

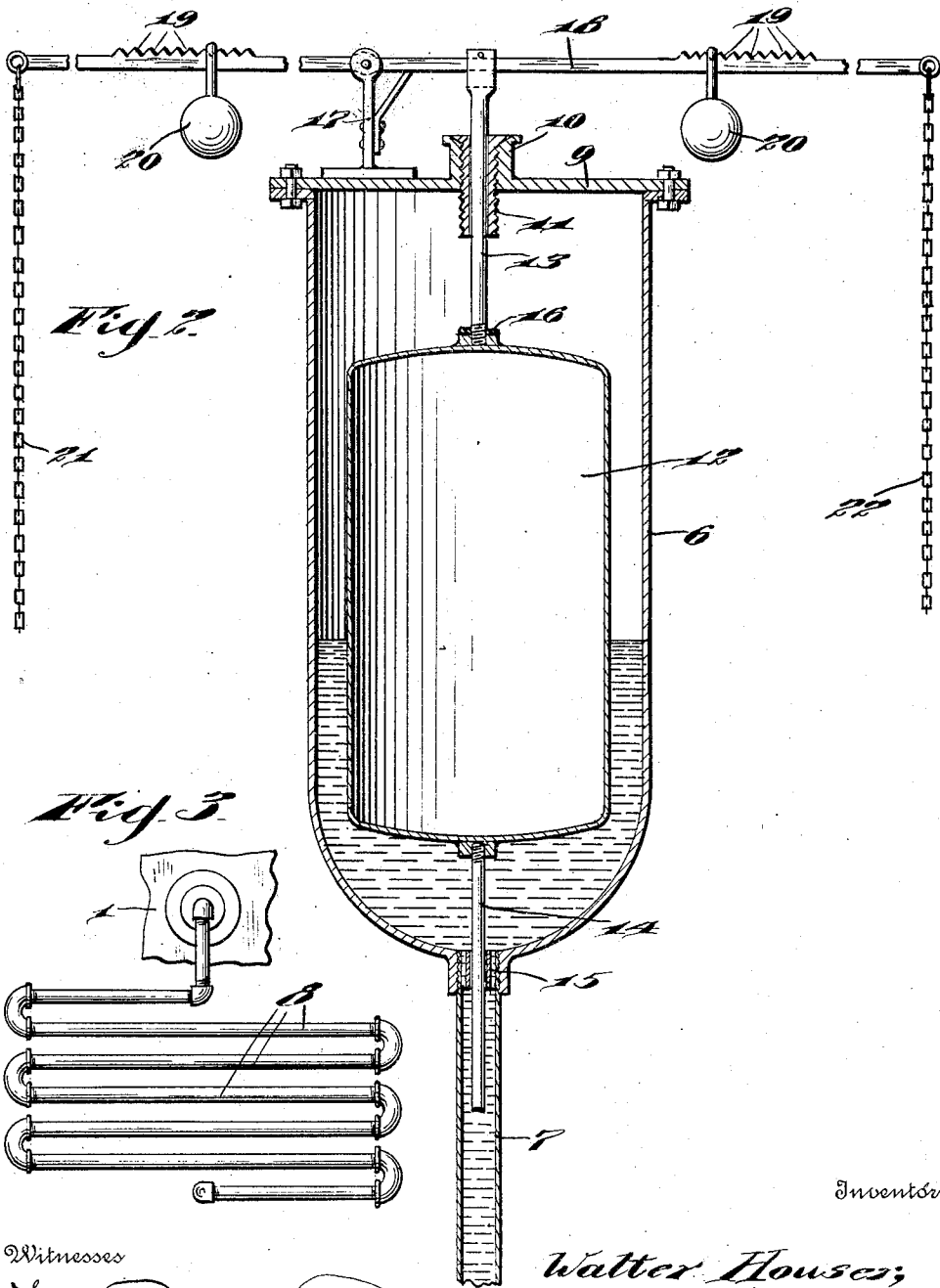


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 AUTOMATIC DAMPER CONTROLLING MECHANISM.  
 APPLICATION FILED MAY 18, 1910.

997,555.

Patented July 11, 1911.

2 SHEETS—SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WALTER HOUSER, OF SUMMITHILL, PENNSYLVANIA.

AUTOMATIC DAMPER-CONTROLLING MECHANISM.

997,555.

Specification of Letters Patent. Patented July 11, 1911.

Application filed May 13, 1910. Serial No. 561,930.

To all whom it may concern:

Be it known that I, WALTER HOUSER, a citizen of the United States, residing at Summithill, in the county of Carbon and State of Pennsylvania, have invented certain new and useful Improvements in Automatic Damper-Controlling Mechanism, of which the following is a specification.

My invention relates to improvements in automatic damper controlling mechanism, and more particularly designed for use in connection with my improved heating system set forth in my application for Letters Patent executed on even date herewith, the object of the invention being to provide improved mechanism controlled by the pressure of steam in the boiler to open and close the draft door and damper of a steam boiler furnace.

A further object is to provide a tank connected with the boiler of the furnace below the water level in the latter, and provide in said tank a float, the level of the water in the tank being regulated by the pressure in the boiler, and provide improved means operated by the float for opening and closing the draft door and damper of the furnace.

With these and other objects in view, the invention consists in certain novel features of construction and combinations and arrangements of parts as will be more fully hereinafter described and pointed out in the claim.

In the accompanying drawings: Figure 1, is a diagrammatic view in elevation, illustrating my improvements. Fig. 2, is an enlarged view in section through the casing and float, and Fig. 3, is a view in elevation of the pipe coil 8, designed to keep cool the water between the boiler and the casing.

1, represents a steam boiler furnace having a draft door 2 at its lower end, and provided with a damper 3, in its smoke pipe 4 adjacent the point of connection with the chimney or outlet pipe 5.

6, represents my improved float casing which is connected at its lower end by a pipe 7 with a coil 8, said coil connected at one end to the boiler furnace and communicating with the boiler below the water level in the latter. The top of casing 6 is closed by a plate or head 9, which is provided with a central internally screw-threaded collar 10, in which a guide sleeve 11 is screwed.

12, represents my improved cylindrical float, which is provided at its upper end

with a rod 13, which moves through sleeve 11, and at its lower end with a guide rod 14, which moves through a spider 15 in the pipe 7. On the upper end of the float 12, around rod 13, a valve 16 is provided to close against the end of sleeve 11, and prevent any escape of water when the float rises.

17, represents a bracket secured on the top 9, and to which a lever 18 is fulcrumed between its ends. This lever is connected at one side of the bracket 7 with the upper end of rod 13, so that the movement of the float causes the lever to swing on its fulcrum. Lever 18 at opposite sides of its fulcrum, is provided with a plurality of notches 19, in any of which weights 20 may be supported so as to secure the exact balance and enable the boiler to be regulated so as to maintain the desired pressure. One end of lever 18 is connected to draft door 2, by means of a chain 21, and the other end of lever 18 is connected by a chain 22 with the damper 3, so that when the draft door 2 is opened, damper 3 is closed, and when damper 3 is open, draft door 2 is closed.

The operation is as follows: When the pressure of steam in the boiler becomes excessive, the steam pressure will force the water up in casing 6, causing float 12 to rise. This movement of float 12 will swing the lever 18 on its fulcrum so as to close draft door 2, and open damper 3, allowing the fire in the furnace to cool. When the pressure falls in the boiler, the water will fall in casing 6, float 12 will move downward with the water, and lever 18 will be swung on its fulcrum to close damper 3 and open draft door 2, causing the fire to come up.

It will thus be noted that my improved mechanism regulates by pressure of steam in the boiler, the draft on the fire in the furnace, hence maintaining a uniform pressure of steam automatically. The coil 8 serves as a radiator which permits the water to cool, thus preventing the water in the tank or casing 6 from becoming heated beyond the desired point.

Various slight changes might be made in the general form and arrangement of parts described without departing from my invention, and hence I do not limit myself to the precise details set forth, but consider myself at liberty to make such changes and alterations as fairly fall within the spirit and scope of the appended claim.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:

In a device of the class described, a steam boiler furnace in combination with a casing arranged below the water level of said boiler, a coil arranged below the water in said boiler and connected at its upper end with said boiler, a pipe connecting the lower end of said coil with the lower end of said casing, a float in said casing and means op-

erated by said float for moving the draft door and damper of the furnace, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WALTER HOUSER.

Witnesses:

WALLACE REMALEY,  
HARRY HOUSER.