

(No Model.)

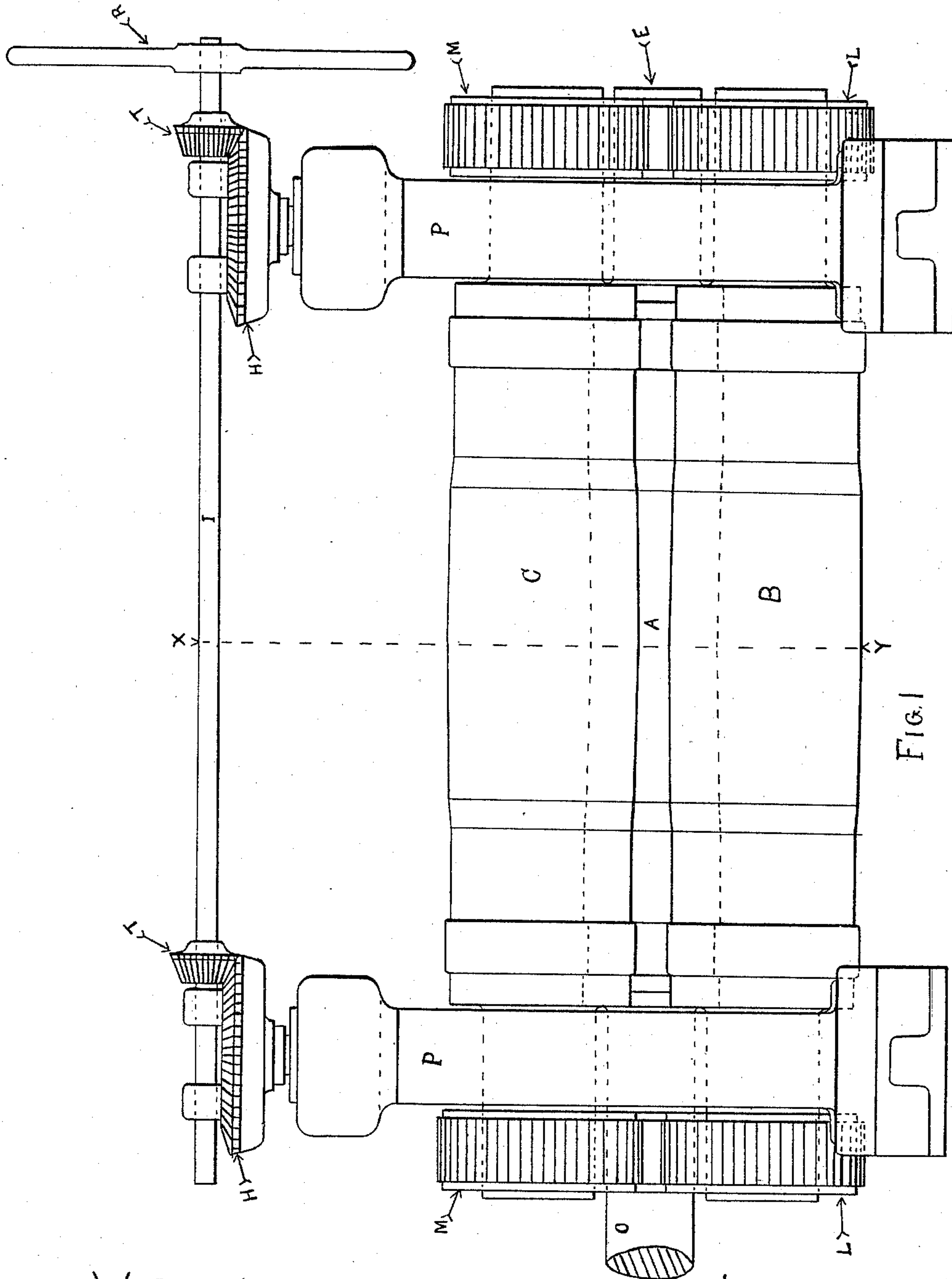
2 Sheets—Sheet 1.

J. R. JONES.

MACHINE FOR MOLDING AND CONDENSING ROUND BARS.

No. 456,957.

Patented Aug. 4, 1891.



WITNESSES

Harry L. James
Henry B. van Benthuysen

INVENTOR

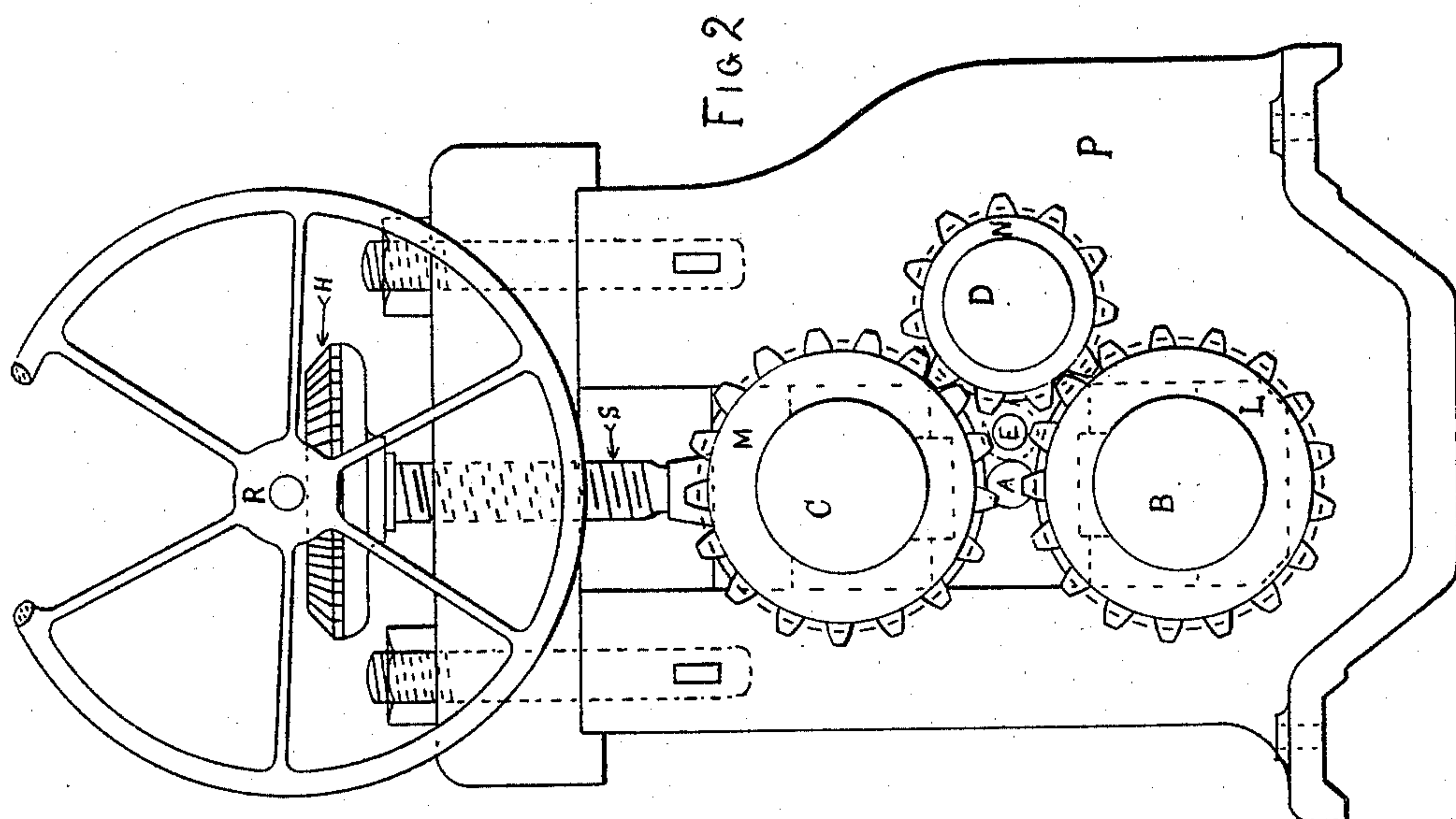
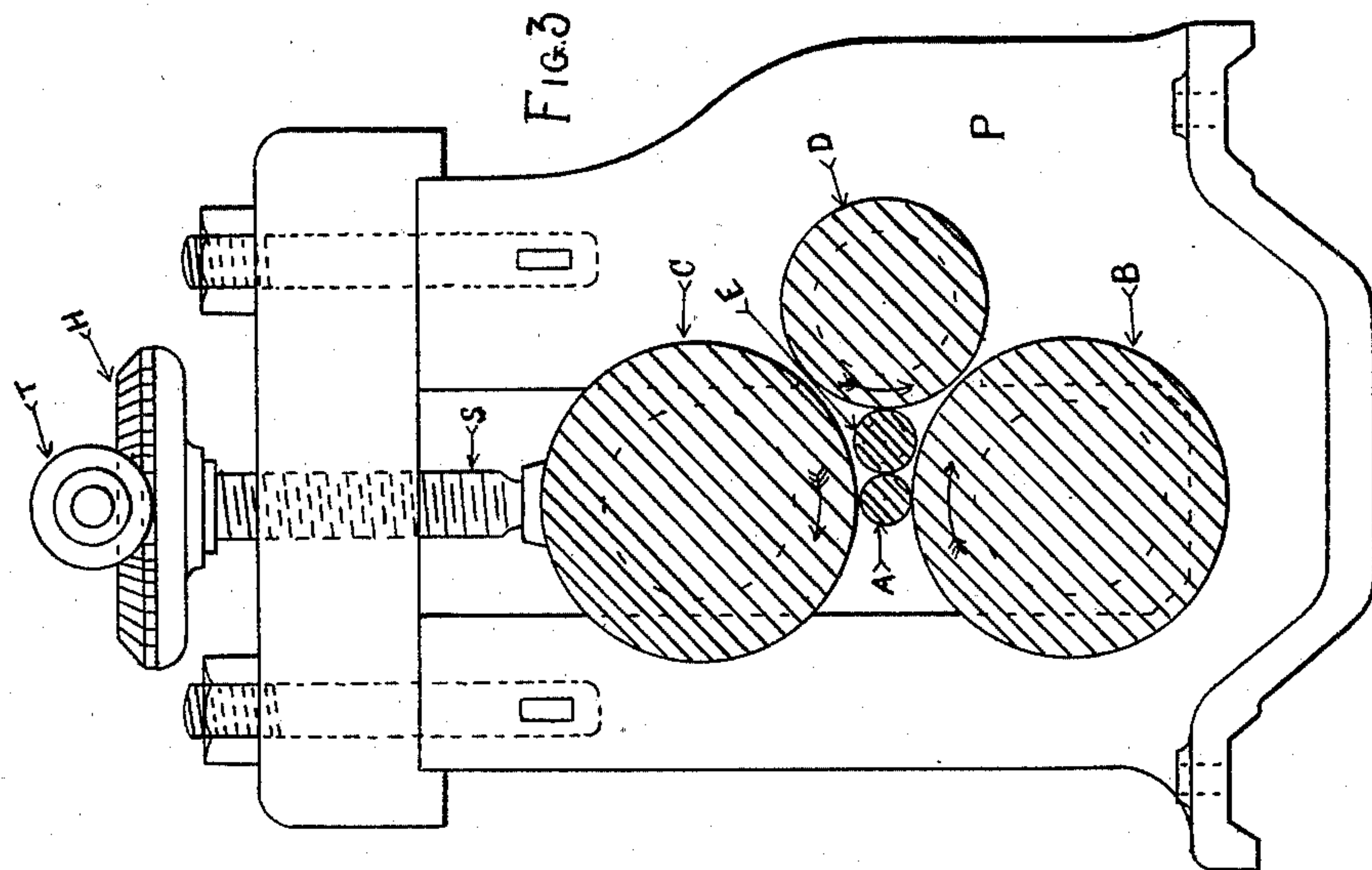
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UNITED STATES PATENT OFFICE.

JOHN R. JONES, OF PHILADELPHIA, PENNSYLVANIA.

MACHINE FOR MOLDING AND CONDENSING ROUND BARS.

SPECIFICATION forming part of Letters Patent No. 456,957, dated August 4, 1891.

Application filed January 29, 1891. Serial No. 379,489. (No model.)

To all whom it may concern:

Be it known that I, JOHN R. JONES, a citizen of the United States, residing in the city of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Machines for Straightening, Condensing, and Finishing Rolled and Forged Bars, of which the following is a specification.

The object of my invention is to produce a bar or axle, straight and round, condensing and hardening the metal, and giving it a true and smooth finish. This object I accomplish by means of a combination of four rolls set and supported in bearing-boxes in a suitable pair of housings. Three of my rolls are driven. Two are in a vertical position and parallel to each other, their faces corresponding to the shape of the bar or axle and moving in opposite directions, but their axes revolving in the same. One of these rolls is movable. The small roll is set between the two vertical rolls a little back, its face corresponding with the bar or axle, but is not driven. The other driven roll is on line with the small roll, but in the rear, its face corresponding to the small roll, and during the operation when its face is in contact will revolve and support it. Power is applied to the rear driven roll, which is transmitted to the vertical rolls by gears.

In the accompanying drawings like letters represent like parts.

Figure 1 is a front view of the entire machine, showing the rolls B C set in a pair of housings P P, with their bearings, shaft I, screws S S, gears L L and M M, and bevel-wheels H H and T T, the axle A in position during the operation. Fig. 2 is a side view of Fig. 1, showing the position of the driven rolls B, C, and D and their gear-wheels L M N and hand-wheel R. Fig. 3 is a sectional view through X Y of Fig. 1, showing the positions of the rolls B C D and the small roll E and axle A.

Roll B is set in housings P P, and has on each end gear-wheels L L, which receive motion

through gears N N on roll D, its face corresponding to the shape of the bar to be operated on and moving with the parts in contact.

Roll C is set in bearings parallel with roll B and above it, but separated so that axle A will roll between them, its face shaped to correspond with the bar or axle and moving with it, but in opposite direction to the face of roll B, receiving motion through gears M M from gears N N, Figs. 1 and 2.

Roll C is supported on bearings and can be balanced with weights or springs, and it is adjustable to different diameters. It is held in position with screws S S, which is controlled with hand-wheel R on shaft I and bevel-wheels H H and T T. Hydraulic or other power can be applied to give pressure to roll C during the operation.

Roll D is set in bearings on a line with roll E, but in the rear, its face corresponding to the shape of roll E. It is connected at shaft O on roll D with an engine or other mechanical power, giving motion to rolls B and C through gears L L M M with gears N N.

Roll E is a small roll set in bearings between rolls B, C, and D. During the operation it keeps the bar on line with the axis of rolls B and C, its face corresponding to the shape of the bar and the face of roll D, moving in the same direction, receiving its motion and support from roll D when in contact with the bar.

The bar or axle A is rolled between the rolls B and C and against roll E. The machine is started, and pressure is given to roll C by means of screws S S, bevel-wheels H H T T on shaft I, and hand-wheel R. Hydraulic or other power can be applied. After the bar has been worked the motion of the machine is reversed and the bar rolls out.

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

1. In a machine for straightening rolled and forged metal, the combination of four rolls set in a pair of housings with their respective shafts, bearings, screws, and pin-

ions, and their faces shaped in the manner and for the purpose substantially as described.

2. In a machine for straightening rolled
5 and forged metal, the combination of three driven rolls with their bearings, shafts, and gearings, and one small roll, their faces shaped in the manner and for the purpose set forth.

3. In a machine for straightening rolled

and forged metal, the combination of three driven rolls with their bearings, shafts, and gearings, one of which is movable, with their faces shaped substantially as set forth.

JOHN R. JONES. [L. s.]

Witnesses:

HARRY L. JAMES,

HENRY B. VAN BENTHUYSEN.