

(No Model.)

R. F. GRIGSBY.
INLET VALVE FOR AIR COMPRESSORS.

No. 567,092.

Patented Sept. 1, 1896.

Fig. 1.

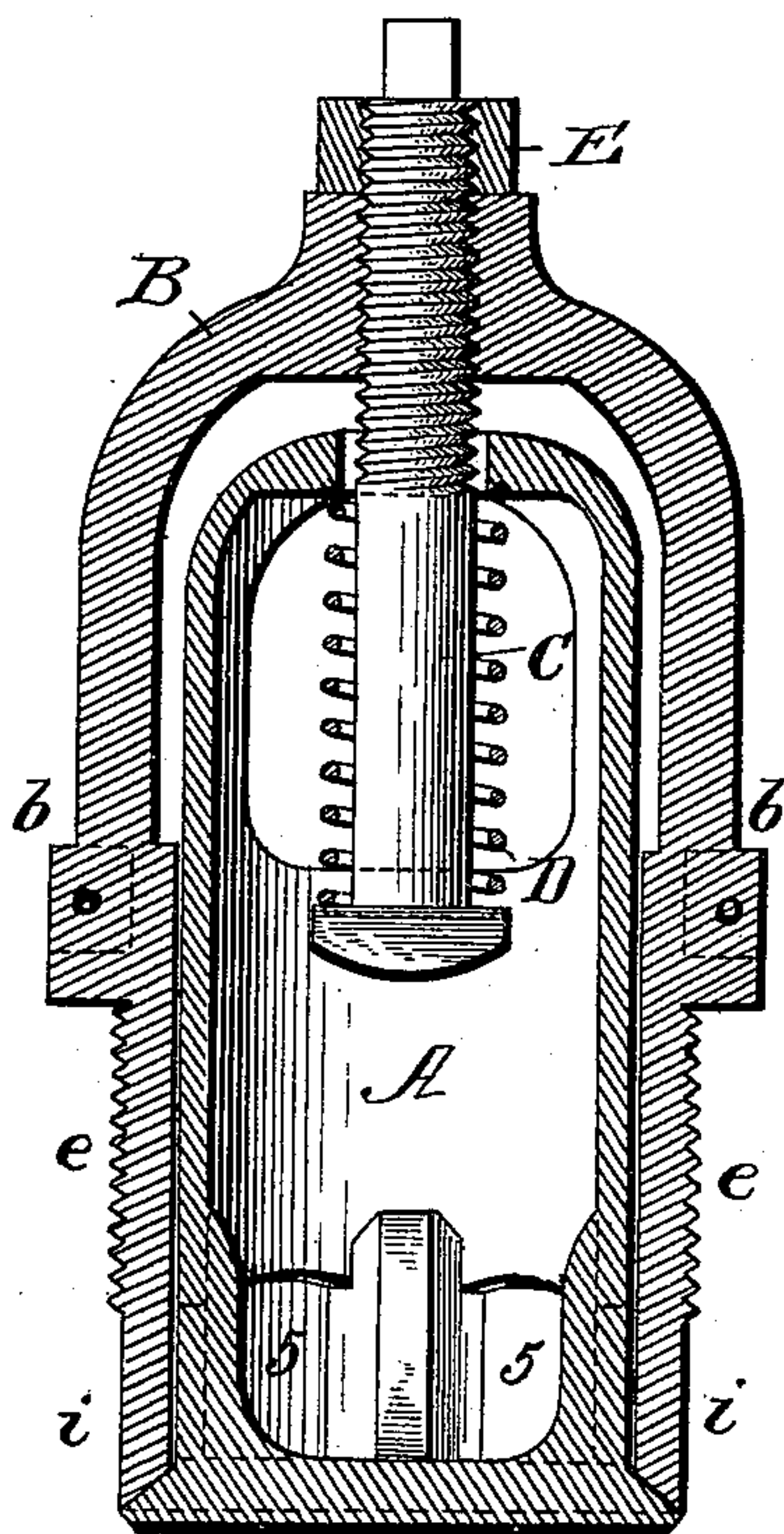


Fig. 3.

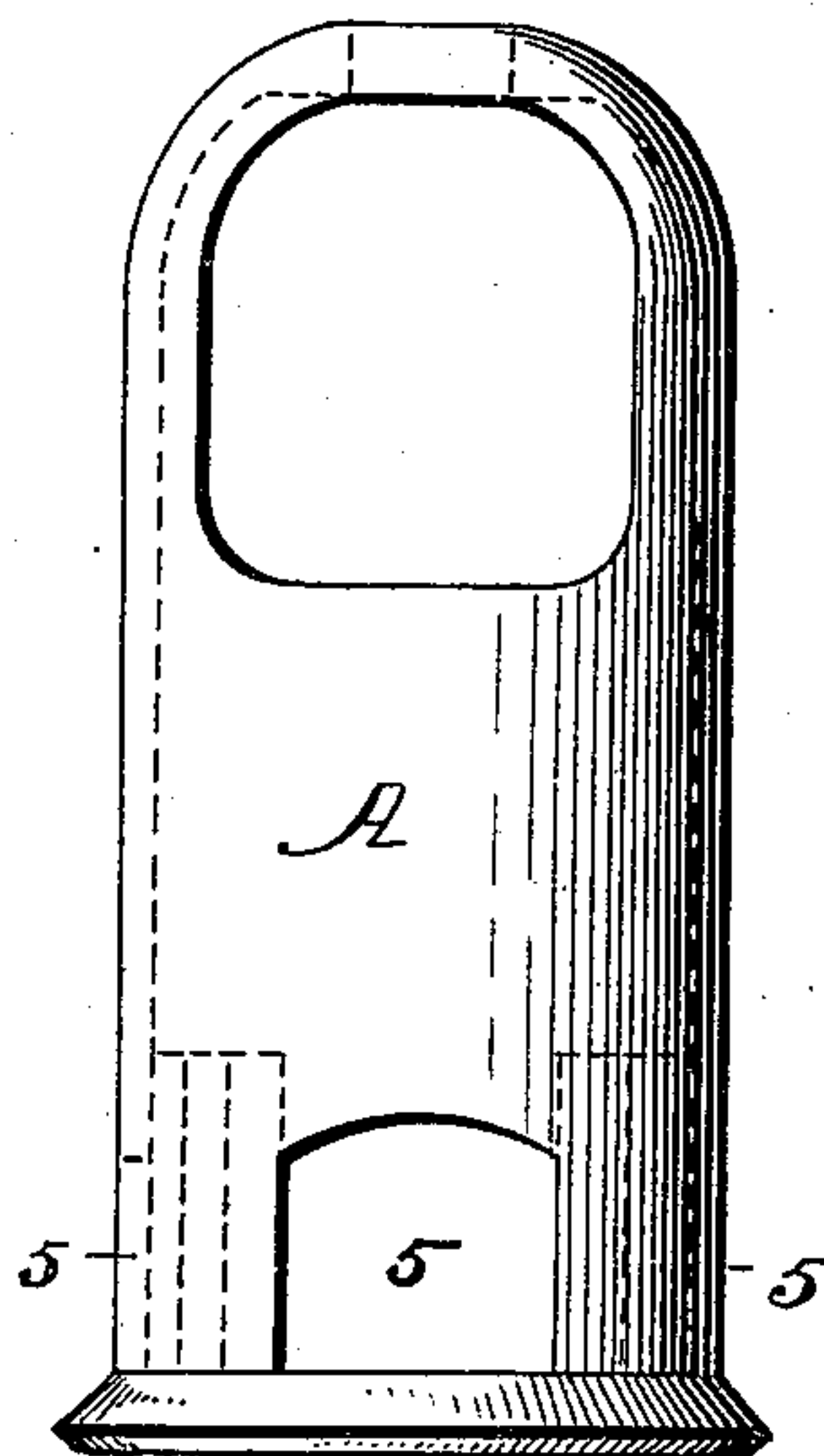


Fig. 2.

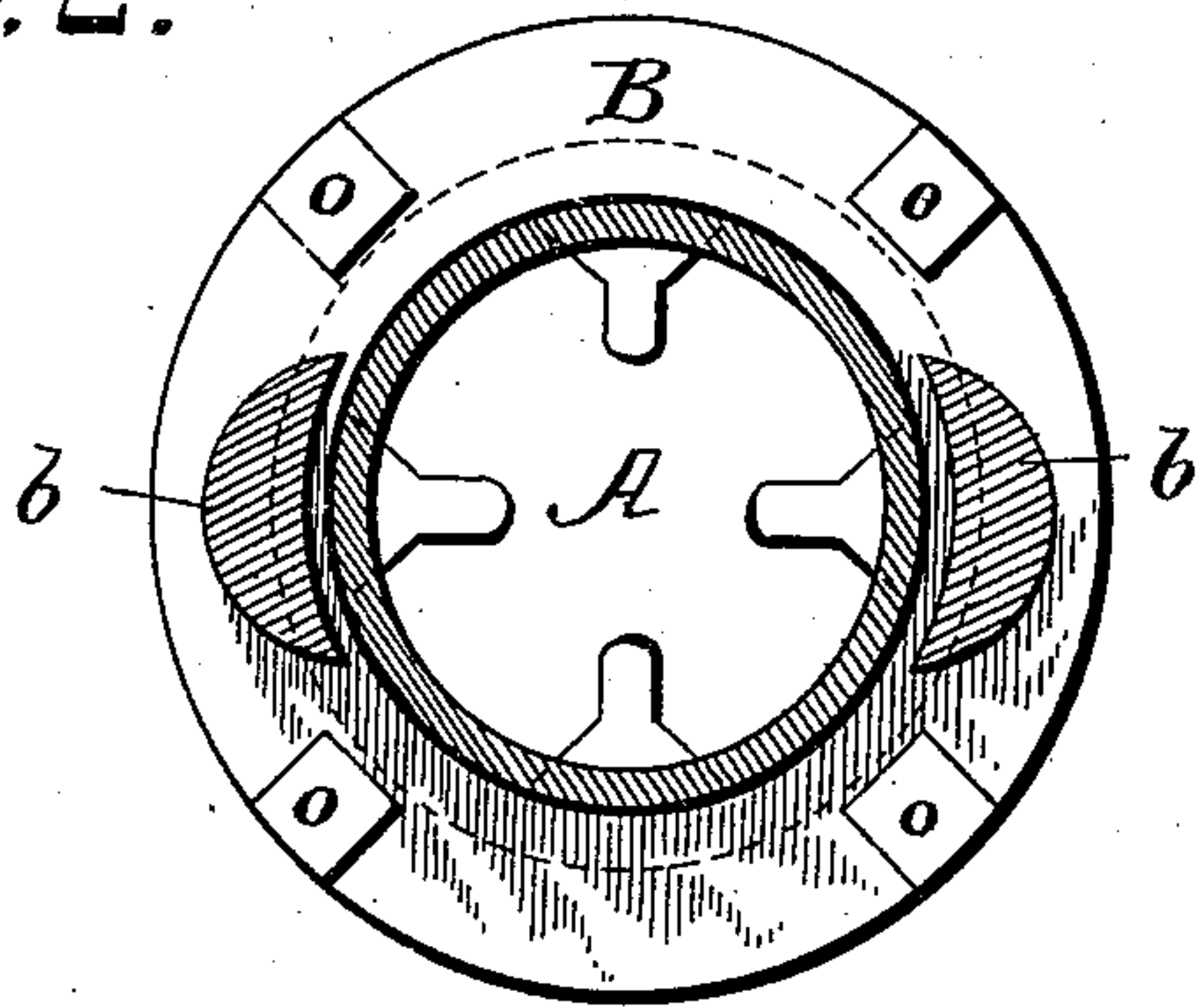
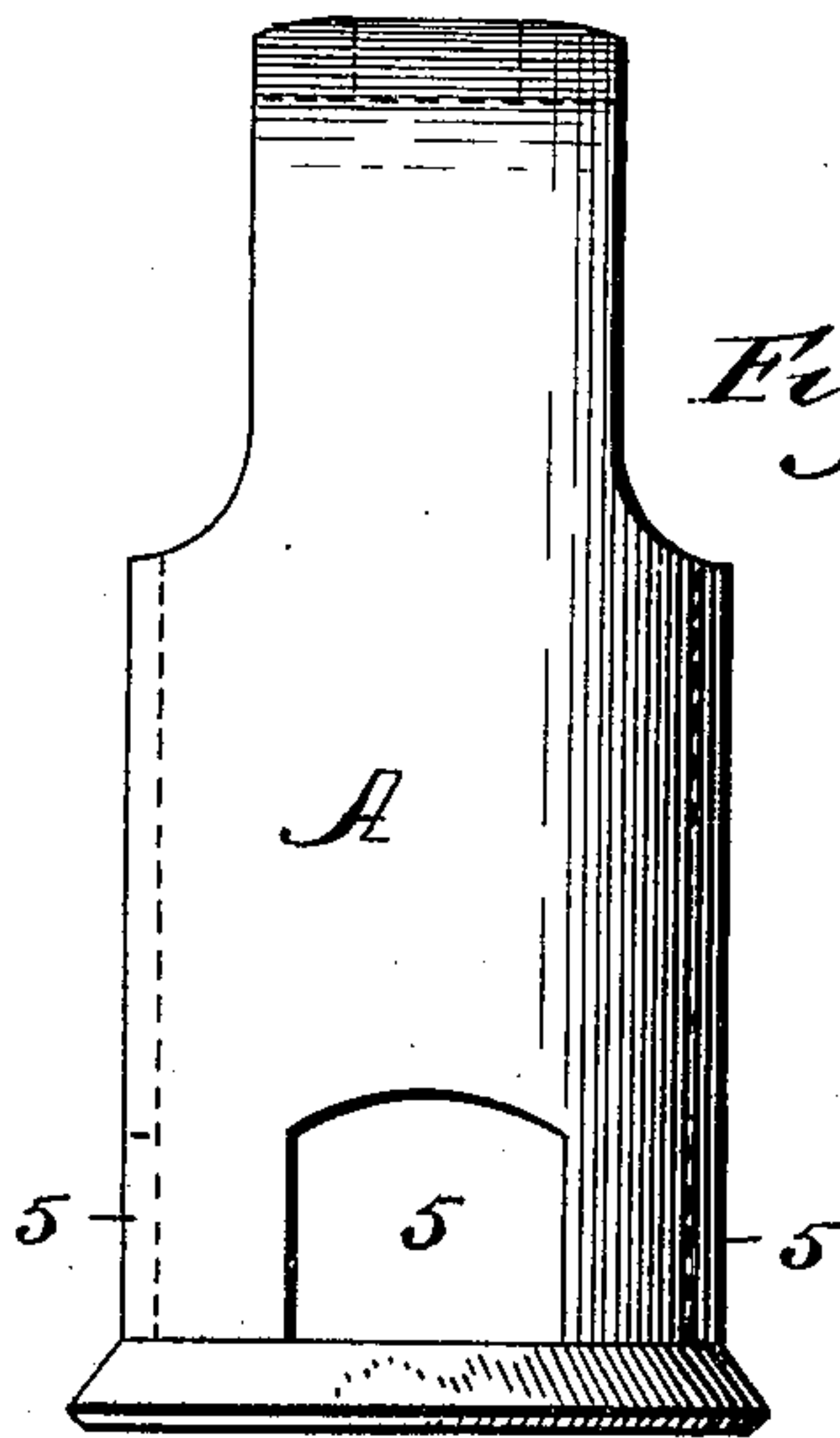


Fig. 4.



Witnesses:

J. M. Givv.
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Inventor:

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UNITED STATES PATENT OFFICE.

ROBERT F. GRIGSBY, OF CALISTOGA, CALIFORNIA, ASSIGNOR OF ONE-HALF
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INLET-VALVE FOR AIR-COMPRESSORS.

SPECIFICATION forming part of Letters Patent No. 567,092, dated September 1, 1896.

Application filed October 2, 1895. Serial No. 564,465. (No model.)

To all whom it may concern:

Be it known that I, ROBERT F. GRIGSBY, a citizen of the United States, residing at Calistoga, Napa county, California, have invented
5 a new and useful Inlet-Valve for Air-Compressors, of which the following is a specification.

My invention relates to inlet-valves for air-compressors, and has for its object to produce
10 a valve of few parts and great efficiency.

To this end my invention consists of an inlet-valve constructed substantially as shown and described, and particularly defined in the claims.

15 In the drawings, Figure 1 is a central sectional view of the entire valve. Fig. 2 is a sectional plan of the lower half of the valve, looking down into it. Figs. 3 and 4 are detail views of the valve itself.

20 A is the valve, which is preferably made of aluminium and is constructed in the form of a hollow cylindrical shell having an opening in its upper portion to admit the rod C. The upper portion of the sides is cut away, leaving
25 two large openings for admission of air to the interior of the valve. Four small openings 5 near the seat of the valve permit the inlet of the air from the valve into the cylinder.

30 B is the casing, preferably made of bronze or gun-metal, and is bored smooth and true inside in its lower portion, so that the aluminium valve will work smoothly and easily therein. The lower portion of the casing is
35 threaded at *e e* and turned at *i i* to enable it to be properly secured in place.

The top of the casing is provided with a threaded opening to receive a threaded rod C. This rod extends down into the center of
40 the casing and through the opening in the top of the valve. The lower end of this rod is provided with a head having a groove upon its upper flange in which is seated one end of
45 a wire spring D, which is coiled around the rod and extends upward to the top of the valve, where it is seated in a groove encircling the opening through which the rod extends. A jam-nut E is threaded on the outer extremity of the rod and bears upon the upper
50 surface of the casing. The rod is provided

with a squared end to permit its being turned by a wrench, so as to adjust the tension of the spring.

The casing B is preferably cut away at its upper portion, so as to form the arms *b*, leading down to the threaded portion *e e*. Sockets *o* are provided in the rim of the casing, which are adapted to receive a wrench to seat the casing. The valve should be carefully turned and finished to snugly fit the sleeve
60 and seat of the casing.

By my construction an inlet-valve is produced having only two moving parts, the valve A and the spring D. By making the valve A in the form of a hollow cylindrical
65 shell, which closely fits the interior of the casing for more than half its length, all binding and sticking are avoided, as is common to the ordinary valve provided with a long valve-stem. By reason of its cylindrical form the
70 valve is free to rotate around the rod C in operation, thus always maintaining a true seat. The simple arrangement of the threaded rod C permits the tension of the spring upon the valve to be easily and speedily regulated
75 while the valve is working, and an entire set of valves can thus be brought to an equal working tension while the compressor is in operation. By locating the spring as shown and described the valve is perfectly balanced,
80 thus preventing the dropping down of the valve, which is a common defect in the ordinary modes of construction. While in its normal or closed position the spring offers very slight resistance, and this, together with the
85 extreme lightness of the valve by reason of its form and material, renders it very easy to move, offering only about one-third the resistance of ordinary valves. A valve thus constructed has been found by actual experi-
90 ment to be especially efficient as an inlet-valve for air-compressors.

What I claim is—

1. An inlet-valve for air-compressors consisting of a casing B having its lower portion
95 bored smooth and true, a cylindrical valve A closely fitted in the said lower portion of said casing and a tension-regulating device substantially as described extended into said casing and into said valve, the construction and
100

arrangement being such that the valve is free to rotate in its casing.

2. An inlet-valve for air-compressors consisting of a casing B having its lower portion
5 bored so as to truly guide and seat the valve, a rod C secured to the upper portion of the casing and extended downwardly therein, a hollow cylindrical valve A working in said casing and around the said rod, and a spring
10 D carried by said rod and bearing against the upper and inner face of the valve, substantially as and for the purpose described.

3. An inlet-valve for air-compressors consisting of a casing B having its lower portion
15 constructed to guide and seat an aluminium valve, a rod adjustably threaded in the upper

portion of said casing and extended downwardly therein, a hollow cylindrical valve sleeved in and seated upon the lower portion of said casing, extended upwardly into
20 the upper portion of the casing and provided with an opening in its upper end through which the rod extends, and a spring sleeved upon said rod and adapted to bear upon the upper end of the valve, substantially as and
25 for the purposes set forth.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

ROBERT F. GRIGSBY.

Witnesses:

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FRANCESCO M. OCHODS.