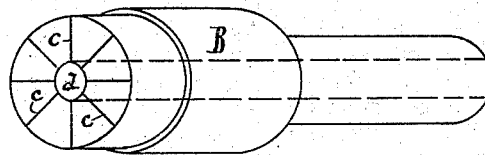
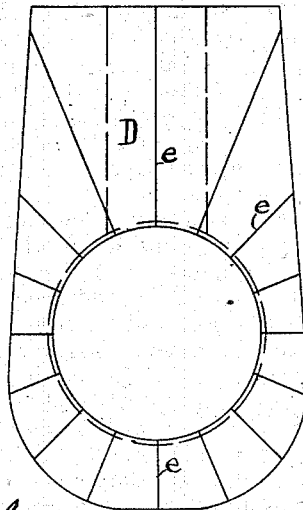
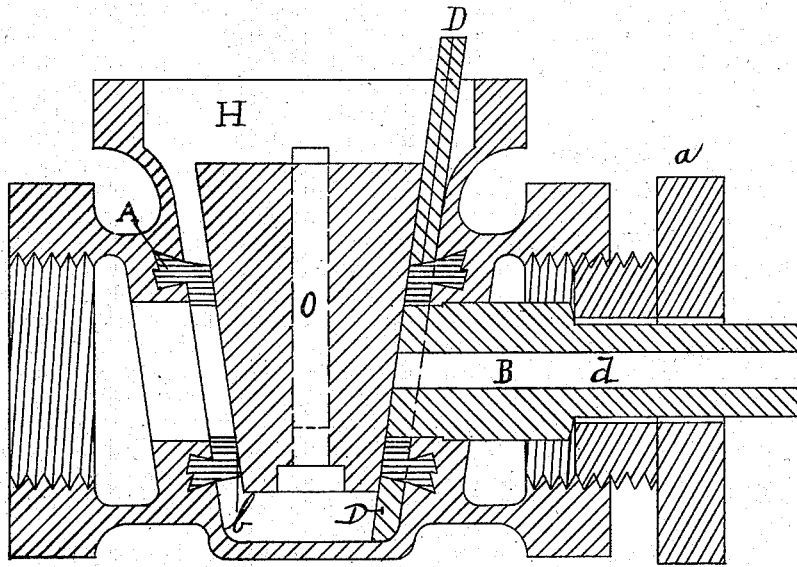


J. BERRY.

APPARATUS FOR CASTING VALVE SEATS.

No. 186,449.

Patented Jan. 23, 1877.



*Witnesses*  
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# UNITED STATES PATENT OFFICE.

JOE BERRY, OF SPRINGFIELD, MASSACHUSETTS.

## IMPROVEMENT IN APPARATUS FOR CASTING VALVE-SEATS.

Specification forming part of Letters Patent No. 186,449, dated January 23, 1877; application filed November 20, 1876.

### *To all whom it may concern:*

Be it known that I, JOE BERRY, of Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful improvement in devices for casting white or soft metal valve-seats or packing onto brass or other gate-valves, and uniting the same thereto, of which the following is a specification:

This improvement relates to that class of valves constructed with a gate made to lift and fall vertically, thus opening and closing the passage-way straight through the valve, and in which valves the metallic bearing-faces, against which the gate impinges to cut off the flow, are cast from Babbitt or soft white metal.

The ordinary method of casting such white metal seats onto the body of valves before the discovery of my method has been to cast a recess in the body around the passage-way through the valve, and putting the gate in place, with a solid plug in the passage-way, to form the interior of the white-metal ring, and a suitable form for the exterior, to pour the molten metal into the cast recess in the body.

A serious difficulty in working by the old method arose from the absence of any effective way of giving a suitable vent to the melted metal after pouring it into its place, and this occasioned blow-holes and bubbles in the white-metal casting, which caused great imperfection and consequent leakage.

The object of my invention is to obviate the above-mentioned difficulty in the way of making perfect valve-seats, and, by means of giving suitable vent to the interior and exterior portions of the white-metal valve-seats while casting them, to prevent blow-holes and bubbles therein, as hereinafter described.

Referring to the drawings, A is a turned recess in the valve-body H. b is the valve-seat. o is the gate. D is the ventilating and forming plate for the outside diameter of the valve-seat, having vent-grooves cut from the hole in it to the outside edges. a is the lock-nut. B is the hollow plug, with vent-grooves cut on the end used next to the gate.

The manner of casting the valve-seats, according to my improvements, is as follows, viz: I take the valve-body H, and turn and cut a suitable recess, A, in it, to receive the molten white metal, and drop the gate o into

its place. I then place the ventilating and forming plate D vertically in the body H, with its grooved face against the gate. I then pass the hollow plug B through one end of the body H, letting its grooved beveled end press closely against gate o. I then screw the lock-nut a into the body H, and over the end of plug B, against a shoulder on it, which holds it firmly in position against the gate. With the parts in this position I pour the molten white metal down the space between the back side of plate D and the interior of the body H, and it flows into the recess A, and into a mold formed by it and the face of gate o, and the plug B, and the perimeter of the hole in plate D, through which plug B passes to the face of gate o. The molten metal finds vent from the interior diameter of the cast seat through the grooves c cut on the end of plug B, and which lead to a vent-hole, d, through it to the open air; and the exterior diameter of the cast seat finds vent through the grooves e cut in the face of plate D, and which radiate from the opening in it to the outside edges of the same.

The seats, cast in the manner and by means of the devices above described, are perfect.

Having thus described my invention, what I claim is—

1. The hollow plug B, conforming on the end next to the gate o to the taper of said gate, and having filed or other otherwise cut on its said inner end vent-grooves running from the outer edge or periphery of said plug to the ventilating-hole through it, substantially as described, and for the purpose set forth.

2. The ventilating and forming plate D, having an opening through it the same as the outside diameter of the soft-metal packing, and having vent-grooves on its face next to the gate, which radiate from said opening to the outside edges of said plate, substantially as and for the purpose set forth.

3. The gate o, plate D, plug B, with its lock-nut a combined within the valve-body, and forming, with the recess A, a mold, to give the valve or gate seat the requisite form, substantially as and for the purpose set forth.

JOE BERRY.

Witnesses:

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