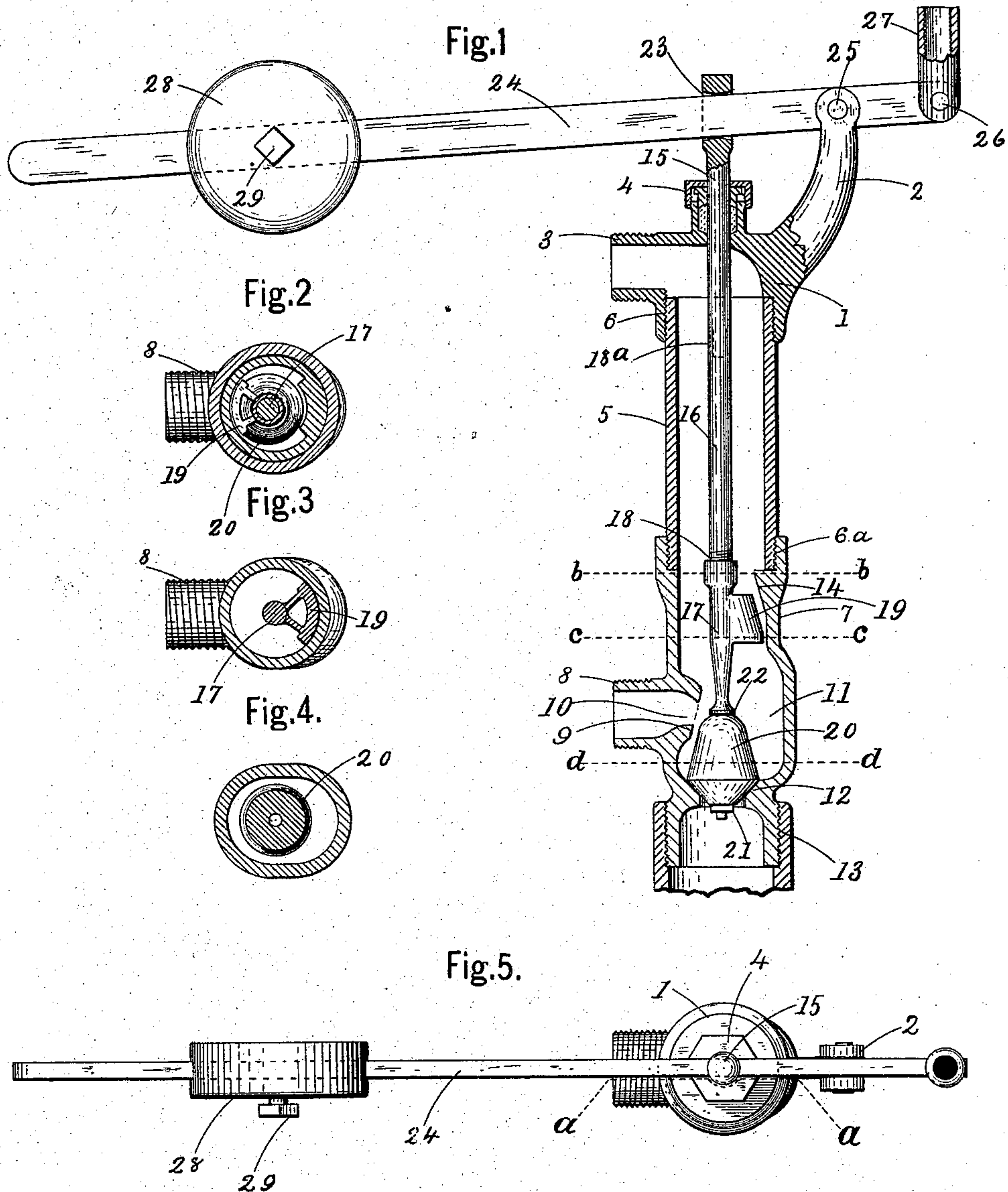


(No Model.)

J. H. CASLER & C. R. HASTINGS.
ANTIFREEZING VALVE.

No. 532,530.

Patented Jan. 15, 1895.



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UNITED STATES PATENT OFFICE.

JOHN H. CASLER AND CHARLES R. HASTINGS, OF BUFFALO, NEW YORK.

ANTIFREEZING-VALVE.

SPECIFICATION forming part of Letters Patent No. 532,530, dated January 15, 1895.

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To all whom it may concern:

Be it known that we, JOHN H. CASLER and CHARLES R. HASTINGS, citizens of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Anti-freezing-Valves, of which the following is a specification.

Our invention relates to certain improvements in anti-freezing valves, whereby the durability of the valve is increased and the working parts are easily got at for repairs or other purposes, all of which will be fully and clearly hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1, is a vertical nearly central section on or about line *a a*, Fig. 5, showing the interior parts complete. Fig. 2, represents a horizontal section through line *b b*, Fig. 1, showing the position of the valve and other parts while being removed. Fig. 3, represents a horizontal section on or about line *c c*, Fig. 1, cutting through the valve-stem and valve wedge support. Fig. 4, is a horizontal section on or about line *d d*, Fig. 1, cutting through the outer case and the valve. Fig. 5, represents a top or plan view of the complete device.

Referring to the drawings, 1, represents the upper case. It is preferably made of cast brass but may be constructed of cast iron or other well known suitable material. At the back of the upper case is an arm 2. Its opposite side is provided with an outlet nozzle 3, and at the top is a stuffing box 4, of well known construction. This upper case is connected to the body 5, by means of a screw portion 6, see Fig. 1, where the whole construction is shown. At the bottom of the body 5, is secured by a screw portion 6^a, the lower or valve case 7, which is constructed of brass or other suitable cast metal and is provided at one side with an outlet or waste nozzle 8, and an inclined valve seat 9, surrounding the opening 10. It is also provided with an enlarged chamber 11, and a tapering valve seat 12, through which the inlet water passes up from the bottom. At the bottom of the case 7, is a screw portion 13, by which it is adapted to screw into another pipe or other water supply receptacle. Near or at the top of the valve

case 7, at the rear, is an inclined portion 14, the office of which will appear farther on.

The valve stem is usually constructed in several parts, 15, 16 and 17, each part secured to the other by the well known screw portions 18 and 18^a, the portion 18^a, being shown by dotted lines. (See Fig. 1.) On one side of the valve-stem portion 17, is an inclined projecting lug 19, adapted to move upward or down with the valve stem and in its upward movement to come in contact with and slide against the face of the inclined portion 14, as will more clearly hereinafter appear.

The lower end of the valve stem is provided with a substantially conical valve 20, made preferably of india rubber, but any suitable material may be used. It is secured to the valve-stem by a nut 21, in the usual way, the top resting up against the collar or flange 22.

The upper part 15, of the valve-stem extends through the stuffing box and is provided with a rectangular opening 23, near the top, through which a bar 24, passes and is pivoted to the top of the arm 2, by a pin 25. At one end of the bar 24, is pivoted by a pin 26, the usual screw socket piece 27, by which a connection is made with a water closet seat or other fixtures. The opposite end of the bar 24, is provided with the usual adjustable weight 28, made adjustable along the bar 24, in the ordinary way by a set screw 29.

The operation of the device is as follows: In its normal condition the valve 20, is down in contact with the valve seat 12, thereby closing the inlet or water supply. When the valve 20, is lifted upward its side is moved to the inclined side valve seat 9. At the same instant the wedge shaped lug 19, comes in contact with the inclined face 14, and thereby causes the valve to press tightly against the side valve seat thereby closing the waste opening and allowing the inlet water to flow up through the chamber 11, around the valve. Now by releasing the valve from the force required to raise it, the weighted bar or lever comes into action and forces the valve down, which operation closes the inlet opening and opens the waste opening, thereby allowing the surplus or waste water to run out, and the valve being down below the freezing point there is nothing left above it to freeze.

When it is desired to remove the valve all

that is required is to remove the pivoted weighted lever and unscrew the upper case 1, and then turn the valve stem and its valve half way round so as to bring the lug 19, to the position shown in Fig. 2. It can be easily drawn upward and out. It is returned to its proper place in substantially the same way.

The inclined valve seat 9, and valve 20, may be substantially vertical and still the wedging or inclined faced portions 14 and 19, would cause the valve to be pressed closely to the valve seat 9, during the upward position of the valve stem, but we prefer the construction shown in Fig. 1.

Either one of the inclined faces 14 or 19, may be of any suitable form for moving against the inclined face of the other during the upward movement of the valve-stem and thereby cause the valve to be pressed closely against the valve seat 9. It is not therefore absolutely necessary that both of said faces shall be inclined as above set forth, but we prefer the form heretofore described. It will be further seen that the lower case and the body portion 5, may be made all in one if desired, but our preferred form consists in having the separate parts removably secured together substantially as above described.

We claim as our invention—

1. In an anti-freezing valve, the combination with an upper and lower valve case, of a

valve stem extending up through the top valve case and provided with a weighted bar extending through its top end and having one end pivoted to an arm on the upper case and its opposite end provided with a weight, a valve seat below the valve and an inclined side valve seat in the lower case, a substantially conical valve attached to the lower end of the valve stem located in the valve chamber, an inclined faced lug on the valve stem and a corresponding inclined faced projection on the valve case, substantially as and for the purposes described.

2. In an anti-freezing valve, a valve stem, an inclined faced lug located on the valve stem, a valve at its lower end, and means at its upper end for operating it, in combination with a valve case having a correspondingly inclined faced projection against which the inclined face of the lug on the valve stem operates, and an enlarged chamber for the valve to operate in, a lower valve seat adapted to receive the bottom of the valve and a side valve seat adapted to receive the side of the valve, both in the lower valve case substantially as described.

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