

(Model.)

R. LAYNG.
Machine for Making Curved Lead Pipe.

No. 241,032.

Patented May 3, 1881.

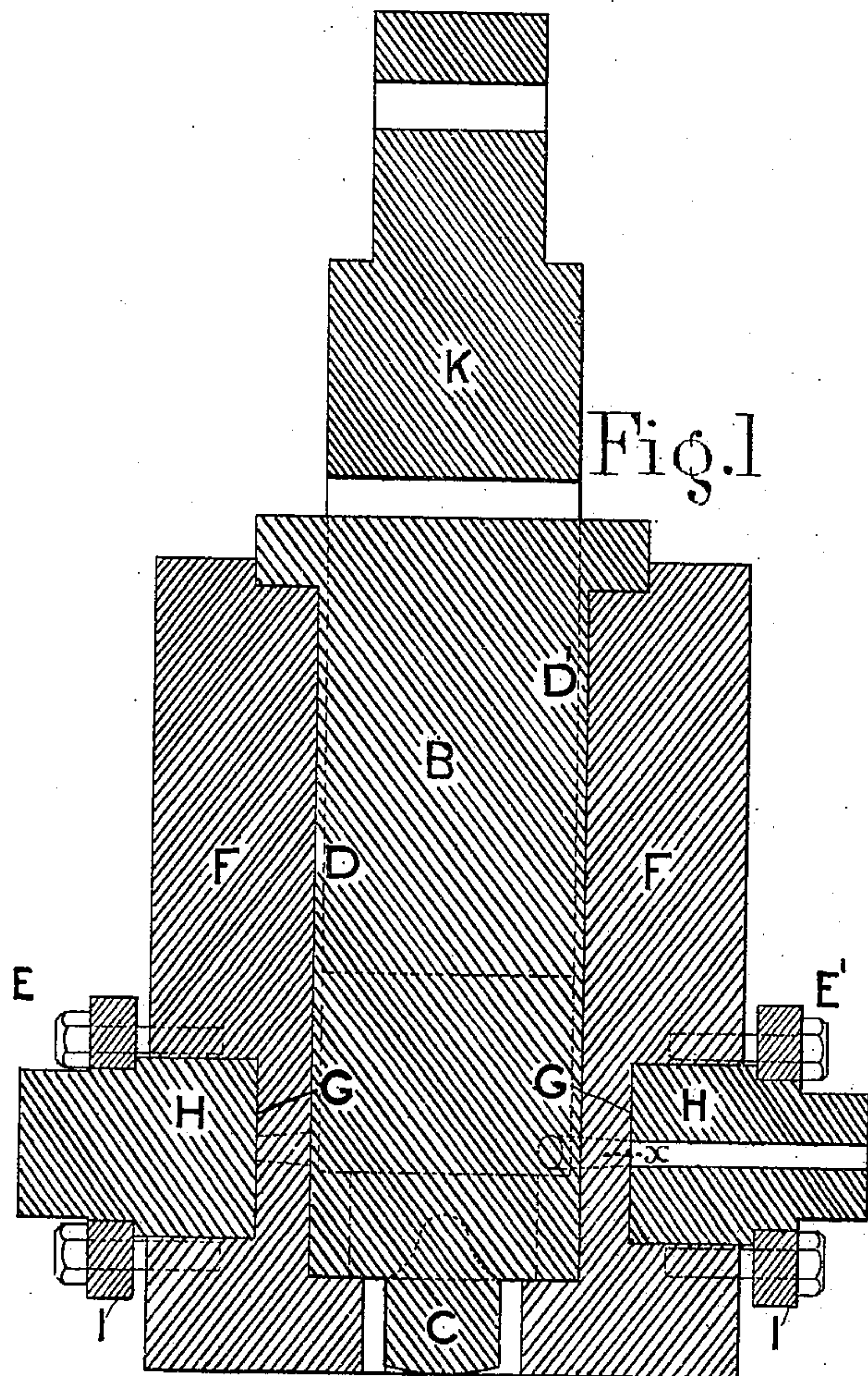


Fig. 1

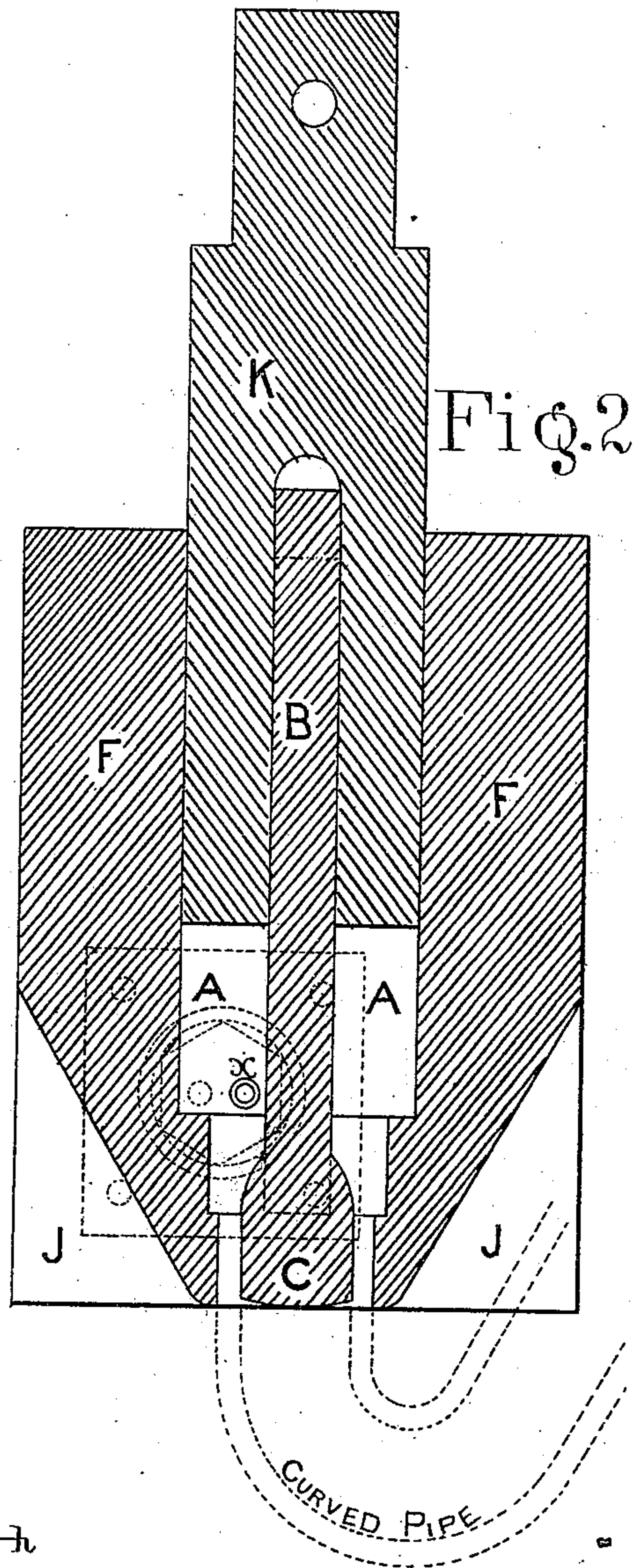


Fig. 2

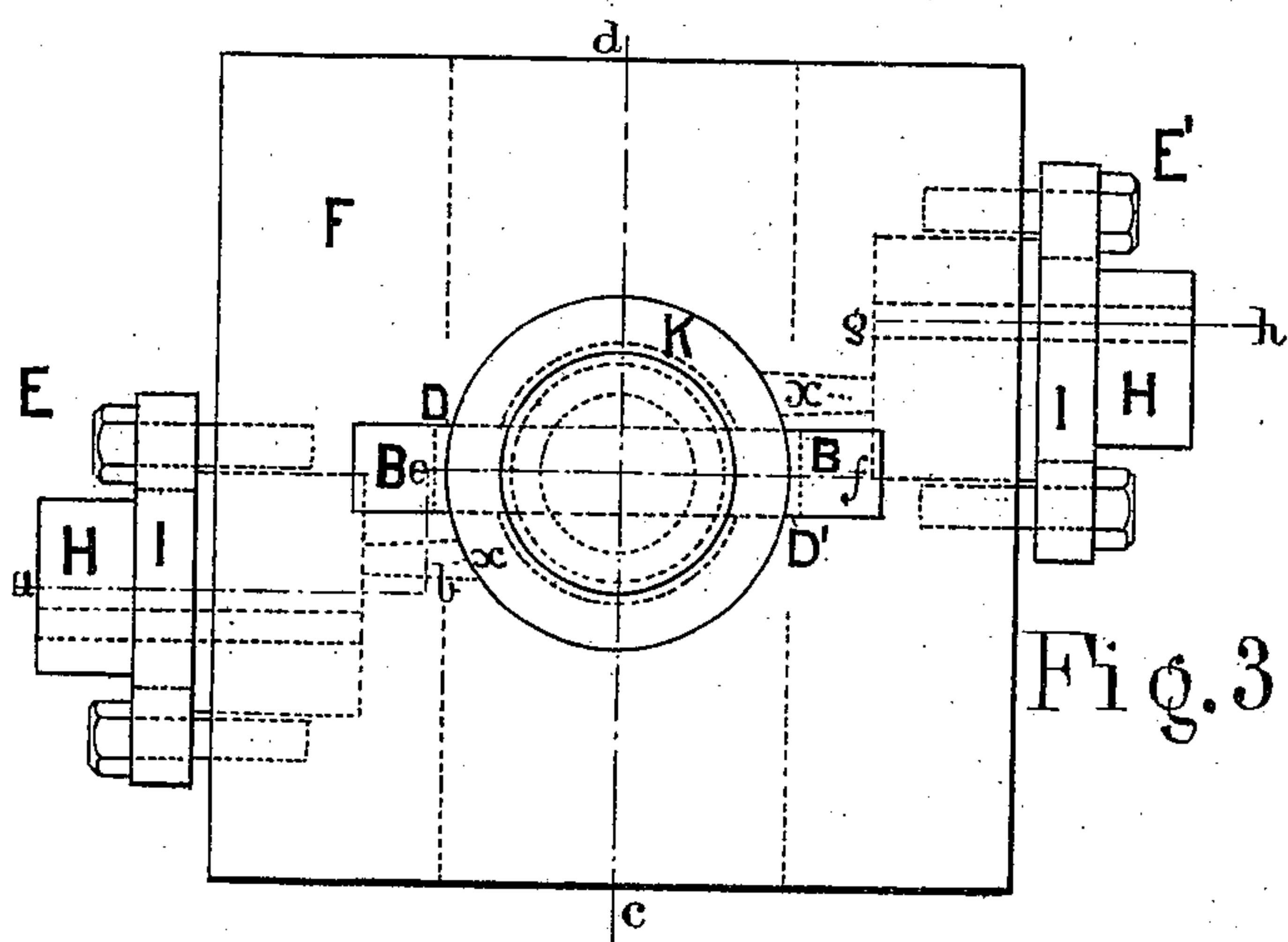


Fig. 3

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WITNESSES

INVENTOR
Robert Layng
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UNITED STATES PATENT OFFICE.

ROBERT LAYNG, OF SAN FRANCISCO, CALIFORNIA.

MACHINE FOR MAKING CURVED LEAD PIPE.

SPECIFICATION forming part of Letters Patent No. 241,032, dated May 3, 1881.

Application filed September 4, 1880. (Model.)

To all whom it may concern:

Be it known that I, ROBERT LAYNG, of the city and county of San Francisco, State of California, have invented a new and useful
5 Improvement in Machines for Making Curved Lead Pipe, of which the following is a specification.

My invention relates to those machines used for making what are called "S-traps," "el-
10 bows," and "U-pieces" or "returns," as used by plumbers; and it consists in combining, with the ordinary cylinder, core, and plunger used in making straight piping, a certain partition, which divides the cylinder into two com-
15 partments, and applying a valve to each compartment to open and close a passage, so as to allow a portion of the metal to escape from the compartment with which it connects, so as to vary the quantity expressed therefrom,
20 by which means, when the amount expressed from the other compartment is different, the pipe is made to curve more or less in one direction or the other, accordingly as the quantities of metal given out from each compartment to form the pipe is regulated by the said
25 valves.

In accompanying drawings, Figure 1 is a sectional elevation of my device taken on line
30 *a b e f g h* of Fig. 3. Fig. 2 is a sectional elevation taken on line *c d*, Fig. 3. Fig. 3 is a plan.

In all the figures like letters of reference refer to like parts.

In operating my device there is used a hy-
35 draulic press, which I do not need to show, as it is used exactly as in making straight pipe; also, the conditions under which I operate as to temperature of metal and amount of pressure are not altered from common practice.
40 Therefore I will confine my description to that which is new.

A is the ordinary reservoir-cylinder, which is filled with lead. B is a partition dividing it into two compartments. This partition is
45 made separate from the cylinder-block, and terminates at the bottom in a short core, C, which regulates the interior diameter of the pipe. There are grooves D D' cut in the opposite sides of the cylinder-block from top to

nearly the bottom, in which grooves the par- 50
tition is held in a central position. The cylinder may be of any suitable diameter and height; but its diameter at the point below where the partition ends and the core com-
55 mences must be just the diameter of the outside of the pipe to be made.

E E' are what I call my "relief-valves." They may be of any suitable form. That which I have found convenient is shown in the draw-
60 ings, and may be described as follows: First, I provide a hole, *x*, leading from the reservoir-cylinder to the valve-seat in the cylinder-block F. This hole should be twice as large at the
65 cylinder end as at the valve end, so as to reduce friction in expressing the metal through it. A recess, G, is provided at the outside of the cylinder-block, in which recess a plug, H, is fitted. This plug has a hexagon-shaped
70 end to fit a wrench upon to turn it around. A plate, I, fits over this plug, and is held by tap-bolts to the block. It rests against a shoulder formed on the plug, and thus holds it to
75 its seat. A hole is bored through the plug parallel with its axis a little out from its center, the escape-hole from the cylinder being
80 made correspondingly out of center with relation to the recess for the plug, so that as the plug is turned in its socket the two holes may be brought to overlap each other and permit
85 the metal to escape; or they may be separated and the metal stopped from flowing. Valves of this kind are sometimes called "eccentric" valves.

To prevent the pipe as it is being forced out of the mold from striking the cylinder-block, 85
I cut the block out, as at J J', to give proper clearance as the pipe curls up.

The plunger K is the same as ordinarily used, with the only exception that it must be
90 slotted through from the bottom to as far up as may be required to permit it to straddle the partition in the reservoir-cylinder as it is forced down to the bottom thereof by the hydraulic press above.

My device is supported on a suitable frame 95
or table immediately under the hydraulic press, and operated precisely as if straight pipes were to be made, with the addition that the

valves are opened and closed to curve the pipe as it exudes from the mold.

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

5 In combination with the reservoir-cylinder A, the partition B, dividing the same into two compartments, the straddling-plunger K, and

the escape-passages leading from each compartment, opened and closed by suitable valves, as and for the purpose herein described.

ROBERT LAYNG.

Witnesses:

GEORGE PARDY,
MARTIAL HAINQUE.