(No Model.)

L. J. HIRT.

VALVE.

No. 588,430. Patented Aug. 17, 1897.

Fig. 2,

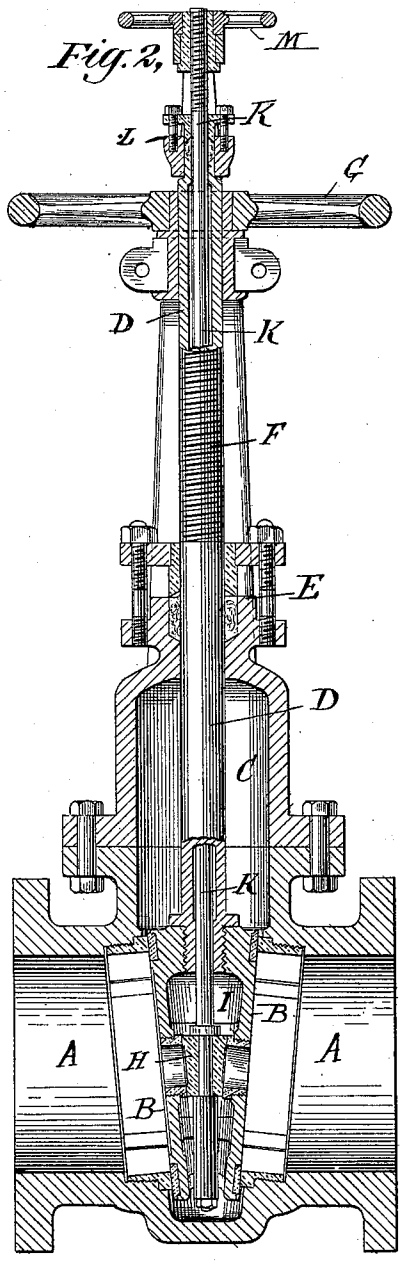
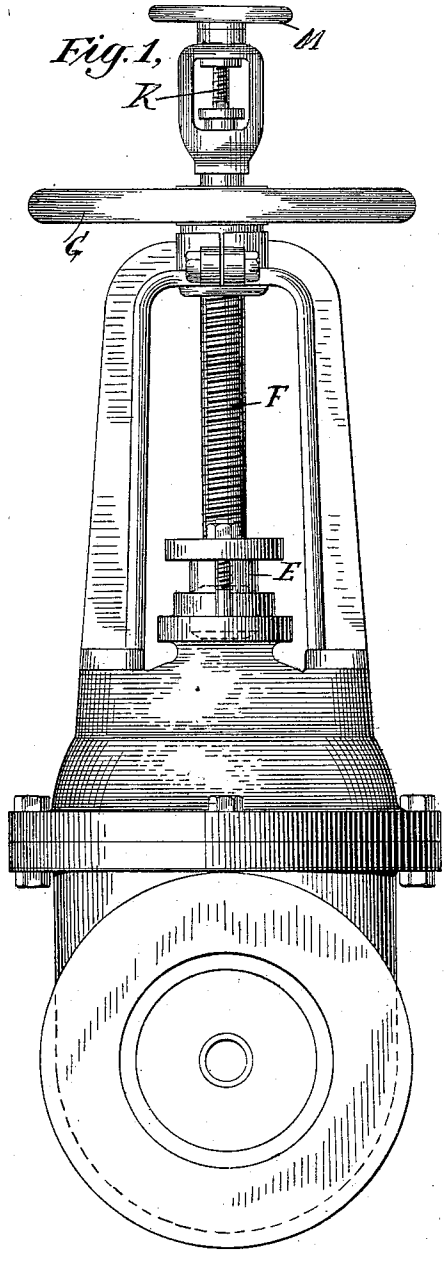


Fig. 1,



WITNESSES:

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UNITED STATES PATENT OFFICE.

LOUIS J. HIRT, OF BROOKLINE, MASSACHUSETTS.

VALVE.

SPECIFICATION forming part of Letters Patent No. 588,430, dated August 17, 1897.

Application filed May 1, 1896. Serial No. 589,842. (No model.)

To all whom it may concern:

Be it known that I, LOUIS J. HIRT, a citizen of the United States, and a resident of Brookline, in the county of Norfolk and State of Massachusetts, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My improvement relates to slide-valves having relief-ports or secondary valves for relieving the pressure on the valve in order to permit it to be operated with greater facility; and it consists of a novel construction and arrangement of the valve and of the mechanism by which the relief part is operated.

In the accompanying drawings, illustrating my improvement, Figure 1 is an end elevation of the valve, and Fig. 2 is a side sectional elevation of the same.

A A is the valve-body and is introduced into or forms part of the steam-pipe.

B is the valve, which, as shown in Fig. 2, is tapering, as seen from the side, and when raised or opened slides into a chamber C, mounted on the valve-body. From the top of the valve extends a valve-stem D, by which the valve is raised or lowered. This valve-stem passes through a suitable stuffing-box E and is provided with a screw-thread F, which engages with the hand-wheel G. As will be understood from the drawings, when the wheel G is turned the valve-stem, and with it the valve, is raised until the valve is drawn up into the chamber C and is thus opened. As the pressure in the steam-pipe on the side of the valve is very great, much force must be used to move the valve in order to open it. To lessen this pressure and therefore permit the valve to be raised easily, I provide in the valve B a secondary slide-valve H, which is operated independently of the valve B. This valve H, when viewed from the side, as in Fig. 2, is likewise tapering and when raised slides into a chamber I, provided in the upper part of the valve B. From the valve H extends a valve-stem K, passing through the valve-stem D, which is constructed hollow for the purpose, and beyond the wheel G, where it passes through a stuffing-box L. The upper end of the stem K is threaded and engages with the wheel M, whereby as the wheel is turned the stem, and consequently the valve H, is raised or lowered, according to the direction in which the wheel is turned.

When the large valve B is to be opened, the small or secondary valve H is first raised by turning the wheel M and sliding the valve up into the chamber I by the valve-stem K. The secondary valve being small and offering but little area to the pressure in the pipe, slight force is required to open it, and as soon as opened it relieves the great pressure on the large valve B. After the valve has remained opened a sufficient length of time and the pressure in the pipe has been reduced so as to permit the ready opening of the large valve B the latter is raised by the wheel G through the valve-stem D. At the same time the wheel M is lifted up and carries with it the valve-stem K and valve H. The secondary valve is therefore raised, together with the large valve, by means of its own valve-stem and by the operation of the one wheel G.

In my construction the several parts are very compact and convenient of operation, as the valve-stem of the one valve is within the stem of the other, thus making the construction very simple and easy of operation.

What I claim is—

In a valve, the combination with the valve B, valve-stem D, and wheel G, of the secondary valve H, valve-stem K, passing through the stem D, and wheel M, substantially as described.

LOUIS J. HIRT.

Witnesses:
WALTER P. PLUMMER,
CHARLES E. CORBY.