

(No Model.)

E. B. DONKIN.

VALVE FOR REGULATING THE FLOW OF GAS IN MAINS, &c.

No. 344,088.

Patented June 22, 1886.

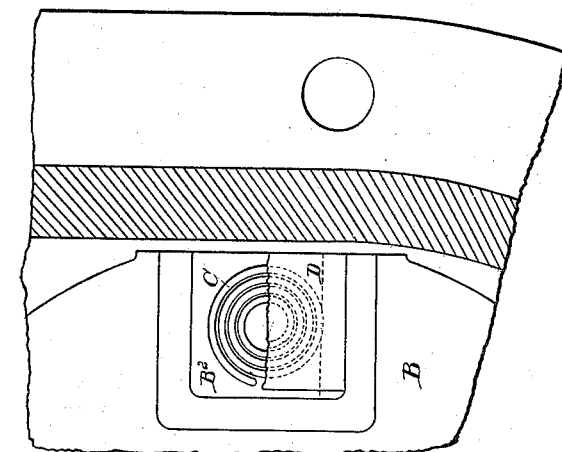


Fig. 4.

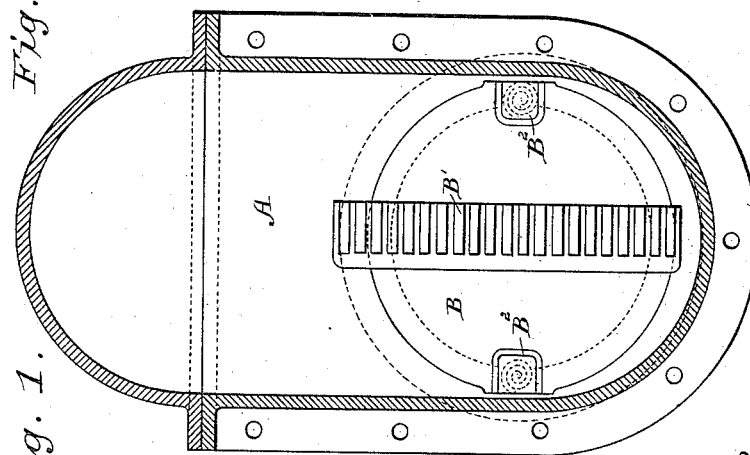


Fig. 1.

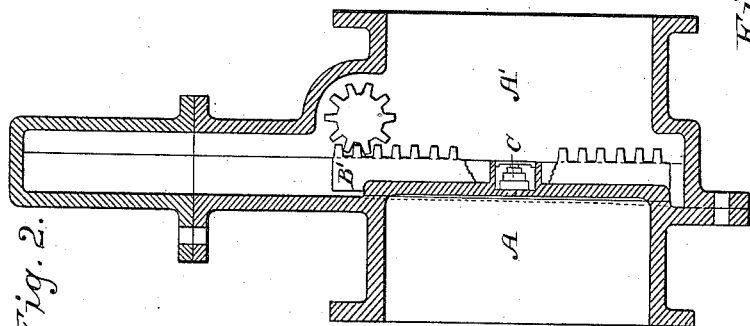


Fig. 2.

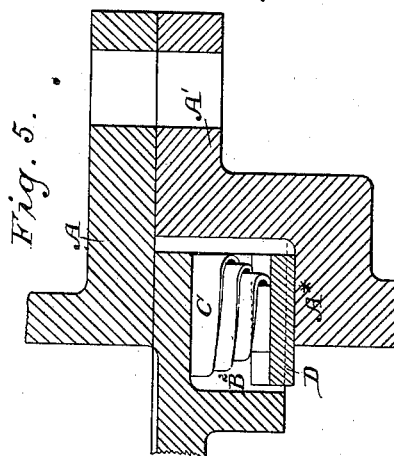


Fig. 5.

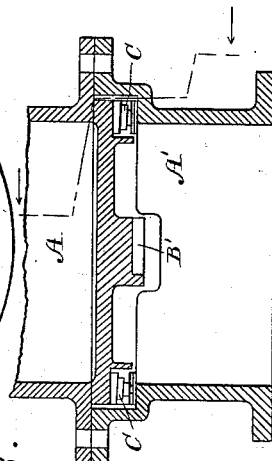


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

EDWIN BRYAN DONKIN, OF BERMONDSEY, COUNTY OF SURREY, ENGLAND.

VALVE FOR REGULATING THE FLOW OF GAS IN MAINS, &c.

SPECIFICATION forming part of Letters Patent No. 344,088, dated June 22, 1886.

Application filed August 24, 1885. Serial No. 175,328. (No model.) Patented in England April 30, 1884, No. 7,057.

To all whom it may concern:

Be it known that I, EDWIN BRYAN DONKIN, a subject of the Queen of Great Britain, residing at Bermondsey, in the county of Surrey, England, mechanical engineer, have invented certain new and useful Improvements in Valves for Regulating the Flow of Gas in Mains and other Passages, (for which I have received Letters Patent in Great Britain, No. 7,057, dated April 30, 1884,) of which the following is a specification.

This invention has for its object improvements in valves for regulating the flow of gas in mains and other passages. The gas-valves at present in common use for such purposes usually consist of a sliding door, which is moved along a face, so as to cover or uncover a mouth by which the gas passes. As at present constructed, these sliding doors are held up to the face by means of a blade-spring attached by its center to the sliding door, and pressing by its ends against guide-surfaces within the valve-case. The door receives its movement from a rack formed upon its back, and with this rack a pinion engages. In some cases a screw is employed to give motion to the sliding door, and other means are also employed. In valves having blade-springs the spring frequently breaks, and when it does so there is not only the trouble of replacing it, but frequently the broken spring jams the valve so that it cannot be moved, and considerable inconvenience sometimes arises. According to my invention I dispense altogether with the blade-spring, and I form cavities in the back of the sliding door, one on either side of it. In each of these cavities I lodge a volute or spiral spring, and over this spring I place a cap. The cap is held by the spring in contact with the guide-surface provided within the valve-case, and its reaction keeps the door to its face. These springs rarely break, and when they do the pieces are retained in the cavity by the cap, and the door does not become jammed.

In order that my said invention may be most fully understood and readily carried into effect, I will proceed to describe the drawings hereunto annexed.

In the drawings, Figure 1 is an elevation showing a portion of the valve-case with the sliding door as arranged in accordance with my invention. Fig. 2 is a vertical section, and Fig. 3 is a horizontal section, of the same.

The case is marked A and A', and the door B. In the position in which the parts are shown the door closes the mouth in the valve-case and prevents the passage of gas.

B' is the rack formed upon the back of the valve. It is as heretofore, except that it is without the slot, which is necessary when a blade-spring is employed for the insertion of the said spring beneath the rack.

B² B² are the two chambers or cavities—one on either side of the sliding door—in which the volute or spiral springs C C are contained.

Fig. 4 shows to a large scale a portion of the sliding door, and also of the case. Fig. 5 is a horizontal section, showing the same portion of the sliding door, together with parts A and A' of the valve-case. Here the spring C is seen within the chamber or cavity B², and over it the cap D. The guideways for the slide are provided with guide-faces at A* A*, upon which the caps D D rest. The faces A* A* form abutments for the spring C, against which they react, while they press the outer edges of the sliding door at two diametrically-opposite points against the face formed around the mouth, by which, when the said mouth is uncovered, the gas issues.

In the drawings volute springs are represented; but in lieu of these spiral springs may be employed. Volute springs, as shown, are, however, preferred. The springs serve to hold the door to the face during its movement, so as to prevent the accumulation of tar upon the face, which would otherwise occur and interfere more or less with the action of the valve.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is—

The combination of the sliding valve, the valve-case, the spiral or volute springs, the chambers in the valve containing the springs, the spring-caps, and the guideways provided with guide-faces, against which the caps bear, substantially as and for the purpose set forth.

EDWIN BRYAN DONKIN.

Witnesses:

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