

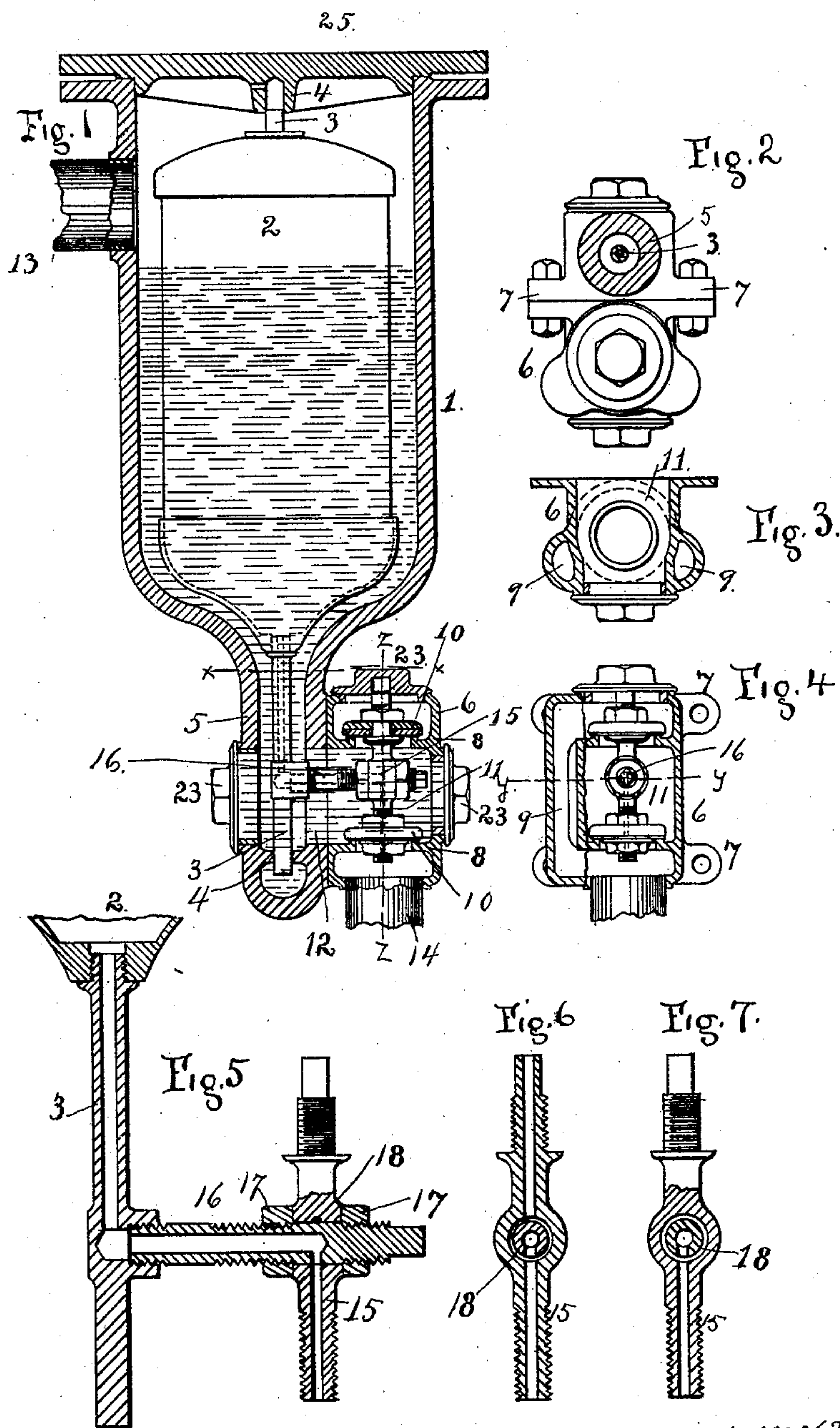
No. 606,655.

Patented July 5, 1898.

J. H. FOGARTY.
FLOAT VALVE.

(Application filed Oct. 15, 1897.)

(No Model.)



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UNITED STATES PATENT OFFICE.

JAMES H. FOGARTY, OF NEW YORK, N. Y.

FLOAT-VALVE.

SPECIFICATION forming part of Letters Patent No. 606,655, dated July 5, 1898.

Application filed October 15, 1897. Serial No. 655,352. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. FOGARTY, of New York, county of New York, and State of New York, have invented a new and useful
5 Float-Valve; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the figures marked on the accompanying drawings,
10 which form a part of this specification.

My invention relates to float-valves.

The object of my invention is to provide an automatic means for draining a float-valve of
15 any accumulation of liquid which may find its way therein.

A further object is to provide a balanced valve with a float device for normally seating the same and for unseating the valve upon a
20 change of the normal water-line of the float-containing vessel.

With these features in view my invention consists of the following construction and combination of parts, the details of which will
25 first be fully described and the features of novelty contained therein then set forth and claimed.

Figure 1 represents a sectional elevation of an apparatus to which I have applied my in-
30 vention. Fig. 2 represents a transverse elevation and section looking downwardly upon the line *x x* of Fig. 1. Fig. 3 is a sectional view of the valve-chamber, taken on the line *y y* of Fig. 4, showing the valve removed.
35 Fig. 4 is a vertical section on the line *z z* of Fig. 1 with parts in elevation. Fig. 5 is an enlarged detailed sectional view of the float and valve stems, with pipe connection partly broken away. Fig. 6 is a longitudinal section
40 of the valve-stem and pipe connection. Fig. 7 is a similar view, partly in section and partly in elevation, of a modified form.

My invention is particularly applicable to steam-traps; but it may be applied in other
45 connections and for other purposes for controlling the flow of a fluid for which it may be found adapted. For the illustration of my invention, however, it will be described only in connection with a steam-trap.

50 In the drawings, 1 represents a chamber containing a float 2, provided with oppositely-disposed stems 3, arranged to have a limited

vertical reciprocating movement in bearings 4 at the top and bottom of said chamber. The lower end of chamber 1 is preferably formed
55 with a contracted extension 5, within which the lower float-stem 3 operates.

6 is a valve-chamber, preferably separate from the chamber 1 and its extension 5, and bolted or otherwise secured, as at 7, to the
60 chamber 1, so as to be in free communication therewith. This valve-chamber has a pair of valve-seats 8 in axial line and a connecting by-pass or passages 9, connecting the valve-
65 chamber around the central passage therein.

10 are a pair of balanced valves seating downwardly upon the valve-seats 8 and connected by valve-stem 15.

11 is the central or main chamber of the valve-chamber and is in free communication
70 with a port 12, leading to the chamber 1.

13 is the inlet-pipe of the chamber 1, which may be a drainage-inlet or a steam or other inlet, according to the purpose for which the
75 invention is used.

14 is the drain or other outlet from the chamber 1 and is in free communication with the valve-chamber 6. The lower float-stem
80 3 is preferably tubular down to its connection with the lateral pipe 16, which rigidly unites the float-stem 3 to the valve-stem 15. The valve-stem 15 is also made tubular, so as to provide a drainage connection from the hollow float 2 down through the valve-chamber 6 out into the outlet-pipe 14. The connect-
85 ing-pipe 16 is preferably screwed into the float-stem 3, and threads are formed upon its opposite ends, by means of which nuts 17 may be set up against the valve-stem 15 to adjust the parts in the proper position.

The valve-stem 15 has preferably a circular bearing formed transversely through it, through which the pipe 16 passes, thereby forming a bearing between the two, and an annular recess 18 is preferably formed around
95 the edge of the bearing, so that no matter what the angle of adjustment between the pipe 16 and the valve-stem may be an open communication will be established between the same for draining the float-valve 2.
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In Fig. 6 the valve-stem 15 is shown hollow throughout its length, while in Fig. 7 the lower portion of the valve-stem only is tubular. In the first case the liquid may escape

at both ends of the valve-stem, while in the latter case the liquid escapes through the lower end only.

It will be obvious that owing to the rigid connection between the float and the balanced double valve the latter will partake of the reciprocating movement of the float due to the varying amount of fluid in the chamber, the valve and float being suitably guided for that purpose.

A series of screw-plugs 23 are employed, as indicated, in order that access may be had to the several parts.

25 is a removable cover for the chamber 1, through which the float may be removed when desired.

In operation the device may be set so that the float will open the balance-valve at any predetermined height of water and to close the same when the liquid falls below that point.

The balanced valves 10 are adjustable, with relation to each other and their seats, upon their stem, as shown. By this adjustment also, if desired, the height of the float in the chamber when the valves are seated may be varied.

Having thus described my invention, what I claim, and desire to obtain by Letters Patent, is—

1. The combination of a chamber, a float therein, a bearing at the top of the float, a tubular stem forming a bearing at the lower end of the float, a tube extending laterally

between the float-bearings, a valve carried upon said lateral tube, a valve-seat for the valve, and inlet and outlet ports for the chamber, the tubular stem and lateral tube forming a drainage connection for the interior of the float.

2. The combination of the chamber, the float therein, a bearing at the top of the float, a tubular stem forming a bearing at the lower end of the float, a tube extending laterally between the float-bearings, a tubular valve-stem secured to said lateral tube, a double balance-valve carried upon the said valve-stem, valve-seats for the valves, and inlet and outlet ports for the chamber, the float-stem, lateral tube and valve-stem forming a drainage connection for the interior of the float.

3. The combination, in a trap, of the hollow float, a bearing at the top of the float, a tubular float-stem forming a bearing at the lower end of the float, a lateral tube connected therewith, a reciprocating tubular valve-stem having an opening at right angles thereto to receive the lateral tube, adjustable means for securing the valve-stem upon the lateral tube and a slide-valve carried upon said valve-stem.

In testimony whereof I affix my signature in the presence of two witnesses.

JAMES H. FOGARTY.

Witnesses:

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