

R. BONNELL.
VALVE.

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1,002,491.

Patented Sept. 5, 1911.

FIG. 1.

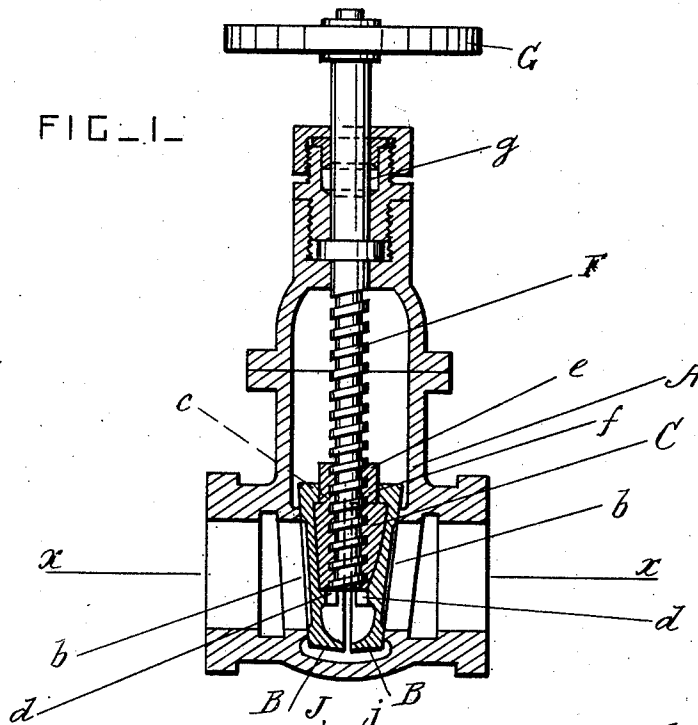


FIG. 2.

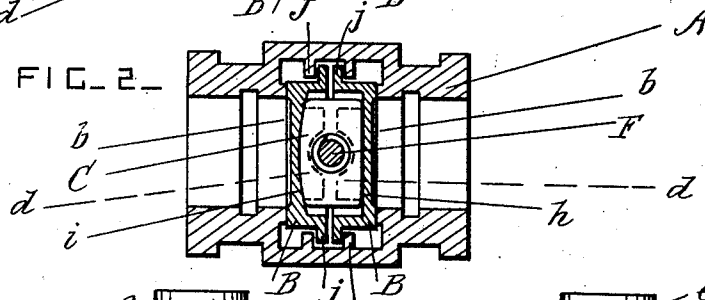


FIG. 3.

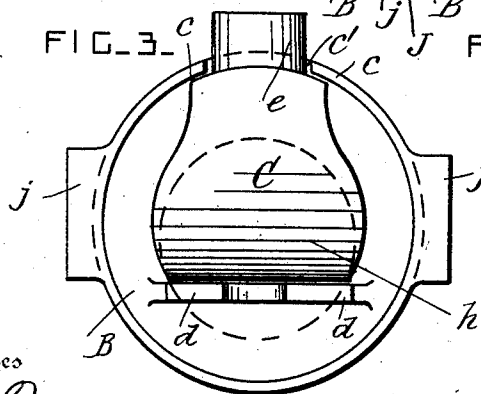
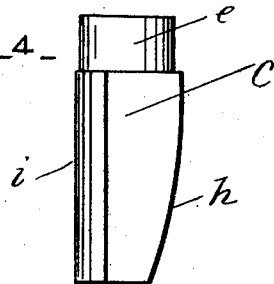


FIG. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

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VALVE.

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To all whom it may concern:

Be it known that I, RUSSELL BONNELL, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to valves for steam, water or other fluid; and it consists in the novel construction and combination of the parts hereinafter described and claimed whereby the valve is prevented from leaking when closed, and whereby a free passage is assured through it when open.

In the drawings, Figure 1 is a vertical section through a valve constructed according to this invention. Fig. 2 is a sectional plan view taken on the line *x-x* in Fig. 1. Fig. 3 is a detail front view of the carrier and one of the valve-plates. Fig. 4 is a side view of the carrier.

A is the valve-casing provided with converging valve-seats *b*.

B are two valve-plates or disks which have projecting flanges *c* at their upper edges. These flanges may extend all around the disks, if desired. The valve-plates have also horizontal lugs *d* on the lower parts of their backs.

C is a carrier for the valve-plates having a boss *e* at its upper part which projects through notches *e'* in the flanges *c*, and which forms a stop for limiting the upward movement of the valve-plates when raised. This carrier has a screwthreaded hole *f* which engages with a screwthreaded stem *F* which is journaled in a stuffing-box *g* at the upper part of the casing, and which is provided with a hand-wheel *G*. Any other approved means besides the screwthreaded valve-stem may however be used for raising and lowering the carrier and the valve-plates, in carrying out this invention. The carrier *C* is arranged to fit loosely between the upper parts of the flanges *c* and the lugs *d* on the valve-plates. On one side, *h*, the carrier is curved vertically from its top downward, and it is broader at its top than at its bottom. On the other side, *i*, the carrier is curved horizontally. The backs of

the two valve-plates are curved to correspond with the sides of the carrier, one back being curved vertically and the other horizontally. Lugs *j* are provided on the edges of the valve-plates, at their side portions, and these lugs slide freely between guide bars *J* arranged vertically on the sides of the valve-casing, so that the valve-seats are relieved of unnecessary pressure and abrasion against the valve-plates when the valve-plates are being raised and lowered. When the valve-plates are raised into the upper part of the valve-casing an unobstructed passage is afforded through it. The boss *e* strikes the casing and prevents the valve-plate from catching against it. When the valve-plates are screwed down they are pressed against the valve-seats by the carrier which bears on the horizontal lugs *d*. As the carrier is curved in opposite directions, upon its opposite sides, the valve-plates adjust themselves to the valve-seats in all directions, and bear uniformly all around the valve-seats, so that there is no possibility of any fluid leaking through the valve.

What I claim is:

The combination, with a valve casing provided with converging valve-seats, of valve-plates having projections on the upper and lower parts of their backs, one valve-plate having a curved surface extending horizontally between its projections and the other valve-plate having a curved surface extending vertically between its projections, each curved surface being of relatively large radius and having its middle part arranged in line with the center of the passage through the valve-seats, a wedge-shaped carrier arranged between the said valve-plates and engaging with their projections, said carrier being thickest at the middle of its upper part and having one side face curved horizontally and the other side face curved vertically to correspond with the curved surfaces of the valve-plates, and means for raising and lowering the said carrier and valve plates in the casing.

In testimony whereof I have affixed my signature in the presence of two witnesses.

RUSSELL BONNELL.

Witnesses:

ALBERT D. LILLEY,
PAUL A. KLINE.