(No Model.)

2 Sheets—Sheet 1.

W. HODGSON.

HIGH OR LOW WATER ALARM.

No. 502,191. Patented July 25, 1893.

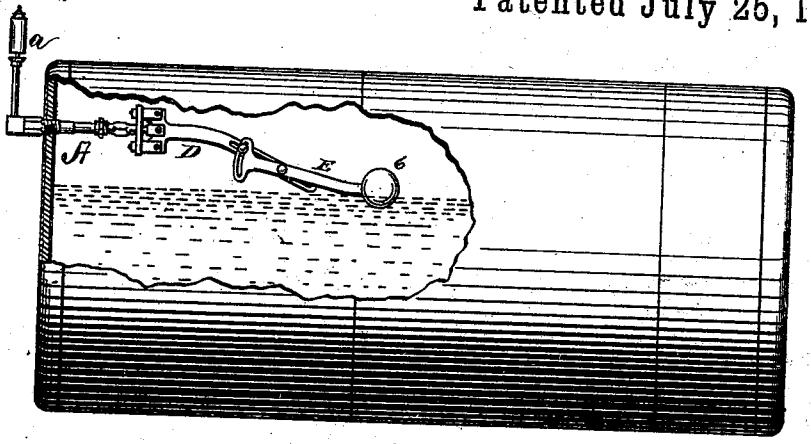


Fig. 1.

Fig. 5.

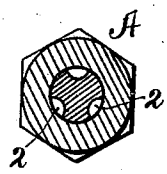


Fig. 4.

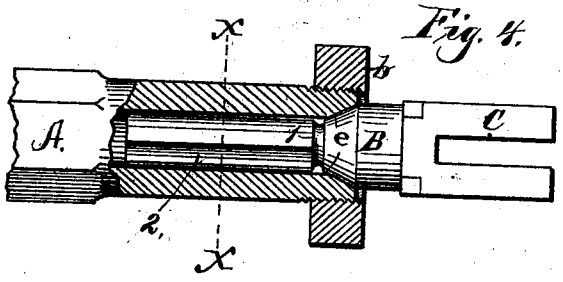
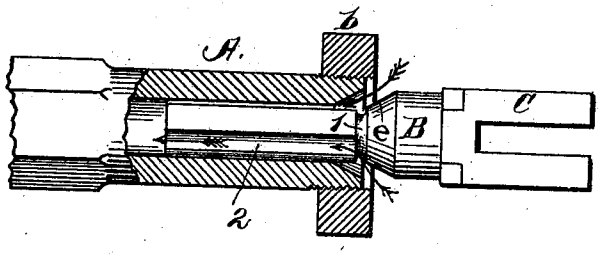


Fig. 6.



WITNESSES:
H. A. Cockart,
D. May Goodrich.

INVENTOR
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By Smith & Benson
ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

W. HODGSON.

HIGH OR LOW WATER ALARM.

No. 502,191. Patented July 25, 1893.

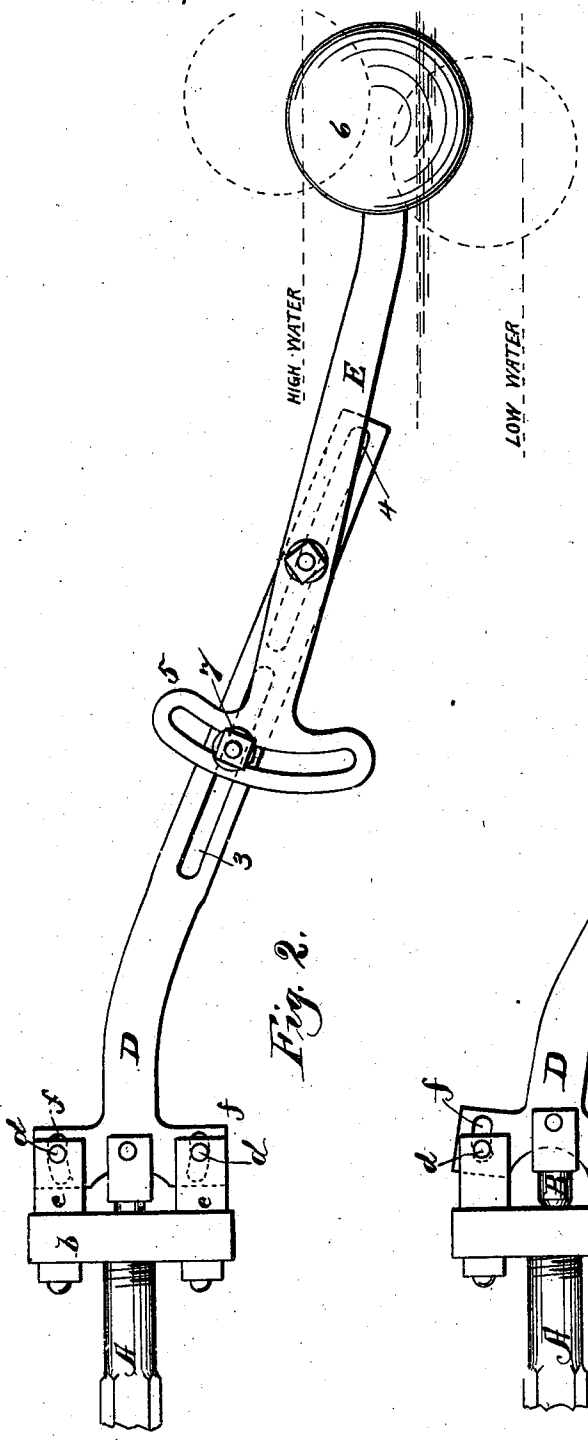

Fig. 2.

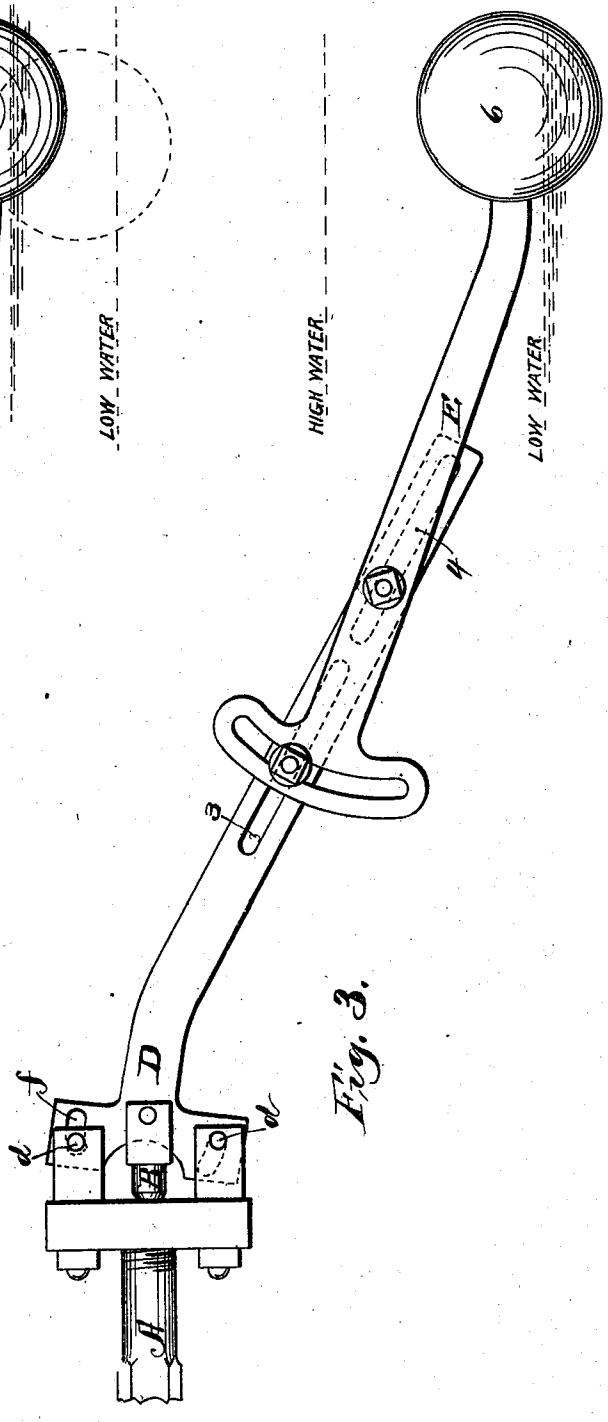

Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM HODGSON, OF NANTICOKE, PENNSYLVANIA.

HIGH OR LOW WATER ALARM.

SPECIFICATION forming part of Letters Patent No. 502,191, dated July 25, 1893.

Application filed April 1, 1893. Serial No. 468,649. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM HODGSON, of Nanticoke, in the county of Luzerne, in the State of Pennsylvania, have invented new and useful Improvements in High or Low Water Alarms, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to high or low water alarms which are provided with automatic alarm actuating devices, mounted within the boiler.

My object is to produce an alarm for high or low water, in which the alarm whistles are connected to and operated, both alike for high and low water.

My invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings in which—

Figure 1, is a view of a boiler, a portion of its side being broken away, showing the mounting and location of my high or low water alarm complete, and connected to a tube which is in connection with a whistle upon the outside. Fig. 2, is a view of the alarm mechanism normally at rest, or as shown when the water is at a medium height. Fig. 3, is a view thereof showing the parts as they appear when the water in the boiler is low. Fig. 4, is an enlarged detail of the valve and pipe, or tube leading to the alarm mechanism in its normal position. Fig. 5, is a cross section on line *x x*, in Fig. 4. Fig. 6, is a view of the parts shown in Fig. 5, when the valve is partially withdrawn, allowing the steam to pass through the same, which operates the whistle.

A, is a tube or pipe secured in the front end of the boiler, as shown, having a whistle —*a*— in connection with its outer end; and a valve —B— engaging with its inner end and adapted to be operated by the levers and float herein described.

To the inner end of the tube —A— I secure the nut or piece —*b*—, provided with the extending arms —*c*— from its upper and lower sides or ends, which arms are provided with pins —*d*—, as shown.

The valve —B— is constructed on the end which is adapted to pass into the tube, cone-shaped, as shown at —*e*—, adapted to fit the inner edge of the tube and also is provided with the transverse groove —1— and longitudinal grooves —2—, as shown, for the purposes hereinafter set forth. The outer end of the valve —B— is provided, preferably, with a bifurcated end C—, which is adapted to receive and pivotally hold the arm —D—.

f, are slotways in the lateral arms of the lever —D—. It will be seen that when the lever —D— is raised or lowered, as soon as the outer end of the slotway —*f*— comes in contact with the pin —*d*—, the valve —B— will be withdrawn partially from the tube and allow steam to pass into the tube and rotate the whistle —*a*—, when an alarm is sounded. It will also be observed that as both parts are constructed substantially alike, this same alarm will be given whether the lever is drawn up or down, thereby operating both as a high and low water alarm. The outer end of the lever —D— is provided with slotways —3— and —4—.

E, is a lever pivoted in the slotway —4— and having the slotted head —5— at its inner end and the float —6— at its outer end. It will be seen that by this slotted head —5— the alarm can be regulated as to the height or shallowness of the water before the alarm shall be given. If, for instance, it is desired to set the alarm so that the water will be very high before the alarm is given, the slotted head —5— will be pushed down so as to have its upper end rest upon the bolt —7—, and conversely.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A high and low water alarm, comprising the combination with the boiler, a tube mounted therein, having an alarm signal upon its outer end, its inner end being provided with a valve, said valve having a bifurcated end —C—, the nut or piece —*b*— secured to said tube, and the lever —D— provided with a float upon one end and secured, pivotally, to said piece —*b*—, and means for limiting the travel of the lateral arms of the lever —D— upon the pieces —*c*—.

2. A high and low water alarm comprising the combination with the boiler, of a tube mounted therein and having an alarm signal upon its outer end and its inner end being provided with a valve, the lever —D—, and means for securing the float —6— adjustably thereto, the piece —*b*— secured to the tube, the lever —D— pivoted to the outer end of the valve —B— and means for limiting the travel of the lateral arms of the lever —D— upon the arm —*c*—.

3. The combination with the tube —A—, of the valve —B—, the lever —D— having a float upon one end and pivoted to said valve, the piece —*b*— having arms —*c*— and the pins —*d*— adapted to engage with the slots —*f*— in the lever —D—.

In witness whereof I have hereunto set my hand this 26th day of June, 1893.

WILLIAM HODGSON.

In presence of—
WILLIAM ROLFE,
H. B. HONEY.