

No. 672,051.

Patented Apr. 16, 1901.

J. ACTON.
NOISELESS SELF ACTING VALVE.

(Application filed June 17, 1897.)

(No Model.)

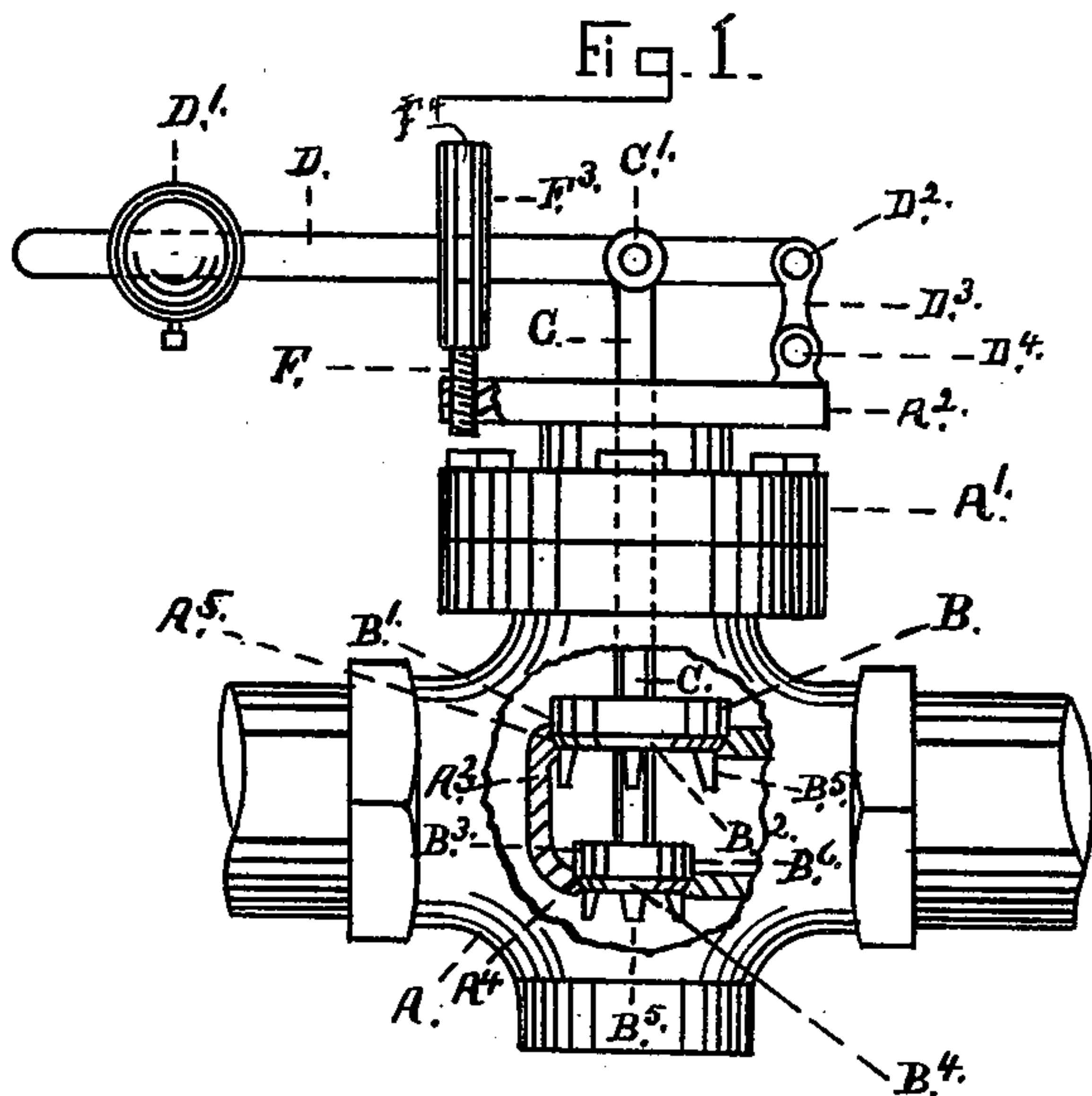


Fig. 2.

Fig. 4.

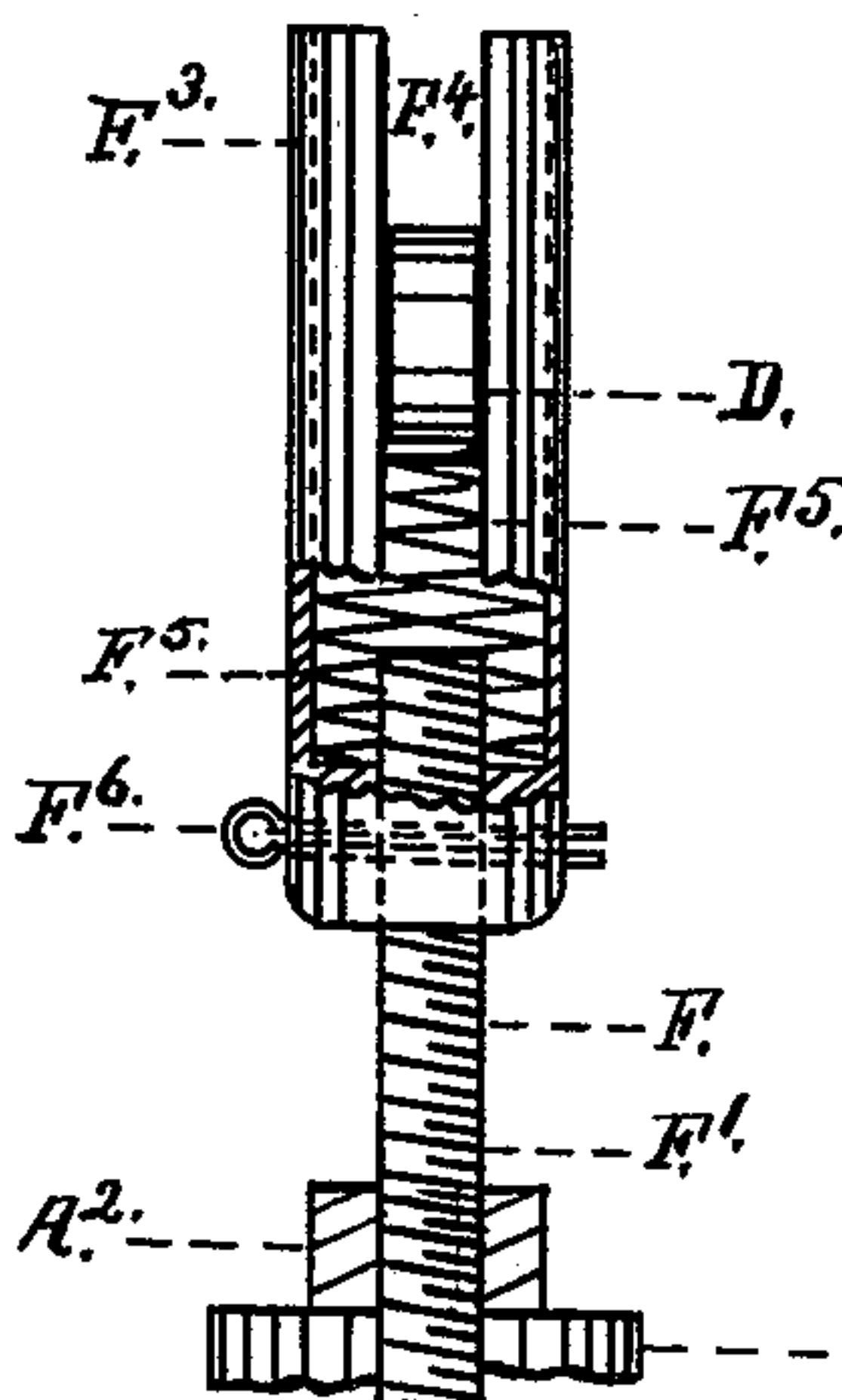
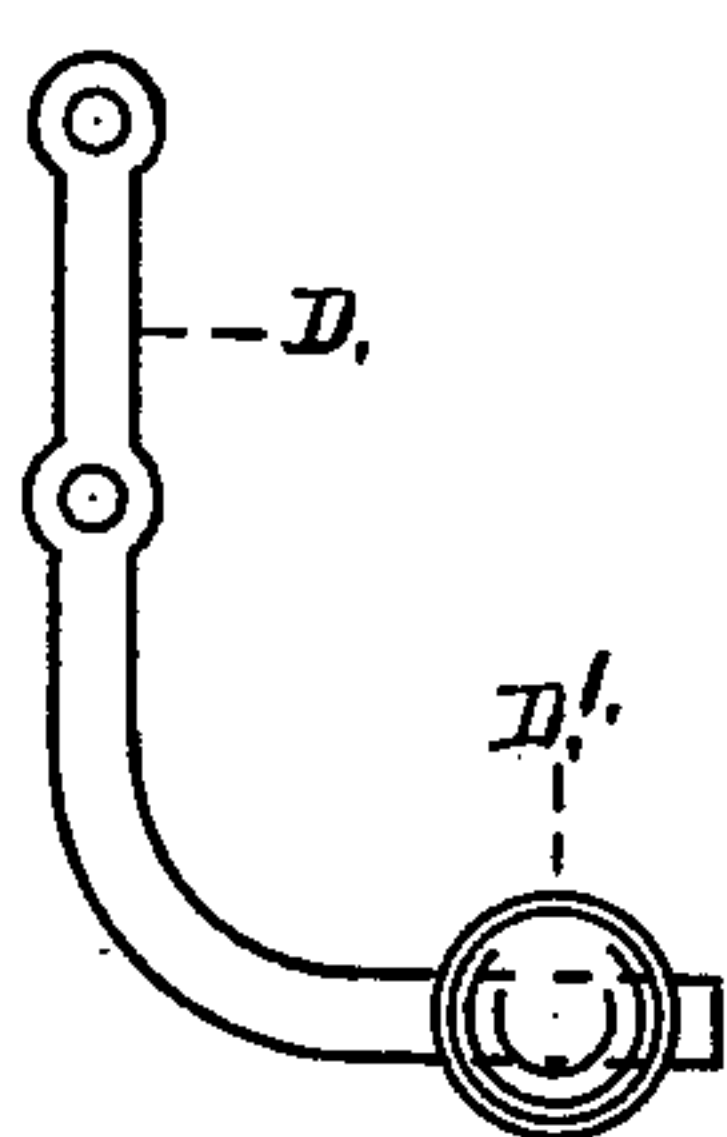
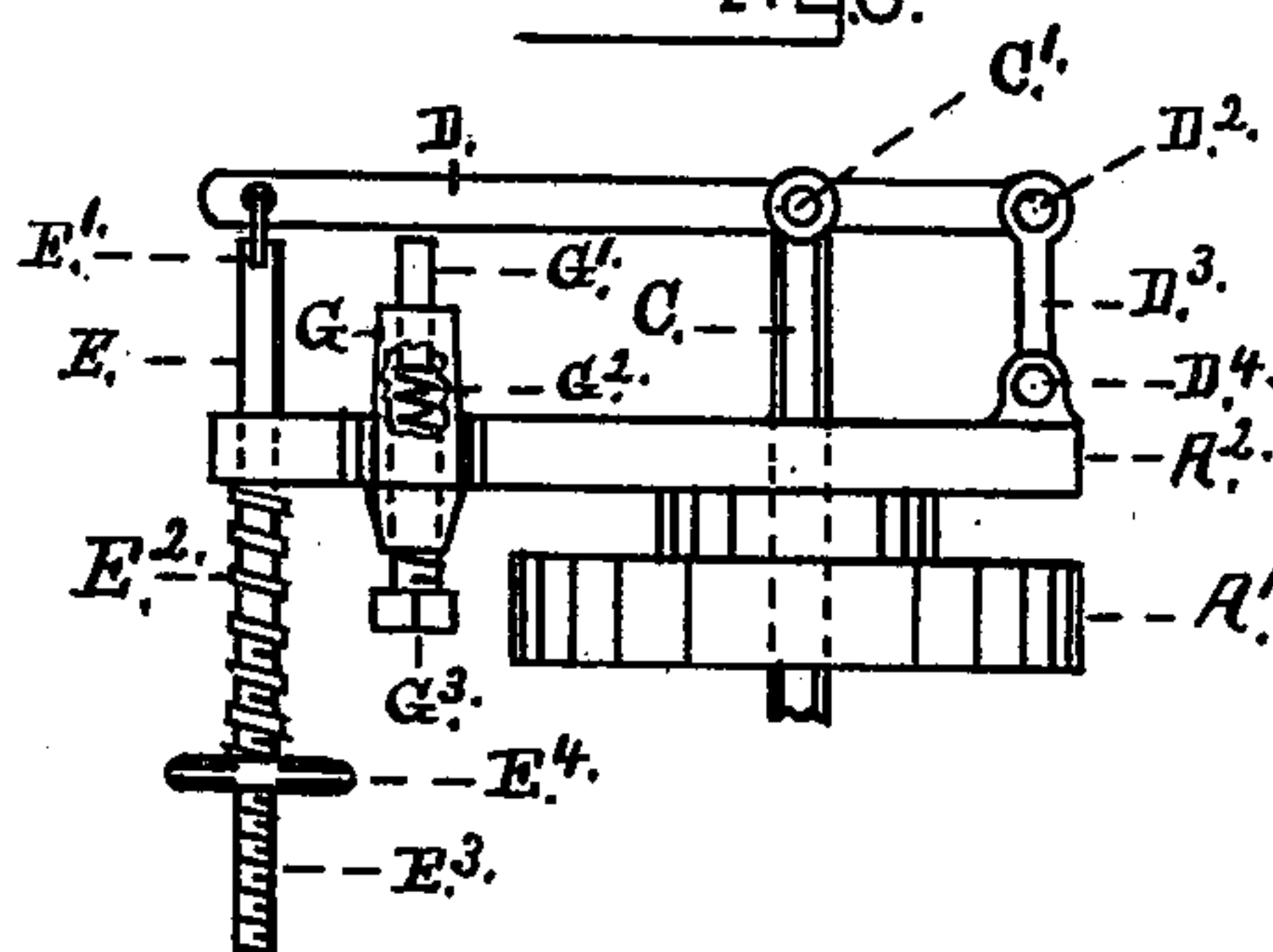
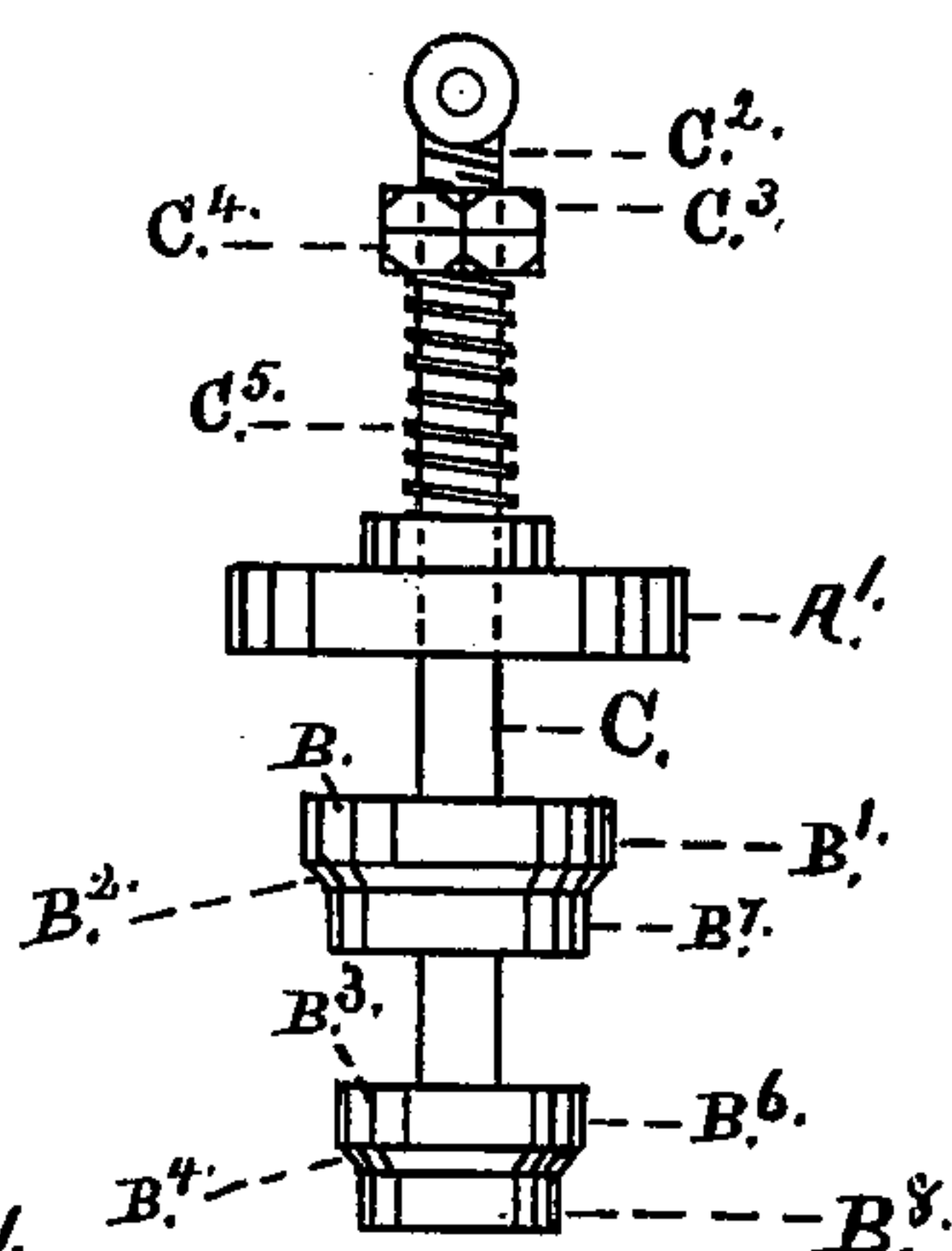


Fig. 3.

Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN ACTON, OF BROOKLYN, NEW YORK.

NOISELESS SELF-ACTING VALVE.

SPECIFICATION forming part of Letters Patent No. 672,051, dated April 16, 1901.

Application filed June 17, 1897. Serial No. 641,123. (No model.)

To all whom it may concern:

Be it known that I, JOHN ACTON, a citizen of the United States, and a resident of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Noiseless Self-Acting Steam-Valves, of which the following is a specification.

The object of this invention is to produce a noiseless self-acting valve.

The invention consists in a compound taper-seat valve, a pivoted post for the valve-lever, and an adjustable recoil-spring support.

Figure 1 is a side view of the valve and its parts. Fig. 2 represents the recoil-spring support. Fig. 3 represents the valve-lever operated by spring instead of a ball or weight. Fig. 4 is a curved valve-lever to be used on an upright valve, and Fig. 5 represents a modified form of recoil-spring.

A, Fig. 1, is the valve-body, to which is secured the several parts composing the valve.

A', Figs. 1, 3, and 5, is a cap which is secured to the body A.

A², Figs. 1, 2, and 3, is a double arm cast integral with or otherwise secured to the cap A'.

A³, Fig. 1, is an interior seat cast integral with the right-hand end of the body A and serves to form the valve-seats A⁴ and A⁵.

B and B³, Fig. 1, are valves. Both of them are secured to the valve stem or rod C and are provided with parallel sides B' and B⁶, except a narrow part of the lower sides, which are beveled, as shown at B² and B⁴. These narrow bevels are ground to fit the seats A⁴ and A⁵ of the part A³.

D, Figs. 1 and 3, is a lever pivoted to the link D³ at D² and secured to the valve-stem C at C', that all friction or binding may be avoided on the valve-stem C. The link D³ is pivoted at D⁴ to the arm A².

F, Figs. 1 and 2, is a threaded post adjustably secured to the arm A² and supports the yoke F³, which is provided with the guide-slot F⁴, in which is held the lever D, as shown in Fig. 2.

F⁵, Fig. 2, is a spring placed in the hollow yoke under the lever D. This spring is of sufficient tension to prevent noise as well as avoid any hammering of the valves and valve-seats. That the spring may have more or less resistance to the lever D the yoke is made adjustable up and down by turning the post F.

The split pin F⁶, Fig. 2, is to hold the yoke F³ in place after it has been properly adjusted.

Fig. 3 shows how the ball D' may be dispensed with and a spring used in its place. E is a rod linked to the lever D at E' and provided with threads E³ at its lower end. E² is a spring which is compressed more or less between the arm A² and the hub of the hand-wheel E⁴. Fig. 3 also shows a modification of the yoke F³, G being a hollow threaded post secured to the arm A² and provided with screw G³, spring G², and cap G'. By turning the screw G³ more or less resistance is given the lever D in the same manner as by the yoke F³.

D, Fig. 4, shows a curved lever which is used when the valves are placed in a vertical position.

Fig. 5 shows a modification of supporting the recoil-spring, by which the yoke F³ and post F are dispensed with. C is the valve-stem, having threads C² at its upper end, on which are placed the nut C⁴ and jam-nut C³. C⁵ is a coiled spring, the tension of which is regulated more or less by aid of the nuts C³ and C⁴ to resist the lever D.

It will be seen that by adopting the narrow bevel on the valves there is less liability of dirt forming than though they were of the usual long bevel, also that the cost of these valves is small compared to the ordinary ones and that they are easily repaired. I also overcome expansion and contraction through its compensating seats of small bearing. The narrow bevel of the valve has also been found after nearly two years of actual test to wear its own seat, which saves expense and annoyance.

While I have shown two valves, I do not limit myself to the use of two, as one will often be used.

B⁷ and B⁸, Fig. 5, show extra parallel guides or clearance sides to the valve. By this plan I am enabled to clear the valve of all dirt and foreign matter as well as forming a gradual cut-off which saves the valve-seats, and in part prevents noise or injury to the valve.

When there is a back pressure of steam, the valve is raised from the seat, which causes the steam to escape until the pressure has all gone.

Having thus fully described my invention,

what I desire to secure by Letters Patent of the United States is—

1. A self-acting valve having the interior valve-seats A^4 , and A^5 , of different diameter, in combination with the stem C, having valves B^1 , and B^3 , of different diameter, the link D^3 , lever D, spring-containing post F^3 , and weight D' , as set forth.

2. A self-acting valve having the interior valve-seats A^4 , and A^5 , beveled to conform to the valves B^1 , and B^3 , in combination with the valves B^1 , and B^3 , of different diameter

secured to the stem C, and provided with the guide-lugs B^5 , and means to hold the valves down as and for the purpose described. 15

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 5th day of May, 1897.

JOHN ACTON.

Witnesses:

E. T. THOMAS,

WILLIAM J. LYNCH.