

B. A. GEURINK.

VALVE.

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955,862.

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Fig. 1

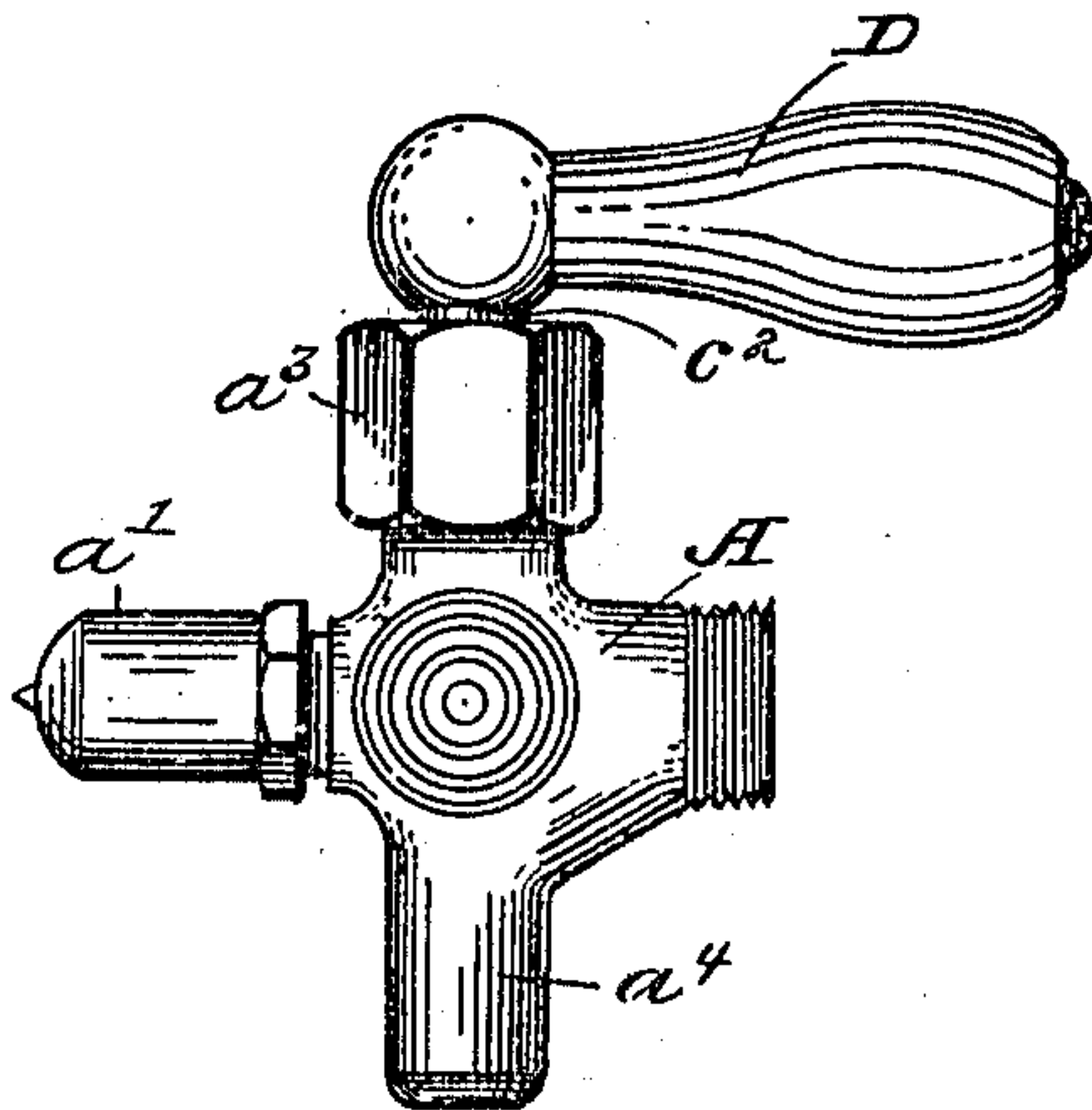


Fig. 2

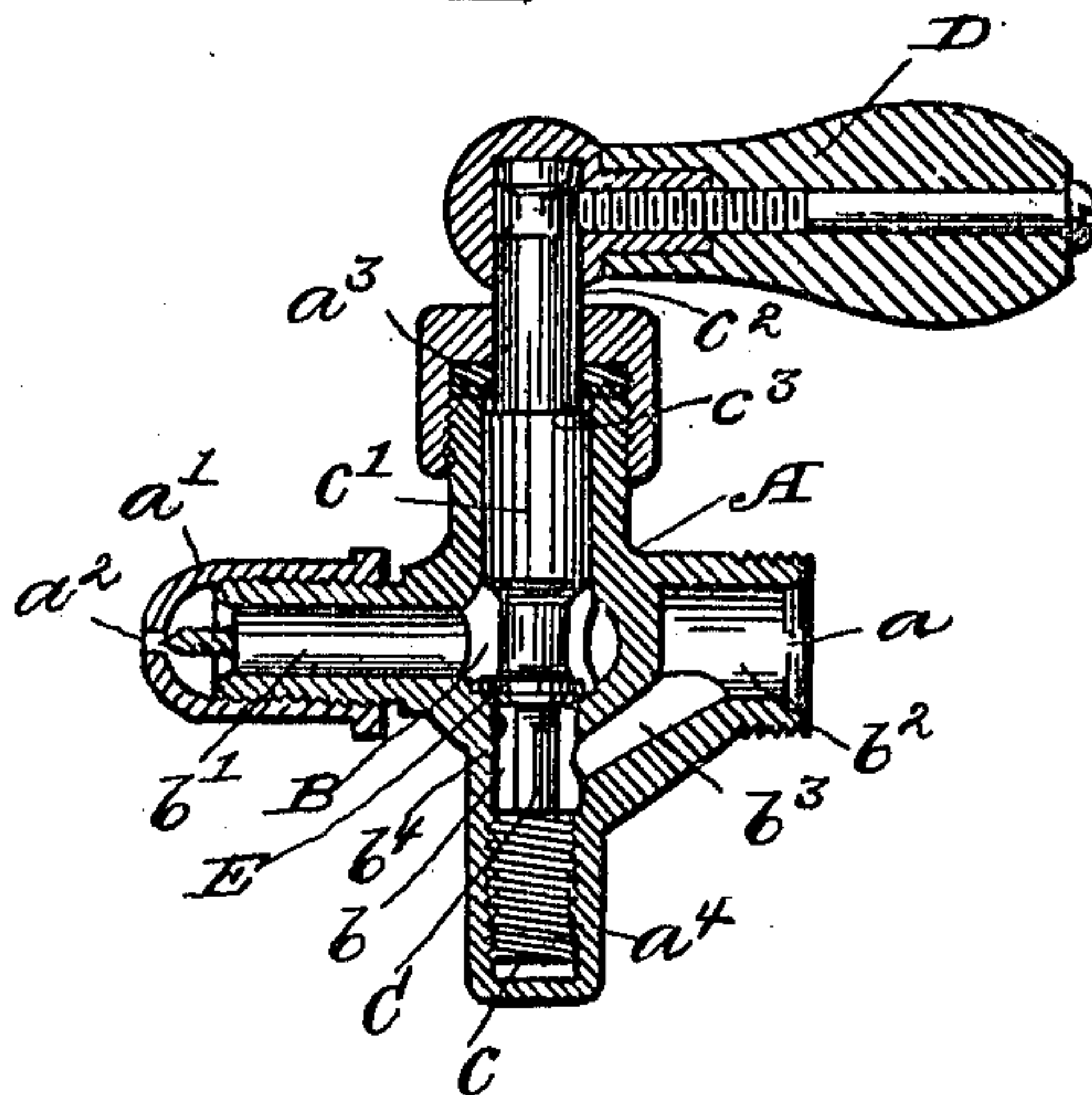


Fig. 3



Witnesses:

J. C. Turner
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UNITED STATES PATENT OFFICE.

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VALVE.

955,862.

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To all whom it may concern:

Be it known that I, BERNARD A. GEURINK, a citizen of the United States, and a resident of East Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Valves, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

My invention relates to valves, and particularly to valves designed to control the flow of gas to gas burners. This control is most usually obtained by the use of the ordinary gas cock, but the disadvantages of using a cock for this purpose are serious.

My invention has for its object the provision of a valve to supplant the ordinary gas cock, by which the several disadvantages of the prevailing type of cock may be obviated.

To the accomplishment of this and related ends my invention, then, consists of the means hereinafter disclosed and particularly pointed out in the claims.

The annexed drawing and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting, however, but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawing:—Figure 1 is a side elevation of my improved valve; Fig. 2 is a vertical section through the center of the valve; and Fig. 3 is an elevation of the discharge end of the same.

The valve comprises in general a casing A which, as shown, is formed of four radiating arms. Centrally disposed within the casing is a chamber B, and connected with the chamber and extending transversely of the casing is a passage *b*. One of the arms is threaded so that the casing may be attached thereby to a gas supply, the end of this arm being provided with an opening *a*. Longitudinal passages *b*² and *b*³ connect the opening *a* with the transverse passage *b*. A second longitudinal passage *b*¹ is provided in another of the arms, this passage extending outwardly from the central chamber. The arm in which this passage is located is designed to receive a cap *a*¹, in the outer end of which is an opening *a*². This latter arm is provided with a conical projection pro-

viding a needle valve and at the same time causing the gas to issue in the form of a jet, it being designed that the cap *a*¹ shall project into the pipe leading to the burner in the usual manner. Extending transversely through the chamber B and the passage *b* is a valve stem C. The lower end *c* of this stem is threaded into the arm *a*¹ of the casing, and this arm has no opening around or below the threaded portion of the stem. This threaded portion of the stem lies within the casing below the opening of the passage *b*³ into the transverse passage *b*. The upper portion of the stem has a closely fitting bearing *c*¹ in one of the arms of the casing, and extends beyond such bearing portion through a nut *a*³ which caps the corresponding arm of the casing, retaining in place the packing ring and washer. Upon the portion *c*² of the stem which extends outside of the casing is fixed a suitable handle D. Adjacent to the inner side of the nut *a*³, through which the stem extends, the stem is provided with an annular shoulder *c*³. A port *b*⁴ connects the chamber with the transverse passage *b*. A valve disk E is provided on the stem within the chamber and is adapted, when the stem is in its lowest position, to close the port *b*⁴.

The operation of the valve is simple, and from this description may be readily understood. The stem may be rotated by means of the handle, and because it is threaded in the casing, such rotation will raise or lower the stem, according to the direction of rotation. The disk is so disposed upon the stem as to close the port through which the inlet and outlet passages communicate, and seating of the valve limits further rotation of the stem. The valve is opened by rotation of the stem in the opposite direction and consequent raising of the valve from its seat. Upward movement of the stem is limited by engagement of the shoulder on the stem with the washer, the range of vertical movement of the valve being equal to about a quarter turn of the handle and stem which is the amount of movement in ordinary gas cocks. It will be seen that the screw portion of the stem lies entirely below any openings in the casing and consequently leakage around this screw portion, which is so common in the usual valve, is rendered absolutely impossible. The portion of the stem adjacent to its extension

through the casing wall is made to have a closely fitting bearing in the casing, and escape of gas therearound is further prevented by the packing.

5 The structural superiority of my improved valve over the gas cock commonly in use will be readily appreciated and at the same time it will be equally well understood that my valve is perfectly simple in its structure and
10 mode of operation, and may be economically manufactured.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means stated by any of the following claims or the equivalent of such stated means be employed.

I therefore particularly point out and distinctly claim as my invention:—

20 1. A valve, comprising a casing provided with inlet and outlet openings, a chamber in the casing, a transverse passage connected with the chamber, a rotatable stem extending through the chamber and transverse
25 passage, one end of the stem being threaded in the casing and the other end thereof being formed with an enlarged portion having a bearing in said casing and forming a shoulder adapted to engage the casing wall when
30 the stem is raised, a passage connecting the inlet opening with the transverse passage intermediate of the chamber and the thread-

ed portion of the stem, a passage connecting the outlet opening with the chamber, and a disk provided on the stem and adapted to close communication between the chamber and the transverse passage. 35

2. A valve, comprising a casing provided with inlet and outlet openings, a chamber in the casing, a transverse passage connected with the chamber, a rotatable stem extending through the passage and chamber, one end of the stem being threaded in the casing and the other end being formed with an enlarged portion having a bearing in the casing and forming an annular shoulder, packing surrounding the stem beyond said shoulder, a washer surrounding the stem below the packing, said shoulder being adapted to engage the washer when the stem is raised, a handle attached to the stem exteriorly of the casing, a passage connecting the inlet opening with the transverse passage intermediate of the chamber and the threaded
40 portion of the stem, a passage connecting the outlet opening with the chamber, and a disk provided on the stem and adapted to close communication between the chamber and the transverse passage. 45 50 55 60

Signed by me this 18th day of September, 1909.

BERNARD A. GEURINK.

Attested:

CHRISTINE E. ARUS,
JNO. F. OBERLIN.