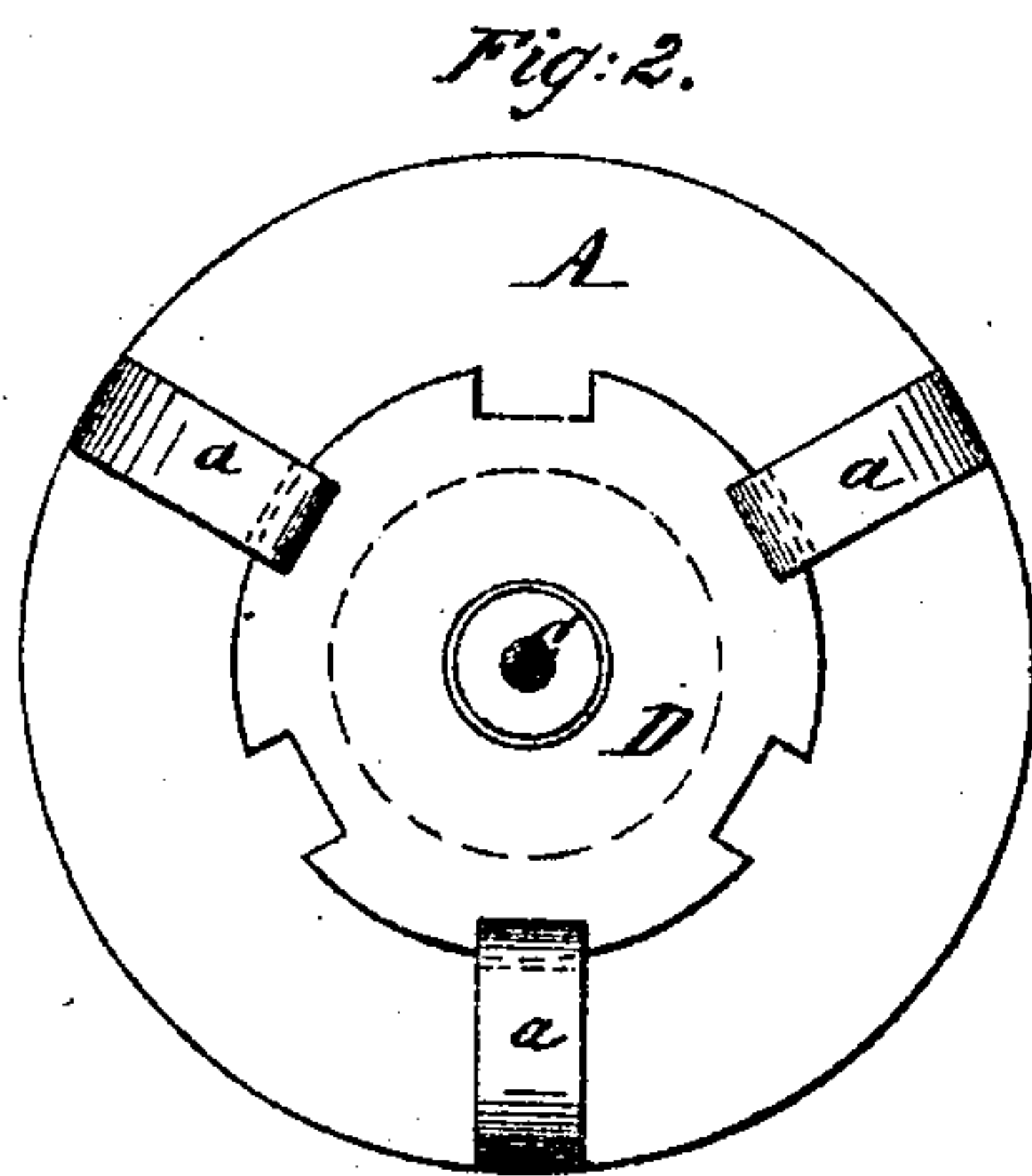
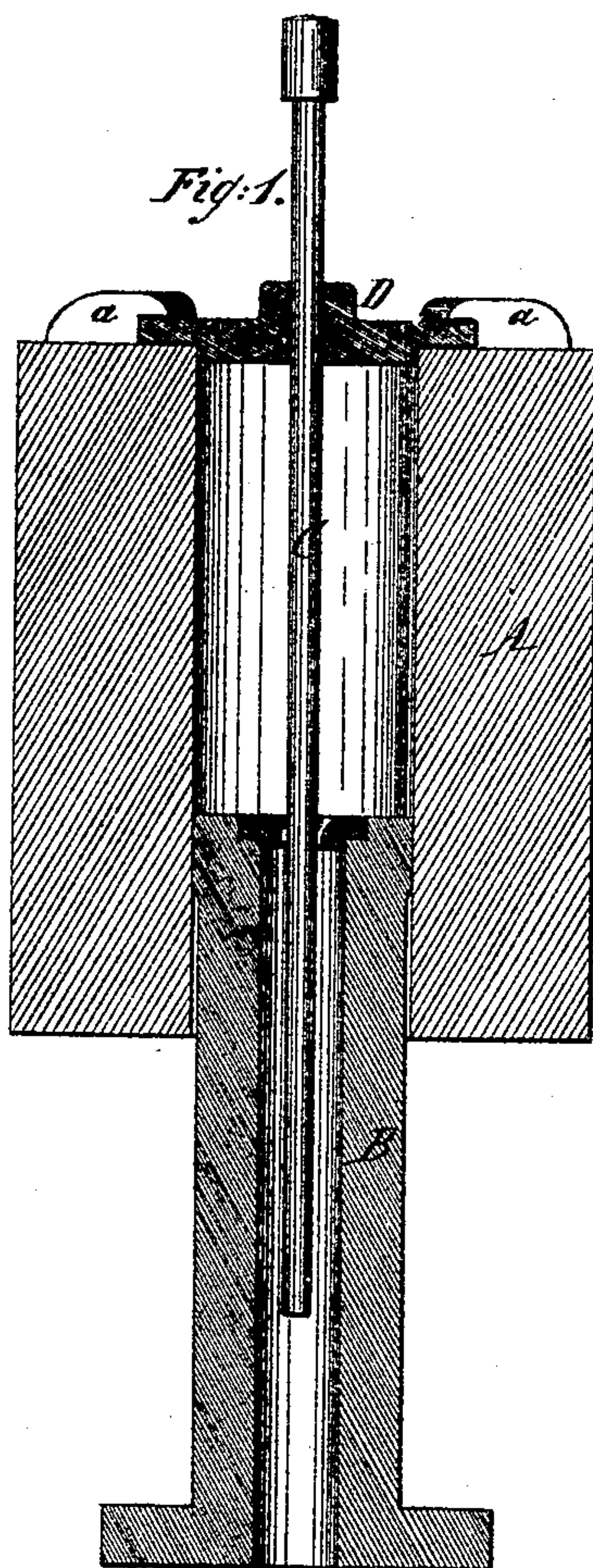


B. TATHAM.  
DIE FOR MANUFACTURING LEAD PIPE.

No. 95,850.

Patented Oct. 12, 1869.



*Witnesses.*

*W. H. Haff,  
C. F. Fennell*

*Inventor.*

*Barnes Tatham*

# United States Patent Office.

BENJAMIN TATHAM, OF NEW YORK, N. Y.

Letters Patent No. 95,850, dated October 12, 1869

## IMPROVEMENT IN DIES FOR MANUFACTURING LEAD PIPE

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, BENJAMIN TATHAM, of the city, county, and State of New York, have invented a new and useful Improvement in the Manufacture of Pipes of Lead and other metals; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 represents a vertical central section of this invention.

Figure 2 is a plan or top view of the same.

Similar letters indicate corresponding parts.

This invention consists in the combination of a loose core with a cylinder and ram, for the manufacture of pipes of lead or other metal, in such a manner, that said core, being free to move with the mass of metal under pressure, is relieved of the strain to which it would otherwise be exposed by the friction of the metal.

In machines for the manufacture of pipes of lead or other metals, the core is usually fastened to the ram or to the cylinder which contains the mass of metal from which the pipes are to be made.

As the mass of the metal is forced out through the annular space formed by the die and core, said core is exposed to a heavy strain by the friction of the metal upon it, and in many cases the core (which is usually made of steel) is stretched and torn asunder.

This disadvantage is overcome by my invention, as represented in the drawings, in which the letter A designates the cylinder; B, the ram; C, the core; and D the head-block, which forms the guide for the core. Said cylinder is to be attached to the upper part or frame of a strong hydraulic or other press, and the ram is attached to the follower or plunger of such press.

The head-block D is held in position by strong bearings a, cast, or otherwise firmly attached to the cylin-

der, as shown in fig. 2 of the drawing, or it may be secured by any other suitable means, sufficiently strong for the pressure to be brought against it, and yet so constructed, that said head-block can be readily removed.

The head-block D is perforated with a hole to admit the core C, which is suspended from a cord passing over a pulley, and loaded with a balance-weight, or by any other suitable means, so that when sufficient pressure is applied to the metal within the cylinder, to force it out through the die b, the core will be free to move with the metal, and not be subjected to the tension, which it would be if immovably attached to the cylinder or ram.

It is obvious that this plan of making pipe by pressure over a loose core in a cylinder, may be applied to any arrangement of cylinder and ram that may be desired.

When the die is placed in the end of the cylinder opposite the ram, the core will be suspended or held within the ram, so as to project through the die in the cylinder, and it is immaterial, except for convenience, whether the pipe be discharged upward or downward.

The metal may be poured into the cylinder and around the core in a fluid state, and allowed to set or become solid, or it may be cast in a separate vessel, and placed within the cylinder, and then the core may be inserted and held in its proper position, and the metal be pressed from the cylinder through the die.

Having thus described my invention,

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

The combination of a loose core with a cylinder and ram, for the manufacture of pipes, substantially as herein described.

BENJN. TATHAM.

Witnesses:

R. P. BIELY,  
W. HAUFF,