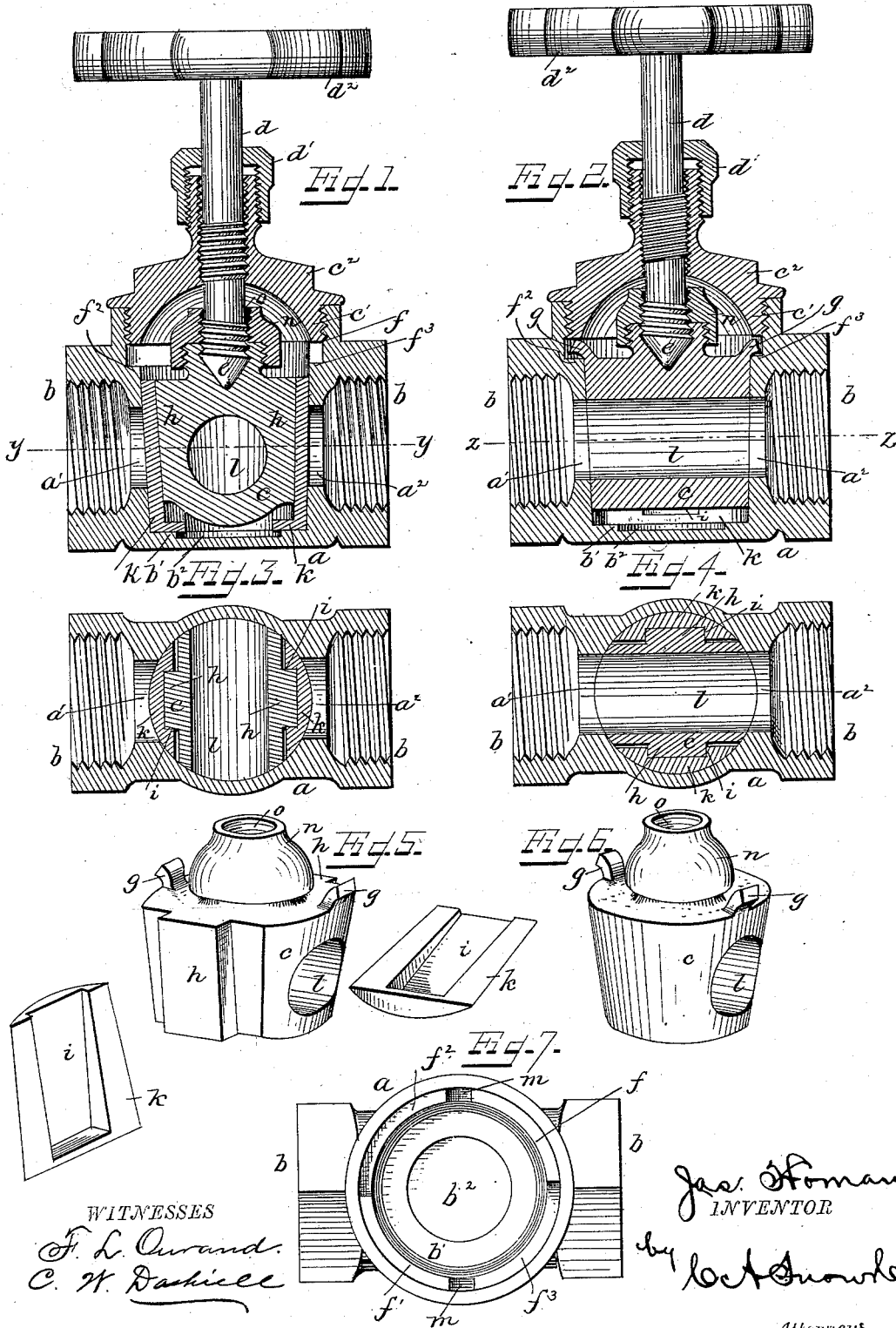


(No Model.)

J. HOMAN.
STRAIGHT WAY VALVE.

No. 305,078.

Patented Sept. 16, 1884.



WITNESSES
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STRAIGHT-WAY VALVE.

SPECIFICATION forming part of Letters Patent No. 305,078, dated September 16, 1884.

Application filed February 27, 1884. (No model.)

To all whom it may concern:

Be it known that I, JAMES HOMAN, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented a new and useful Straight-Way Valve, of which the following is a specification, reference being had to the accompanying drawings.

This invention has relation to straight-way valves for engine-boilers; and it consists in the construction and novel arrangement of parts, as will be hereinafter fully described, and particularly pointed out in the claims appended.

Figure 1 is a vertical sectional view of my improved straight-way valve provided with loose gates, showing the ports closed. Fig. 2 is a vertical section of the same, showing the ports open. Fig. 3 is a horizontal section on the line $y y$, showing the ports open. Fig. 4 is a horizontal section on the line $z z$ in Fig. 2, showing the ports closed. Fig. 5 is a perspective view of the plug and loose gates detached from it. Fig. 6 is a perspective view of the plug having the gates made integral therewith, and Fig. 7 is a sectional detail view showing the interior of the valve-case.

Referring by letter to the accompanying drawings, a designates the body of the valve-case, provided with the ports a' a'' , and cast integral with the hexagonal threaded caps b b . The bottom of the valve-case a has an annular raised portion, b' , near its edge, which forms a depression, b'' , which permits the plug or wedge c to settle down therein, to compensate for the wear on the bottom of the plug and the gates to keep the valve always tight. The interior of the valve-case is threaded near its upper edge to receive the threads on the exterior of the depending annular flange c' of the cap-plate c'' , through which the valve-stem d passes, a stuffing-box, d' , being provided for the valve-stem, which carries the hand-wheel d'' at its outer end. The inner end of the valve-stem d is preferably pointed, and is provided above the point with a short-turn left-hand screw, e , for a purpose hereinafter explained. Below the threads, at the upper edge of the valve-case a , are provided the horizontal ledges or shoulders $f f'$ and $f'' f'''$, the shoulders f and f' being nearer the top of the

valve case than are the ledges $f'' f'''$, and their ends forming stops for the suspending-lugs g g at diametrically-opposite points on the upper edges of the plug or wedge c . The wedge c , when the gates are made to work loosely thereon, has rounded edges and straight sides, the latter being provided with tongues or raised vertical guides $h h$, diametrically opposite each other, which fit into grooves $i i$ in the inner faces of the tapering convexo-plane gates $k k$. The lower ends of these gates $k k$ are the larger ends, and the grooves $i i$ are closed at the lower ends and open at their upper ends. The gates $k k$ are a very little longer than the body of the wedge or plug c , which latter is provided with the way l between the gates $k k$, which is of the same diameter as the ports a' a'' . The valve-case a is provided in its inner face at the ends of the ledges $f'' f'''$, and at diametrically-opposite points in said inner face, with vertical recesses $m m$, into which the suspending-lugs $g g$ drop when the plug or wedge c is properly turned to lock the valve in a closed position. The bell-piece n is provided in its upper end with a threaded seat, o , for the threaded point of the stem when this form is used. The bell-piece may be made separately from or integral with the wedge or plug. The bottom of the body of the plug is preferably rounded, as shown.

The gates, instead of being made separately from the plug, may be made integral therewith, as a solid plug will operate in all essential particulars the same as one having the loose gates; but the loose gates are better and are preferable, as they can be better arranged to compensate for wear. When the valve is open, the point of the stem is journaled into the bell-piece or head of the plug, and the first turn of the hand-wheel throws it into position to close. In fact, the gates are opposite the ports. When the lugs on the head strike the recesses in the inner face of the valve-case, the plug can be turned no farther, and the left-hand threads on the stem and in the bell-piece force the plug down between the gates and tighten them. The stem is now free from the head of the plug, so that upon opening the gates the first turn of the wheel simply raises the plug, leaving the ports still closed,

but not tightly. When the stem jams into the plug, it can rise no farther, but must turn and open the gates.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a straight-way valve, the combination, with the valve-case having ledges and diametrically-opposite stop-recesses, of the plug carrying the gates and provided with suspension-lugs, and a threaded stem-seat in its upper end, and the valve-stem having the short-turn left-hand screw near its point, for raising, lowering, and turning the plug, substantially as specified.

2. In a straight-way valve, the combination, with valve-case having suitable internal ledges and stop-recesses, of the wedge having vertical guides on its sides, a threaded seat in its upper end, and suspension-lugs at its upper edge, the valve-stem having the short-turn left-hand screw near its point, and the loose gates having grooves for the reception of the vertical guides on the wedge, substantially as specified.

3. In a straight-way valve, a plug carrying the gates for closing and opening the ports, provided with a steamway and a threaded seat in its upper end, in combination with a pointed valve-stem having a short-turn left-hand thread just above the stem-point, for raising and turning and turning and lowering the plug to cause the gates to close the ports, substantially as specified.

4. The combination, with the valve-case provided with internal ledges and diametrically-opposite stop-recesses, of a plug having a passage-way horizontally through it, suspension-lugs, and a threaded stem-seat in its upper end, and the valve-stem having the short-turn left-hand screw near its point, for raising, lowering, and turning the plug, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JAMES HOMAN.

Witnesses:

GEORGE LUDLOW,
HORACE ALEXANDER.