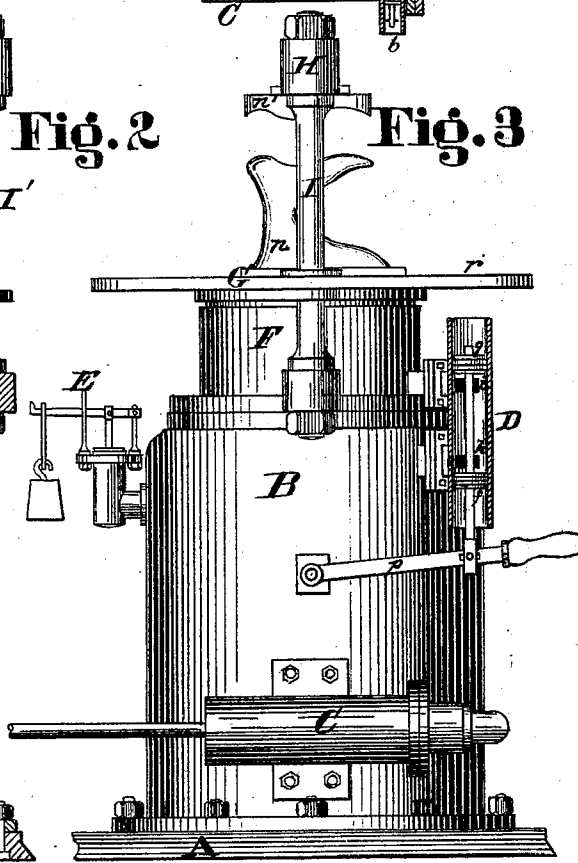
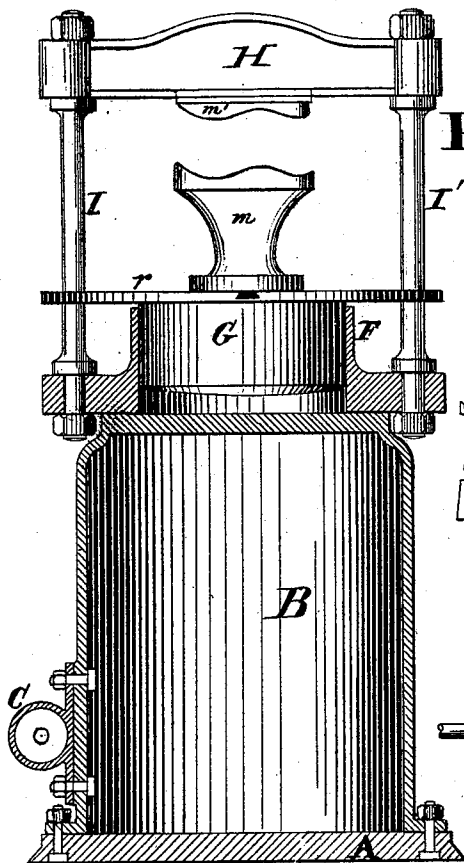
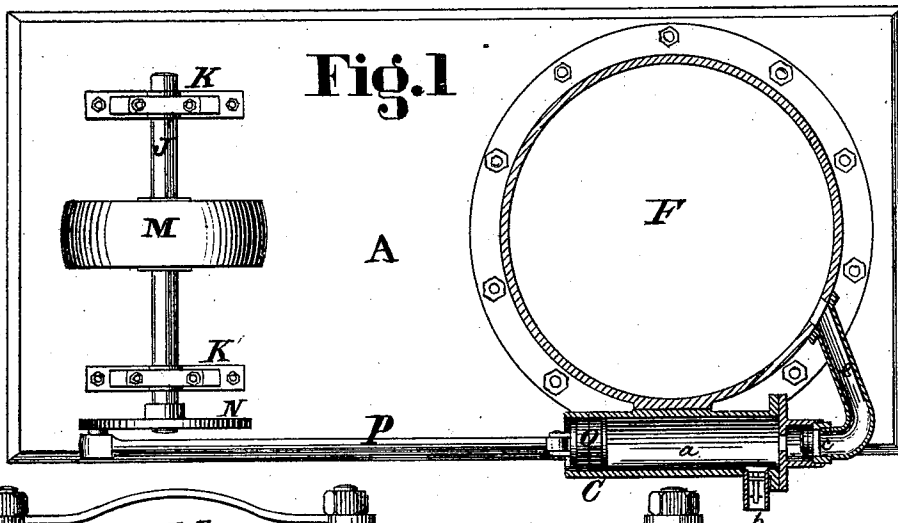


S. ROSS.
MACHINES FOR BEATING OUT AND MOLDING SOLES OF
BOOTS AND SHOES.
No. 177,355. Patented May 16, 1876.



Attest
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UNITED STATES PATENT OFFICE

SIMON ROSS, OF CINCINNATI, OHIO, ASSIGNOR TO ROSS, DAVIS & CO., OF
SAME PLACE.

IMPROVEMENT IN MACHINES FOR BEATING OUT AND MOLDING SOLES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **177,355**, dated May 16, 1876; application filed
November 4, 1875.

To all whom it may concern:

Be it known that I, SIMON ROSS, of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Machines for Beating Out and Molding Soles, of which the following is a specification:

My invention relates to machines for beating out and molding soles used in the manufacture of boots and shoes; and the invention consists of a novel combination and arrangement of parts, which will be fully hereinafter described and specifically pointed out in the claim, a preliminary description being, therefore, deemed unnecessary.

In the accompanying drawings, Figure 1 is a sectional plan view of a machine embodying my invention. Fig. 2 is a transverse sectional elevation of the same; and Fig. 3 a longitudinal elevation, with the regulating-valve chamber in section, and with part of the bed-plate and driving machinery removed.

On the bed plate A, at one end, is mounted an air-chamber, B, upon which are mounted the air-pump C, regulating-valve chamber D, safety-valve E, cylinder F, piston G, arch-bar H, guide-bars I and I', and the molds or formers used in the shaping of the material under pressure; and on the other end of the bed-plate A the driving machinery is fixed, consisting of a shaft, J, running in journals K and K', to which are attached the driving-pulley M and crank-plate N. To connect the crank-plate N with the piston O a pitman, P, is used, which is joined to the piston O in such a manner as to compensate for its movement around the crank-plate N. The air-pump C consists of a piston, O, cylinder a, and valves b and c, the valve b opening inwardly for the admission of air when the piston is moving outwardly and the valve c remains closed. During the piston's return the valve b is closed and the valve c is open, and allows the air to pass through the ejection-pipe e into the air-chamber B, which communicates with the valve-chamber D, in which are two connected pistons, f and g, arranged a suitable distance apart, and fitting the chamber D in such a manner as to be air-tight. The piston f remains below the opening h that com-

municates with the valve-chamber D and air-chamber B, and is so arranged as to confine the air in the chambers B and D when the piston g cuts off communication between the said chamber and the cylinder F, or until the pressure is sufficient to raise the safety-valve E. When the piston g is located above the opening i, the air is free to pass into the cylinder F at a point below the piston G, raising the said piston, and with it the mold m, upon which is placed the material to be pressed, until the molds m and m' are brought forcibly together, in which position they will be retained until the piston g is moved by the lever p to a point below the opening i. The air is then free to escape through the top of the chamber D, and the piston G, being relieved from pressure, descends easily until its top flange r rest upon the top of the cylinder F. The arch-bar H is supported and held in position by the guide-bars I and I'. The flange r, which is part of the piston G, is arranged to fit the guide-bars I and I' in such a manner as to steady the piston G while it is moving in the cylinder F.

The machine can be changed from a molding to a beating-out machine by removing the molds m and m' and replacing them by the last n and mold n', as shown in Fig. 2. The change can be readily made, as the molds and lasts are all fitted with a male dovetail slide, and the piston G and arch-bar H with corresponding female slides, so arranged as to locate the molds or lasts in the center of the machine.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of an air-chamber, B, valve-chamber D, fitted with valves f and g, cylinder and piston F and G, on the cylinder G of which is fixed a mold, m, operating against an upper fixed mold, m', by means of an air-pump, C, substantially as and for the purpose specified.

In testimony whereof I have hereunto set my hand this 25th day of October, 1875.

SIMON ROSS.

Witnesses:

D. W. STRICKLAND,
HENRY MILLWARD.