H. Merrie.

Making Lead Pipe.

No. 89,326. Patented Apr. 27, 1869.

Fig: 1.

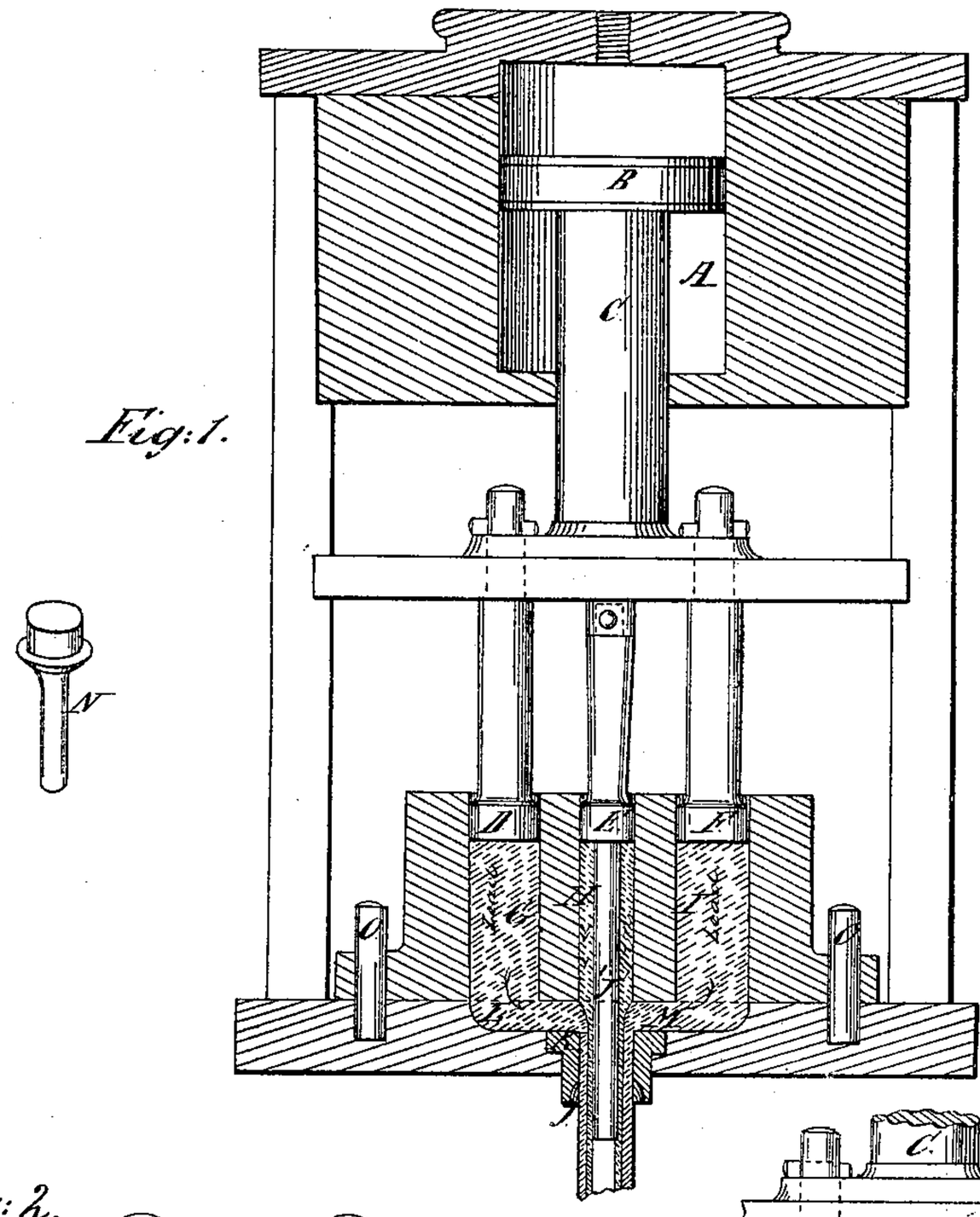


Fig: 2.

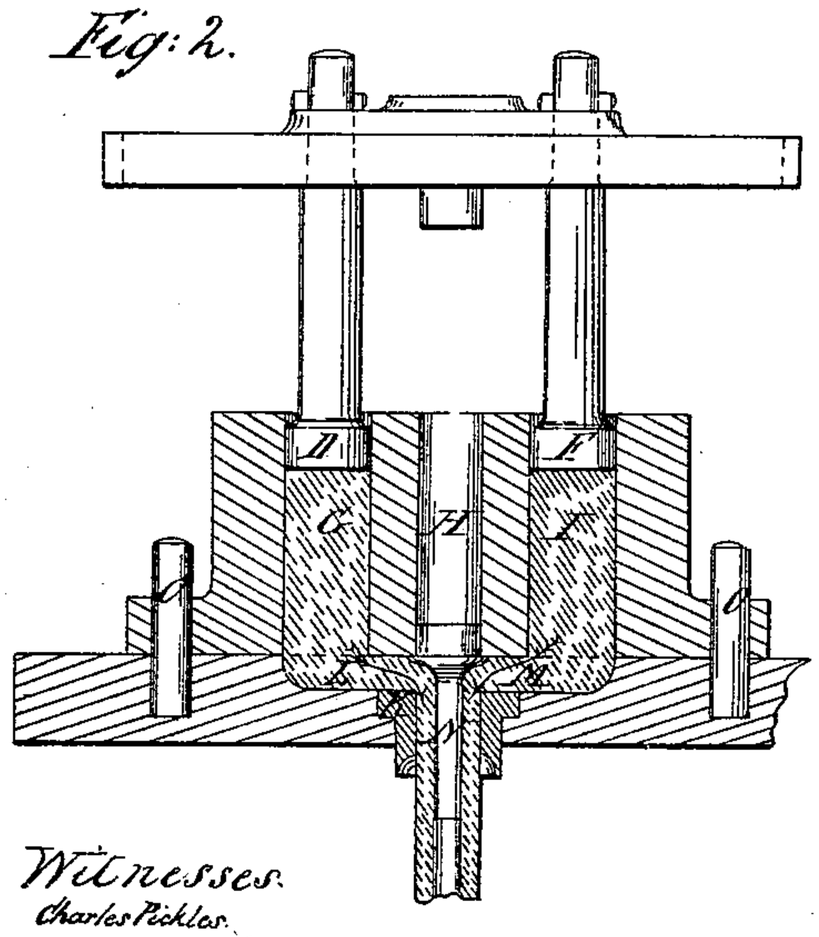
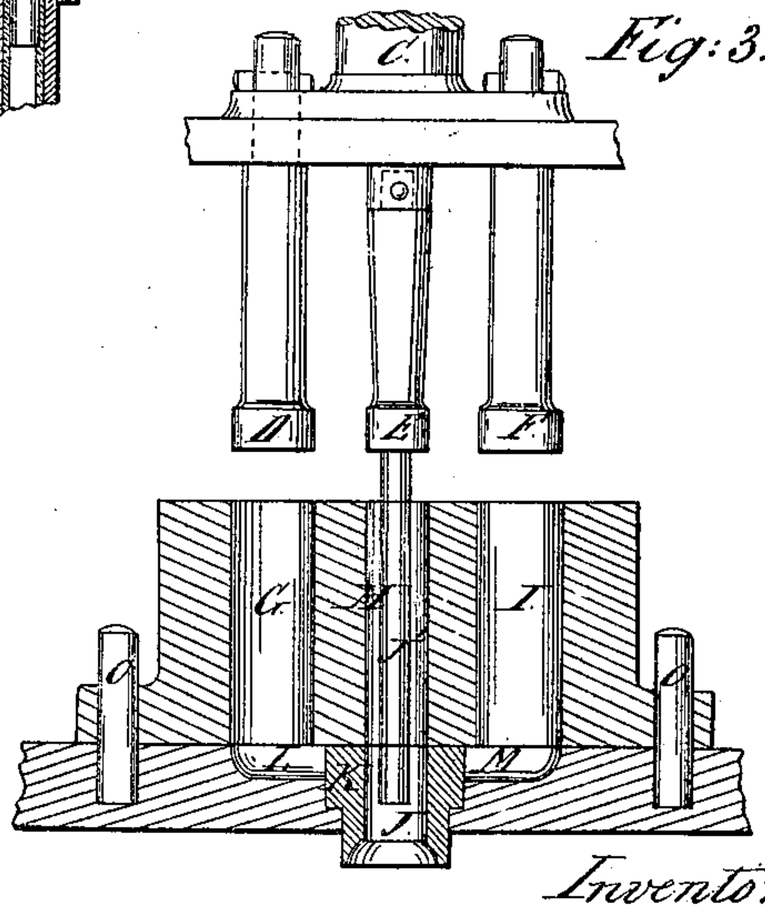


Fig: 3.



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UNITED STATES PATENT OFFICE.

HUGH MERRIE, OF CINCINNATI, OHIO.

IMPROVEMENT IN MACHINES FOR MAKING TIN-LINED LEAD PIPE.

Specification forming part of Letters Patent No. **89,326**, dated April 27, 1869.

To all whom it may concern:

Be it known that I, HUGH MERRIE, of Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Improvements in Machines for Making Soft-Metal Pipes; and I do hereby declare the following to be a sufficiently full, clear, and exact description thereof to enable one skilled in the art to which my invention appertains to make and use it, reference being had to the accompanying drawings, which form a part of this specification.

My invention consists of a machine of such construction that while it is peculiarly adapted for the purpose of making tin-lined lead pipe, it is convertible into a machine for making lead pipe, possessing advantages over lead-pipe machines now in use, and is also convertible into a machine for making tin pipe.

In the accompanying drawings, Figure 1 is an axial section, exhibiting my machine arranged to make tin-lined lead pipe. Fig. 2 is an axial section, exhibiting the machine converted into a machine for making lead pipe. Fig. 3 is an axial section, representing the machine to make solid-tin pipe.

In the drawings a hydraulic press is represented as the preferred application of power, A being the cylinder of the same, B the piston, and C the piston-rod. To the head of the press are attached three plungers, D E F, adapted to fit snugly and slide within the cylinders G H I. The metal is poured into these cylinders and pressed out into a single discharge-aperture, J, by the plungers D E F.

In making tin-lined lead pipe, tin is poured into the middle cylinder, H, and lead into the outside cylinders, G I, the cylinders being of such relative diameters that the combined metals will be forced out in the exact proportion desired. The middle plunger, E, carries a core, J′, around which the pipe is formed, the die K serving to limit the outside diameter of the pipe. Passages L M connect the outer cylinders with the discharge-aperture J.

In the operation of making tin-lined lead pipe, the tin contained in the cylinder H is forced out, and tightly encircles the core J′, and the lead is forced to surround the tin and fill the die K.

For making common lead pipe the core J′ is removed, the cylinders raised off the frame on which they are fitted over "steady-pins" O, and the permanent or stationary core N is inserted in the bottom of the cylinder H to stop off the middle cylinder and form at the same time a core on which the pipe is formed. The lead is forced from the cylinders G I through the die K and around the core N.

In other machines for making lead pipe a single cylinder is used and the core is reciprocated in the pipe, attended by considerable friction and liability of destruction of the pipe in the upward stroke.

For the purpose of converting my machine into an apparatus for making tin pipe, I make the die K (in which the passages L M are in part formed) loose and capable of being rotated on its seat. When turned quarter round (see Fig. 3) the communication between cylinders G I and the discharge-pipe J is cut off. The core N is removed and the core J′ replaced, and the machine is then adapted to form tin pipe in the ordinary way.

I claim herein as new and of my invention—

1. In combination with the cylinder H, plunger E, and core J′, the additional or supplementary cylinders, G I, plungers D F, and passages L M, arranged and operating substantially in the manner and for the purpose specified.

2. In the described connection with the additional or supplementary cylinders, G I, plungers D F, and passages L M, the core N, arranged and operating in the manner and for the purpose described.

In testimony of which invention I hereunto set my hand.

HUGH MERRIE.

Witnesses:
THEO. H. JAMES,
EUGENE TRUMP.