

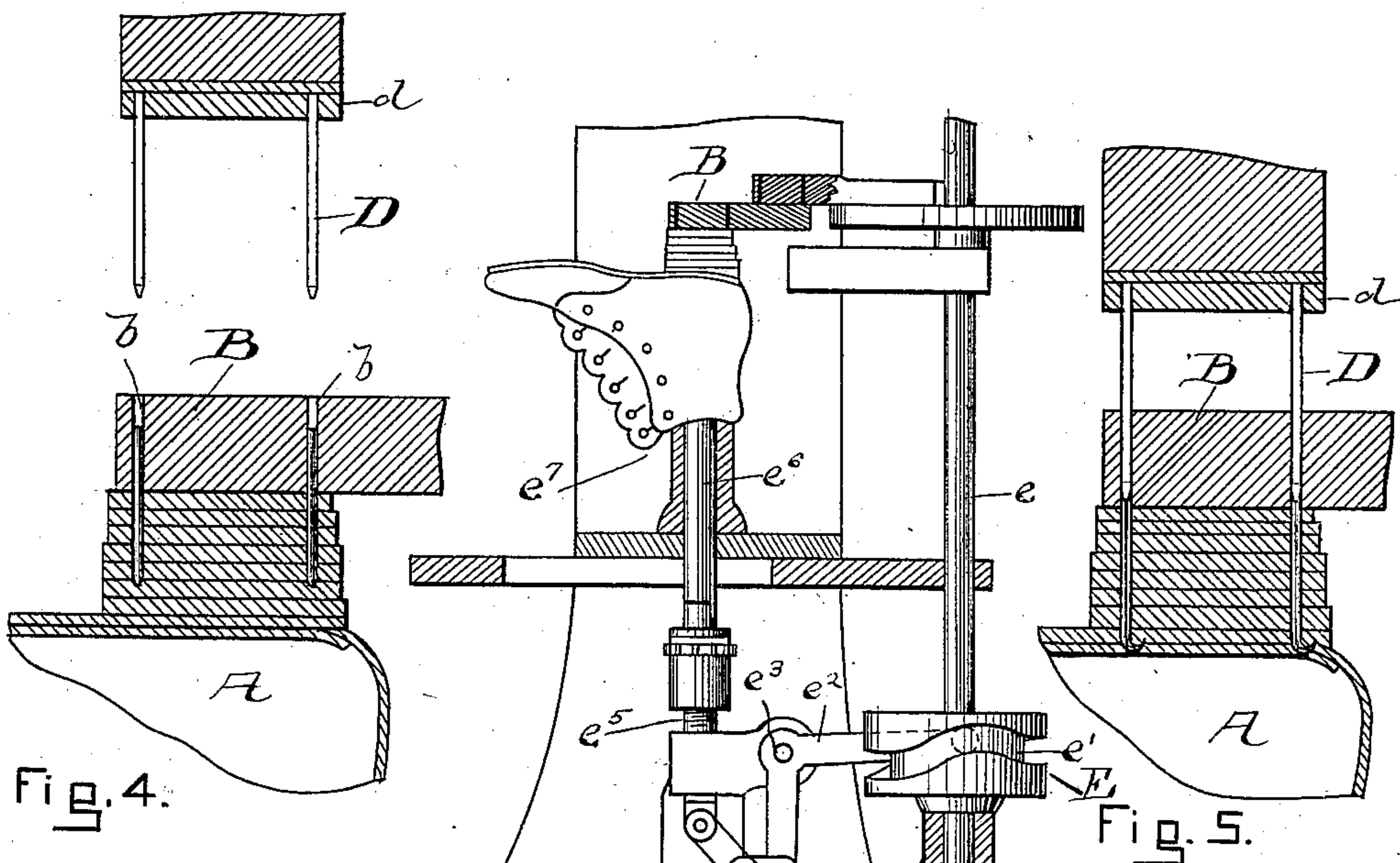
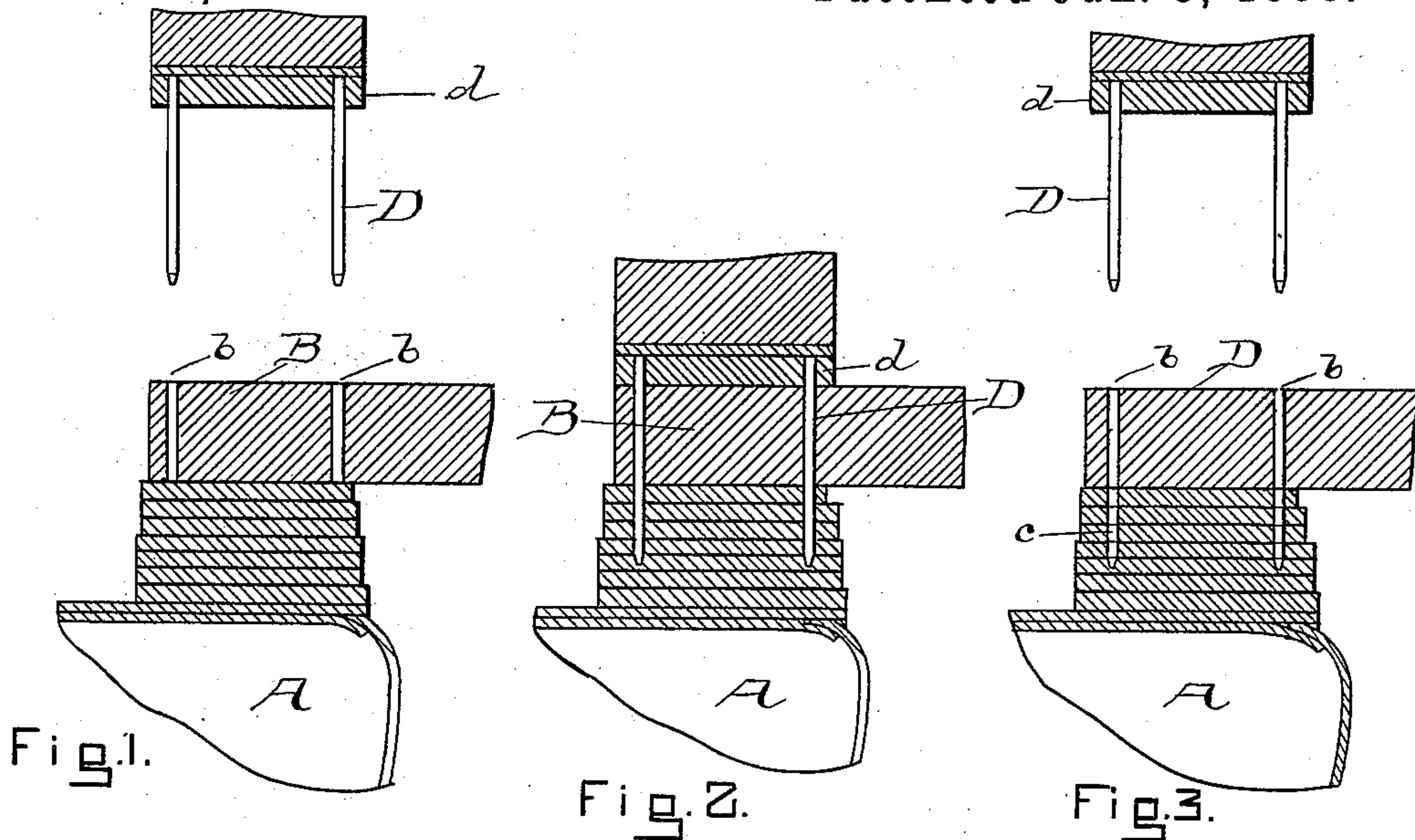
(No Model.)

C. C. SMALL.

METHOD OF ATTACHING HEELS TO BOOTS OR SHOES.

No. 376,049.

Patented Jan. 3, 1888.



WITNESSES

Fred. B. Dolan

J. W. Dolan

Fig. 6.

INVENTOR

Charles C. Small
by his atty.

Clapp & Raymond

UNITED STATES PATENT OFFICE.

CHESTER C. SMALL, OF MALDEN, ASSIGNOR TO FREEBORN F. RAYMOND, 2D,
OF NEWTON, MASSACHUSETTS.

METHOD OF ATTACHING HEELS TO BOOTS OR SHOES.

SPECIFICATION forming part of Letters Patent No. 376,049, dated January 3, 1888.

Application filed April 19, 1887. Serial No. 235,318. (No model.)

To all whom it may concern:

Be it known that I, CHESTER C. SMALL, of Malden, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Process of Attaching Heels to the Soles of Boots or Shoes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to the process or method of attaching heels to the soles of boots or shoes, comprising the compressing of the heel-blank with such pressure as may be required between two surfaces, one of which is perforated, then puncturing or forming holes in the heel-blank with a gang or group of implements moved through said holes into the heel-blank, then feeding or supplying said holes with nails, then driving said nails through the heel-blank into the sole of the boot or shoe by the same implements used in forming the perforations or holes in the heel blank.

In the drawings, Figure 1 is a view in section, enlarged, representing the perforate and imperforate pressure-blocks and the section of the sole of a boot or shoe and a heel-blank between them, representing the position of the parts before the heel-blank has been compressed. Figs. 2, 3, 4, and 5 are views similar to Fig. 1, but showing the parts in different positions to illustrate the successive steps of my method. Fig. 2 represents the puncturing devices in the act of forming the holes. Fig. 3 shows the puncturing devices withdrawn from the holes. Fig. 4 shows the nails inserted in the holes preparatory to driving, and Fig. 5 represents the puncturing devices in the act of driving the nails into the soles of the boot or shoe. Fig. 6 represents in vertical section a portion of an apparatus for carrying my invention into effect.

A represents one presser-block for subjecting the heel-blank to pressure upon the outsole of the boot or shoe. B represents the perforated pressure-block. These two blocks are moved relatively to each other to compress the heel-blank with any desired degree of compression, either by hand or automatically. The pressure-block B has the holes *b*.

D represents the gang or group of implements used. They are supported by a block, *d*. They are first driven or moved forcibly through the holes *b* to puncture holes *c* in the heel-blank, and are then withdrawn to permit nails to be fed through said holes to the holes *c*. They are then again moved into said holes to drive the nails through the heel-blank into the sole. This movement may be by hand or it may be by power.

The nails may be fed by hand or automatically.

It will be seen that as the same gang of implements forms the holes for the nails and drives them they are first moved through the holes *b* sufficiently far to prick the holes, and are withdrawn therefrom to permit the feeding of the nails, and are then again inserted in said holes, but are not then moved beyond the surface of the block. The block A may be perforated in addition to or instead of the block B and a gang of implements used in connection with it to form a hole through the soles into the heel and to drive the nails. This process may also be used for loading detached blanks with nails and for driving nails into soles or other material adapted to be held between two holding or pressure blocks of the character described.

The device for moving the pressure-block A in relation to the pressure-block B to compress the heel-blank to any desired extent upon the soles of the boot or shoe comprises a cam, E, upon the vertical shaft *e*, rotated in any desired way. This cam has a cam-groove, *e'*, which receives a cam-pin upon the lever *e''*. This lever is pivoted at *e'''* and operates the toggle *e''''*, which is connected with the slide-block *e'''''*, which in turn operates upon a slide-post, *e''''''*, carried by the jack *e'''''''*, and which receives at its upper end the block A.

In operation the boot or shoe is placed upon the presser-block A and a heel-blank placed between the outsole and the presser-block B, and it is then compressed to any required extent between the two supports, preferably by means of the support A and the block B. The implements D are then inserted in the holes *b* and moved through the same sufficiently far to form the holes *c* in the heel-blank. (See 100

Fig. 2.) They are then withdrawn and the nails are fed through the holes in the pressure-block to the holes *c*. The same implements are again inserted in the holes *b* and the nails
5 driven through the heel-blank and soles of the boot or shoe. In case the heel-blank is to be loaded only, the shoe is not placed upon the support *A* and the implements are not caused to drive the nails entirely through the heel-
10 blank.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

The method of driving nails in heels, &c., comprising the formation in the heel of a gang 15 or group of holes; second, in supplying said holes with nails, and, third, in driving said nails into said heel by the same implements used in forming the holes, substantially as described.

CHESTER C. SMALL.

In presence of—

F. F. RAYMOND, 2d,
J. M. DOLAN,
FRED. B. DOLAN.