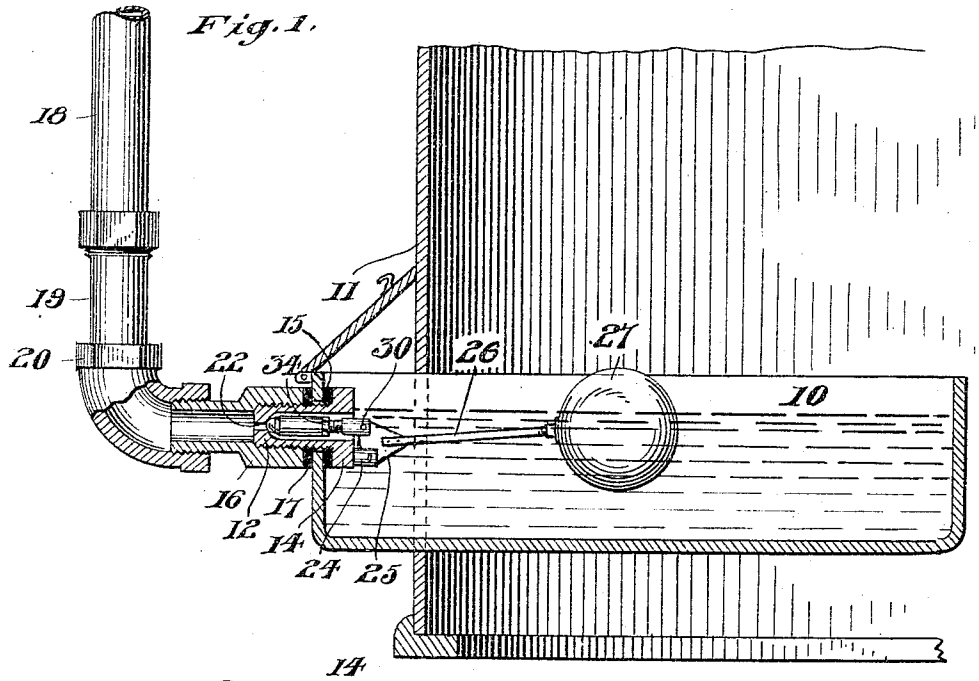
J. L. SKUTTLE.

AUTOMATIC WATER CONTROL.

APPLICATION FILED DEC. 30, 1916.

1,235,389. Patented July 31, 1917.

Fig. 1.



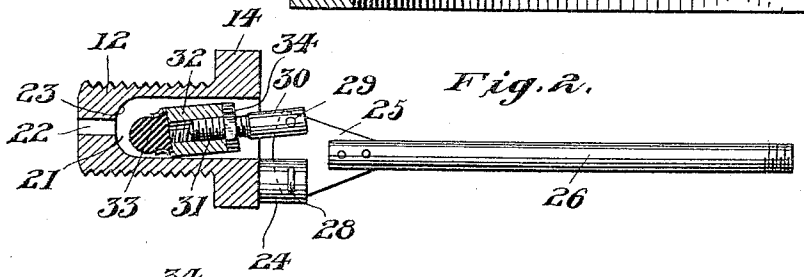


Fig. 2.

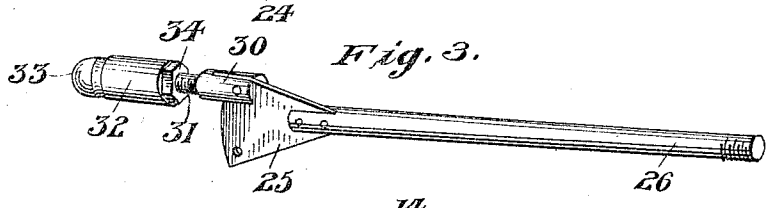


Fig. 3.

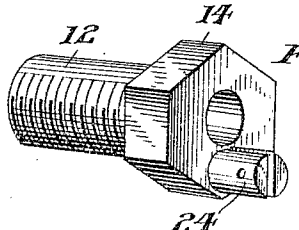


Fig. 4.

Inventor
John L. Skuttle

By Milton E. Lowry.

Attorney

UNITED STATES PATENT OFFICE.

JOHN L. SKUTTLE, OF MASON CITY, IOWA, ASSIGNOR TO H. E. FRANCISCO, OF MASON CITY, IOWA.

AUTOMATIC WATER CONTROL.

1,235,389. Specification of Letters Patent. Patented July 31, 1917.

Application filed December 30, 1916. Serial No. 139,734.

To all whom it may concern:

Be it known that I, JOHN L. SKUTTLE, a citizen of the United States, residing at Mason City, in the county of Cerro Gordo and State of Iowa, have invented certain new and useful Improvements in Automatic Water Controls, of which the following is a specification.

This invention relates to certain new and useful improvements in automatic water control, and relates more particularly to an automatic water control adapted to be applied to the water or vapor pan of hot air furnaces for automatically regulating the feed of water to such pan.

The present invention is an improvement upon the device shown, described and claimed, in Letters Patent 1,150,709 issued to me August 17, 1915, and the invention aims materially to simplify the construction of the device shown in said prior patent, and render the same more effective in its operation.

In the device shown in said prior patent, the valve carrying rod or stem which is attached to the float rod extends through the valve, and since the said valve or rod on one side of the valve is subjected to the temperature of the water in the supply pipe, and on the other side of the valve is subjected to the temperature of the water in the vapor pan, it has been found that this rod expands in such manner as to interfere with the easy and proper working of the valve.

The present invention aims to overcome the above objection, by the simplified construction of valve and valve rod, and the invention also aims to simplify the construction of the shell with which the valve is associated, whereby the device may be more easily placed in the wall of the vapor pan and securely retained in position.

With these general objects in view, and also others as will appear as the device is more fully described, the invention consists in the novel construction, combination and arrangement of parts illustrated in the accompanying drawings, particularly set forth in the following description, and as hereinafter claimed.

In the drawings, like numerals are used for designating like parts throughout the several views, in which:

Figure 1 is a central longitudinal sectional view of the device installed in position on a vapor pan of a furnace, the vapor pan being shown in longitudinal section, and the furnace broken away,

Fig. 2 is an enlarged longitudinal sectional view of the mounting member for the valve and float rod, the valve being unseated,

Fig. 3 is a detailed perspective view of the valve and float rod detached and

Fig. 4 is a similar view of the mounting member of the device.

The device as here shown is attached to a vapor pan 10 of an ordinary type which, as is well known in the art, is usually mounted in the side of the furnace 11 near the base of the latter.

In the present device, like in that shown in my prior patent above referred to, I employ a mounting member to which the water supply pipe is connected, and which houses the valve that is opened or closed by the float which lies within the vapor pan.

The mounting member in the present construction is in the form of an externally threaded sleeve 12 provided at its inner end with a head 14, preferably made square, hexagonal, or other shape similar to the peripheral shape of an ordinary nut, so that the sleeve can be readily turned into the wall of the vapor pan 10. As shown, the sleeve of this mounting member is threaded into an opening provided therefor in the outer wall of the vapor pan, and in order to effect a perfectly tight joint a gasket as 15 is placed between the inner face of the vapor pan wall and the head 14. A nipple section as 16 is threaded onto the outer end of the sleeve section 12, a gasket as 17 being preferably mounted on the sleeve section 12 so as to be clamped tightly between inner end of the nipple section 16 and the vapor pan. The water supply pipe 18 is connected with the nipple section 16 in any desirable manner as by a pipe section 19 and an elbow 20 as disclosed in my prior patent.

The sleeve section 12 is hollowed out at its inner end to form a chamber 21 in which the valve hereinafter described is housed, a port 22 in the outer end of the sleeve section establishing communication between the chamber 21 and the water supply through the nipple section 16. The chambering of the sleeve section 12, and the making of the port 22 of less diameter than the chamber 21, forms a valve seat 23 within the sleeve

12 against which the valve which is housed by the mounting member normally seats.

Projecting from the inner end of the mounting member is a post 24 slotted to receive therein the blade or flattened end 25 of the float carrying rod 26, which rod at its outer end has the usual float 27. The blade or flattened end 25 is, in practice, usually secured to the boss by a cotter pin 28, and this blade or flattened end is also pivotally connected as at 29 to the outer end of valve stem 30, the latter being slotted to receive the blade or flat end 25, and having its inner threaded portion 31 projecting into the chamber 21 and threaded into a valve carrying shell 32, which at its inner end carries a valve 33 adapted to engage with the seat 23 to close the port 22. The position of the shell 32 on threaded portion 31 of the valve stem 30 is controlled by a nut 34 mounted on the threaded portion of the stem 30 so as to be turned up against the inner end of the shell 32 to lock said shell in adjusted position. In practice, I usually employ a rubber, leather, fiber or like valve which is secured in the end of the shell as by swaging so as to securely hold the same. By the use of a cushion valve, the end of the shell 32 may be primarily swaged inwardly and the cushion valve forced into position therein. It will therefore be understood that should the cushion valve 33 become worn or otherwise damaged, the same may be easily removed and a new one inserted without altering the swaged end of the shell in any manner whatever.

The manner of assembling will be fully understood from the foregoing description of the parts, taken with the accompanying drawings. Also, the operation will be readily apparent, as obviously as the water lowers in the vapor pan due to evaporation thereof, the float 27 will lower with the lowering of the water level, automatically opening the valve 33 to permit water to flow in from the supply pipe 18 through the port 22 and chamber 21 into the vapor pan. As the desired height of water is reëstablished the float will again close the valve to shut off the supply of water.

I desire to call particular attention to the construction of the present device as is involved in the mounting member and valve structure. The mounting member being in one piece is readily inserted into the opening provided therefor in the vapor pan wall, and readily connected with the float rod. The valve being carried by a shell into which the valve stem extends, both being housed within the chamber of the mounting member, and only the valve *per se* being exposed to the cooler water in the supply pipe, all danger of any sticking action or imperfect movement of the valve has by this construction been wholly eliminated.

While I have described in detail the precise construction of the device as it has been practised by me, yet it will be obvious that various changes may be made in the form of the elements without departing from the spirit of the invention as claimed.

What I claim as new is:—

A float valve mounting member comprising an exteriorly threaded sleeve having a nut head at one end, and having a chamber terminating adjacent the other end of the sleeve, an inlet port in the unchambered end of the sleeve, the inner end of which constitutes a valve seat, a post carried by the sleeve head, a float rod pivoted to said post, a threaded valve stem pivotally secured to said float rod, an internally threaded valve carrying shell mounted on said threaded stem and open at its outer end, the outer end of the shell being of reduced thickness and primarily swaged inwardly, and a cushion valve forcibly received in the swaged end of said shell and retained in position by the swaging, the diameter of the cushion valve being less than the diameter of the shell, whereby during reciprocal movements of the valve, the shell alone will slide upon the wall of the sleeve chamber with the cushion valve spaced therefrom.

In testimony whereof I affix my signature.

JOHN L. SKUTTLE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."