

J. S. BRENNAN.
 FLOAT VALVE.
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918,272.

Patented Apr. 13, 1909.

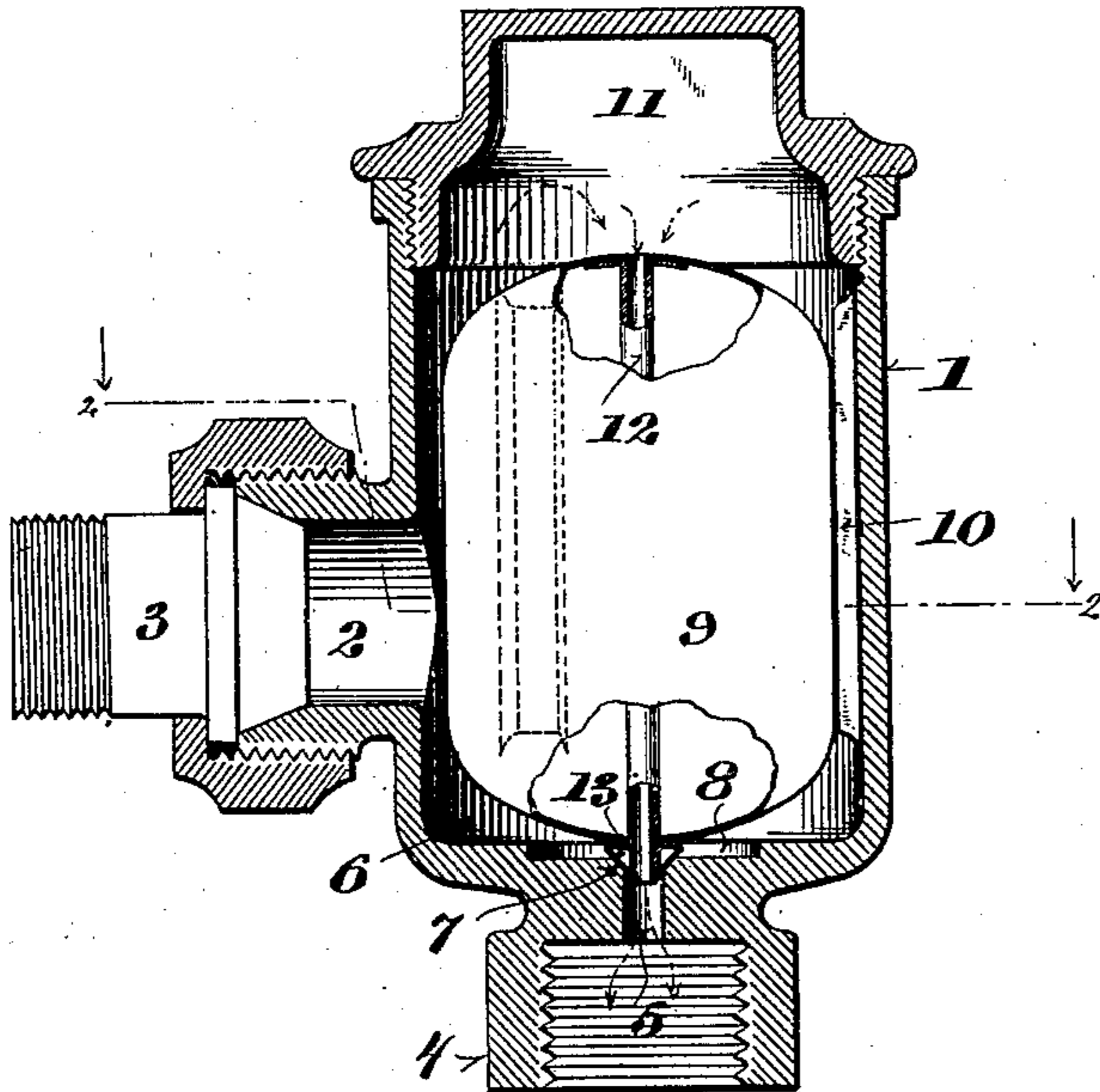


Fig. 1.

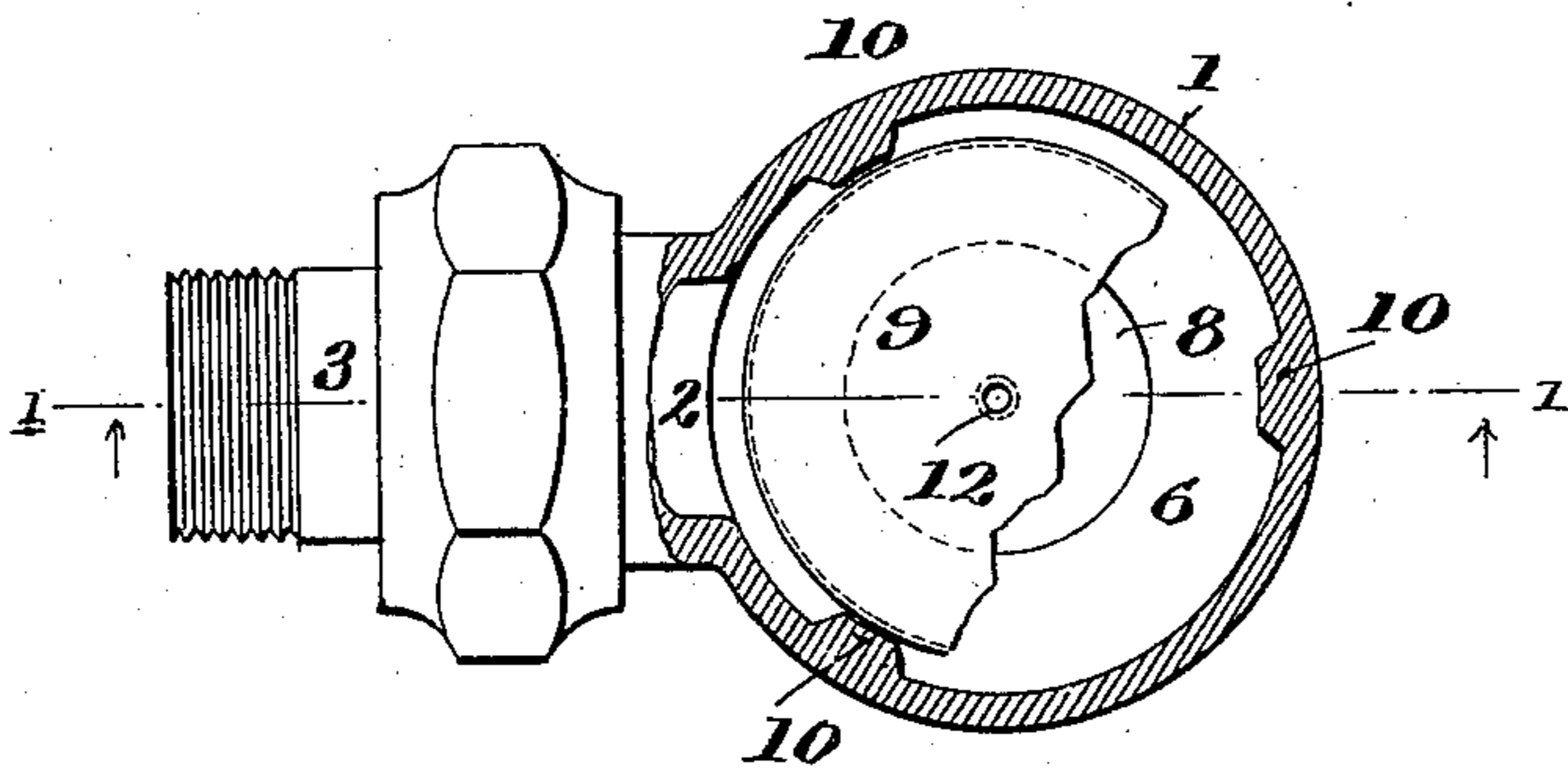


Fig. 2.

Witnesses:
 George Feller
 Fred Palm.

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UNITED STATES PATENT OFFICE.

JOHN S. BRENNAN, OF MILWAUKEE, WISCONSIN.

FLOAT-VALVE.

No. 918,272.

Specification of Letters Patent.

Patented April 13, 1909.

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To all whom it may concern:

Be it known that I, JOHN S. BRENNAN, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Float-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof.

10 The object of my invention is to provide a simple, economical and effective float-valve, especially designed for relieving the steam-pipes of vacuum heating-systems from air and condensation without comparative loss
15 of steam, the valve in which case acting as an automatic trap.

Said invention consists of various novel details of construction and combination of parts as herein described with reference to
20 the accompanying drawings and subsequently claimed.

In the drawings: Figure 1 represents a sectional elevation of a float-valve embodying the features of my invention, the float
25 being in full and partly broken away to better illustrate the details thereof and the section being indicated by line 1—1 of Fig. 2, and Fig. 2, a cross-section of the float-valve as indicated by line 2—2 of Fig. 1, part of
30 the float being also broken away in this view.

Referring by numerals to the drawings, 1 indicates a cylindrical valve-casing provided with a steam-inlet nipple 2, which nipple is threaded for the usual pipe-coupling 3. At
35 the bottom of the casing there also projects an internally threaded boss 4 for connection with a return-pipe not shown. This boss is provided with a central opening 5 communicating with the valve-casing chamber 6, the
40 mouth of the opening being provided with a beveled valve-seat 7 communicating with a circular depression 8 in the bottom of said valve-chamber.

A hollow float 9 comprised of thin metal
45 and cylindrical in shape is fitted into the valve-chamber, the float being vertically guided therein by a series of ribs 10, which ribs project from the inner walls of the said chamber, and in connection with the flat
50 walls form a series of passages for the rise of water and air around said float.

The valve-casing mouth is threaded for the reception of a similarly threaded cap, which constitutes a steam-tight closure or dome for

the chamber and also acts as a stop for the
float when raised in its operation. 55

The float has secured to its upper and lower ends a central tube 12, having a conical centrally apertured hollow head 13 in communication therewith, which head is prefer-
ably composed of soft metal and projects 60 beyond the lower end of said float, the head forming a valve or closure for the beveled seat 9 of the opening 5 constituting the return-pipe connection. The conical head as
shown being of thin flexible soft metal, is in effect a shell and will more readily adjust
itself to its seat and thereby insure a perfect closure. The restricted passage through
said tube and its head, as shown, is designed
as an air-vent, by means of which the steam
pipe-system to which the valve-chamber is
connected may be relieved of air which es-
capes through the main return-pipe com-
municating with the bottom of said cham-
ber, the tube also serving to brace and
strengthen the thin metallic float from end
to end. 75

While I have shown and described the valve or closure as a head forming part of
the tube 12, it is obvious that, without de-
parting from the spirit of my invention, I
may, in some instances, press the same out
from the body of the metallic float shell, in
which case the tube would be brazed or
otherwise connected thereto. 85

Having described the device in detail, the operation is simple, air being drawn through the restricted tube-passage, and when water condensation rises in the chamber the float
unseats and permits the water to escape
through the main return-pipe opening. The
soft metallic valve-closure or head renders
the same self-seating and consequently in-
creases the effective life of the device, while
the ribbed chamber serves as an economical
and effective means for guiding the float and
its valve-closure to the seated opening there-
beneath. Thus in effect I accomplish all the
results obtained in float or trap-valves of the
type to which my invention pertains, by a
combination of mechanical features which,
owing to their simplicity, not only reduce the
cost of manufacture, but materially increase
the life of same with comparatively slight
attention. 105

I claim:

In a float-valve, having an open-end cylin-

drical chambered casing, a side-inlet and a
bottom-discharge opening provided with a
tapered valve-seat, and a closure for the
open-end of the casing; the combination of
5 a hollow float, a central tube extending
through the float and connected to its oppo-
site walls to constitute a vent therethrough,
a valve-closure for the tapered valve-seat in
connection with the lower end of the tube
10 and adjacent float-wall, the valve-closure
comprising a flexible conical shell surround-

ing the tube, and whereby a dead-air space
is formed between the outer walls of the con-
ical shell and tube extension.

In testimony that I claim the foregoing I 15
have hereunto set my hand at Milwaukee,
in the county of Milwaukee and State of
Wisconsin in the presence of two witnesses.
JOHN S. BRENNAN.

Witnesses:

CARL H. VOSS,
F. H. MEADOWS.