(No Model.)

W. SCOTT.

GATE VALVE.

No. 340,371. Patented Apr. 20, 1886.

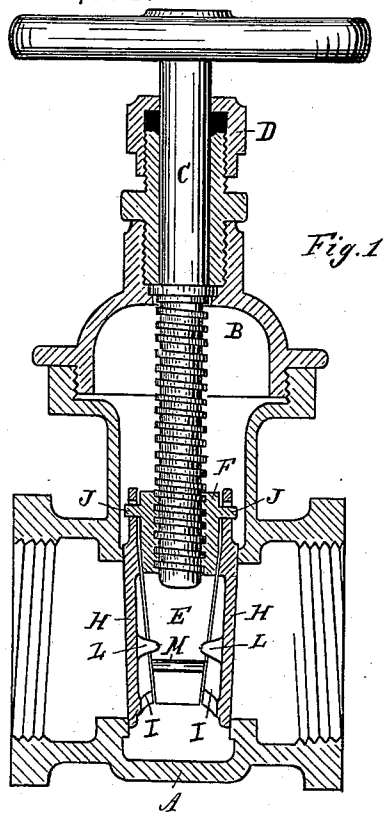


Fig. 1

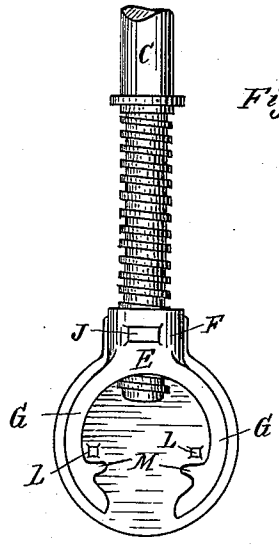
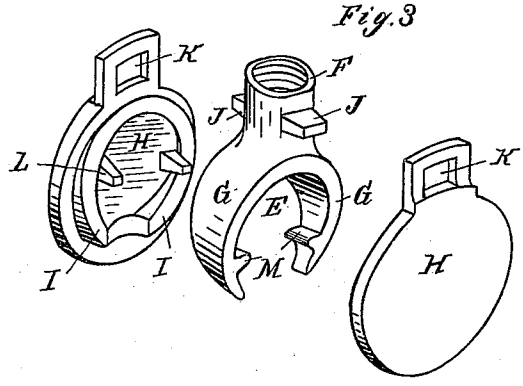


Fig. 2

Fig. 3



Attest:
John Schuman.
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Inventor:
William Scott.
by his Atty
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UNITED STATES PATENT OFFICE.

WILLIAM SCOTT, OF DETROIT, MICHIGAN, ASSIGNOR TO ROE STEPHENS, OF SAME PLACE.

GATE-VALVE.

SPECIFICATION forming part of Letters Patent No. 340,371, dated April 20, 1886.

Application filed August 13, 1885. Serial No. 174,334. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SCOTT, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Gate-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in gate or straightway valves, and is especially designed as an improvement upon the structure of such valves as shown and described in Letters Patent No. 302,434, issued to me, and dated July 22, 1884.

The invention consists in the peculiar construction of the various parts and their combination, as more fully hereinafter described.

Figure 1 is a longitudinal vertical section of my improved valve. Fig. 2 is a plan of the wedge, one of the gates or disks, and a portion of the screw. Fig. 3 is a perspective detail showing the method of securing the gates or disks to the central wedge.

In the accompanying drawings, A represents a shell of the usual form, having a removable cap, B, and screw-stem C, for raising or lowering the gates, and the packing-gland D, applied to the cap B, and encircling the screw-stem to prevent leakage, these parts being common to all valves of this class.

E represents the wedge, which is bifurcated, and consists of a stem, F, internally threaded to engage with the screw-stem C, and the two wedge-shaped wings G, secured to or integral with the lower end of the same. The faces of the wings, instead of being parallel with one another, form converging angles, such wings being curved to conform to the shape of the valve or the bearings upon the rear sides of the inner faces of the disks H, which have upon their inner faces and cast integral therewith wedge-pieces I, or inclined planes formed to correspond with the angles of the wedge E, so that when the latter is forced between such disks it drives them apart and holds them firmly against their seats in the shell.

Projecting from either side of the stem F, and opposite each other, there are formed lugs J, and there are formed or cast upon the upper ends of each of the disks a loop, K, the interior dimensions of such loops being larger than the lugs J, so that when the disks are hung by means of such loops upon the lugs J they will have a little vertical play, and so that they will always, by their own gravity, hang a little lower than the wedge and seat themselves when in operation, after which such freedom of motion on the lug allows the wedge to be forced down a little farther, thereby holding the disks firmly against their seats. The wedge being cast in brass, the lugs cast thereon are malleable, thereby giving me an opportunity to slightly rivet upon their two side edges each of the lugs as they project through the loops of the disk, thereby rendering it impossible for the latter to be accidentally displaced.

In practice, the shell being in place and the operative parts in place in the shell with the valve open, and it is desired to close the same, the wedge is run down by means of the screw-stem, carrying with it the disks hanging on either side thereof, until the disks are brought opposite their seats. Now, continuing slightly the motion of the screw forces the wedge to drive outward the disks firmly against their seats. Studs L are formed on the inner face of the disks, which engage with ledges M, formed on the inner face of the two legs of the wedge, and this engagement is for the purpose of preventing the disks from dropping too much in advance of the wedge, and these parts are so arranged as not to interfere with the vertical play of the disks upon the lugs J, while the ledges M, by their engagement with the studs L, form means for lifting the disks H without allowing the weight to be thrown upon the lugs J.

What I claim as my invention is—

1. In a gate-valve, as described, the combination, with the bifurcated wedge having ledges M upon the inner surface, of the disks H, loosely hung upon the said wedge and having studs L, arranged to engage said ledges, and the whole arranged to serve with a stem and case, as set forth.

2. In a gate-valve operated by a screw-stem, the combination of a shell with two disks having loops K and studs L, and a bifurcated

wedge, E, having lugs J and ledges M, substantially as and for the purpose described.

3. In a gate-valve, the combination of a shell with disks having loops and studs and rear inclined projections, and a bifurcated wedge having ledges, as M, and having a hub which has lugs projecting therefrom, the parts being constructed and operating substantially as and for the purpose specified.

WILLIAM SCOTT.

Witnesses:
H. S. SPRAGUE,
CHARLES J. HUNT.