, are passed through the said holes, their lower ends resting in pockets in the bottom of the die to insure their proper steadiness, and the upper ends of the pins being level with the upper surface of the follower, on which are placed layers *m*, of leather, in a group, approximating in shape to that of the desired heel, as shown in Fig. 7. The weight of the drop-press is now permitted to fall onto the layers of leather, thereby simultaneously accomplishing three objects—namely, the driving of the pins through the layers of leather, reducing the layers to the shape of the heel, and forming in the united layers a concavity adapted to the convexity of the seat of the heel. It may here be remarked that this concavity is usually formed by cutting away portions of some of the layers, and that such a sacrifice of leather is unnecessary if the heel be shaped by the above-described process; for, while the convex die of the drop-press compresses the central portion of the layers of leather, the outer portions are expanded to a limited extent, thereby imparting to the exterior of the heel a greater depth than the group of layers. The layers of leather have now been reduced to the condition shown in Fig. 8—that is to say, they have been jammed into the recess of the die and united by the pins, the follower I being at the bottom of the recess, from which it may be elevated by operating the lever *e'*, thereby forcing out from the die the united layers of leather, which have been reduced to the condition of a heel, with projecting pins, as shown in Fig. 9.

It may be remarked here that one of the objects of my invention is to supply shoe-finding stores with these ready-made molded heels with pins embedded in them for attachment to the seats of boots and shoes, the pins in this case being driven by hand-hammers while the



boot or shoe is resting on an anvil. In factories, however, where the complete boots and shoes are made, and which are furnished with drop-presses, the anvil G may be adjusted to the bed of the press, the shoe placed over it, and the heel adjusted to the seat, as shown in Fig. 10. A plate, *f*, (shown in the enlarged view, Fig. 12,) is then fitted over the projecting ends of the nails. This plate *f* has a series of angular recesses in it, so that when pressure is applied the ends of the nails are forced into these recesses, and a sharp point is formed on the same. After the nails have been driven home the plate *f* is removed and a piece of leather of the proper size and shape forced down upon the sharpened ends of the nails, as shown in Fig. 11, so as to give the heel a neat appearance.

I claim as my invention—

1. The recessed die H and its follower I, having perforations corresponding with pockets at the bottom of the recess of the said die, in combination with a die, G, having a convex face and attached to the weight of a drop-press, all substantially as set forth.

2. The mode herein described of uniting layers of leather to form the heels of boots and

shoes, said mode consisting in, first, arranging nails in the openings of a guided and elevated follower upon a base, beneath which the nails are supported; second, arranging the layers of leather on said follower; and, third, striking the pile of layers a blow, whereby the follower and the layers of leather thereon are depressed, and the guided nails caused to penetrate and unite the layers, all substantially as set forth.

3. The flanged and perforated plate F, adapted to the heel-seat of a boot or shoe, and to pins for securing the said seat to the insole and upper, as specified.

4. The partly-perforated plate *f*, whereby the projecting ends of the nails in the heel are confined while said nails are being driven to secure the heel to the boot or shoe, all substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH SPERRY.

Witnesses:

JAMES F. TOBIN,  
HARRY SMITH.