

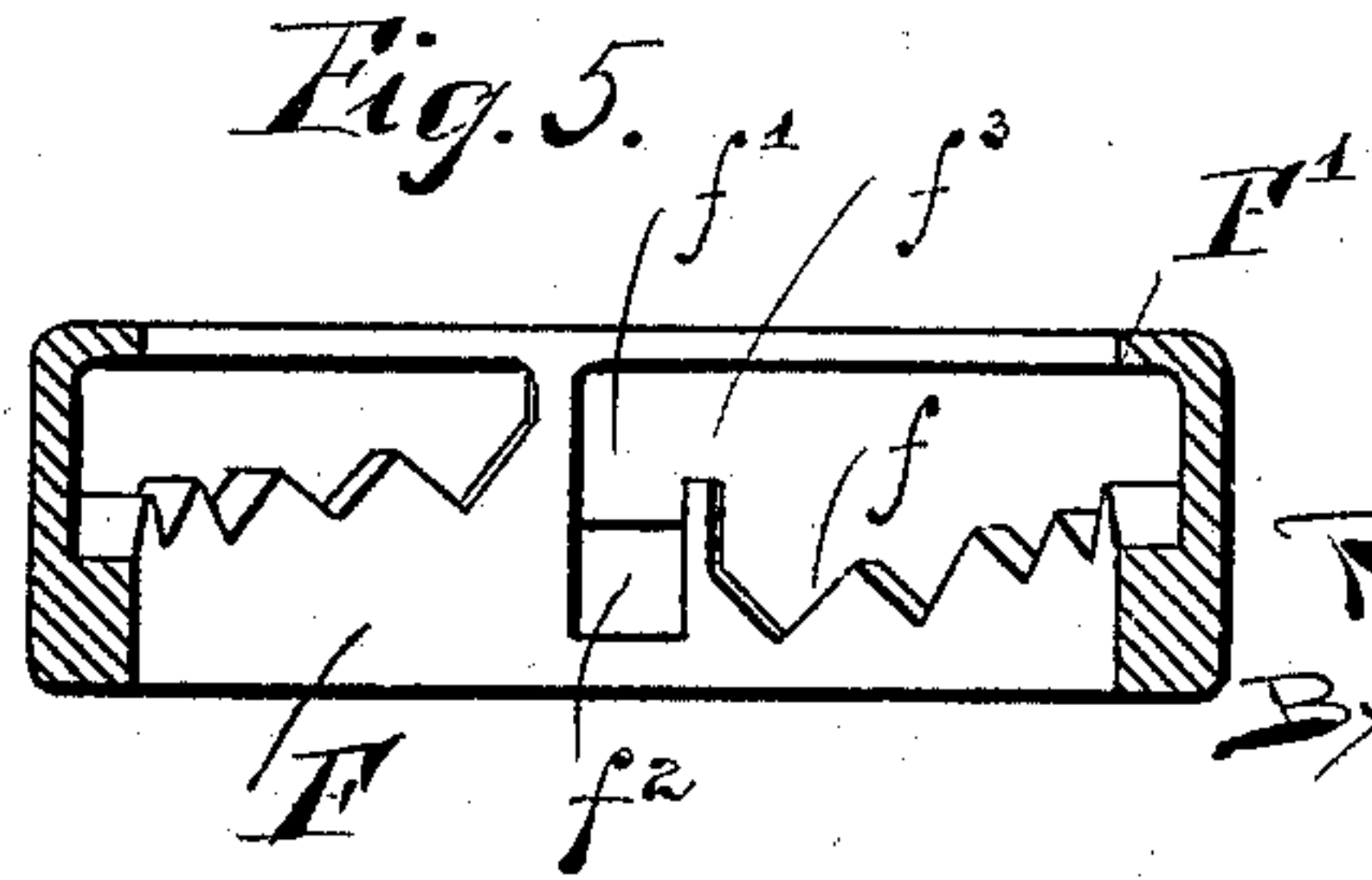
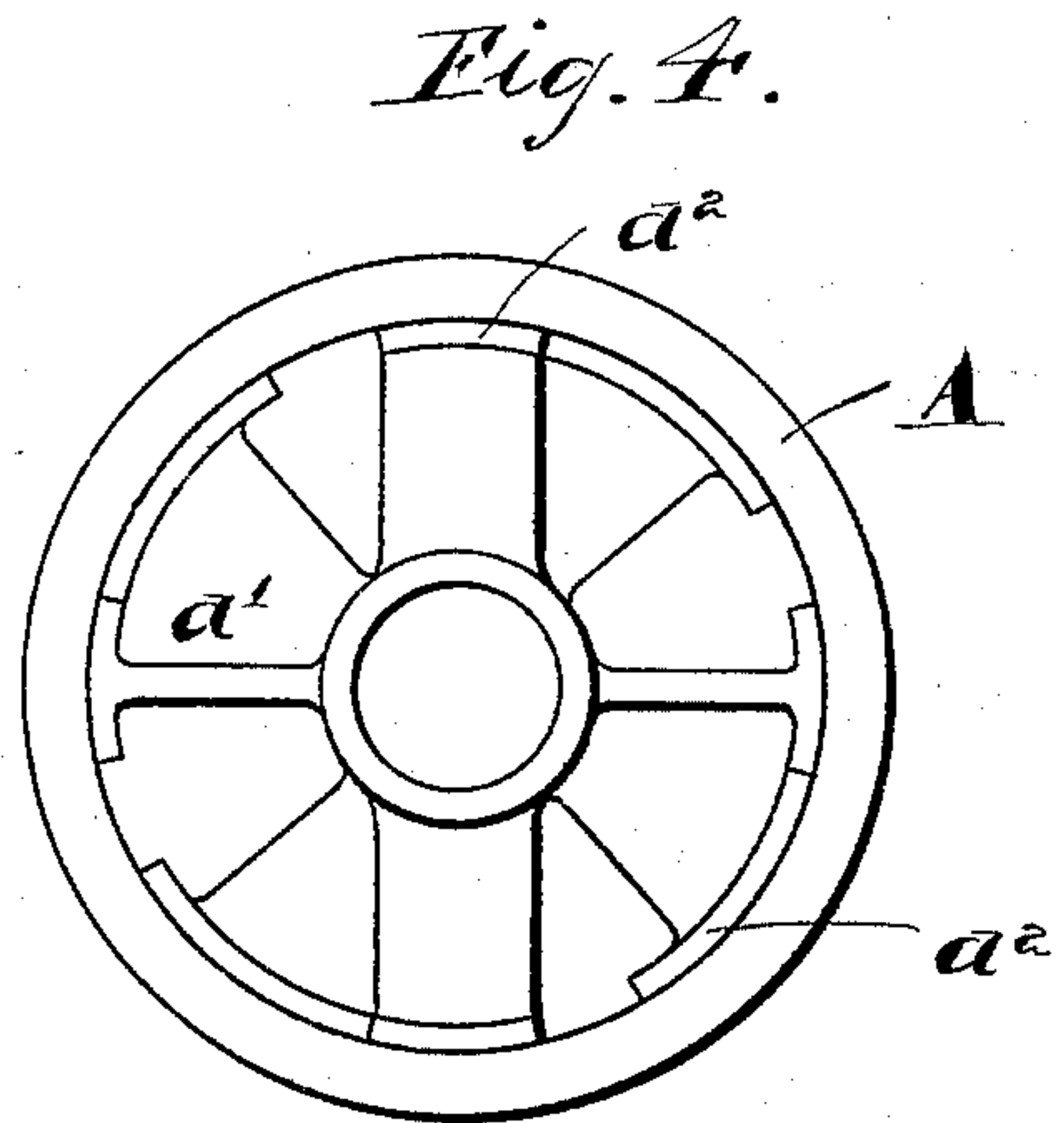
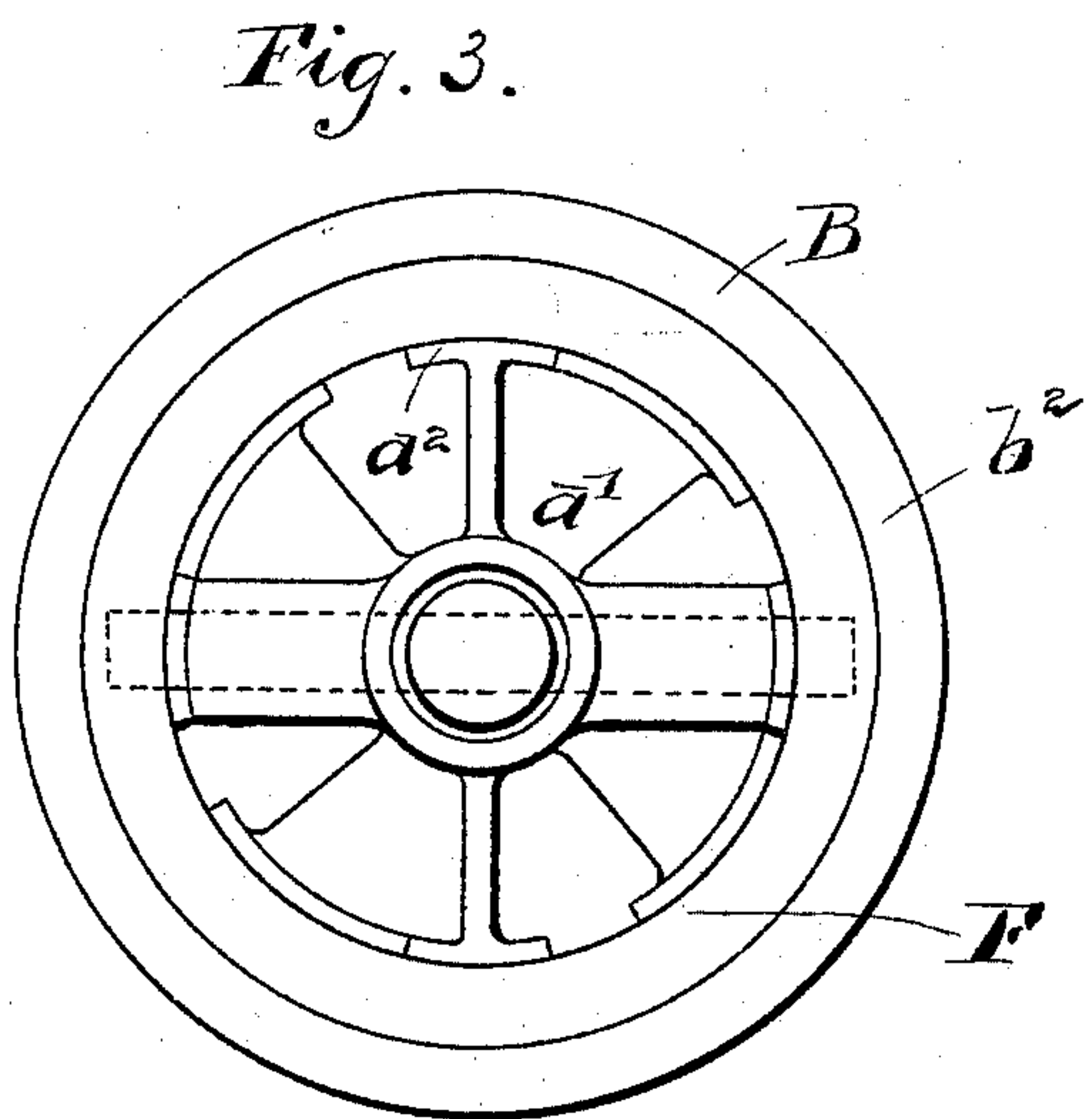
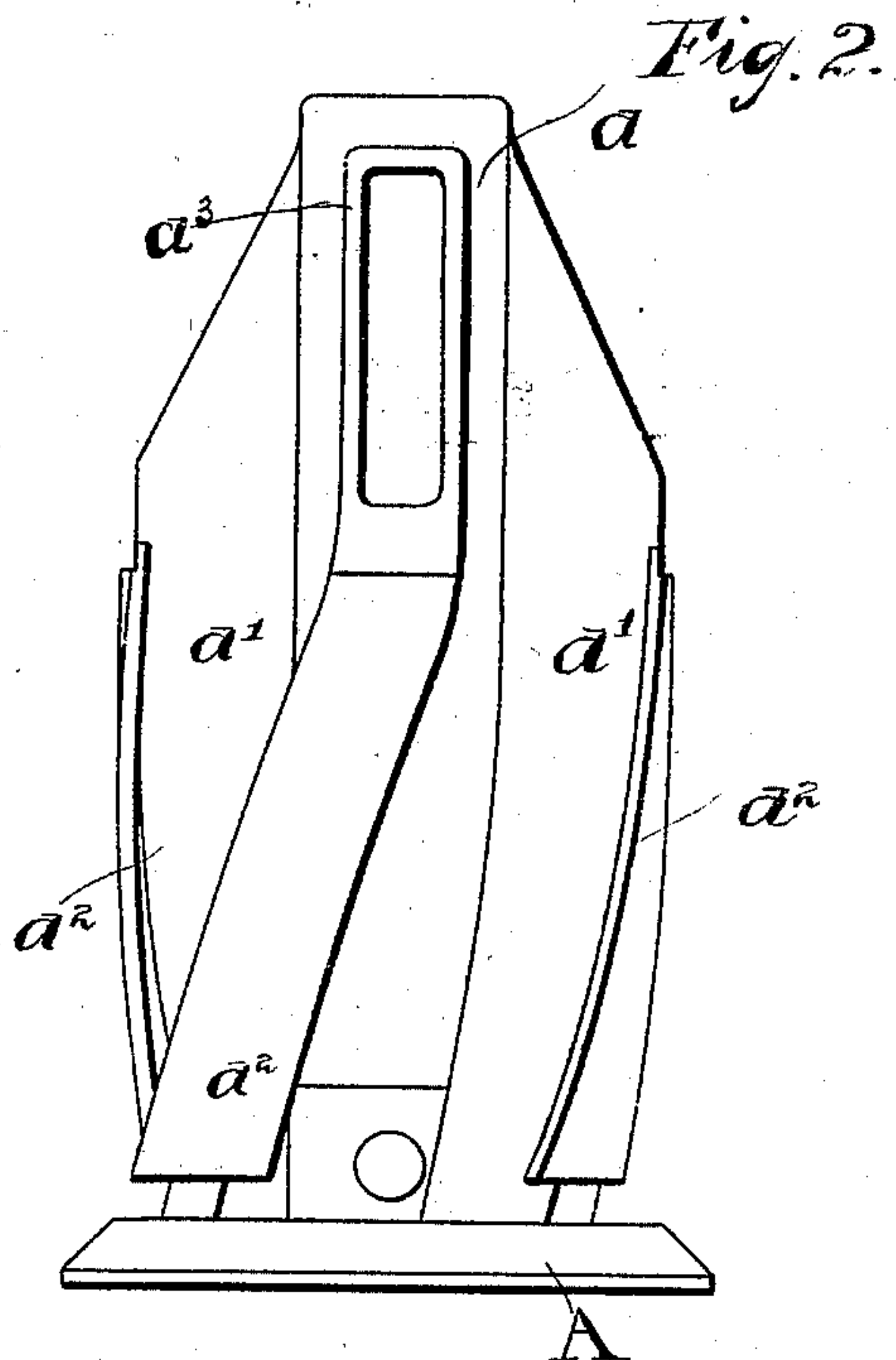
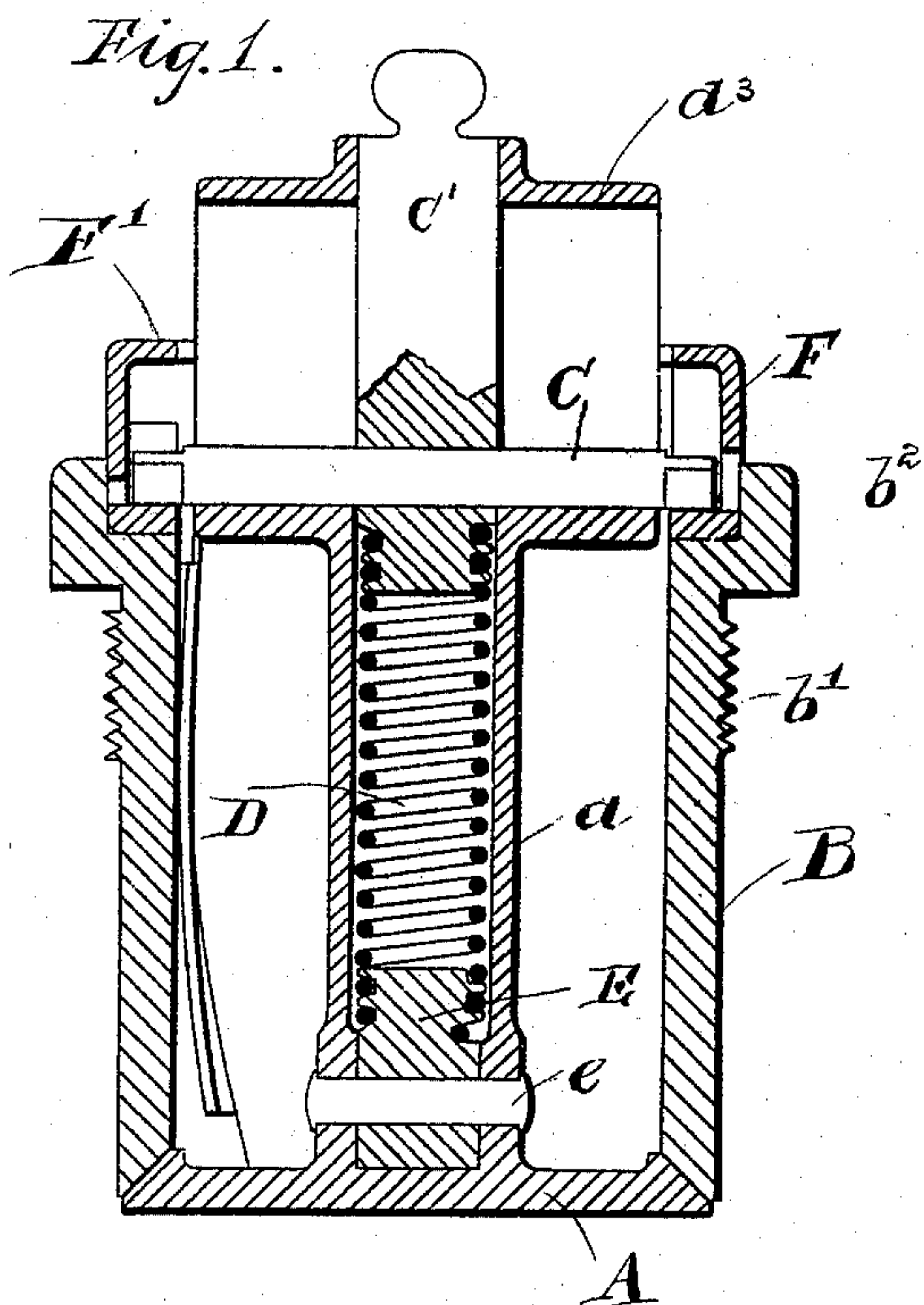
No. 638,142.

Patented Nov. 28, 1899.

P. H. REARDON.
VALVE.

(Application filed May 10, 1899.)

(No Model.)



Witnesses
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UNITED STATES PATENT OFFICE.

PATRICK H. REARDON, OF SAN FRANCISCO, CALIFORNIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 638,142, dated November 28, 1899.

Application filed May 10, 1899. Serial No. 716,310. (No model.)

To all whom it may concern:

Be it known that I, PATRICK H. REARDON, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to valves, more especially to those intended to act as inlet-valves for air-compressors.

The invention will be more fully explained by reference to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the device. Fig. 2 is an elevation of the valve proper. Fig. 3 is a plan view of Fig. 1. Fig. 4 is a plan view of Fig. 2. Fig. 5 is a sectional elevation of the tension-ring.

In the class of devices in which these valves are particularly designed to operate it is of great importance that in case of breakage no part shall fall or be drawn into the cylinder by the ingoing air. The clearance-spaces in compressors being very small, the introduction of a piece of a broken valve is apt to be productive of a very serious breakdown, if not a total wreck, of the device.

To provide against such accidents is one of the objects of the present invention, while also providing for exceptionally large inlet area and even wearing of the valve and seat.

As shown in Fig. 1, I provide the valve A with a hollow stem a , having radial, preferably spiral, wings or vanes a' , preferably of an even number. These wings are provided with transverse bearing flanges or ribs a^2 . The upper part of the hollow stem is provided with a radial cross-arm a^3 , longitudinally slotted for the reception and guidance of a yoke-pin. The valve A, with its ribbed wings, is in a casing B, provided with a suitable seat, with which the valve A engages. It is also provided with suitable means for securing it in position in the compressor, shown in the drawings as the screw-thread b' and flange b^2 .

C is a yoke-pin or cross-rod passing through the slotted cross-arm a^3 of stem a . In the hol-

low stem a is a slidable plug C' , having attached to it a tension-spring D. The other end of the spring D is attached to a plug E, secured in place by a pin e , passing through stem a and plug E. The yoke-pin is preferably of square or flat-sided section. It passes through the plug C' and rests in a loose ring F of peculiar construction, which is shown in Figs. 1, 3, and 5. On the inner surface of this ring is an inner ring or raised surface of metal, the upper edge of which is zigzag, notched, or stepped, forming two notched reverse inclines, the notches on each corresponding, notch for notch, with those of the other, the said notches forming seats of equal height for each end of the yoke-pin or cross-bar C. The inclines are preferably each a little short of half the inner circumference of the ring, thus leaving the space f' for the entrance of the yoke-pin C. A hole f^2 radially through the ring permits the pin C to be passed into space f' . The material of the ring surrounds the hole f^2 on three sides, a space f^3 being left on the upper part of one side of the pocket thus formed to permit the pin being carried by an arc movement of its ends onto the stepped inclines. Around the upper edge of the ring F is an inwardly-projecting flange F' to prevent the pin C jarring out.

The ring F is preferably let into the casing B, as shown in Fig. 1, the flange b^2 being counterbored for this purpose.

In practice the spiral form of the wings or vanes a' causes the valve to turn by the impact of the rushing air. This form, with the flanges a^2 , provides a good bearing or guide for the valve in the casing. The spiral form of the wings and the turning of the valve keep the bore of the casing clear, smooth, and free from grooves.

More or less tension may be put upon the spring D by moving the yoke-pin C into a higher or lower notch of the incline f .

The form of the ring F makes it practically impossible for the pin C to jar out.

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

1. In a spring-actuated valve, a tension-

ring provided with a notched incline, means to connect the spring adjustably therewith, an inwardly-projecting safety-flange whereby the spring connection is guarded.

- 5 2. In a spring-actuated valve, a tension-ring provided with a series of steps, a yoke-pin connected with the spring, resting upon

said steps and a flange on the ring to prevent the pin from leaving the ring.

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Witnesses:

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