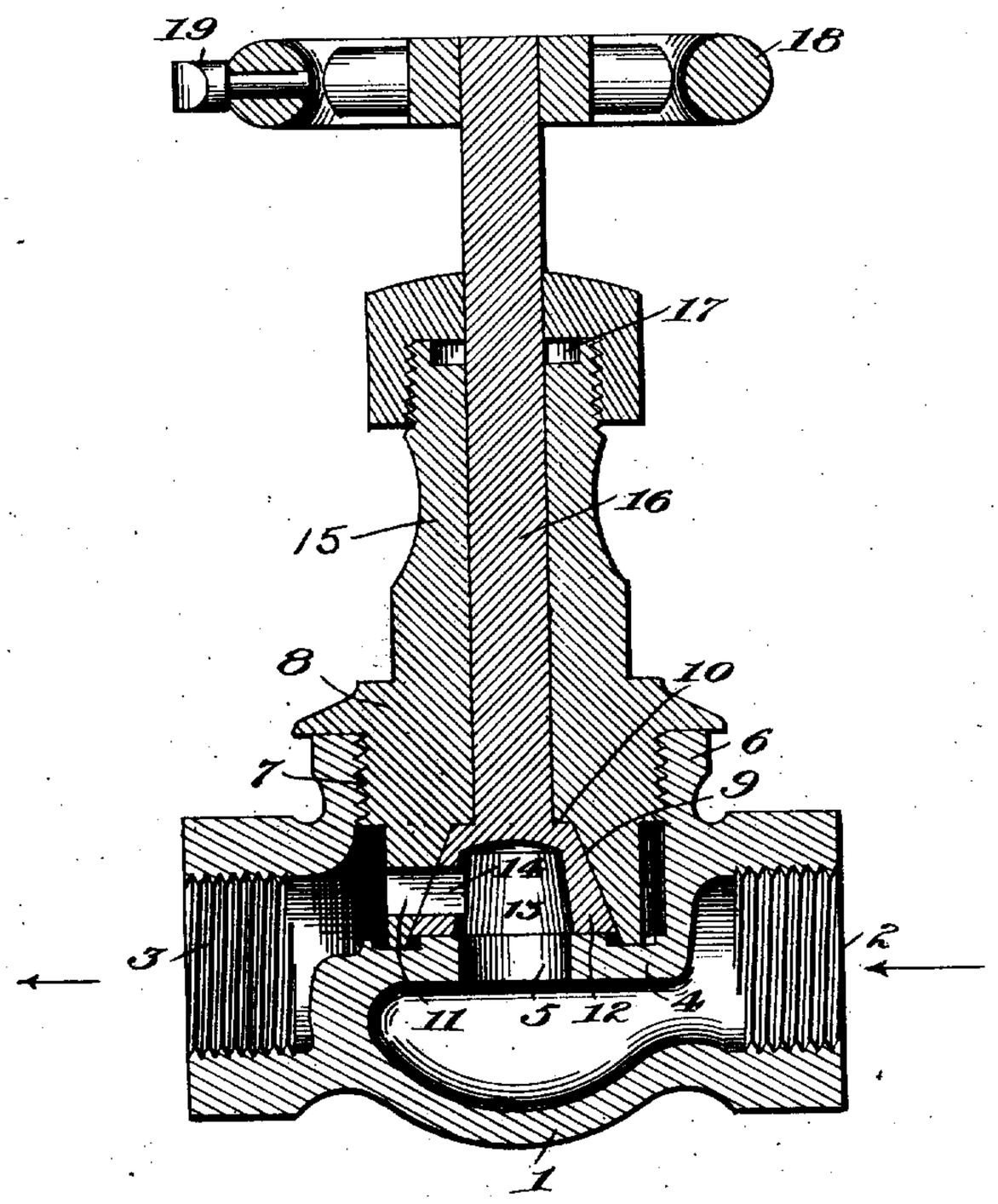
G. SCHMAAL & J. B. WICKS.

VALVE.

APPLICATION FILED JULY 2, 1907.

973,819. Patented Oct. 25, 1910.



Witnesses:
Chas. H. Potter.
Louis A. Potter.

Inventors:
Gustav Schmaal
Joseph B. Wicks,
by Byrnes & Townsend,
Att'ys.

UNITED STATES PATENT OFFICE.

GUSTAV SCHMAAL AND JOSEPH B. WICKS, OF PAULSBORO, NEW JERSEY.

VALVE.

973,819. Specification of Letters Patent. Patented Oct. 25, 1910.

Application filed July 2, 1907. Serial No. 381,922.

To all whom it may concern:

Be it known that we, GUSTAV SCHMAAL and JOSEPH B. WICKS, citizens of the United States, residing at Paulsboro, in the county of Gloucester and State of New Jersey, have invented certain new and useful Improvements in Valves, of which the following is a specification.

This invention is a valve or cock which is more particularly adapted for use under high liquid, gas or vapor pressures and in relations which require frequent opening and closing, as for instance for the control of hydraulic cylinders or the like.

The form of the valve, the number and disposition of the apertures therein, and the material of which it is made will of course depend upon the specific use for which it is intended.

A valve constructed in accordance with our invention is shown in the accompanying drawing, wherein the figure is a central vertical section.

Referring to said figure the valve shown comprises a casing 1 having an inlet aperture 2 and an outlet aperture 3, the particular form of casing shown being provided with an integral division plate 4 apertured at 5. The upwardly extending flange 6 of the casing is internally screw-threaded as shown at 7 to receive the valve-seat member 8 which extends within the casing to the division plate 4, making a tight joint therewith. The inner face 9 of the valve seat member is frusto-conical in form, slightly shouldered above as indicated at 10, and is provided with an aperture 11 extending through said seat in alinement with the casing outlet 3. The valve member 12 is coned in conformity to the seat and is centrally recessed as shown at 13, the recess being in alinement with the aperture 5. An aperture 14 extends from the recess 13 through the wall of the valve member and is adapted to be brought into alinement with the aperture 11 by rotation of the valve member. The valve seat member extends upwardly in the form of a neck 15, receiving and closely encircling the valve stem 16. A recess 17 formed in the upper portion of the neck 15 serves as an oil-chamber to lubricate the valve and its stem and to preserve it from corroding liquids. A handle 18 of any suitable type is shown as provided with an indicator 19 in alinement with the aperture 14.

The construction described possesses many advantages among which may be mentioned the following: (1) The valve is self-adjusting in that the valve-member 12 is always forced upwardly against its seat by the fluid pressure applied from below; (2) it is self-grinding in that the rotation of the valve in one plane against its seat under pressure maintains the two in conformity; (3) it is self-oiling and non-corrodible in that the oil in the pocket 17 serves to lubricate and protect the valve and its stem; (4) no packing is required for the stem, a close joint being maintained at the shoulder 10; (5) the valve and its seat constitute an independent member or attachment separable from the casing and applicable to a casing of any type or form. This permits the valve member to be applied to multiple-way casings having such number of inlet and outlet apertures as may be required, the valve member and the casing being modified if desired by providing two or more outlet apertures therein.

We claim:

1. A valve comprising a casing having an aperture and provided with an interior, transverse, apertured division plate, a threaded valve seat member engaging the aperture in said casing and extending to said division plate and forming a tight joint therewith, said valve-seat member having an internal shoulder, and a hollow frusto-conical, apertured valve rotatable within said seat-member and carried thereby, said valve having a shoulder engaging the shoulder in said valve-seat member, the lower face of the valve abutting the portion of the apertured division plate surrounding the aperture.

2. A valve comprising a casing having an aperture and provided with an interior, transverse, apertured division plate, a threaded valve seat member engaging the aperture in said casing and extending to said division plate and forming a tight joint therewith, said valve-seat member having an internal shoulder, a hollow frusto-conical, apertured valve rotatable within said seat-member and carried thereby, said valve having a shoulder engaging the shoulder in

said valve-seat member, the lower face of the valve abutting the portion of the apertured division plate surrounding the aperture, the stem of the valve projecting through said valve seat-member, and an oil pocket in said valve seat-member in contact with said stem.

In testimony whereof we affix our signatures in presence of two witnesses.

GUSTAV SCHMAAL.
JOSEPH B. WICKS.

Witnesses:
FRANK POTE,
ALBERT RITTER.