(No Model.)

J. WALSH, Jr.

VALVE.

No. 524,922. Patented Aug. 21, 1894.

FIG. 1.

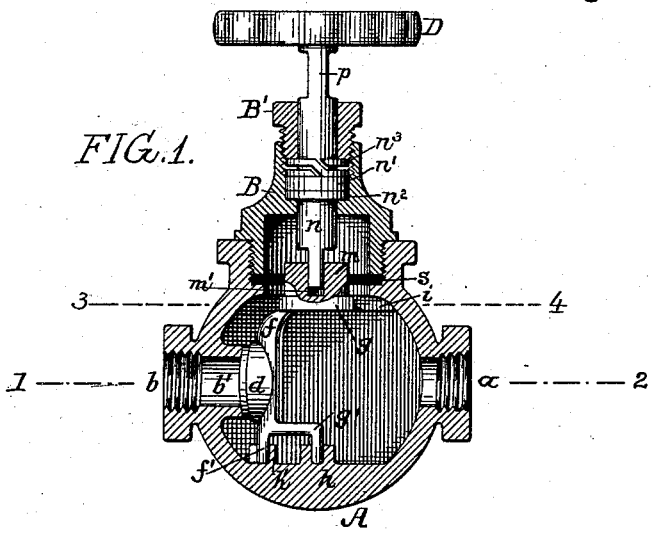


FIG. 2.

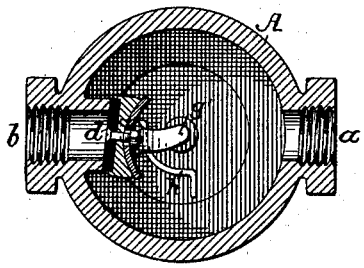


FIG. 3.

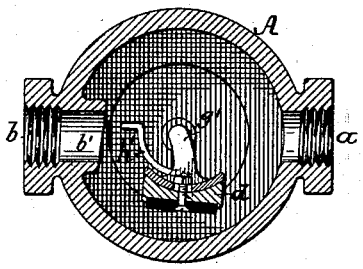


FIG. 4.

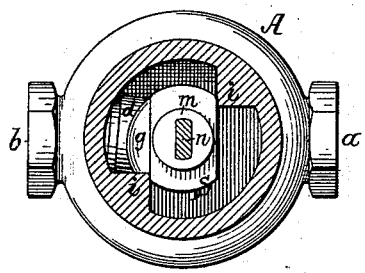
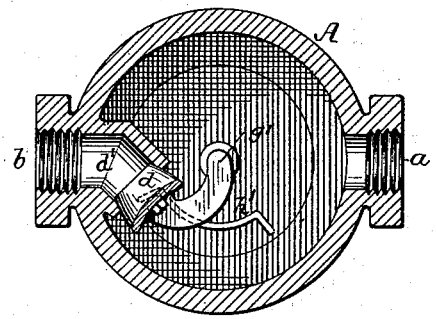


FIG. 5.



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UNITED STATES PATENT OFFICE

JAMES WALSH, JR., OF PHILADELPHIA, PENNSYLVANIA.

VALVE.

SPECIFICATION forming part of Letters Patent No. 524,922, dated August 21, 1894.

Application filed January 5, 1891. Serial No. 376,741. (No model.)

To all whom it may concern:

Be it known that I, JAMES WALSH, Jr., a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Valves, of which the following is a specification.

One object of my invention is to construct a straight way valve of a cheap and simple character in which the valve is out of the path of the steam or liquid when the valve is open, further objects being to provide for the proper guidance of the valve in its movements, to prevent the valve from moving too far in either direction and to insure the easy opening of the valve and the closing of the same without thump or jar. These objects I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1, is a longitudinal section of my improved valve. Figs. 2 and 3, are sectional plan views of the same, on the line 1—2, Fig. 1, showing the valve in different positions. Fig. 4, is a sectional plan view on the line 3—4, Fig. 1, and Fig. 5, is a view illustrating a special form of valve in accordance with my invention.

A represents the casing of the valve, *a* the inlet and *b* the outlet, the latter having, within the casing, a projection *b'* forming a seat for the valve *d* which is carried by an arm *f* depending from a cross bar *g* at the top of the casing and having at the bottom an arm *g'* free to turn in a central bearing *h* in the bottom of the casing, the lower end *f'* of the arm *f* being guided by a segmental lug *h'* in the bottom of the casing, and the opposite ends of this lug being projected so as to serve as stops for the arm. The upper portion of the casing has internally projecting lugs *i* which act as stops for the cross bar *g*, so that the movement of the arm *f* and its valve in either direction is arrested at the proper point.

The cross bar *g* has a hub *m*, in which is a recess *m'* for the reception of the flattened lower end of a stem *n* which is free to turn in the cap B of the valve and has a collar *n'* seated upon a packing ring n^2 supported by a shoulder in said cap, said collar being acted upon by a spring n^3 upon which bears the screw cap B'.

The outer end of the stem *n* has a handle D and that portion of the stem which is beyond the cap B' is flattened, as at *p*—, so that the position of this flattened portion of the stem in respect to the casing of the valve indicates whether the valve is opened or closed.

Between the cap B and a shoulder in the casing A is interposed a packing ring *s* which fits snugly to the hub *m* of the cross bar *g* so as to aid the packing n^2 in preventing leakage.

The valve *d* may either carry a washer, as indicated in Figs. 2 and 3, or it may be so shaped as to enter a ground seat formed in an inclined internal tube *d'* on the casing, as shown in Fig. 5, and in either case the back of the valve is preferably made concave and the arm *f* is convex and is slotted for the reception of the bolt whereby the valve is hung to the arm, so that said valve is free to swivel on the arm to a certain extent to insure its proper seating in or against the valve seat. This swiveling of the valve need not be adopted in all cases, however, as the valve may, in some cases, be rigid on the arm and the lower guide *h'* may also be omitted, if desired, although both of these features are preferable.

It will be observed that in the valve shown in Figs. 1 to 3 the valve-carrying arm is pivoted at the center of the casing so that the valve swings laterally across the valve seat in opening and closing, this movement being transverse to the line of flow and pressure of the fluid passing through the valve, so that the valve opens easily and closes against its seat without the thump or jar likely to be caused when the closing movement of the valve is in the same direction as the flow of the fluid.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. The combination of the casing having an inlet and an outlet provided with an inclined valve seat, the pivoted arm, the valve mounted directly thereupon, and a stem engaging with said arm to turn the same, the axis of said stem and arm being at the center of the valve casing, whereby the valve swings laterally across the valve seat in opening and closing, substantially as specified.

2. The combination of the casing having an inlet and an outlet provided with an inclined valve seat, a swinging arm having a curved

face with slot therein, and a valve adapted to close upon the inclined seat of the outlet, said valve being fitted at the rear to the curved face of the swinging arm and provided with a bolt adapted to the slot in said arm, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES WALSH, JR.

Witnesses:
EUGENE ELTERICH,
HARRY SMITH.