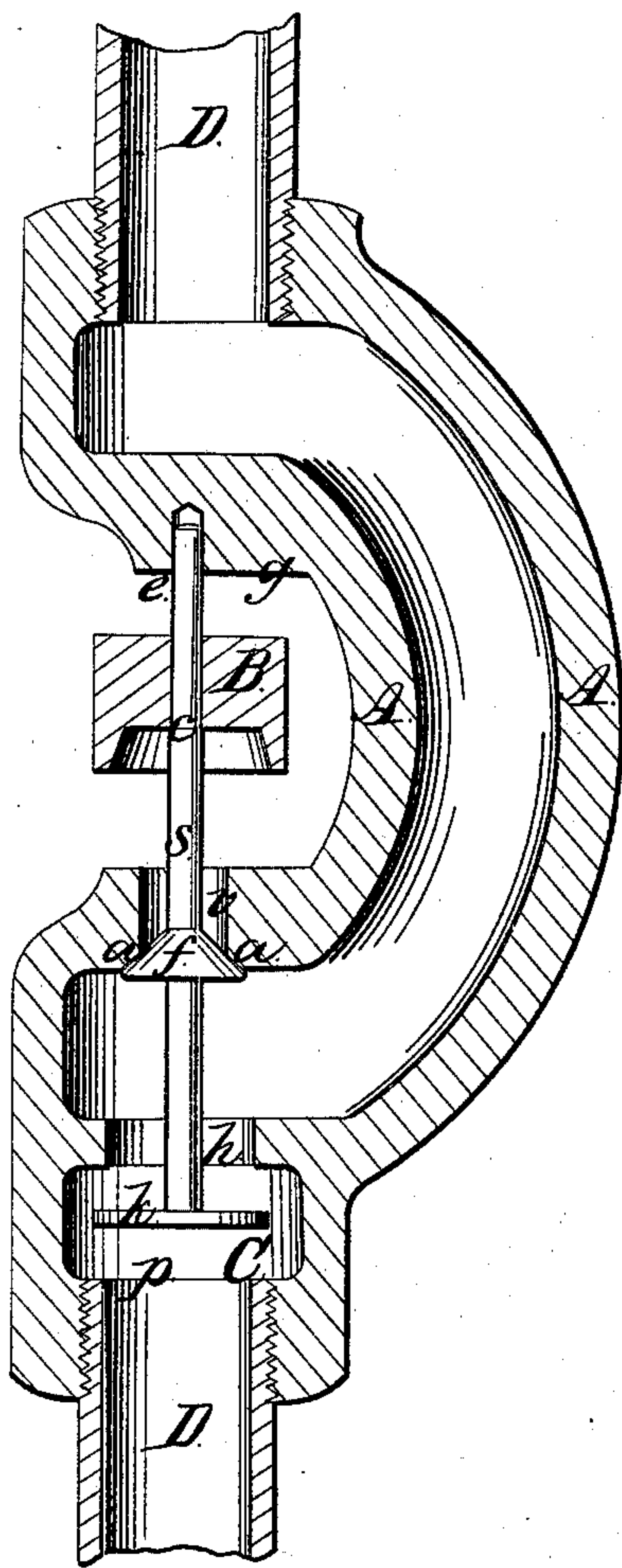


G. E. Brettell,
Pump Valve,
No 77,865, Patented May 12, 1868



Witnesses.

Wm. S. Loughborough
Fred. H. Hatch.

Inventor.

G. E. Brettell.

United States Patent Office.

GEORGE E. BRETTELL, OF ROCHESTER, NEW YORK.

Letters Patent No. 77,865, dated May 12, 1868.

IMPROVED WASTE-VALVE FOR PUMPS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, GEORGE E. BRETTELL, of Rochester, in the county of Monroe, and State of New York, have invented a new and useful "Escape-Valve for Submerged and other Pumps;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, making part of this specification, in which the figure is a vertical central section of my invention.

The plans usually adopted for rendering pumps anti-freezing are very objectionable, on account of the constant leakage during the act of pumping. The object of this invention is to remove those objections, and at the same time provide a very rapid discharge through the escape-valve immediately after the pumping ceases.

To enable others to make and use my invention, I will describe its construction and operation.

I provide a curved section, A, which is cored out, as shown, and is made to receive the valve-stem *s*. This stem has a conical flange, *f*, fitted to a corresponding seat at *a*. The lower end of the stem is provided with the disk *k*, which operates within the chamber C. The upper end of the valve-stem is made with a shoulder, at *c*, upon which the counterbalance-weight B rests while the pump is in action. There is a hole drilled in the section A, at *e*, to receive the upper end of the valve-stem, and in which it has a bearing. The counterbalance-weight B may be made cup-shaped in the under face, and it is fitted loosely upon the small section of the stem, so as to move upon it freely. The main pump-pipe, short sections, D, of which are shown attached, is tapped into each end of the cast section A. This section may be located at any point between the platform and the pump.

As soon as the action of the pump commences, the ascending column of water strikes the disk *k*, and forces it to the position shown, to which point it is limited by the cone *f* striking its seat, and thereby closing the escape-opening. As soon as the action of the pump ceases, the reaction of the column of water drives the disk down upon the end of the pump-pipe at *p*, which forms its seat, and the disk thereby constitutes a check-valve, and at the same time it opens the port *v* of the escape-valve. The water contained in the pipes above the valve is thrown out through this port, and, striking in the cup of the counterbalance-weight B, it is forced up against the face *g*, and the water is thrown back into the well. As the water reacts after the action of the pump ceases, it is prevented from running under the disk *k*, by being forced through the contracted port *h*, and made to strike upon the upper face, which closes the port.

The port *v* may be made as large as may be desirable, and of course the larger it is the more rapidly it will empty the pump.

The valve-stem may be made of brass or other suitable metal.

The weight B might probably be dispensed with, and the valve made to work very well.

What I claim as my invention, and desire to secure by Letters Patent, is—

The arrangement, in pump-pipes, of the automatic escape-valve, substantially in the manner herein shown and described, and for the purposes set forth.

GEO. E. BRETTELL.

Witnesses:

WM. S. LOUGHBOROUGH,
FRED. A. HATCH.