No. 860,141. PATENTED JULY 16, 1907.

J. P. LAVIGNE.

QUICK OPENING VALVE.

APPLICATION FILED DEC. 2, 1905.

Fig. 1.

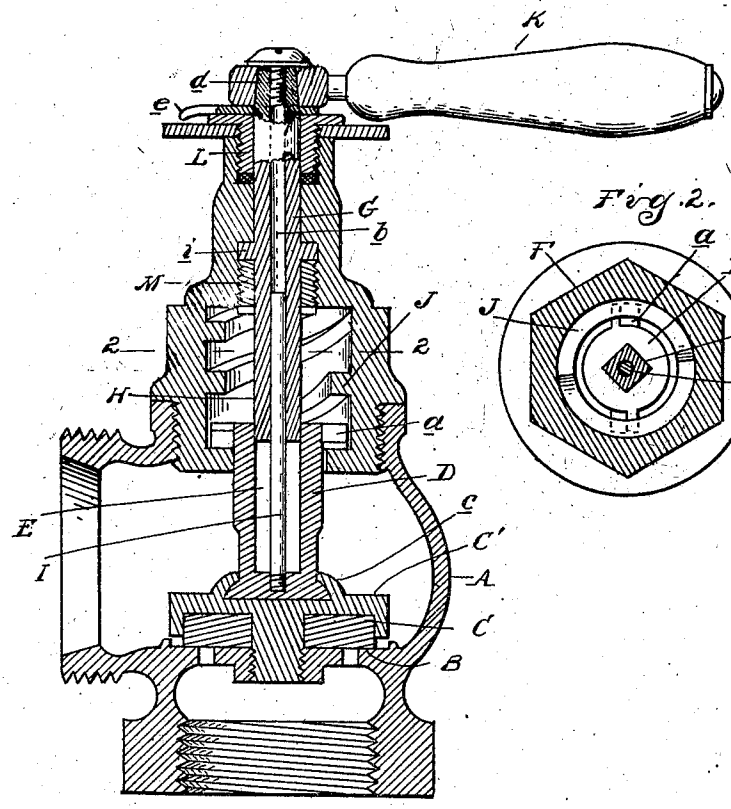


Fig. 2.

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JOSEPH P. LAVIGNE, OF DETROIT, MICHIGAN, ASSIGNOR TO DETROIT LUBRICATOR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

QUICK-OPENING VALVE.

No. 860,141. Specification of Letters Patent. Patented July 16, 1907.

Application filed December 2, 1905. Serial No. 290,036.

To all whom it may concern:

Be it known that I, JOSEPH P. LAVIGNE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new useful Improvements in Quick-Opening Valves, of which the following is a specification, reference being had therein to the accompanying-drawings.

The invention relates to new and useful improvements in quick-opening valves, and consists in the construction, arrangement and combination of the various parts whereby the construction is rendered more stable, easily assembled and certain in its action, without danger of binding and without undue friction, as more fully hereinafter described and particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical central section through an angle valve embodying my invention; and Fig. 2 is a horizontal section thereof on line 2—2, Fig. 1.

A represents the casing, having an angle passage therethrough, a seat B and a disk C, in ordinary form of disk casing C′, adapted to be moved to and from the seat B to open and close the valve. The disk casing has on it a flange *c* in which is engaged the lower enlarged end of the hollow valve stem D. This valve stem projects up into the cap F, which as usual is screwed into the main portion of the casing A. At the top this valve stem D is provided with the lateral flange *a*, which engages the spiral or quick thread J on the interior of the cap.

G is an operating stem journaled in the central aperture in the cap F, and the lower portion H thereof is squared to enter the squared aperture E in the valve stem, so that in turning the operating stem the valve stem will turn therewith. The valve stem slides on the operating stem in the opening and closing movement. Secured centrally of the valve stem and within the aperture thereof is the guide rod 1 which I have shown as screwed into a screw-threaded aperture in the interior portion of the stem. This guide rod extends upwardly and into a central aperture *b* in the operating stem, acting to guide and steady and center the valve and its stem in relation to the operating stem on the opening and closing movements thereof. At the top this bore or aperture *b* may be closed by a screw *d*.

K is an operating handle which is secured in the upper end of the operating stem and may be provided with a pointer *e* to indicate the position of the valve.

L is the usual packing gland around the upper portion of the operating stem.

The operating stem is provided with a collar *i* which enters a counterbore in the lower portion of the cap, which counterbore is screw-threaded to receive the annular nut or screw plug M. This screw plug being screwed in position, as shown in Fig. 1, the contact with the collar *i* will prevent any undue vertical movement of the operating stem and at the same time allow it to freely rotate.

The parts being thus constructed, it is obvious that if the handle K is turned it will turn the operating stem and through the squared connection between the operating stem and valve stem the valve stem will likewise be rotated and the lug *a* engaging the spiral or thread J will be moved up or down according to the direction in which the handle K is turned, the rod 1 acting as a guide to prevent the wabbling or angular motions of the valve stem in relation to the operating stem.

What I claim is,—

1. In a quick-opening valve, the combination of the casing, the valve disk, a stem therefor engaging a quick thread, an operating stem slidingly engaging the valve stem, and a guide for the valve stem engaging the operating stem.

2. In a quick-opening valve, the combination of the casing, a valve disk, a stem therefor engaging a quick thread, an operating stem slidingly engaging the valve stem, and a guide rod extending through the valve stem and engaging an axial guideway in the operating stem.

3. In a quick-opening valve, the combination of the casing an apertured cap therefor, a rotary operating stem journaled therein, said cap having a screw-threaded counterbore at the lower end of the aperture, a collar on said stem, an annular screw plug surrounding the operating stem, screwed into the counterbore and engaging the underside of the collar, a valve arranged to seat in the casing, and a stem for the valve having a telescopic engagement with the operating stem, substantially as described.

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

JOSEPH P. LAVIGNE.

Witnesses:
FREDERICK W. HODGES,
CAMERON B. WATERMAN.