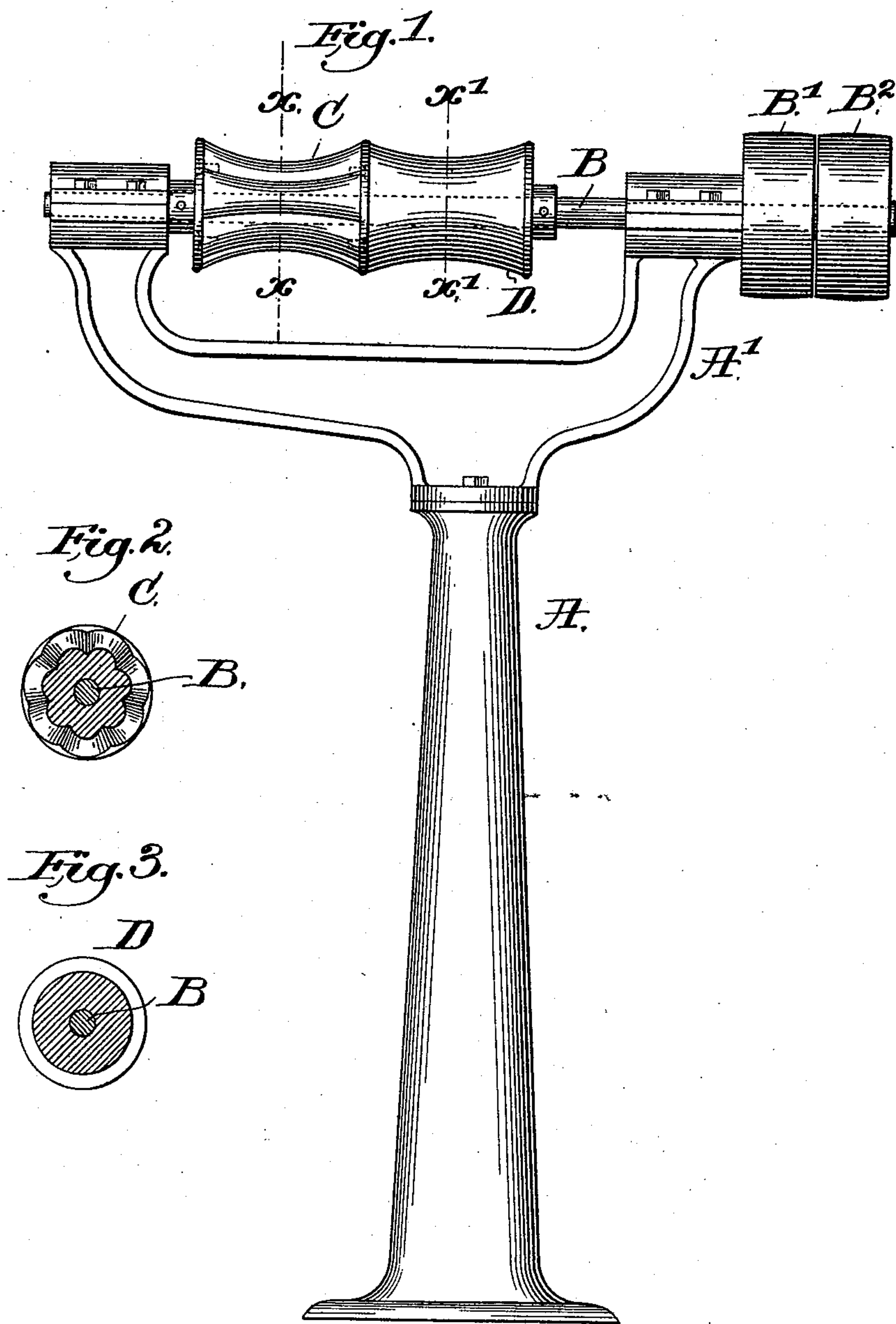


(No Model.)

C. E. HOWE.
MACHINE FOR BEATING OUT SHOE SOLES.

No. 563,487.

Patented July 7, 1896.



Witnesses,
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UNITED STATES PATENT OFFICE.

CHARLES E. HOWE, OF LYNN, MASSACHUSETTS.

MACHINE FOR BEATING OUT SHOE-SOLES.

SPECIFICATION forming part of Letters Patent No. 563,487, dated July 7, 1896.

Application filed December 8, 1892. Serial No. 454,470. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. HOWE, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Machines for Beating out Soles of Boots or Shoes, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 In the manufacture of shoes, especially turned shoes, after the sole has been united to the upper the shoe is turned and put on a last, and the sole is then "beaten out," as it is called, that is, it is hammered by a hammer
15 in the hands of the operator with a series of glancing blows until the sole is drawn out and conforms to the bottom of the last. To effect a like result automatically and mechanically, I have devised a beating-out machine comprising, essentially, a rapidly-rotating roll
20 having a series of fixed rigid longitudinal projections, so that when the roll is rotated its projections will strike the sole with distinct drawing blows in rapid succession, thus wiping or drawing, as it were, the exposed surface of the sole, and leaving the same smooth and uniform. For the best results the roll will be made concave in the direction of its length.

30 In the accompanying drawings, Figure 1 shows a beating-out machine embodying my invention. Fig. 2 is a section of the beating-out roll in the line x , and Fig. 3 is a section of the finishing-roll in the line x' .

35 In the drawings, A represents a suitable standard having a suitable yoke A', provided with bearings for the rotary shaft B, the latter being provided, preferably, with a fast pulley B' and a loose pulley B'', adapted to receive a belt driven from any suitable source.
40 Fast on this shaft is my improved beating-out roll C, preferably constructed of metal and provided with a succession of separated longitudinal fixed rigid projections located in
45 radial planes passing through the longitudinal axis of the roll, so that when the roll is rotated its projections will strike the sole with distinct blows in rapid succession with a drawing motion to draw it out smoothly.
50 The roll C is also shown as concave at its periphery.

By concaving the roll the operator is en-

abled to so hold the bottom of the sole against the roll that the projections at each side the portion of the roll of least diameter will
55 strike the bottom of the sole near its edges and thus simultaneously beat or draw out the sole and round the same near its edges and cause it to fit the bottom of the last. The shaft B has also fixed to it a finishing-
60 roll D, represented as a concave roll, preferably made of wood, the surface of the roll being smooth to act on and finish or polish the sole.

The shaft B is rotated at high speed and the
65 operation of beating out a sole requires but the fraction of a minute.

In my improved roll the projections are longitudinal and radial to the axis of the roll, and the dragging or wiping action of the pro-
70 jections is very different from what would be the case if said projections were arranged spirally about the roll.

I am aware that a rotating cylinder has had a series of rolls arranged about its periphery,
75 said rolls being journaled at their ends so as to have a planetary motion when in use, and said rolls, as soon as they meet the material on which they are to act, roll over said material like a wheel, whereas when the rigid
80 non-rotating projections strike a soft material like leather any and all inequalities are, by the dragging action of the projections, wiped or rubbed out in a manner not possible to be
85 done by simple rolling pressure against the leather. The distinctive feature, therefore, of my invention resides in the fact that the beating out of the sole is accomplished by a series of rapid blows all delivered in the
90 same direction and simultaneously near the opposite edges of the sole.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a beating-out machine, the combination
95 with a rotary shaft, of a beating-out roll provided with a series of fixed, rigid, longitudinal projections, separated sufficiently from each other to strike the sole, in the rotation of the roll, with distinct blows to work
100 the leather of the sole, as desired, substantially as described.

2. In a beating-out machine, the combination with a rotary shaft, of a beating-out roll

made concave in the direction of its length,
and provided with a series of fixed, rigid, lon-
gitudinal projections, separated sufficiently
from each other to strike the sole, in the rota-
5 tion of the roll, with distinct blows to work
the leather of the sole, substantially as de-
scribed.

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

CHARLES E. HOWE.

Witnesses:

FREDERICK L. EMERY,
EMMA J. BENNETT.