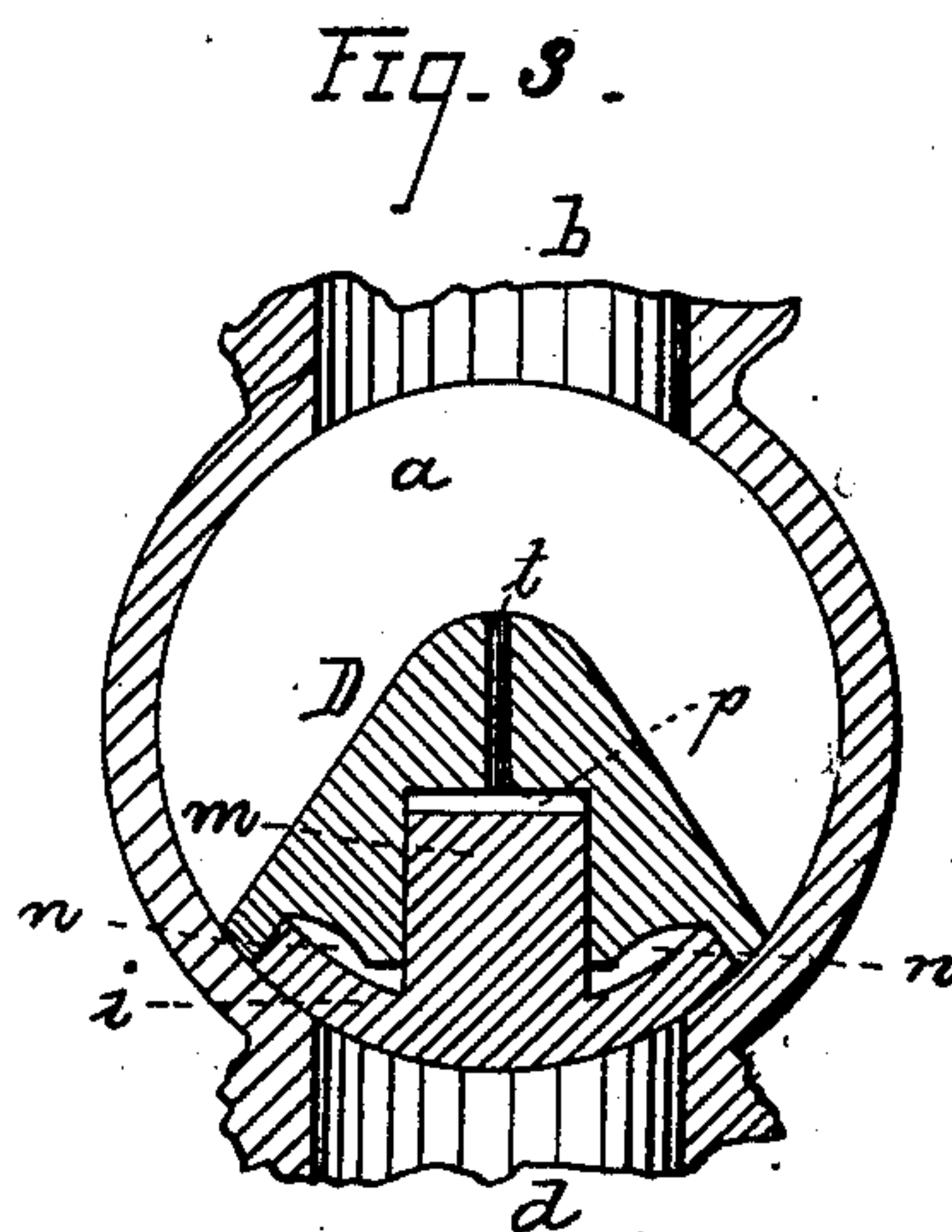
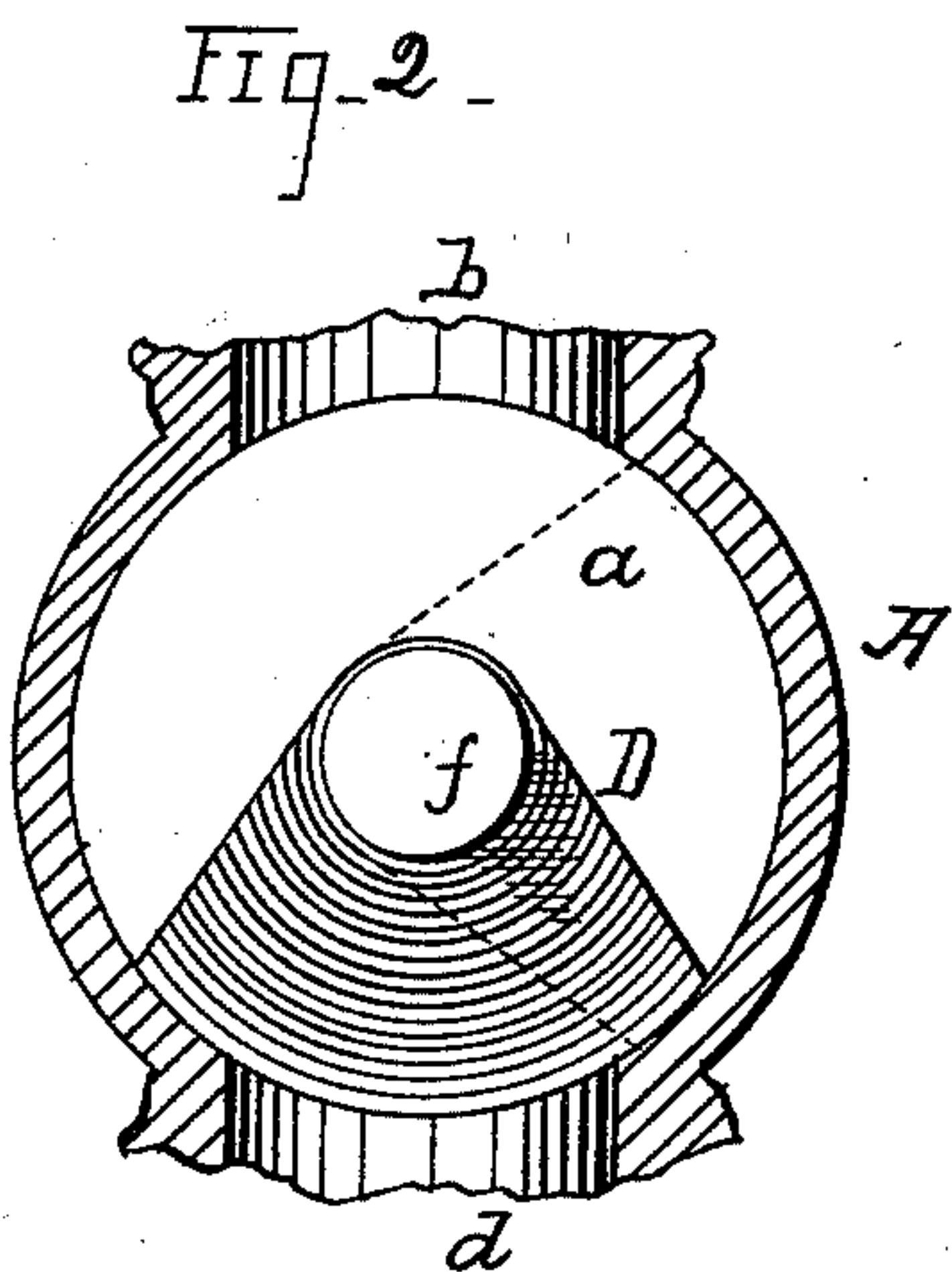
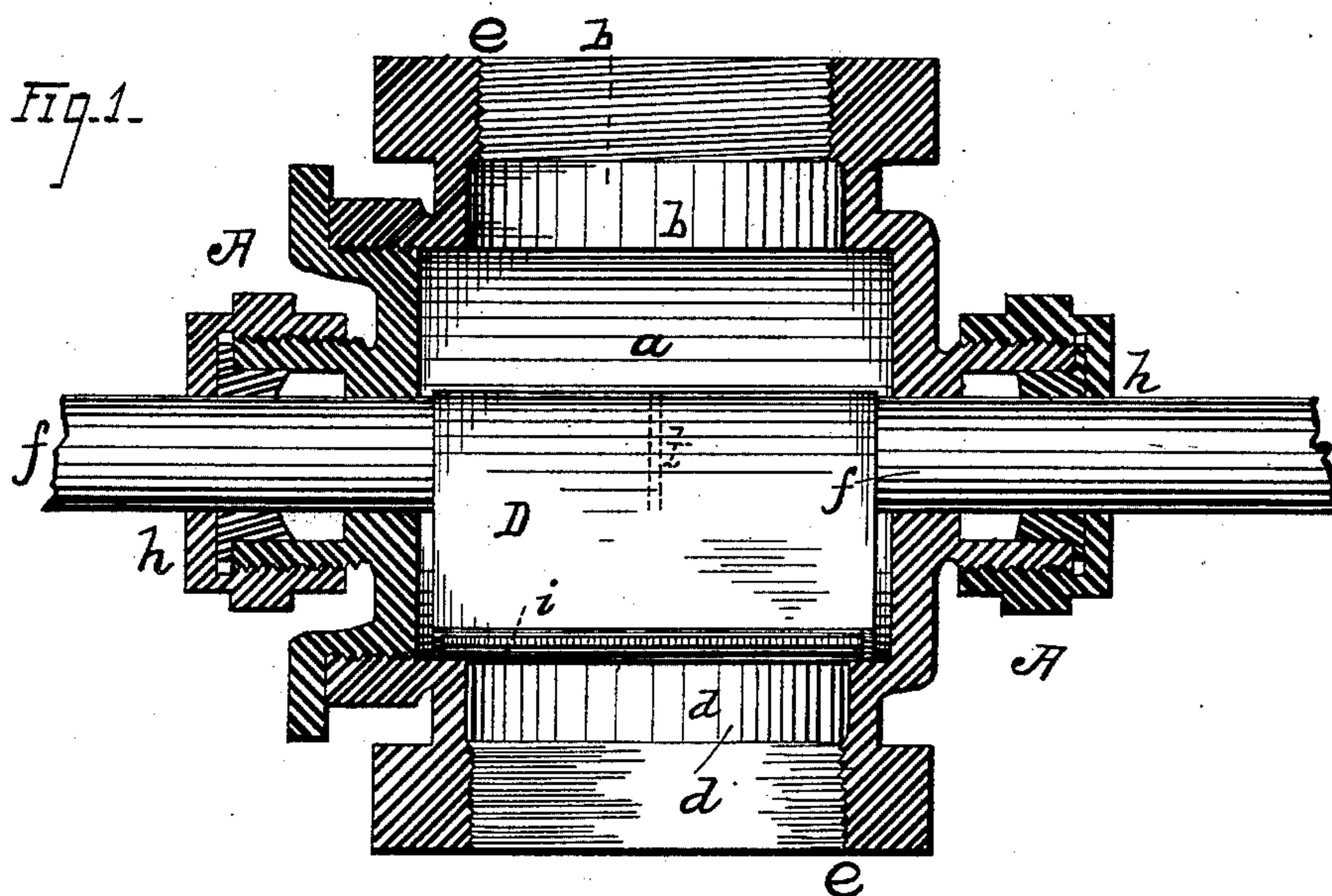


(No Model.)

T. E. BARROW.
Valve for Steam Engines.

No. 232,230.

Patented Sept. 14, 1880.



Witnesses;
Chas. C. Gill
John R. Kerr.

Inventor;
Thomas E. Barrow,
By his attys,
Cox & Cox.

UNITED STATES PATENT OFFICE.

THOMAS E. BARROW, OF MANSFIELD, OHIO, ASSIGNOR OF ONE-HALF OF
HIS RIGHT TO HUBBARD D. B. WILLIAMS, OF SAME PLACE.

VALVE FOR STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 232,230, dated September 14, 1880.

Application filed May 24, 1880. (No model.)

To all whom it may concern :

Be it known that I, THOMAS E. BARROW, of Mansfield, in the county of Richland and State of Ohio, have invented a new and useful Improvement in Valves for Steam-Engines, of which the following is a specification, reference being had to the accompanying drawings.

The invention relates to an improvement in valves for steam-engines; and it consists in a case of appropriate construction containing a quadrangular-shaped valve made a part of or mounted upon a stem, the curved exterior face of the valve being of a separate piece from and set in grooves in the main portion of the same and capable of adjustment by the steam to closely impinge the wall inclosing it.

The construction of the valve will be readily understood from the detailed description hereinafter presented.

The object of the invention is to provide a valve of simple construction which will effectually cut off the passage of steam when desired, and in the employment of which the head of steam upon it will exert but slight resistance when the stem to which the valve is secured is turned.

Referring to the accompanying drawings, Figure 1 is a central vertical longitudinal section of a valve embodying the elements of the invention. Fig. 2 is a transverse section of the casing of same, showing the end of the valve. Fig. 3 is a vertical transverse section through the center of the valve.

A indicates the casing, having a cylindrically-shaped interior or cavity, *a*, which is supplied at its upper portion with the inlet *b* and at its lower with the outlet *d*. The outlet *d* and inlet *b* are, in the present instance, oblong, but may be of any appropriate form. Beyond the inlet and outlet the casing is internally threaded at *e*, whereby it may be secured to the cylinder or other parts of the engine in connection with which it is to be employed.

D represents the valve, which is of quadrangular form and made a part of or secured upon the shaft or stem *f*. The valve D is about the length of the cavity *a*, in which it is placed, and is capable of being rotated, while the ends of its shaft *f* protrude beyond its end caps,

h, and are connected with suitable actuating mechanism.

The outer curved surface of the valve D is made of a separate piece or section, *i*, the outer surface of which is cut to closely impinge the wall of the cavity *a*, while its edges are beveled and its inner side provided with a lug or projection, *m*, extending the whole length of the section, which beveled edges and projection *m* fit into the grooves *n* and *p* formed in the main portion of the valve, and serve thereby to retain the said section *i* in position, and permit it to be adjusted outwardly against the wall of the cavity *a*.

An aperture, *t*, passes vertically through the main portion of the valve D, terminating immediately above the central portions of the projection *m*.

The valve being in position in the cavity *a*, when it is desired to permit the passage of steam through the air-tight casing the stem *f* is turned so that the section *i* will be to one side of the cavity between the inlet and outlet apertures, as shown in dotted lines in Fig. 2. When the passage of steam through the casing is to be cut off the valve will be turned down, as shown in Fig. 3, bringing the section *i* squarely over the outlet-aperture *d*. When the valve is in this position the steam will fill the cavity *a* and enter the aperture *t*, where it will press against the projection *m*, and cause thereby the section *i* to firmly impinge the wall of the cavity around the said outlet-aperture, effectually preventing the escape of steam.

I do not limit myself to the precise form of the valve D, as it may be varied without departing from the essence of the invention.

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

1. A rotary quadrangular-shaped valve having an adjustable outer surface, and mounted on a stem in an air-tight case provided with inlet and outlet apertures, substantially as set forth.

2. The case A, having inlet and outlet apertures, in combination with the valve D, mounted upon a stem, *f*, and having an adjustable outer surface or section, *i*, substantially as set forth.

3. In combination with an air-tight case, A, having inlet and outlet apertures, the valve D, mounted upon a stem, *f*, and having grooves *n p*, and the section *i*, having beveled edges and a projection, *m*, substantially as set forth.

4. The valve herein described, consisting of the air-tight case A, having inlet and outlet apertures, and the valve D, mounted upon a stem, *f*, and supplied with the adjustable outer

surface or section, *i*, and aperture *t*, substantially as specified.

In testimony that I claim the foregoing improvement in valves for steam-engines, as above described, I have hereunto set my hand this 17th day of May, 1880.

Witnesses: THOMAS E. BARROW.

LE ROY PARSONS,

H. D. B. WILLIAMS.