

1,010,959.

FIG. 1

FIG. 2

FIG. 3

FIG. 4

FIG. 5.

WITNESSES

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# UNITED STATES PATENT OFFICE.

WILLIAM ROHRBACHER, OF CONNELLSVILLE, PENNSYLVANIA.

BOILER ACCESSORY.

1,010,959.

Specification of Letters Patent.

Patented Dec. 5, 1911.

Application filed September 30, 1910. Serial No. 584,675.

*To all whom it may concern:*

Be it known that I, WILLIAM ROHRBACHER, a citizen of the United States of America, residing at Conneltsville, in the county of Fayette and State of Pennsylvania, have invented certain new and useful Improvements in Boiler Accessories, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to boiler accessories, and more particularly to an automatic recording device adapted to maintain a record of the operations of a fireman in cleansing or "blowing out" the water column of a boiler.

The invention aims to provide a device that will automatically record each time the fireman cleanses the water column of a boiler, and it is through the medium of this record that a boiler inspector can readily determine whether a fireman maintains his boiler in a perfect condition and performs his duty, as required by boiler insurance companies.

The invention embodies a float actuated electrical switch or rheostat in connection with an alarm recording gage or clock that will maintain a record of each downward movement of the float within the water column of a boiler, together with certain mechanisms that are easily installed, inexpensive to manufacture, and positive in operation.

The invention will be hereinafter specifically described and then claimed, and reference will now be had to the drawing, wherein there is illustrated a preferred embodiment of the invention, but it is to be understood that the structural elements thereof are susceptible to such changes as fall within the scope of the appended claims.

In the drawing: Figure 1 is an end view of a portion of the boiler showing the water column equipped with my device. Fig. 2 is an enlarged sectional view of a portion of the water column. Fig. 3 is a horizontal sectional view of the column. Fig. 4 is a longitudinal sectional view of a detached plug or bearing, and Fig. 5 is an elevation of the rheostat or switch forming a part of the device.

In the accompanying drawing, the reference numeral 1 denotes a portion of a boiler and adjacent to the boiler is a vertical water column 2 having the lower end thereof connected by a pipe 3 to the boiler 1. The upper end of the water column is connected

with the top of the boiler through the medium of a pipe 3<sup>a</sup>. A drain cock 4 is provided at the lower end of the water column 2 and the latter has the ordinary and well-known type of water gage 5 and testing cocks 6.

Mounted upon the upper end of the column 2 is a dome-shaped cap 7 having a vertical extension 8. The walls of the cap 7 are tapped or provided with oppositely disposed openings 9 and mounted in said openings are exteriorly threaded plugs 10 having reduced rectangular ends 11 to accommodate a wrench or other instrument employed for screwing the plugs in the openings 9. The inner ends of the plugs 10 are provided with tubular bearings 12 for a shaft 13. Mounted upon the shaft 13 is a gear wheel 14 adapted to mesh with a vertical rack 15 connected to the upper end of the hollow float 16 adapted to rest upon the surface of the water within the column 2. The float 16 is preferably made of copper and the rack 15 of brass to withstand any chemical action incurred by acids in the water within the column. The rack 15 when in a raised position extends into the extension 8 of the column and normally remains in engagement with the gear wheel 14 during the movement of the float 16.

Mounted upon the shaft 13 is a worm 17 meshing with a gear wheel 18 mounted upon a shaft 19 arranged at right angles to the shaft 13 and beneath the same. The shaft 19 is journaled in a plug 20 similar to the plugs 10, also in a stuffing box 21 carried by the wall of the water column 2 opposite the plug 20. The outer end of the shaft 19 is provided with a pinion 22 meshing with a segment shaped rack 23 carried by a switch or rheostat arm 24, said arm being pivotally mounted, as at 25, upon an insulated rheostat board 26 located adjacent to the column and supported thereby. The upper end of the arm 24 is adapted to engage contacts 27 and these contacts are in circuit with electrical wires 28 connected to a suitable source of electrical energy, as a battery 29, and to any suitable means that will maintain a record of the position of the float 16 within the water column and said means is conventionally shown at 30, the rheostat arm being operated by a lowering or raising movement of the float, the actuation of the rheostat arm causing the operation of the device 30.

It is a well-known fact that insurance companies require firemen to cleanse a water column from time to time and prevent dirt and other material from accumulating in the bottom of the column and the pipe 3, which often results in explosions or other damage to the boiler and property in the vicinity of the same.

It is thought that the operation and utility of the device will be apparent without further description and that the device is easily maintained in an operable condition that insures an accurate record of each movement of the float.

What I claim, is:

1. An automatic recording device for steam boilers comprising a recorder, a water column, means for establishing communication between the water column and the boiler, a rheostat including a pivoted arm provided with a segment-shaped rack and adapted to be electrically connected to said recorder for controlling its operation, operable means supported by the water column and engaging with said rack for actuating said arm thereby throwing the rheostat into operation to control the actuation of the recorder, a vertically movable float within said water column, and an operative connection between said float and said means for operating the latter on the rise and fall

of the float thereby actuating said arm to throw the rheostat into operation.

2. An automatic recording device for steam boilers comprising a water column, means for establishing communication between the water column and the boiler, a recorder, a rheostat for controlling the operation of the recorder, said rheostat supported exteriorly of the water column and including a pivoted arm having a segment-shaped rack, a shaft rotatably mounted in the water column provided with a pinion for engaging with said rack for actuating said arm when the shaft is revolved, a vertically movable float within the water column, a rotatable member disposed at right angles with respect to said shaft and supported by the water column, an operative connection between the float and said member for operating the latter on the rise and fall of the float, and an operative connection between said member and said shaft for operating the latter when said member is revolved.

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

WILLIAM ROHRBACHER.

Witnesses:

KARL H. BUTLER,  
C. T. HOOD.