

H. Aland,
Hot Blast Over.

No. 87,456,

Patented Mar. 2, 1869.

Fig. 1.

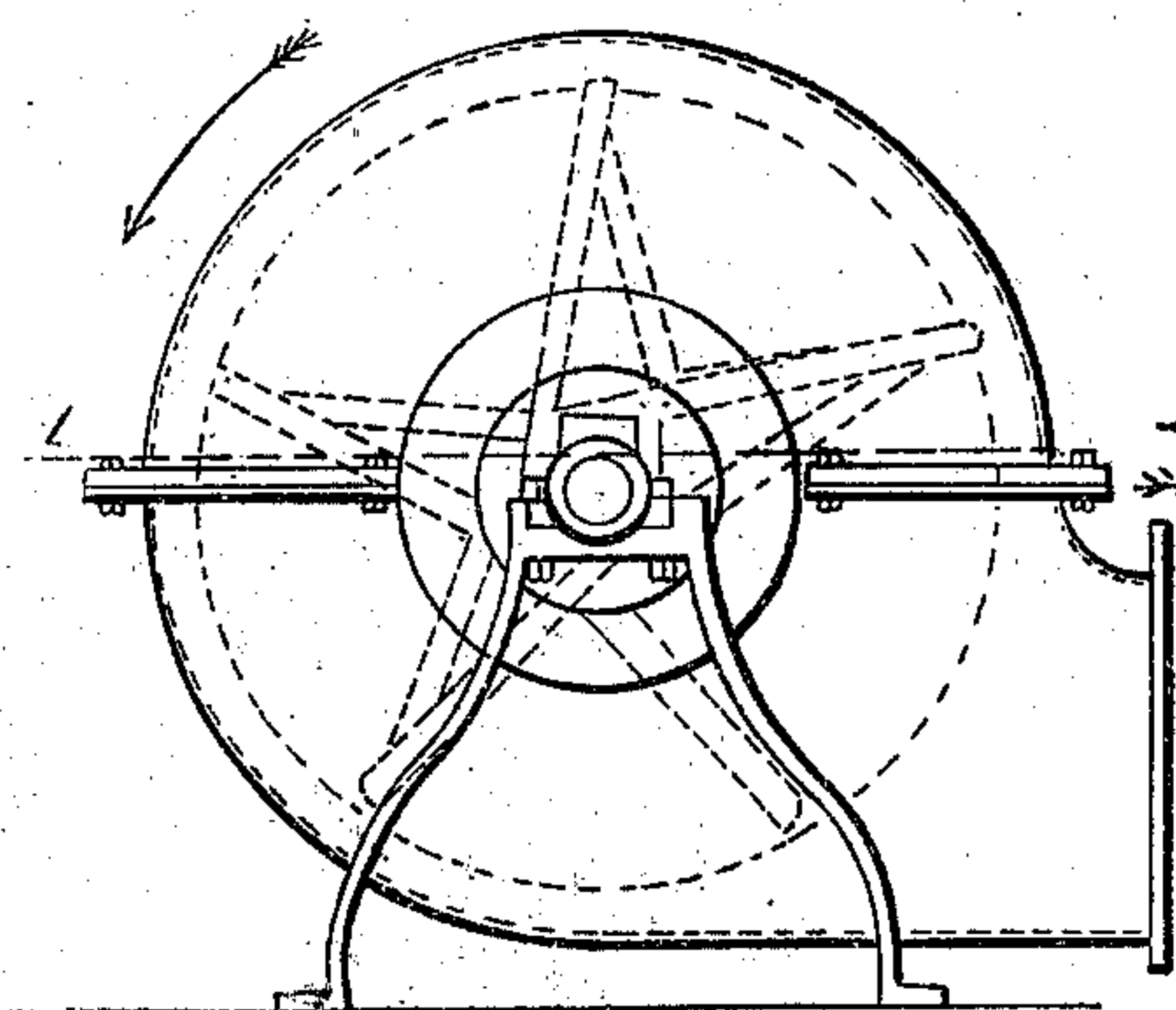


Fig. 4.

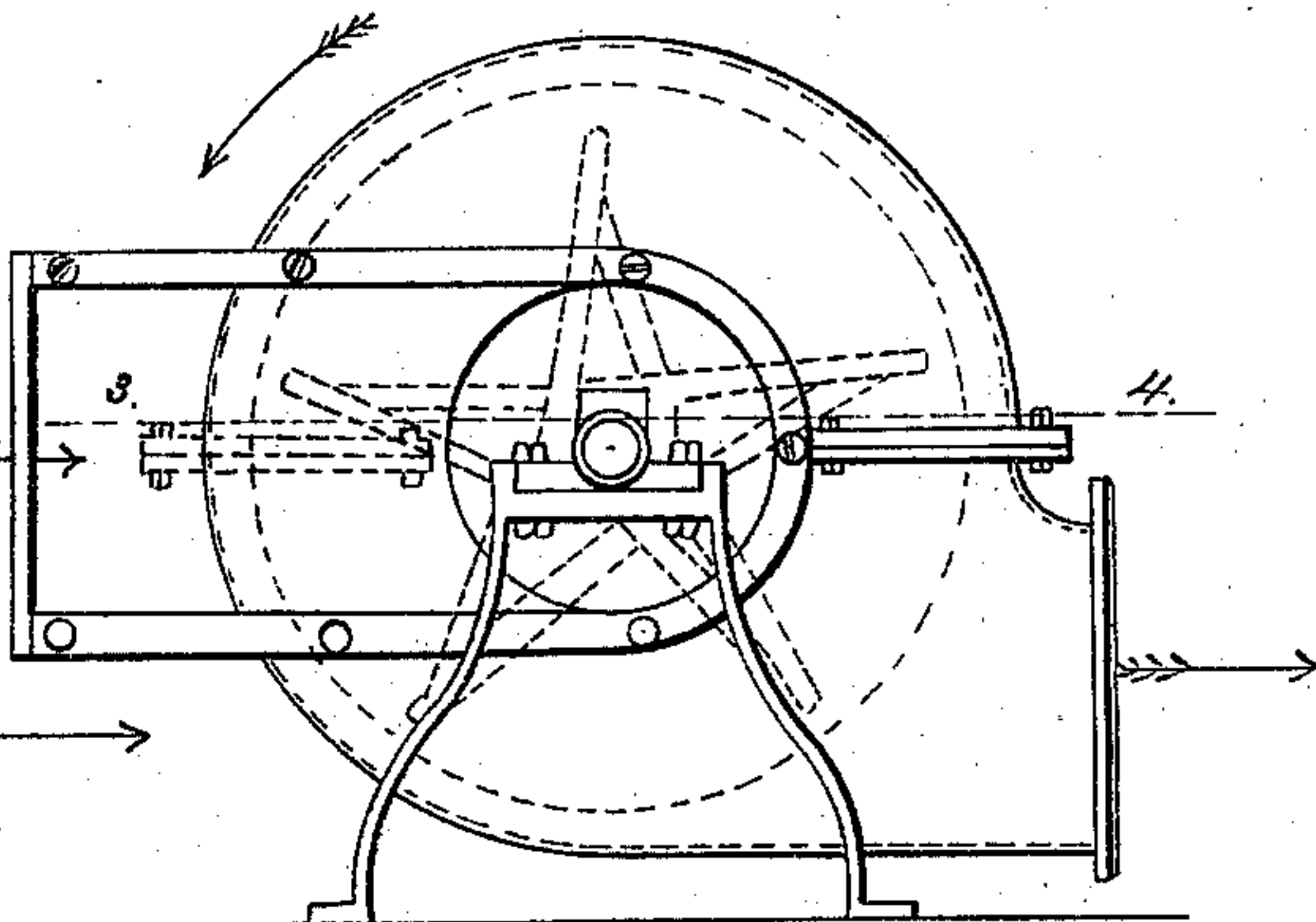


Fig. 2.

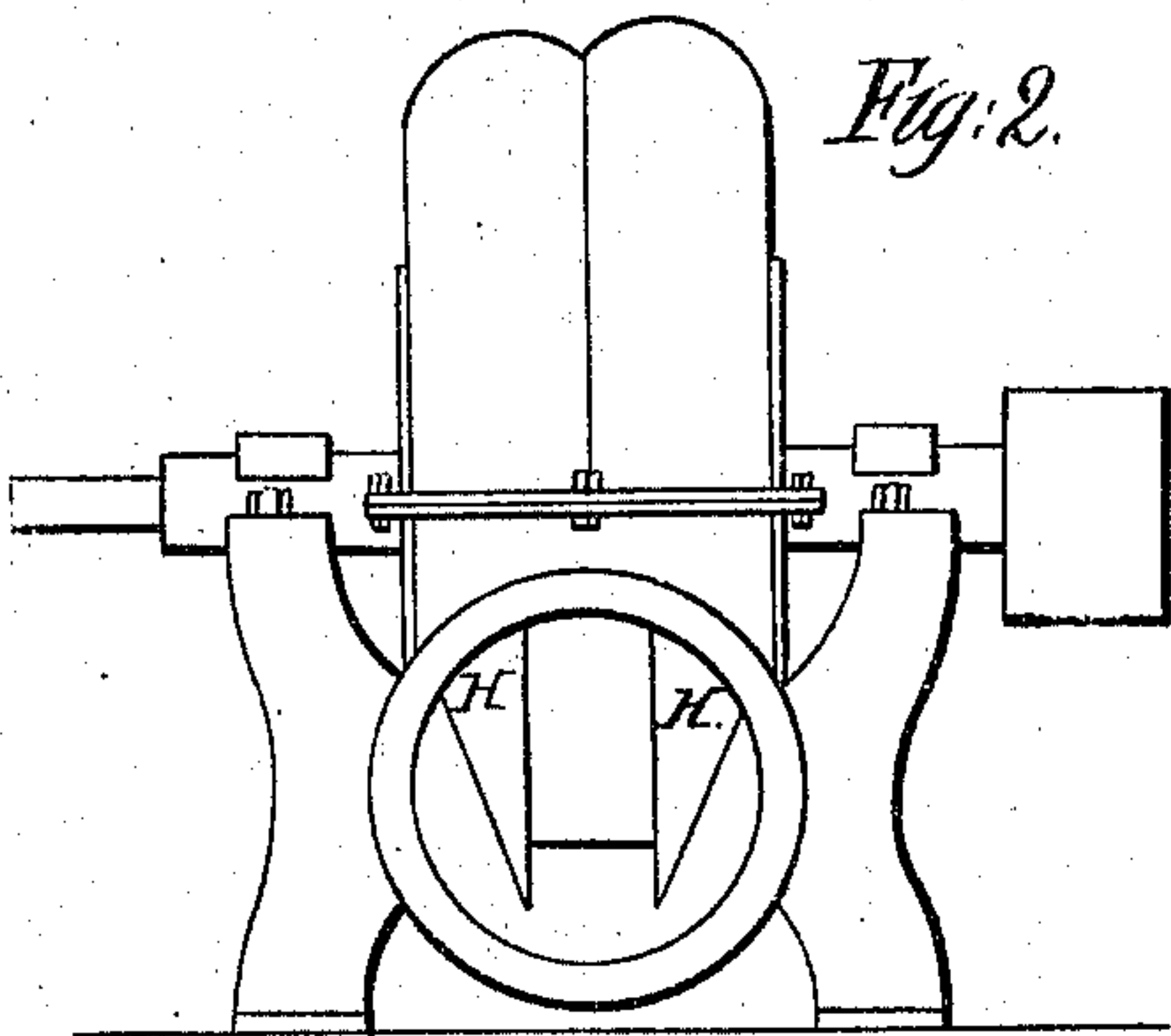


Fig. 5.

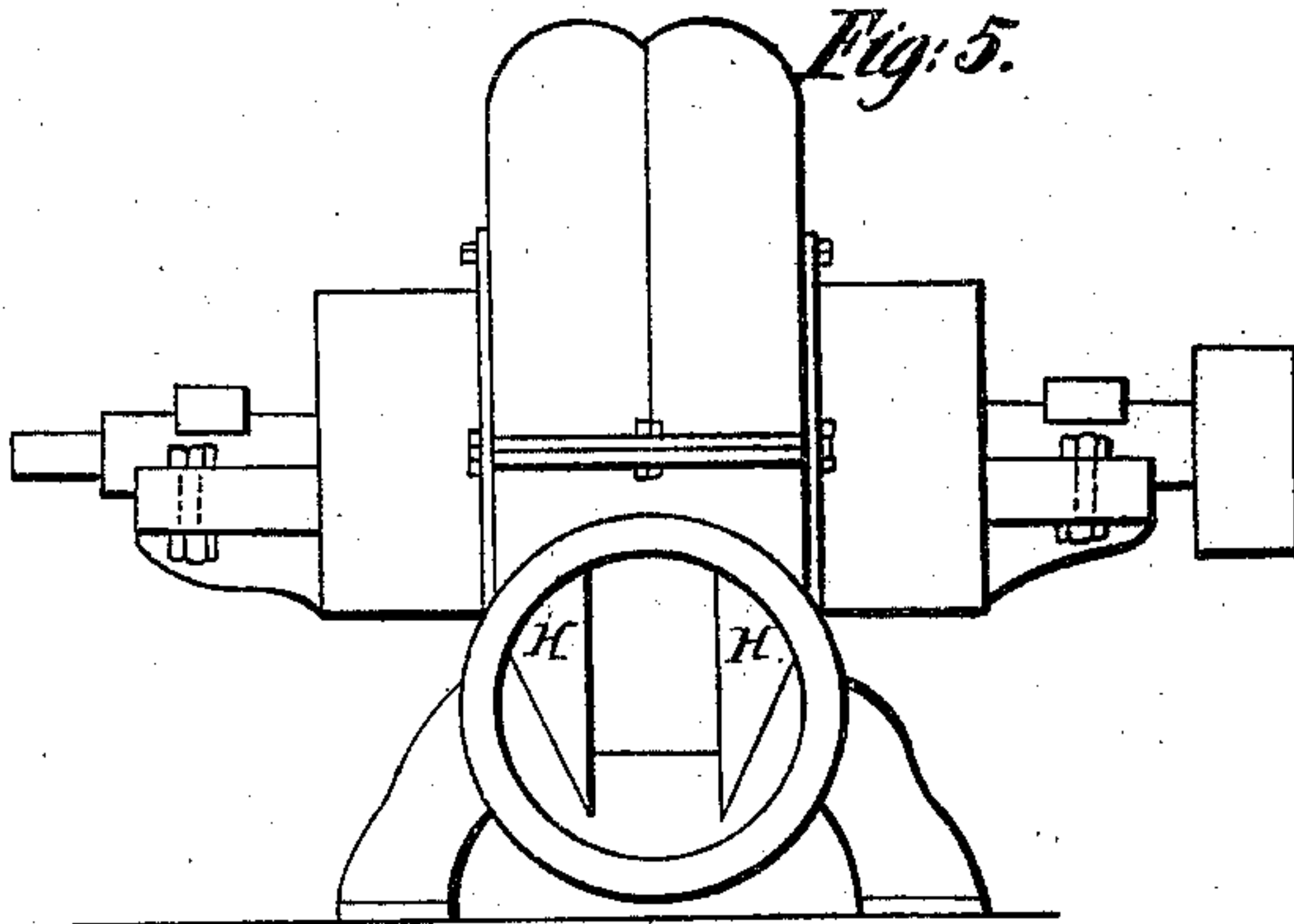


Fig. 3.

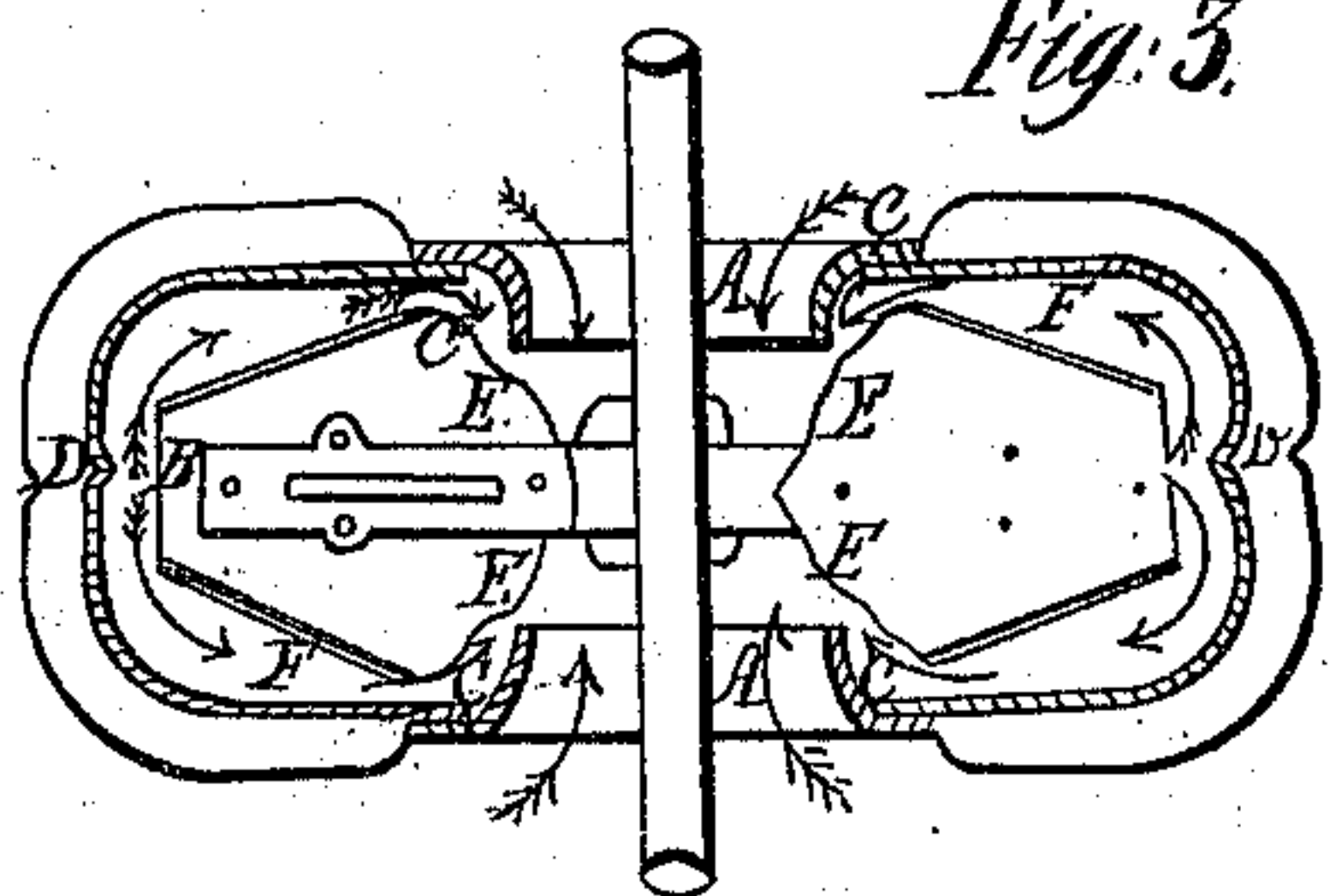
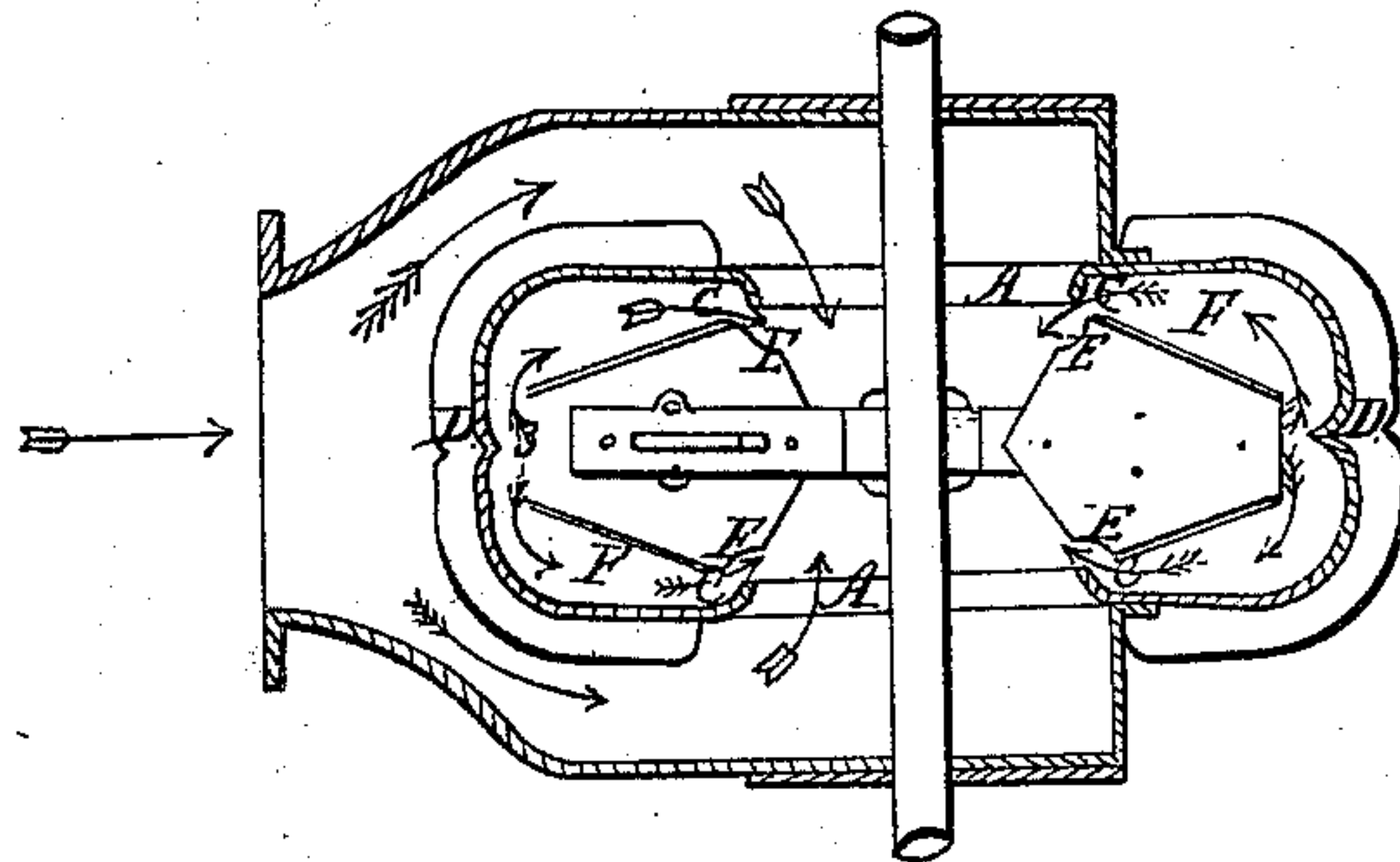


Fig. 6.



Witnesses:
George M. Weaver
John G. Crocker

Inventor:
Henry Aland
By Samuel Aland
His Attorney

United States Patent Office.

HENRY ALAND, OF LONDON, ENGLAND, ASSIGNOR TO SAMUEL
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Letters Patent No. 87,456, dated March 2, 1869.

IMPROVED ROTARY BLOWING-FAN FOR FURNACES, GAS-WORKS, &c.

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

To all to whom it may concern :

Be it known that I, HENRY ALAND, of 18 Richard street, Roupell street, Lambeth, London, in the county of Surrey, iron-founder, have invented new and useful Improvements in Rotary Fans for Producing Blast for Furnaces and other purposes, which improvements may also be applied to air and gas-exhausters; and I do hereby declare the nature of my said invention, and in what manner the same is to be performed, to be particularly described in and by the following statement, reference being had to the drawing herewith annexed, and to the letters and figures marked thereon; that is to say—

This improvement consists in the formation of a space between the sides of the fan-disk and outer casing laterally on each side; also the introduction of a conical ring round the periphery of the inlet-openings, so as to direct a given pressure of air or gas from the discharge-side to the supply, as shown in the accompanying drawings.

Figure 1 is a side elevation of blowing-fan.

Figure 2, a front elevation, showing the discharge.

Figure 3, a sectional plan, taken in the line 1-2 of fig. 1.

Figure 4 is a side elevation of the fan in its application to an exhauster.

Figure 5, a front elevation of the same, and showing the discharge.

Figure 6, a sectional plan through the line 3-4 in fig. 4.

Fig. 3. A A are the inlet-openings or supplies from the surrounding atmosphere.

E E E E, the inlet-openings of fan-disk.

B B is the discharge of fan-disk inside of casing F F.

C C C C, the conical rings, round the periphery of

the inlet-openings, leaving a space between the fan-disk and cones, so as to direct a supply of air or gas from the discharge-side B B to the centre openings E E E, of a higher density than the surrounding atmosphere.

It will thus be seen that a continuous pressure of air or gas will be directed from the periphery or discharge of the fan-disk, and injected, at the increased pressure, into its centre, as shown by the darts inside of fig. 3, thereby forming a better impinging body, by which to produce a more perfect vacuum for the introduction of the supply, and increase the amount of work done.

D D also show an internal projection, round the inside of case, for dividing and grinding the fluid with regularity, in a direction toward the cones C C C C.

From the foregoing explanation of its construction, it will now be understood that it can be applied to all disk-fans, single or compound, with conical side plates to the blades, as shown in fig. 2, H' H, or with ordinary flat side-plates.

Having now described the nature of my invention, and in what manner the same is to be performed, I wish it to be understood that what I claim, is—

The directing a given pressure from the discharge of the fan-disk periphery, and injecting it into its centre, as hereinbefore described.

In witness whereof, I, the said HENRY ALAND, have hereunto set my hand and seal, this 29th day of September, A. D. 1868.

HENRY ALAND. [L. s.]

Witnesses:

EDW'D HYDE,

ROBT LINKSON.