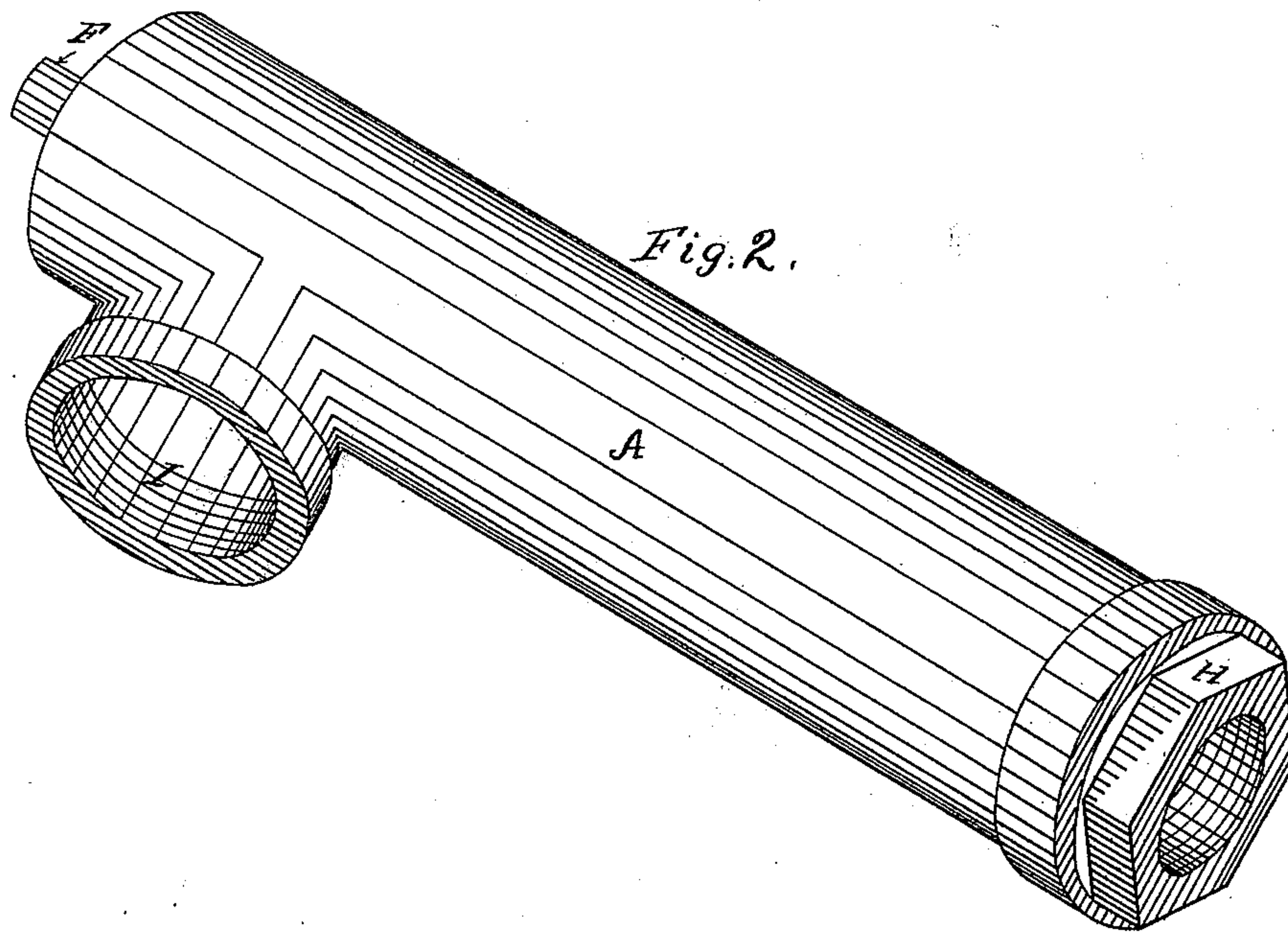
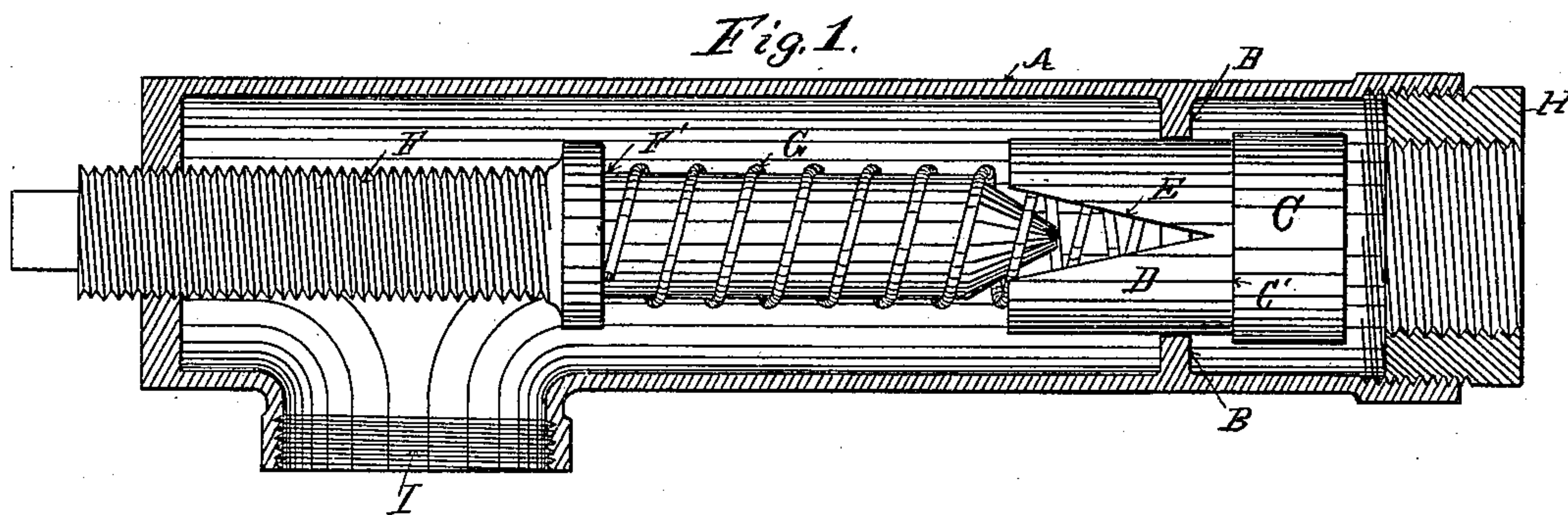


(No Model.)

B. FRANKLIN.  
GAS OR WATER REGULATOR.

No. 334,011.

Patented Jan. 12, 1886.



Attest.  
*John S. Rilling*  
*H. M. Sturgeon.*

Inventor  
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Atty.



# UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN, OF BRADFORD, PENNSYLVANIA.

## GAS OR WATER REGULATOR.

SPECIFICATION forming part of Letters Patent No. 334,011, dated January 12, 1886.

Application filed November 20, 1885. Serial No. 183,455. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN FRANKLIN, a citizen of the United States, residing at Bradford, in the county of KcKean and State  
5 of Pennsylvania, have invented certain new and useful Improvements in Gas or Water Regulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others  
10 skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

15 My invention relates to pressure-regulators for gas or water pipes; and it consists in the improvements hereinafter set forth and explained.

20 My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a longitudinal central section of my improved pressure-regulator. Fig. 2 is a perspective view of my improved device.

25 Like letters refer to like parts in all the figures.

In constructing my improved pressure-regulator I preferably cast the body A of the same in a single piece. This body A is provided, near one end thereof, with a valve-seat,  
30 B, through the center of which I place a hollow valve, C. This valve C is provided with a shoulder, C', adapted to fit upon the seat B, and has in the portion D thereof which passes through the valve-seat B V-shaped slots E E,  
35 which extend nearly or quite to the shoulder of the valve C'. Through the lower end of the body A, I cut a screw-thread, in which the adjusting-screw F operates. This adjusting-screw F supports a spiral spring, G, which  
40 extends from the shoulder F' on the screw F to and into the valve C, and tends to raise the valve C off of its seat B, the screw F being so arranged that by the turning thereof the tension of the spring G may be increased or diminished.  
45 In the end of the body A, I show a reducer, H, screwed into the body A over the valve C. This operates to prevent the valve C from being thrown off of its seat by the spring G. However, if the end of a supply-pipe is screwed directly into the end of

the body A it will answer the same purpose. In the side of the body A below the valve-seat B, I make an opening, I, adapted to receive a gas or water pipe to be screwed therein.

55 In operating my device it is screwed into a supply-pipe conveying gas, water, or other similar substance from a tank or reservoir to a point where the same is to be used. The end of the body A is screwed to the supply-  
60 pipe by means of the reducer H, and the discharge-pipe is screwed into the opening I. The tension of the spring G is then adjusted by means of the screw F, so that it will support the valve C, and sustain it in an open  
65 position against the normal and ordinary pressure of the gas or fluid in the supply-pipe upon the head of the valve C to a sufficient distance to admit of the passage of a proper amount of such gas or fluid through the V-  
70 shaped openings E E of the valve. When, however, the pressure of the gas or fluid in the supply-pipe increases so that the pressure upon the head of the valve C overcomes the resistance of the spring G, it tends to close  
75 the valve, thereby decreasing the area of the openings E E above the valve-seat B, leaving smaller openings for the passage of the gas or fluid at such increased pressure, while a decrease of the normal pressure in the supply-  
80 pipe relieves the pressure on the head of the valve C, so that the spring G operates to force the valve C farther back, thereby increasing the area of the openings E E above the valve-seat B for the passage of gas or water at such  
85 decreased pressure. In this manner the amount of gas or water which passes the valve C at varying pressures in the supply-pipe is equalized, and substantially the same, except when the pressure in the supply-pipe upon  
90 the head of the valve C is sufficiently great to entirely overcome the resistance of the spring G. When, however, the valve C is constructed for use as a gas-regulator, the valve C is not fitted closely to the seat B, but is so  
95 constructed that however tightly the valve C may be closed from excessive pressure a small amount of gas will continuously pass the valve, so that if the gas is used for either lighting or fuel the pressure cannot close the valve so as  
100

to cut off all of the supply and entirely put out the light or fire.

Having thus fully described my invention so as to enable others skilled in the art to 5 which it appertains to construct and use the same, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a gas or water regulator, of a valve, C, provided with slots or openings E therein, with a valve-seat, B, and sustaining-spring G, substantially as and for the purpose set forth.

2. The combination, in a gas or water regulator, of a valve, C, provided with V-shaped openings or slots E, with a valve-seat, B, a

sustaining-spring, G, and adjusting-screw F, substantially as and for the purpose set forth.

3. The combination, in a gas or water regulator, of the body A thereof provided with a 20 valve-seat, B, substantially as shown, with a hollow valve, C, provided with V-shaped slots or openings E, the sustaining-spring G, and regulating-screw F, substantially as and for the purpose set forth. 25

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

BENJAMIN FRANKLIN.

Witnesses:

GEO. A. STURGEON,  
DAVID STERRETT.