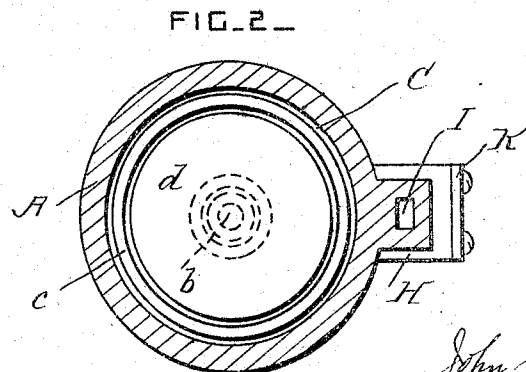
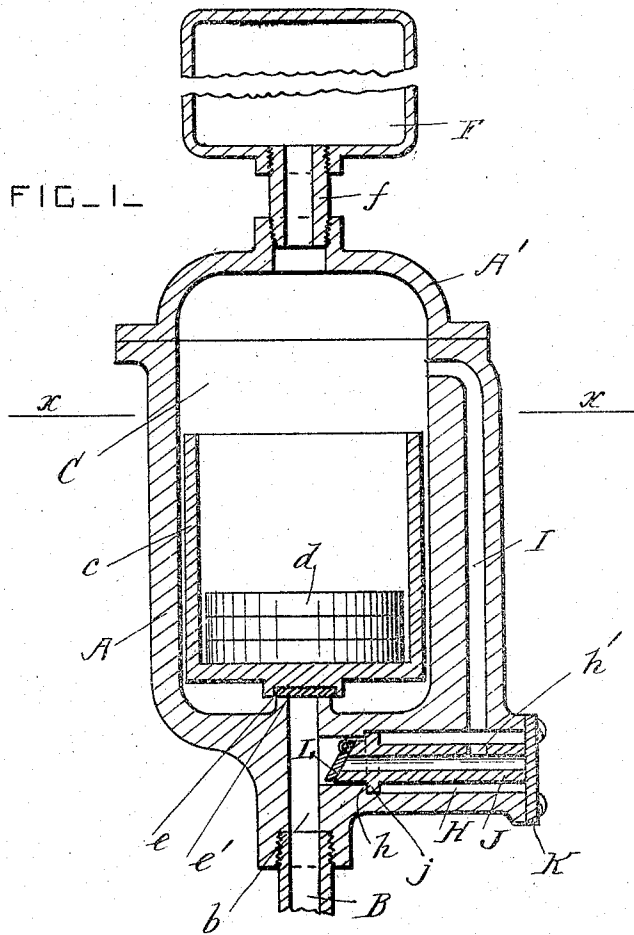


J. C. WATSON.
SAFETY VALVE.
APPLICATION FILED FEB. 11, 1909.

941,478.

Patented Nov. 30, 1909.



Witnesses

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JOHN C. WATSON, OF TERRE HAUTE, INDIANA.

SAFETY-VALVE.

941,478.

Specification of Letters Patent.

Patented Nov. 30, 1909.

Application filed February 11, 1909. Serial No. 477,417.

To all whom it may concern:

Be it known that I, JOHN C. WATSON, a citizen of the United States, residing at Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Safety-Valves; and I do hereby 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.

This invention relates to safety devices for use in connection with hot-water heating apparatus for warming dwellings; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a vertical section through the safety-valve. Fig. 2 is a sectional plan view, taken on the line $x-x$ in Fig. 1.

A is the valve-casing provided at its lower part with a pipe B by means of which it is connected to one of the heating pipes or vessels of a hot-water heating apparatus such as is used in dwellings. The valve casing is provided with a chamber C, and c is a main valve which is slidable vertically in the said chamber. The valve c is preferably hollow, and d are weights which are placed inside the valve to adjust its downward pressure. The valve c is provided with a facing e of soft material, such as lead, which rests on the valve-seat e' and normally closes the inlet passage b which communicates with the pipe B.

The valve-casing A is provided with a cover A', and F is an expansion or heating chamber connected to the cover by a pipe f .

H is a valve-chamber which communicates with the inlet passage b , and which is provided with a shoulder h near its inner end.

I is a by-pass port which connects the outer end of the valve-chamber H with the upper end portion of the main valve-chamber C.

J is a tubular valve-support which is placed in the valve-chamber H. The valve-support J is provided near its inner end

with a collar j which is pressed against the shoulder h by a plate K which is secured to the valve-casing A. The plate K bears against the outer end of the tubular valve-support and it also closes the chamber H. The valve-support has a hole h' in its outer part which connects its interior with the chamber H.

L is a by-pass valve which is pivoted to the inner end portion of the valve-support, and which normally closes it so that no water can pass from the passage b into the valve-support. This by-pass valve permits the passage of water in the reverse direction.

When steam is formed in the heating apparatus and the water raises the main valve, the water passes through the main valve chamber into the heating chamber F in which it assists in heating the dwelling. The water drains back through the by-pass valve which opens automatically to let it flow back into the main heating apparatus. The weights in the main valve are regulated so that the main valve will rise at any desired pressure.

What I claim is:

1. The combination, with a valve-casing provided with an outlet and an inlet-passage, and a main valve which normally closes the said inlet-passage, said valve-casing having also a by-pass valve-chamber and a by-pass passage which connect the said inlet-passage with the said outlet; of a tubular valve-support having a lateral hole which connects its interior with the said by-pass passage, and a by-pass valve pivoted to the said valve-support and normally closing one end of it, said valve-support and valve being adapted to be slid into and secured within the said valve-chamber.

2. The combination, with a valve-casing provided with an outlet at its upper part and an inlet-passage at its lower part, said valve-casing having also a by-pass valve-chamber connected to the said inlet-passage and provided with a shoulder, and having also a by-pass passage between the said valve-chamber and the upper part of the

casing; of a main valve which normally closes the said inlet-passage, a tubular valve-support provided with an opening which connects it with the said by-pass passage and
5 having also a projection which bears against the said shoulder, a cover which holds the said valve-support in place, and a by-pass valve carried by the said valve support and

arranged to open automatically to permit the flow of water into the inlet-passage. 10

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

JOHN C. WATSON.

Witnesses:

ROY W. GLENN,
EMILY L. MOORE.