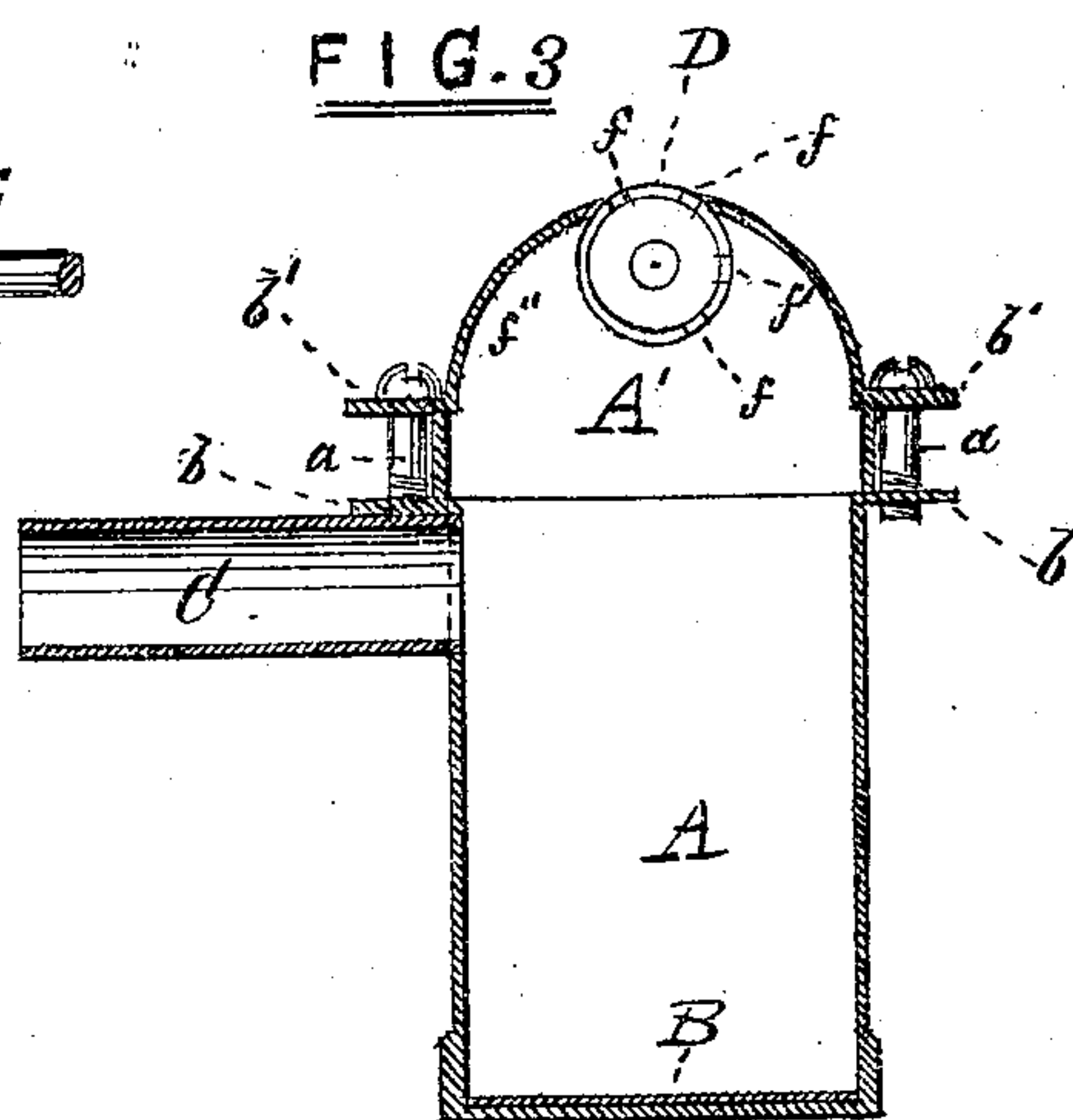
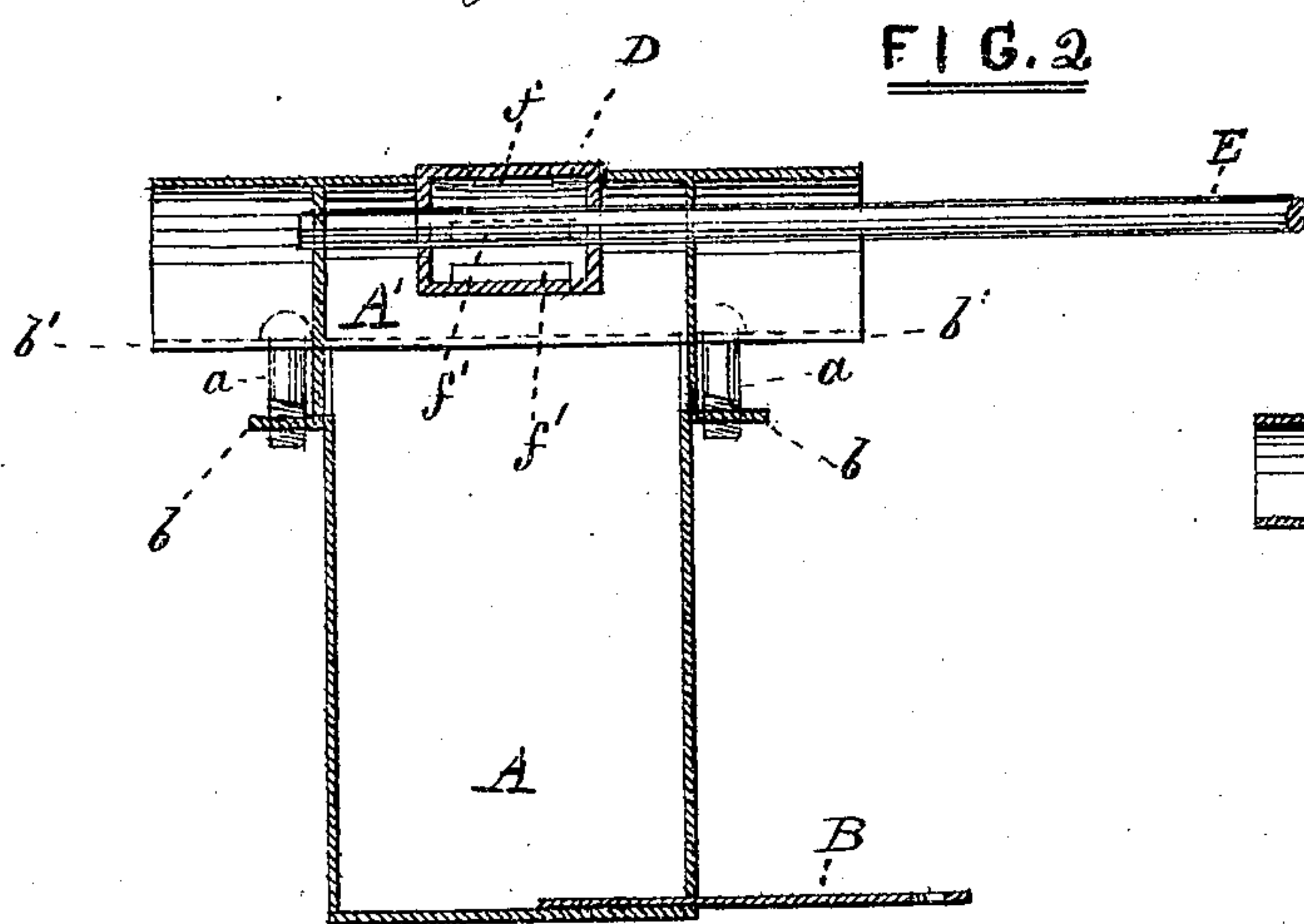
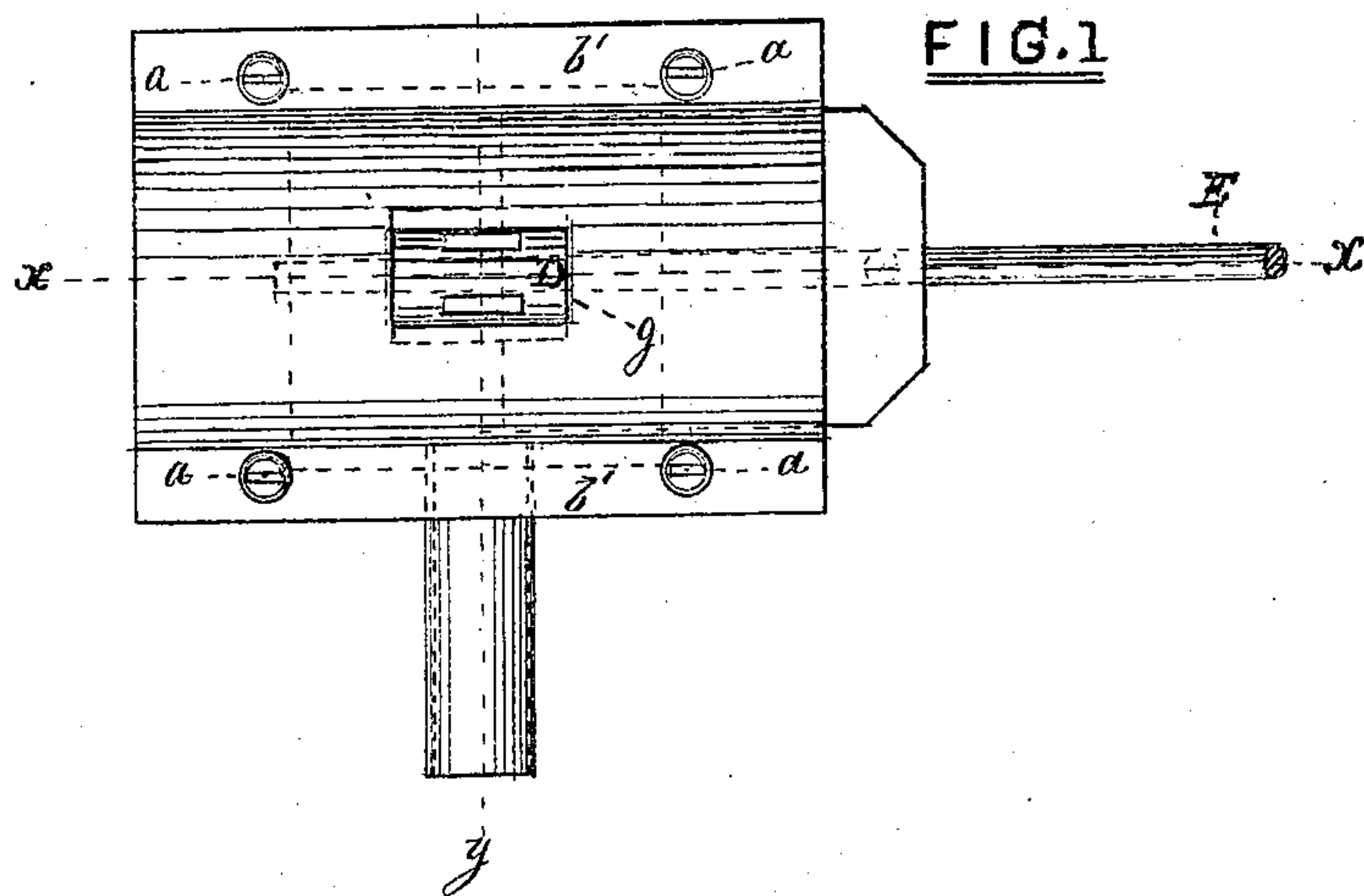


WILLIAM WERTS.
Improvement in Tuyeres.

Patented Feb. 27, 1872.

No. 124,100.



WITNESSES.

Sam. L. P. Mindell
Sam. P. Mindell

INVENTOR.

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By his Atty.
Stephen Ustick

UNITED STATES PATENT OFFICE.

WILLIAM WERTS, OF CAMDEN, NEW JERSEY.

IMPROVEMENT IN TUYERES.

Specification forming part of Letters Patent No. 124,100, dated February 27, 1872; antedated February 26, 1872.

SPECIFICATION.

I, WILLIAM WERTS, of the city and county of Camden and State of New Jersey, have invented certain Improvements in Tuyeres, of which the following is a specification:

My invention consists of a cylindrical valve, provided with air-passages or slots of unequal areas, in combination with a cylindrical arched covering, which serves as a hearth; the said cylinder has a central rod whereby it is revolved to bring one or more of the air-passages within the opening of the cover or hearth to produce the requisite draught, as hereinafter described.

In the accompanying drawing which makes a part of this specification, Figure 1 is a plan of the improved tuyere. Fig. 2 is a vertical section at the line *x x* of Fig. 1. Fig. 3 is a section at the line *y y* of Fig. 1.

Like letters in all the figures indicate the same parts.

A is the lower portion of the air-chamber, and A' the upper portion of the same. The part A is provided with a bottom slide, B, which is withdrawn for cleaning out the air-chamber; at other times it remains closed. C is a portion of the conducting-pipe for supplying the chamber with air. The part A' of the air-chamber is detachable from the part A, for convenience of construction, and is connected with it by means of the screw-bolts *a a a a*, which pass through the flanges *b' b'* of the former and the flanges *b b* of the latter. The part A', above the flanges *b' b'*, is of rounded form, for the purpose of having but a small portion of its surface exposed to the fire. The greater portion, by being below the level of the central part, is covered by ashes or cinders and thus the heating of the same is prevented. D is a revolving cylinder on the shaft E, that is supported by means of the vertical ends *e* of the part A', as seen in Fig. 2. One end

of the shaft is projected far enough for convenience in turning the cylinder around in its adjustment, and is provided with a crank (not seen in the drawing) for that purpose. The cylinder D has a chamber, D', which has openings, *f*, of variable area, that are caused to communicate at pleasure with the opening *g* of the part A' of the air-chamber, for the purpose of regulating the strength of the blast.

In the drawing five openings are shown in the cylinder. Two openings, *f f*, are seen in the part of the cylinder which passes through the opening *g* of the top of the part A'; they are of about the same width as the openings *f' f'*, but are shorter than the latter so that the strength of the blast may be varied in changing the position of the cylinder. The area of the opening *f''* varies from the combined area of either pair of openings *f* and *f'*. Any number of openings, of variable area, may be made to the cylinder D for regulating the blast. The shaft E of the cylinder D is provided with index figures, which indicate, as they are brought into position with the hand F, what openings of the cylinder communicate with the fire.

I do not claim the lower part A of the air-chamber, as that is not new; but

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

The combination of the air-chamber A with its semi-cylindrical arched covering, to serve as a hearth, the valve-cylinder D provided with air-passages or slots of unequal areas, and the rod E, or its equivalent, for revolving said valve-cylinder, substantially as described.

In testimony that the above is my invention I have hereunto set my hand and affixed my seal this 6th day of July, 1871.

WILLIAM WERTS. [L. S.]

Witnesses:

WM. LARZELERE,
STEPHEN USTICK.