Henry G. Ludlow and Jabez Stone.

Stop-Valves for Steam & other Enginery.

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PATENTED OCT 25 1870

Fig. 1.

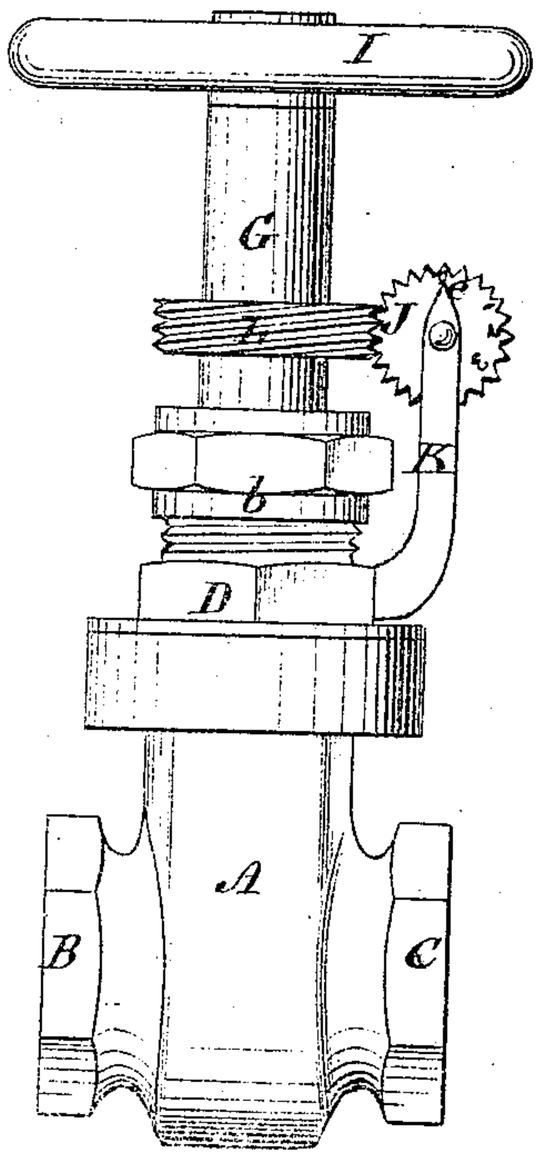


Fig. 2.

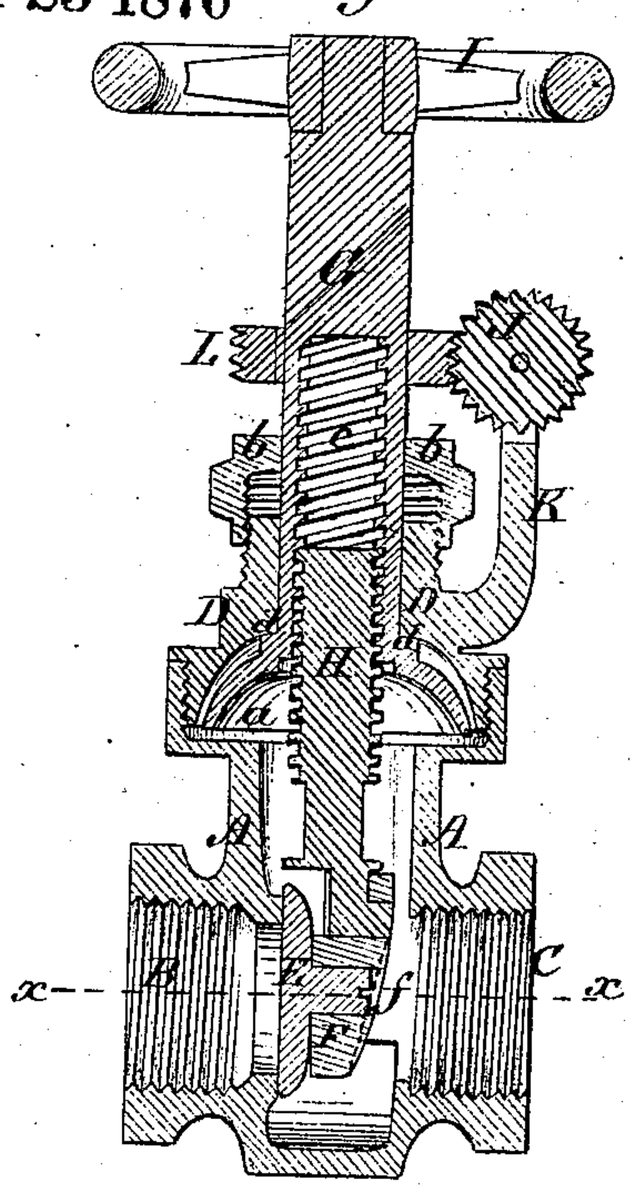


Fig. 3.

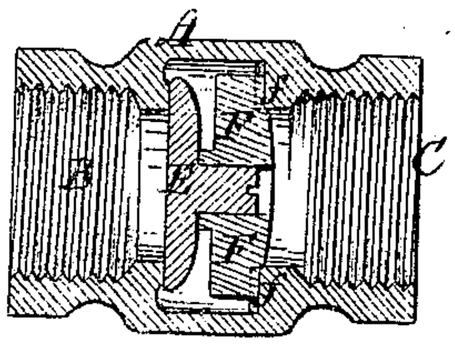
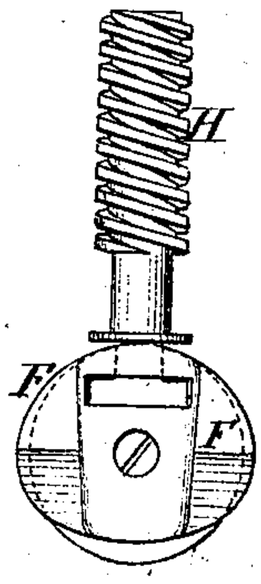


Fig 4.



Witnesses.
Geo W. Pearson
J. A. Clarke

Henry G. Ludlow & Jabez Stone Inventors

By their Attorneys,
Upperman & Johnson.

United States Patent Office.

HENRY G. LUDLOW, OF TROY, AND JABEZ STONE, OF WATERFORD, NEW YORK, ASSIGNORS TO HENRY G. LUDLOW.

Letters Patent No. 108,714, dated October 25, 1870.

IMPROVEMENT IN STOP-VALVES.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that we, HENRY G. LUDLOW, of Troy, in the county of Rensselaer and State of New York, and JABEZ STONE, of Waterford, in the county of Saratoga and State aforesaid, have invented certain new and useful Improvements in Stop-Valves for Steam and other Enginery; and we do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing, which makes part of this specification, and in which—

Figure 1 represents an elevation of a stop-valve embracing our improvements;

Figure 2 represents a longitudinal section, showing the valve or gate closed;

Figure 3 represents a horizontal section, taken at the line *x x* of fig. 2; and

Figure 4 represents an elevation of the valve, valve-carrier, and its screw-stem.

Our invention relates to that class of stop-valves in which the stem is made to revolve only on its axis to produce a motion of the valve in opening and closing the same; and

Our improvement consists of an indicator, in connection with such a valve, operated by the revolving motion of the valve-stem, in such manner as to indicate whether the valve is opened or closed, or to regulate and indicate any degree, in inches or fractions of an inch, to which it may be desired to open said valve.

In the accompanying drawing—

A represents the valve-box, having suitable openings, B C, for its attachment to the engine and the escape-pipe, and is provided with a screw-cap, D, through the opening for which the valve E and its carrying-plate F are inserted into their chamber in the box.

The revolving stem or sheath G of the valve passes into and through the cap D, and is packed, so as to render it steam-tight, by an annular rim, *a*, of an inverted cup, upon which it is supported, and a stuffing-box, *b*, fitted into and screwed upon the outer end of the cap.

The revolving stem or sheath G is provided with an interior screw-thread, *c*, into which is fitted a screw-stem, H, to which the valve-carrier F is attached.

The hollow revolving stem or sheath is prevented from having any movement in the direction of its length by the bearing of its annular rim, *a*, upon its seat in the valve-box, and a shoulder, *d*, also upon the stem above the inverted cup *a* acting against the inner side of the screw-cap D.

The turning of this stem to the right or left, therefore, causes the screw-stem H to move lengthwise within the revolving stem or sheath G in opening and closing the valve or gate.

The valve is closed upon its seat by means of inclined planes, *f*, on one side of the valve-chamber, against which the valve-carrier strikes in closing said valve; and, as the latter and its carrier cannot turn within their chamber, nor the screw-stem upon the carrier, the valve must move in and out by simply turning a hand-wheel, I, on the outer end of the hollow stem or sheath.

In order to determine the position of the valve or gate, and to regulate the opening thereof, according to inches or fractions, we utilize the revolving motion of the hollow stem or sheath G, to operate an indicator divided into inches and fractions.

This indicator consists of a toothed wheel, J, supported by a standard or an arm, K, on the cap, and matching into the threads of a worm, L, or other suitable device that will interlock with and communicate the rotary motion of the sheath G to the indicator.

The standard K, which supports the indicator, also forms a pointer or index-finger, *e*, for the graduated wheel.

The scale of inches may be arranged upon the wheel so as to be read either from its face or edge, as may be desired.

The indicator may be supported in a standard separate from the valve, and connected therewith in any suitable manner.

The teeth of the indicator and its operating device must correspond with the screw of the interior stem H, and the indicator adjusted so that a cipher, for instance, will show the valve closed, and the figure 4 the valve open.

The rotary motion of the worm L and its wheel J will indicate exactly the longitudinal movement of the screw-stem, and the extent of the opening of the valve.

We do not intend to confine ourselves to the use of a hollow sheath or stem, but to connect it with the interior screw-stem in any manner that will operate the indicator by a revolving motion.

Having described our invention,

We claim—

1. An indicator for determining and regulating the position of a stop-valve or valves, operated by the revolving motion of the stem from which the valve derives its opening and closing movement, as herein described.

2. The combination, substantially as described, of the revolving stem or sheath G of a stop-valve, the worm L, and indicator J, for the purpose of indicating the position of said valve.

3. The combination of the valve-box A, the valve E, with its carrier F, the suspending screw-stem H, the revolving stem or sheath G, and the indicating device J and L, the several parts being constructed, arranged, and operating as herein described.

In testimony whereof, we have hereunto set our hands.

HENRY G. LUDLOW.
JABEZ STONE.

Witnesses:
LYMAN K. EDDY,
ELDORUS PORTER.