

No. 720,477.

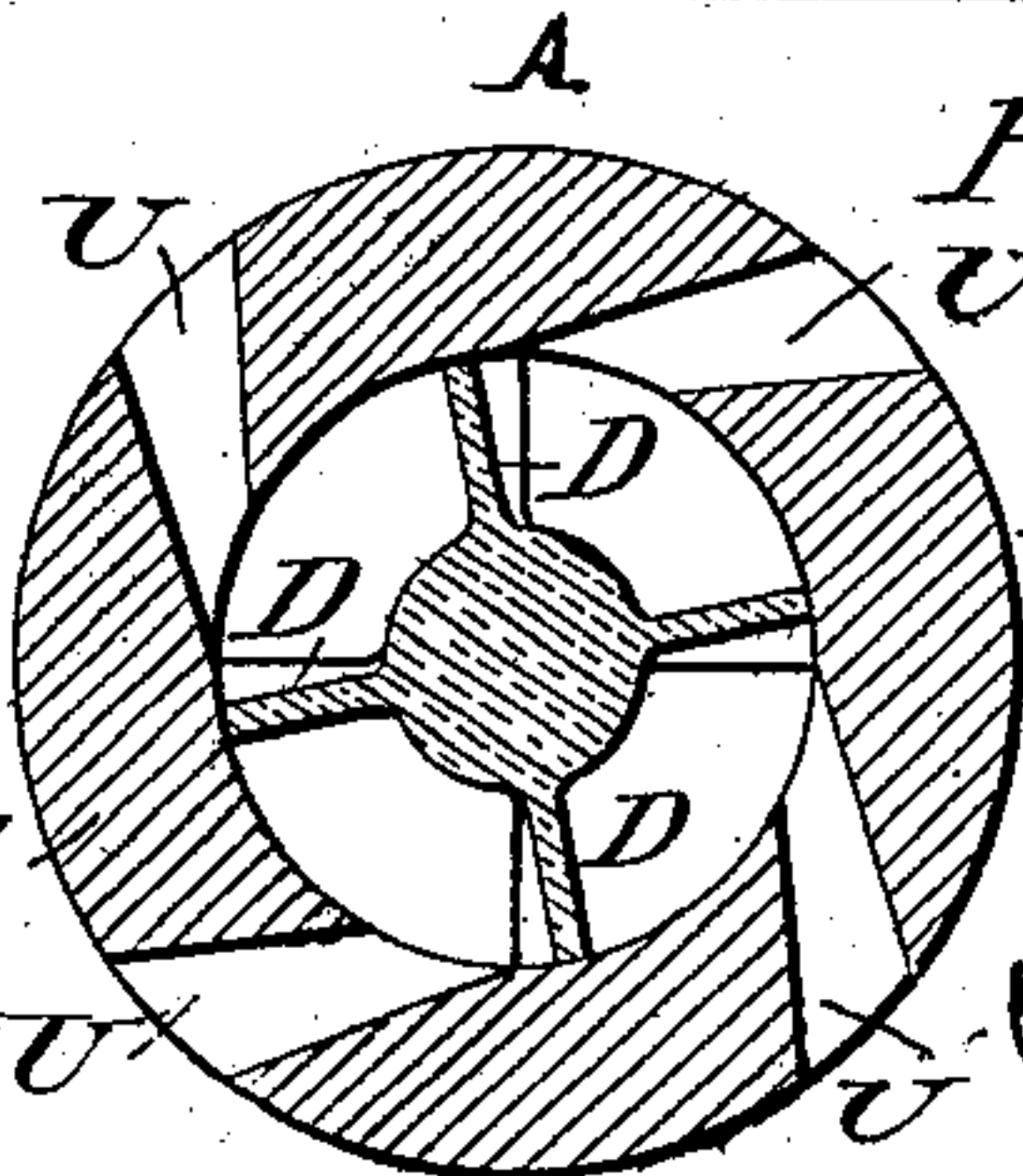
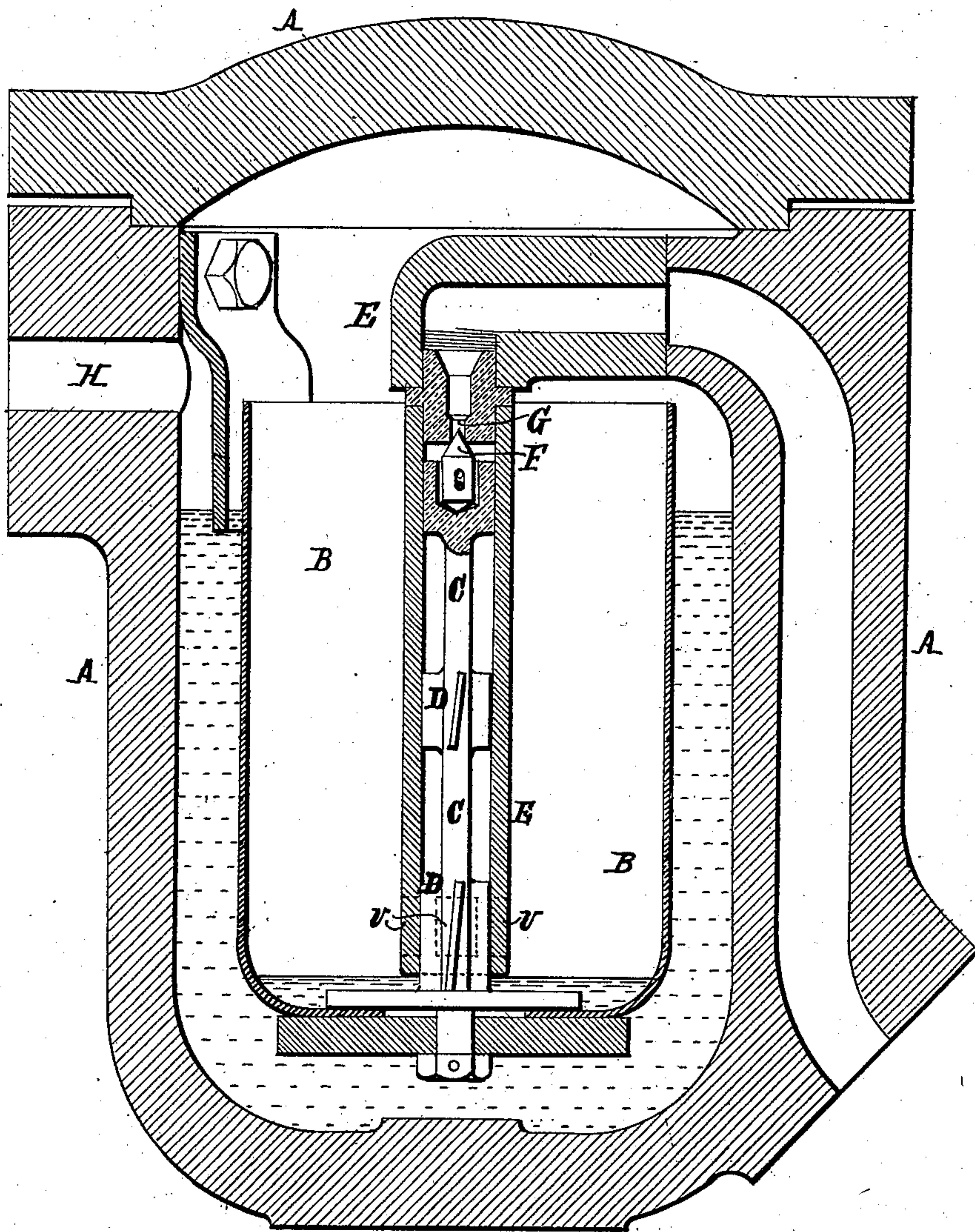
PATENTED FEB. 10, 1903.

W. J. POOLE.
VALVE.

APPLICATION FILED AUG. 23, 1901.

NO MODEL.

FIG. 1.



WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM JOHN POOLE, OF GLASGOW, SCOTLAND.

VALVE.

SPECIFICATION forming part of Letters Patent No. 720,477, dated February 10, 1903.

Application filed August 23, 1901. Serial No. 73,074. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOHN POOLE, a subject of the King of Great Britain and Ireland, and a resident of Glasgow, in the county of Glasgow, Scotland, have invented certain Improvements in and Connected with Valves, of which the following is a specification.

My said invention has for its object to prevent or greatly diminish the possibility of unequal wear between a valve and its seat, thereby rendering such valve more efficient and satisfactory in use by lessening the possibility of leakage past the valve, which is liable to happen when the valve and its seat wear unequally.

In carrying out my invention in the case of a steam-trap such as is shown in vertical section in Figure 1 and in detail cross-section in Fig. 1^a there floats in the water of condensation in the trap A the usual inverted bell B, having a central spindle C, guided by vanes D on it, bearing on the inner side of the discharge-pipe E, which dips, as usual, into the bell B. The valve F is, as usual, on the upper end of this spindle, and it closes against a seat G in the interior of the discharge-pipe E when the bell B is in its highest position, as shown. According to my invention I place the guiding-vanes D at an angle on the valve-spindle C, as shown, or one or more spiral vanes may be employed. When the water of condensation entering the trap A by the inlet H has overflowed into the bell B and sinks it, as usual, thus removing the valve F from its seat G, the steam-pressure forces the water in the bell up the discharge-pipe E. This water in its passage will encounter the inclined or spiral vanes D and cause the bell B to revolve as it empties and rises. When it has reached its highest position again, the momentum which the bell has gained will make the valve F turn on its seat G more or

less in closing, and thus cause a slight grinding action to take place, which will insure that both the valve and its seat will wear equally and be kept clean and free from any matter which might deposit thereon and cause corrosion and leakage. A number of ports U may be formed through the side of the lower part of the discharge-pipe E at an angle with the center of the pipe, and the steam-pressure will also force the water through these ports. In this case the vanes D do not require to be angled, but may be straight, as the angled position of the ports U causes the water passing through so to strike on the blades that these will be rotated.

I claim as my invention—

1. A valve on a spindle capable of rotation and fitted with vanes, and a weighted part and a number of angled ports formed through the part within which the valve-spindle works and opposite the vanes on the spindle, substantially as and for the purposes described.

2. A steam-trap having a discharge-pipe, a valve and spindle therefor and an inverted bell, with vanes on the spindle within the discharge-pipe and openings in the pipe to cause the discharged water to pass through the pipe and to so strike the vanes as to rotate the valve, spindle and bell, as and for the purpose described.

3. A steam-trap having a discharge-pipe, a valve, spindle and weighted part therefor, vanes on the spindle and angled ports in the discharge-pipe adapted to direct a flow against said vanes, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM JOHN POOLE.

Witnesses:

DAVID FERGUSON,
GEORGE PATTERSON.