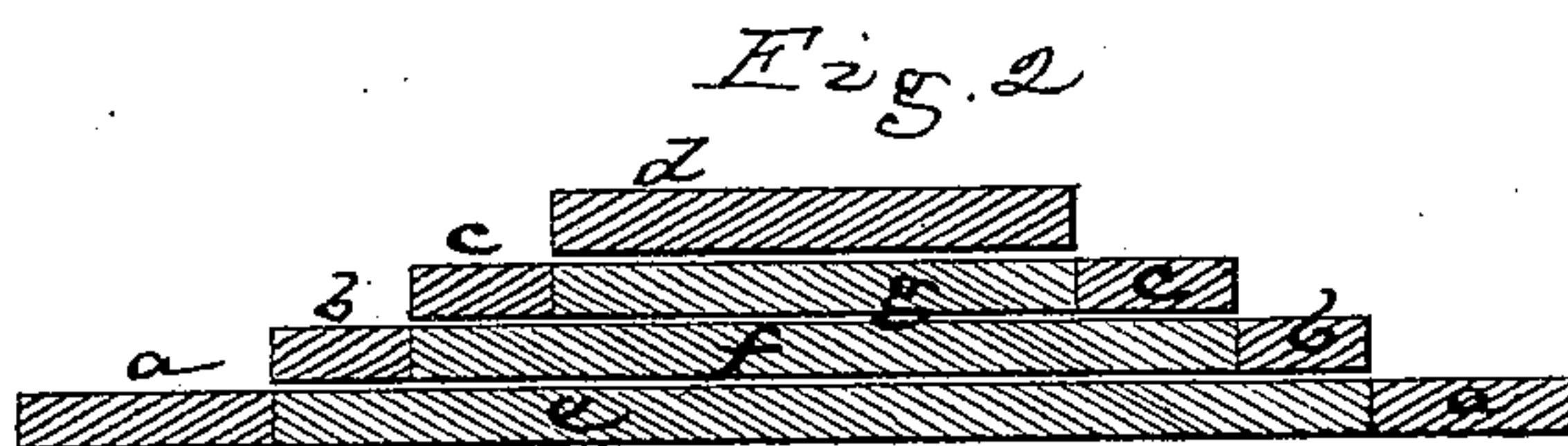
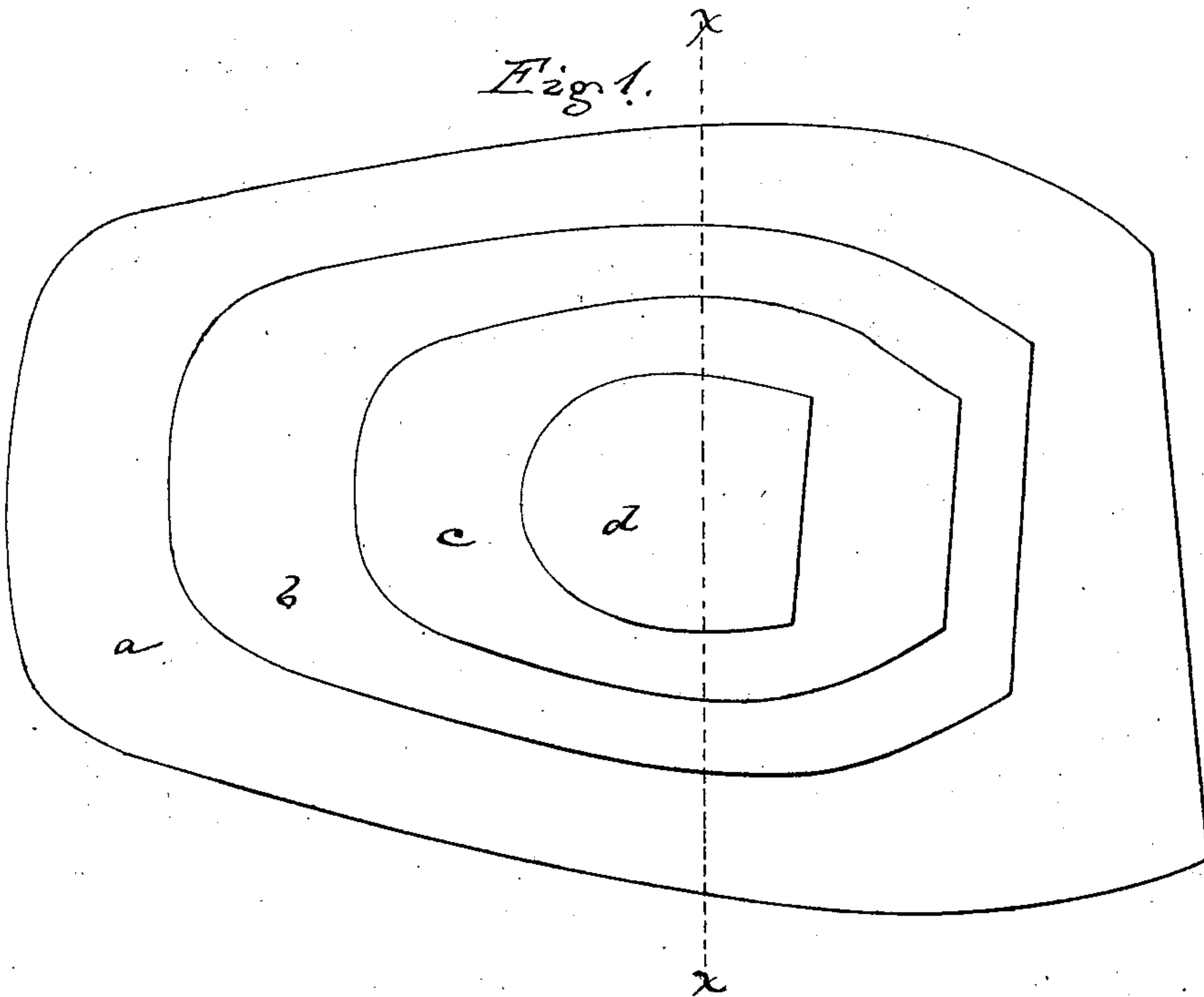


C. H. BRIGHAM.

Methods of Forming Soles of Boots and Shoes.

No. 142,893.

Patented September 16, 1873.

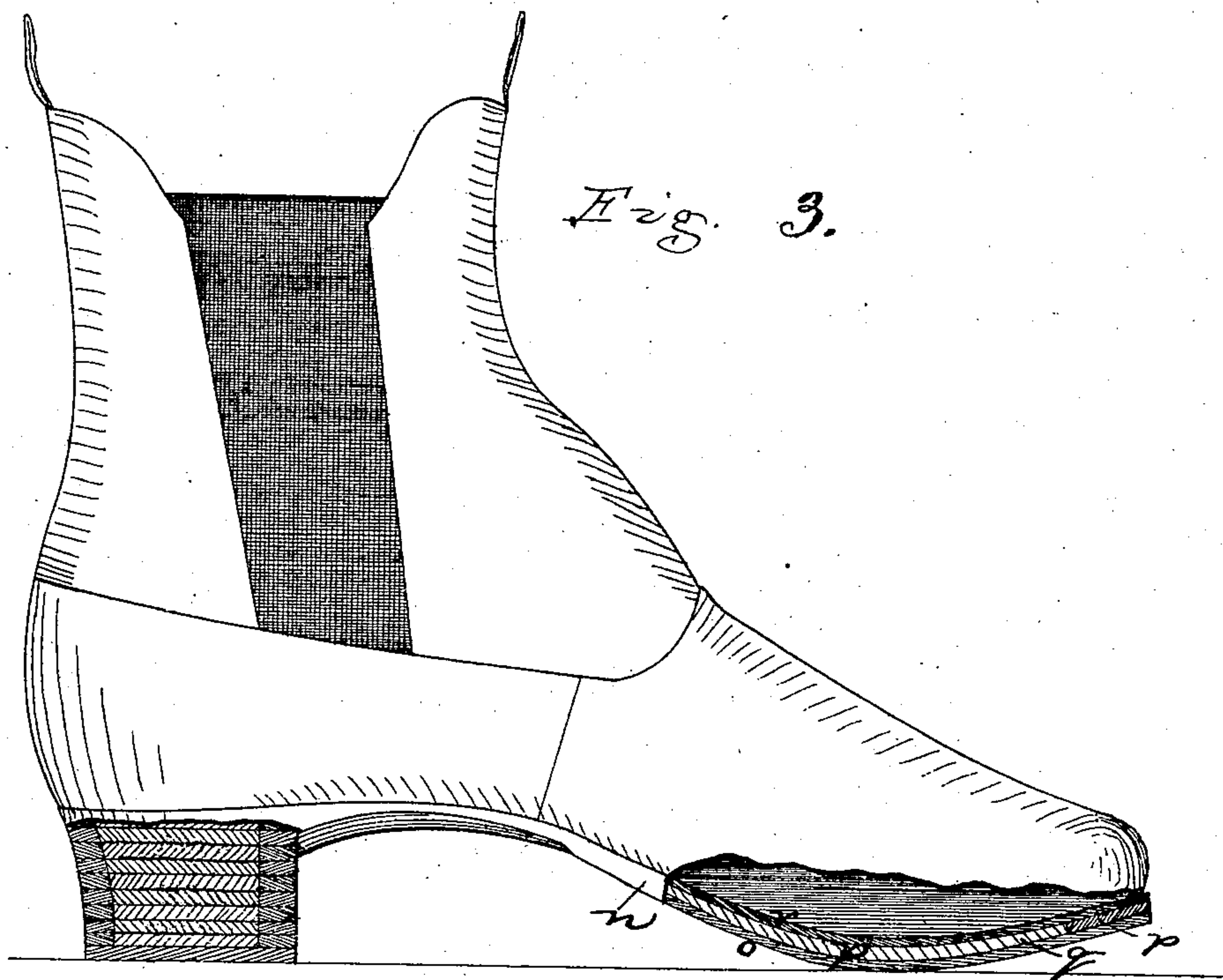


Witnesses.
M. W. Frothingham.
J. B. Kidder.

Inventor.
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By his Attys.
Crosby & Gould

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UNITED STATES PATENT OFFICE.

CHARLES H. BRIGHAM, OF MARLBOROUGH, ASSIGNOR TO HIMSELF, G.
FRED. SMITH, OF SAME PLACE, AND STEPHEN MOORE AND HOMER
ROGERS, OF SUDBURY, MASSACHUSETTS.

IMPROVEMENT IN METHODS OF FORMING SOLES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **142,893**, dated September 16, 1873; application filed
January 29, 1873.

To all whom it may concern:

Be it known that I, CHARLES H. BRIGHAM, of Marlborough, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Forming Soles of Boots and Shoes; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

In my invention I have sought to make soles, which should have wearing-surfaces formed of good and well-shaped stock, without involving the expense inseparable from such heels and soles as now made. For this purpose I take good sole-leather sides and cut them up into large soles or sole-taps. Then I take each large tap and punch from it a series of smaller taps and heel-lifts, leaving the first sole and each succeeding piece (except the last piece cut) in the form of a hollow piece or frame having ample width to form the edge to give all the requisite strength at and near the edge, and to receive the pegs, nails, or other fastenings, the last piece being solid and forming a solid sole piece or heel-lift. For soles the hollow soles form middle taps to be placed between outer taps and main soles.

My invention consists in this method of

forming tap-soles, and in a boot or shoe having a tap-sole thus formed.

Figure 1 of the drawing shows a series of soles and a top-lift for a heel thus cut from one piece of leather. Fig. 2 is a cross-section on the line *x x*, showing the hollow pieces and the fillings. Fig. 3 shows a section of a sole applied to a shoe.

a denotes the largest sole; *b*, the next largest piece punched therefrom; *c*, the piece punched from *b*; *d*, the heel top-lift punched from *c*; *e* denotes the card-board filling that fills the large piece *a*; *f*, the filling to the piece *b*; *g*, the filling for the piece *c*, or the filling that takes the place of the punched lift *d*.

In Fig. 3, *n* denotes the sole; *o*, the outer tap-sole; *p*, the middle and hollow tap-sole; *q*, the filling thereto; *r*, the main sole.

I claim—

1. A middle tap or sole, formed substantially as described.

2. A boot or shoe having a sole formed with the punched and filled piece or pieces, substantially as shown and described.

Executed this 23d day of January, A. D. 1873.

CHAS. H. BRIGHAM.

Witnesses:

E. L. BIGELOW,
WM. MORSE, 2d.