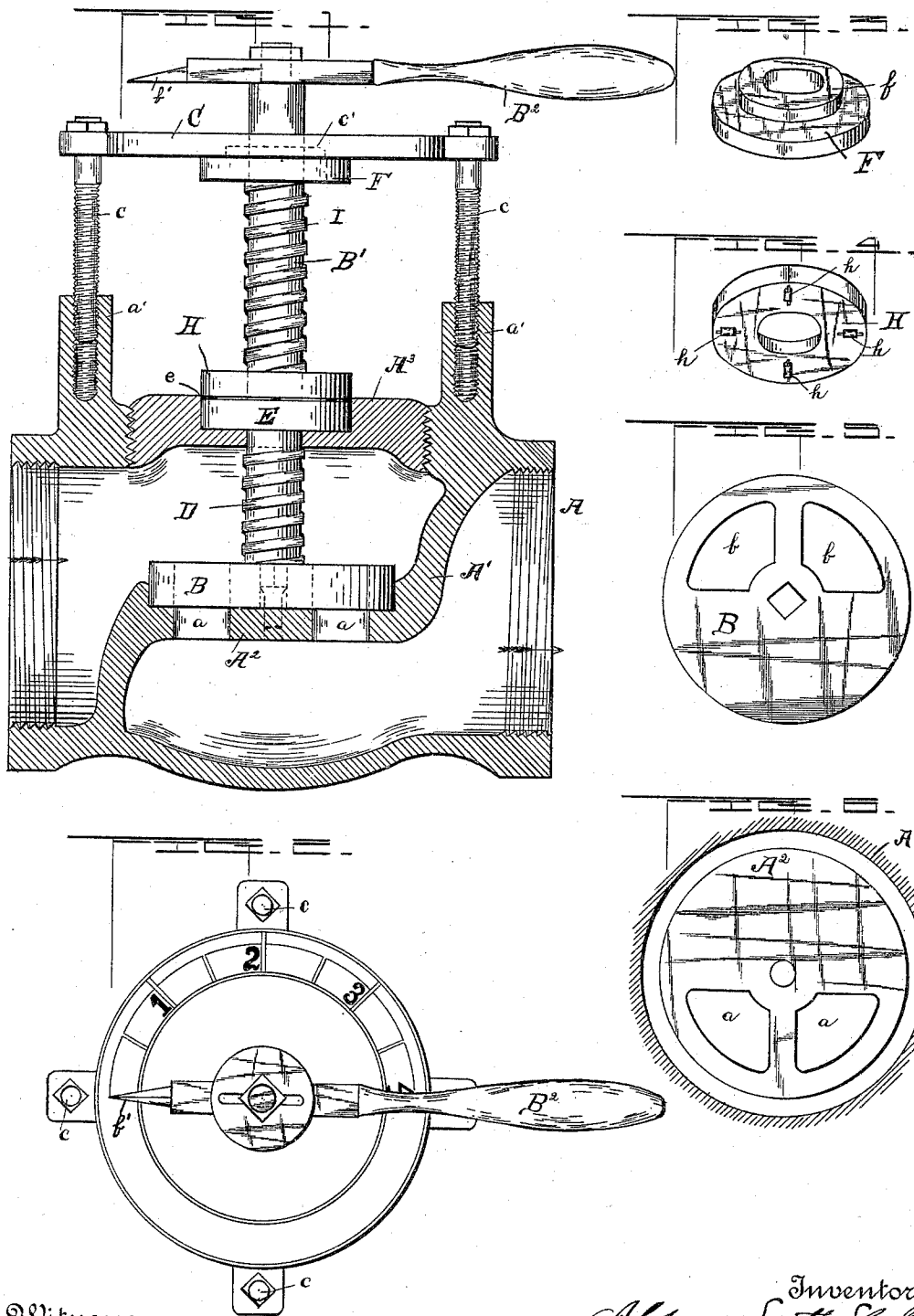


(No Model.)

A. S. SLYKER.
VALVE.

No. 488,228.

Patented Dec. 20, 1892.



Witnesses:
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UNITED STATES PATENT OFFICE.

ALFRED SCOTT SLYKER, OF LAFLIN, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 488,228, dated December 20, 1892.

Application filed March 30, 1892. Serial No. 427,050. (No model.)

To all whom it may concern:

Be it known that I, ALFRED SCOTT SLYKER, a citizen of the United States, residing at Laflin, in the county of Luzerne and State of Pennsylvania, 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.

My invention relates to improvements in valves, and has special reference to rotary valves; the principal object being to provide a simple and efficient rotary valve which may be easily and quickly opened or closed without being thrown from its seat and in which the use of packing is entirely dispensed with.

Another object is to provide means for indicating the "intake" of the valve when the actuating lever is operated for the purpose of opening the same.

To this end my invention consists in the improved features of construction and combination of parts all as will be hereinafter described and particularly pointed out in the claims at the end of this description.

Referring to the accompanying drawings which are to be taken as a part of this specification, and in which similar letters of reference are used to denote corresponding parts of the device, Figure 1, is a vertical sectional elevation of a valve embodying my invention; Fig. 2, is a plan of the same; and Figs. 3, 4, 5 and 6 are details of parts of the device for the purpose of more clearly illustrating the construction.

The letter A, in the drawings denotes a section of pipe forming a suitable valve chamber or casing which may be provided with interiorly screw threaded inlet and outlet ends for the attachment of the adjacent pipe sections, and with a cross-piece or partition A', having a countersunk valve seat A² to receive the valve disk B. The disk B is provided with ports or openings b, b, adapted to register with corresponding ports or openings a, a, in the valve seat A², when the disk is turned so as to cause said openings to coincide. The casing A may be formed integrally with the hollow internally screw-threaded lugs a', a', to receive the screw-threaded ends of pins or

studs c, c, which have their upper ends secured to a cross-bar or gland C.

B' denotes the valve stem which may be formed or cast integrally with a solid disk E, above the point of attachment to the disk B.

A³ is a cap piece having a countersink e, formed therein to receive the disk E, which forms a ground joint connection therewith; this cap piece being screwed into the opening in the top of the casing A, as shown, so that it may be readily removed and replaced for the purpose of inspecting, removing, and replacing the valve disk.

B² is the actuating lever by which the disk B is rotated.

D denotes a coiled or other suitable spring which is interposed between the valve disk B and the cap-piece A³, for the purpose of holding the disk B in contact with the seat A².

F denotes a washer which is placed on the valve stem B', and preferably formed with a cylindrical flange or collar f, adapted to fit a countersunk opening c', in the cross-bar or gland C.

H denotes a loose washer or follower fitting on the valve stem B' above the disk E, and provided with friction rollers h, h, which are adapted to rest upon the disk E, so as to relieve these parts of friction when the disk is rotated.

I, denotes a coiled or other suitable spring fitting about the valve stem B', between the disk or washers F, H, for the purpose of holding the disk E, to its seat, and at the same time permitting the valve stem to turn easily without torsional strain upon the spring. The spring I, being secured between two loose washers with the lower washer bearing on the disk E, will hold the disk having the friction rolls firmly to its seat, so as to form a steam, air or water tight joint, without the use of packing, while the valve stem and valve proper may be easily turned in either direction without exerting a torsional strain upon the spring I. This construction also dispenses with any lifting or raising of the valve or stem, and there is sufficient play of the valve disk B to compensate for the wear on the seat A². The spring D should have sufficient strength to normally seat the valve disk, but inasmuch as the "intake" of the

valve is from above, as indicated by the arrows, a spring of great strength is rendered unnecessary.

The pressure of the spring I may be regulated by means of the adjustable connections between the gland and casing, and any wear upon the contacting surfaces of the disk E and valve seat A² may be taken up by adjusting the screw rods c, c, while the valve stem is centered and retained in proper position to seal the joint between the disk E and part A³ about the stem.

In order to show the extent to which the valve ports a, b, are opened when the valve lever B² is turned, and thus indicate the "intake" of the valve, I provide an indicator which may consist of a suitable dial plate secured to the gland C, and provided with the graduated scale bearing the numerals 1, 2, 3, 4 or the like as shown in Fig. 2, together with an index or pointer b' on the inner end or short arm of the lever B². By this means when the lever B² is actuated the disk B may be rotated so as to open or close the ports a, b, to a greater or less extent, as may be desired, and the amount of "intake" of the valve will be accurately indicated on the dial plate.

Having thus fully described my invention what I claim and desire to secure by Letters Patent of the United States, is:—

1. In combination with the valve casing, the valve disk seated therein, the spring-pressed valve stem having the disk formed integrally therewith, the cap-piece or cover having the countersink adapted to receive said disk and forming a ground joint connection between said valve stem and casing, the spring adapted to press said disk to its seat,

and the actuating lever for rotating the disk valve, substantially as described.

2. A rotary valve comprising a suitable casing with disk valve seated therein, the valve stem, the actuating lever, the disk rigid with said valve stem, the cross-bar, the adjusting screws connecting said cross-bar and casing, the washers fitted loosely on said valve stem between said cross-bar and casing, the spring interposed between said washers, and a second spring for holding the disk valve to its seat, substantially as described.

3. In combination with the valve casing having the disk valve seated therein, the valve stem having the disk rigid therewith seated above said disk valve so as to form a ground joint above the valve stem, the loose washer having the friction rollers bearing on said rigid disk, and the spring bearing on said washer so as to force said disk to its seat, substantially as described.

4. In combination with the valve casing having the valve seat with disk valve seated therein, the valve stem having the disk rigid therewith seated above said disk valve so as to form a ground joint about the valve stem, the cross-bar and adjusting screws for centering said stem and disks, the loose washer having the friction rollers bearing on said rigid disk, the spring bearing on said washer so as to force said disk to its seat, and the actuating lever substantially as described.

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

ALFRED SCOTT SLYKER.

Witnesses:

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W. A. O'NEILL.