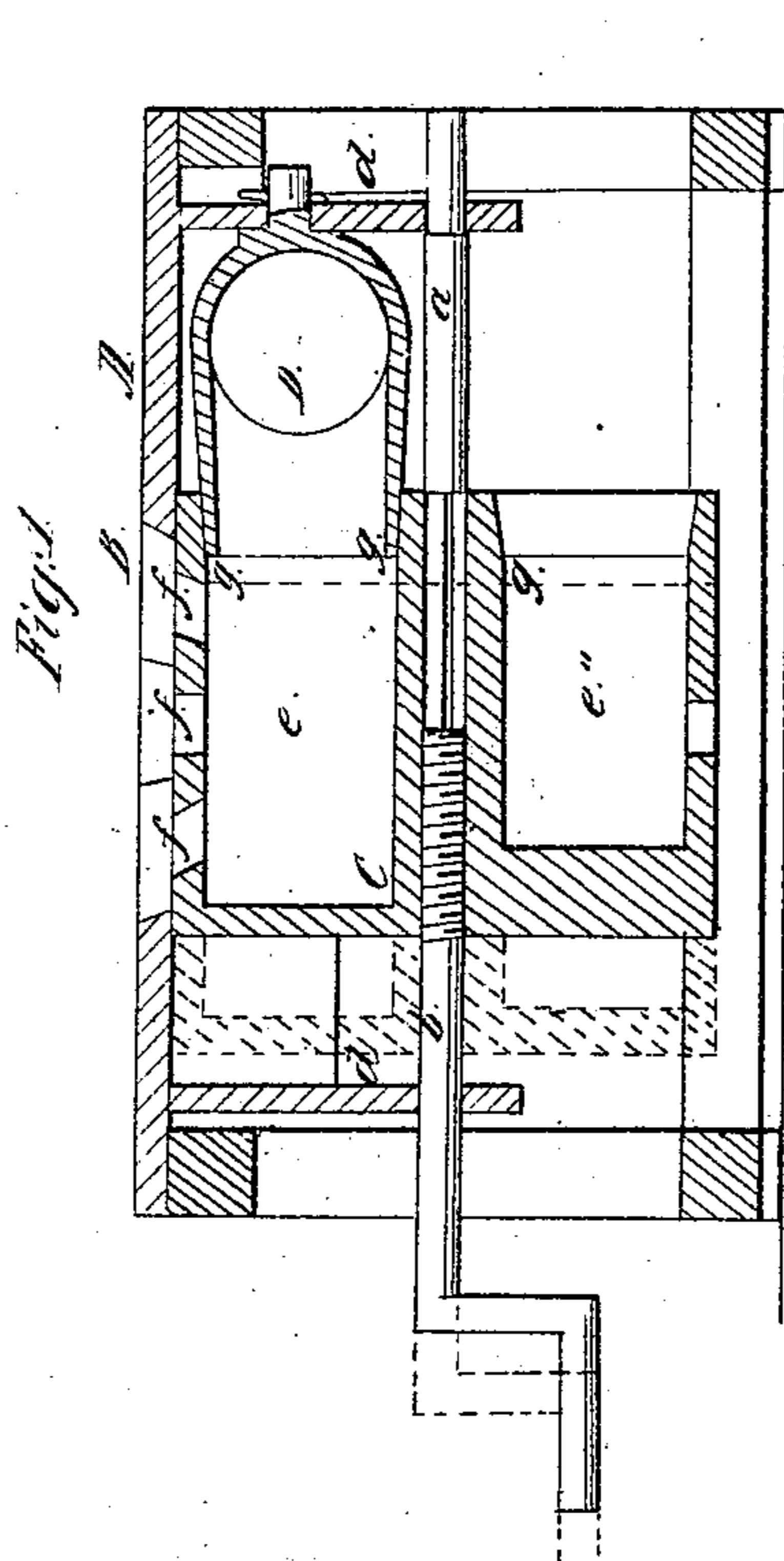
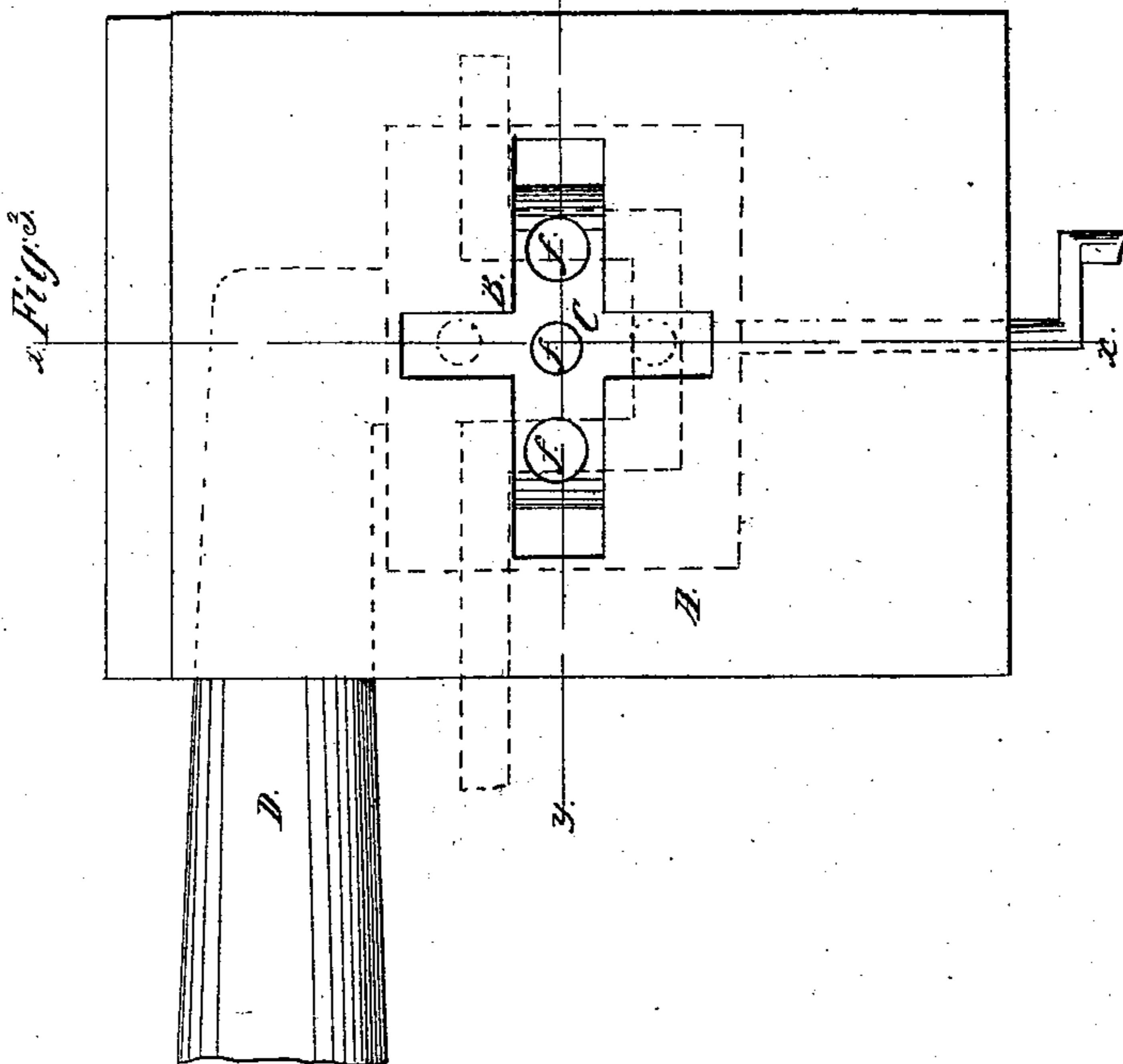
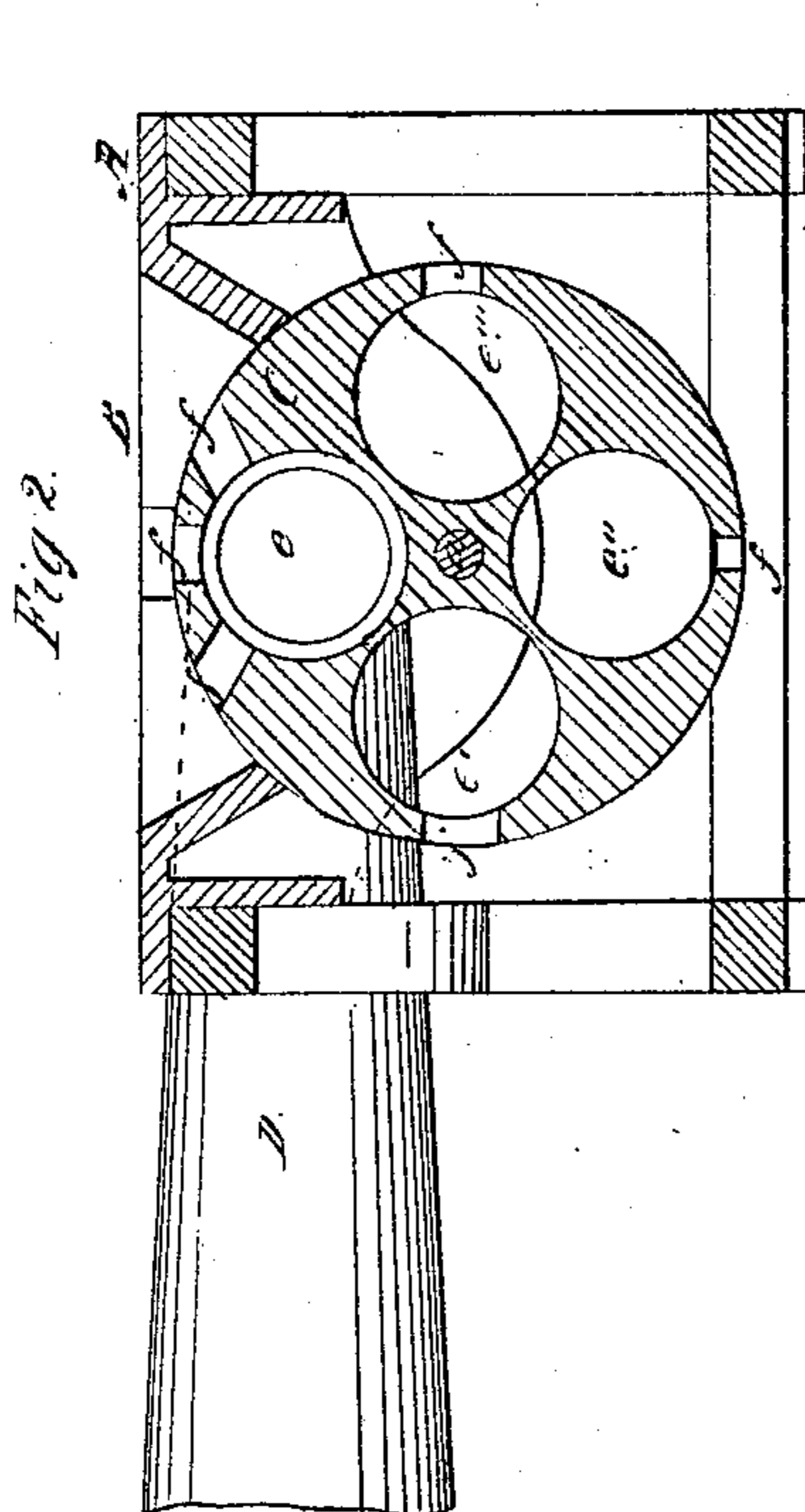


G. W. Dean,

Tuyere,

N^o 24,012.

Patented May 17, 1859.



Witnesses:

George B. Jackson.
Norman Goodman

Inventor:

George W. Dean

UNITED STATES PATENT OFFICE.

GEORGE W. DEAN, OF GLENS FALLS, NEW YORK.

TWYER.

Specification of Letters Patent No. 24,012, dated May 17, 1859.

To all whom it may concern:

Be it known that I, GEORGE W. DEAN, of Glens Falls, in the county of Warren and State of New York, have invented a new and Improved Twyer; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a longitudinal vertical section of my invention taken in the line *x, x*, Fig. 3. Fig. 2, is a transverse vertical section of the same, taken in the line *y, y*, Fig. 3. Fig. 3, is a plan or top view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a twyer by which the blast is placed under the control of the operator and made to act upon the fire in different ways to suit the character or nature of the work and thereby greatly facilitates its progress.

The invention consists in the employment or use of a rotating cylinder provided with a series of chambers having orifices of different sizes variously arranged and placed relatively with a blast pipe and an opening in the bed plate as hereinafter described whereby the desired object is attained.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A, represents a cast iron bedplate which is fitted on suitable masonry contiguous to a flue and forming a forge. The bedplate A, has a slot or opening B, made through it. This opening is in the form of a cross as shown clearly in Fig. 3. Below the bedplate A, a cylinder C, is placed, said cylinder having a shaft *a*, placed in one end of it and secured permanently therein, the opposite end having a crank shaft *b*, secured in it by a screw *c*. The shafts *a, b*, have their bearings in pendants *d, d*, attached to the under side of the bedplate, see Fig. 1. The cylinder C, has a series of chambers *e, e', e'', e'''*, made in it parallel with the axis. These chambers extend the length of the cylinder and are made concentrically around its axis, as shown clearly in Fig. 2.

D, is a blast pipe which receives the nozzle of the bellows. This blast pipe is fitted in the masonry, and is bent in elbow form, as shown by the dotted lines in Fig. 3, the

orifice of the pipe D, being within the plane of rotation of the chambers *e, e', e'', e'''*. Each chamber has a hole or holes *f*, made in its side, and these holes vary in size and are differently disposed. The cylinder C, is directly below the slot or opening B, so that the openings *f*, will come directly in line with it. The outer end of each chamber in the cylinder is made slightly flaring or bell-shaped and the inner end of the pipe D, is made taper, as shown at *g*, in Fig. 1.

The shafts *a, b*, are allowed to slide in their bearings to a certain extent.

The operation is as follows:—The blast is forced through the pipe D, and is made to enter either of the chambers of the cylinder C, as may be desired. If a small concentrated blast is required the cylinder C, is turned until the chamber *e''*, is brought in line with the end of the pipe D, and the cylinder turned so as to enable either of the chambers *e', e'''*, to be fitted to the pipe, said chambers having holes larger than that of *e''*. If two or more blasts are required, the chamber *e*, is fitted on the pipe, see Fig. 1. The holes *f*, may be arranged and disposed in various ways so that the blast may act on the fire according as the nature of the work may require, the holes in one of the chambers being in line with one portion of the slot or opening B, and another having its holes in line with the other part. By this arrangement the blast is placed under the complete control of the operator and the work will be greatly expedited thereby. In Fig. 3, a crank shaft is shown in red, and it will be seen that two of the holes *f*, of chamber *e*, are brought in line with two sides of the crank, so that the blast will be made to act in the most efficient manner to further the desired work, to wit, the heating of the shaft.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is,

The adjustable rotating chambered cylinder C, arranged substantially as shown with the slot B, in the bed plate A, and relatively with the blast pipe D, to operate as and for the purpose set forth.

GEORGE W. DEAN.

Witnesses:

GEORGE E. JACKMAN,
HEMAN GOODMAN.