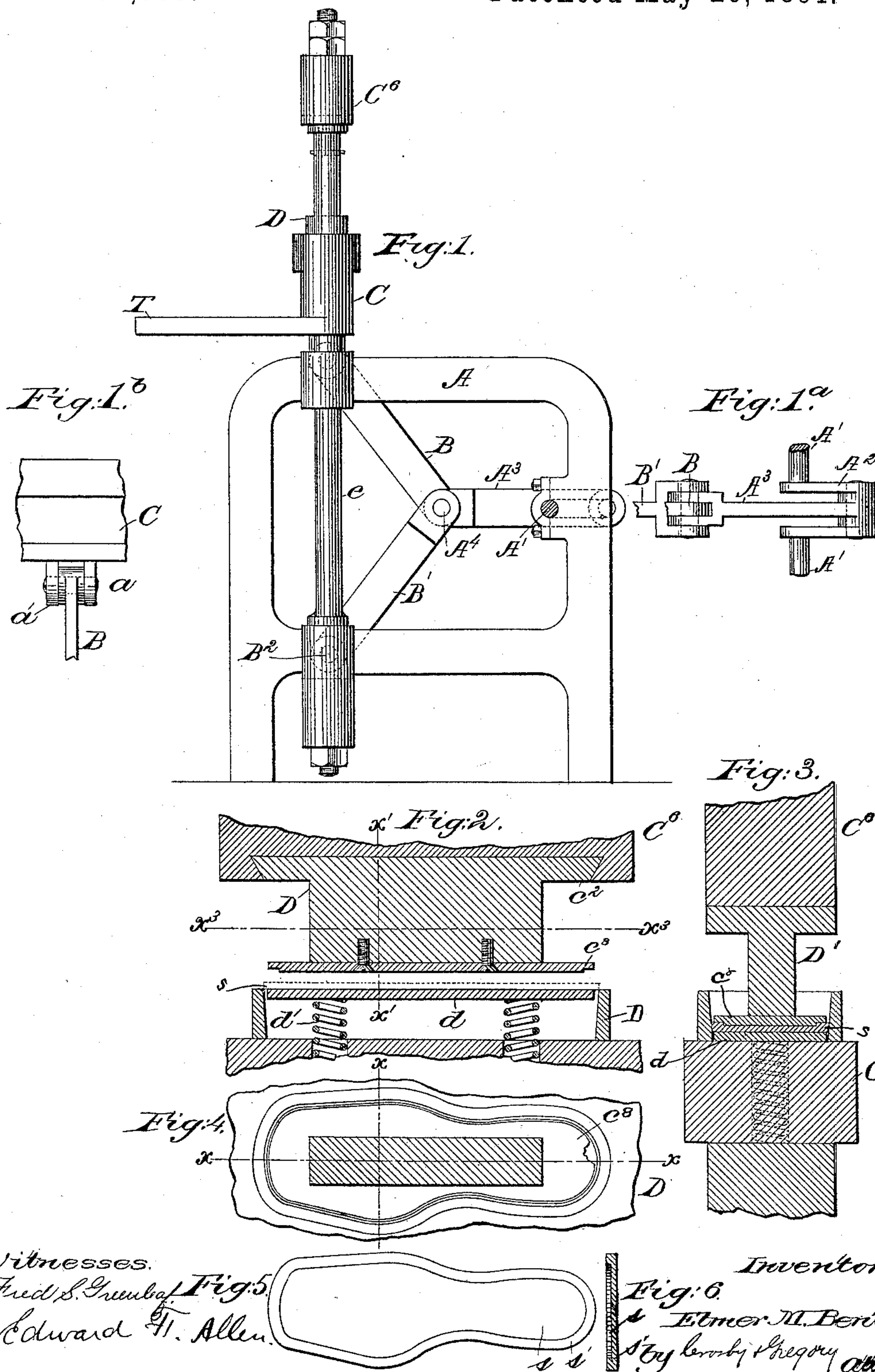


(No Model.)

E. M. BENT.  
MACHINE FOR THICKENING SOLE EDGES.

No. 452,988.

Patented May 26, 1891.



Witnesses.

Fred S. Greenleaf

Edward T. Allen

Inventor.

Fig. 6.

E. M. Bent.

By Leroy & Gregory attys



# UNITED STATES PATENT OFFICE.

ELMER M. BENT, OF COCHITUATE, MASSACHUSETTS.

## MACHINE FOR THICKENING SOLE-EDGES.

SPECIFICATION forming part of Letters Patent No. 452,988, dated May 26, 1891.

Application filed February 10, 1891. Serial No. 380,965. (No model.)

*To all whom it may concern:*

Be it known that I, ELMER M. BENT, of Cochituate, county of Middlesex, State of Massachusetts, have invented an Improvement in Machines for Thickening Edges of Soles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention has for its object the production of a novel machine by which to thicken the edges of leather soles to be used as outer soles in boots and shoes.

15 In the manufacture of boots and shoes by hand it is customary to pound the edge of the outer sole to thus give to it the appearance of thickness. In accordance with this invention a sole placed between two clamping-plates with its edges protruding is placed  
20 into a converging or tapering sided mold, which acts to force back the said edges to fill the space between the two clamping-plates.

My invention consists, essentially, in a sole-edge-thickening machine comprehending the  
25 following instrumentalities, viz: a hollow converging or tapering mold and two clamping-plates to hold the sole between them when being forced into the said mold, as will be described.

30 Figure 1, in side elevation, represents a sufficient portion of a sole-edge-thickening machine to enable my invention to be understood; Fig. 1<sup>a</sup>, a detail chiefly to show in top view the crank to actuate the toggle-link; Fig. 1<sup>b</sup>, a detail, chiefly to show the connection of the toggle-link with the mold-carrier; Fig. 2, an enlarged sectional detail of the follower, the clamping-plates, and the mold, the section being in the line  $x$ , Fig. 4; Fig. 3, a  
40 section in the line  $x'$ , Fig. 2, but with the clamping-plates within the mold; Fig. 4, a section below the line  $x^3$ . Fig. 5 shows a sole with its edges upset or thickened, in accordance with this invention; Fig. 6, a section in the line  $x^4$ .

45 The frame-work A, of suitable shape to sustain the working parts, has a crank-shaft A', provided with a crank A<sup>2</sup>, which is joined by a link A<sup>3</sup> to the pin A<sup>4</sup>, uniting the contiguous ends of the two links B B', the latter

link embracing a fixed pin B<sup>2</sup>, while the upper end of the link B is jointed by pin  $a$  between a forked ear  $a'$ , attached to the under side of the cross-head or mold-carrier C. The mold D sits on this cross-head C and receives  
55 within it the under form or clamping-plate  $d$ , sustained yieldingly with relation to the mold by suitable springs  $d'$   $d'$ . The guide-rods  $e$ , one at each side of the machine, and on which the cross-head C slides, are united at their upper ends by a cross-bar C<sup>6</sup>, cut away at its under side, as shown in Fig. 2, for the reception of the flange  $c^2$  of the block D', (see Fig. 2,) carrying the second member  $c^8$  of the clamping plate or device.

65 In operation let it be supposed that the parts are in the position shown in Fig. 1. At this time the plate  $d$  will stand substantially at the entrance of the mold. (See Fig. 2.) The leather sole  $s$ , to be thickened about its edges, is shown by dotted lines, Fig. 2, as laid on plate  $d$ . In this condition, in the form in which my invention is represented as embodied, the mold-carrier is lifted until the sole meets the plate  $c^8$ , and the sole being arrested in its upward movement, the further rise of the carrier causes the mold D to rise until the two plates with the sole between occupy a position wholly within the mold. The upper plate  $c^8$  is shown as cut away for a short  
80 distance about its edge, as shown in Figs. 2 and 3, and the sole is of slightly larger dimensions, and as the edge of the sole is forced back it fills the space about the edge of the plate  $c^8$ , leaving the edge of the sole  $s$  thickened, as at  $s'$ , Figs. 5 and 6. The cross-head has a table T, on which to lay a sole or any other work.

I am aware that a piece of leather has been laid upon a base, has then been clamped between the base and the platen of a mold, leaving the edges of the leather extending beyond the said base and platen, and that thereafter a follower has been made to descend and surround the platen and base and bend over  
95 about the edges of the base the projecting edges of the leather, as in United States Patent No. 126,823; but in this my invention it will be noticed that the edge of the leather is not turned over, but is thickened by a pressure  
100

exerted in a line from one toward the other edge of the sole.

I claim—

5 A sole-edge-thickening machine containing the following instrumentalities, viz: a hollow converging or tapering mold and two clamping-plates, one of which is supported yieldingly with relation to said mold and normally at the entrance thereto to receive the  
10 sole, the other being attached to a follower, the said plates holding and carrying the sole

between them when being forced into and through the said mold, substantially as described.

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

ELMER M. BENT.

Witnesses:

EDWIN FARWELL,  
A. O. BLANDIN.