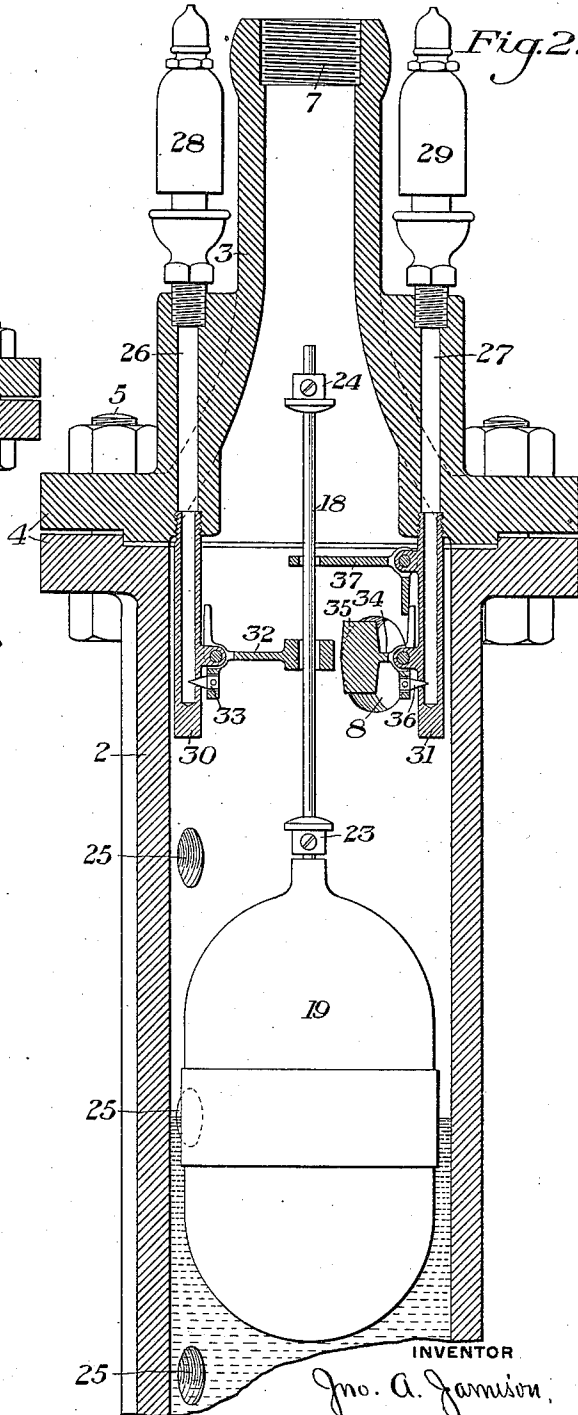
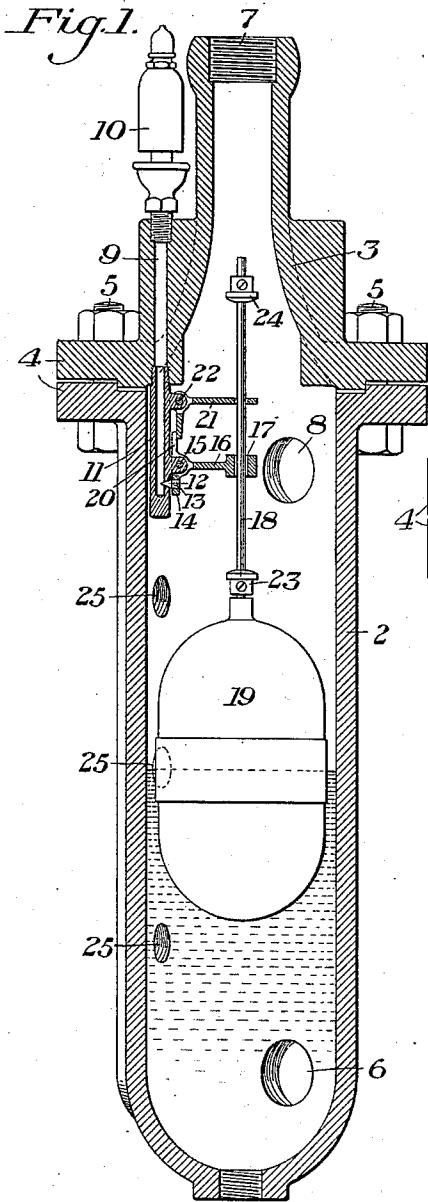


J. A. JAMISON.
ALARM WATER COLUMN FOR BOILERS AND THE LIKE.
APPLICATION FILED JAN. 18, 1912.

1,045,294.

Patented Nov. 26, 1912.

2 SHEETS—SHEET 1.



WITNESSES

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Fig. 3.

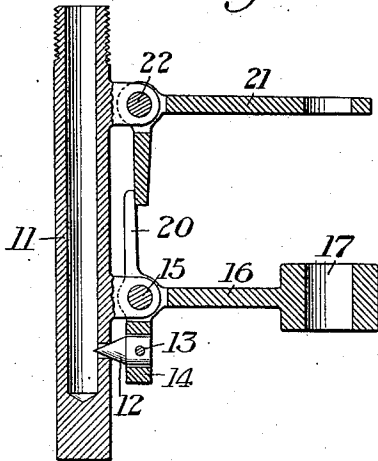


Fig. 4.

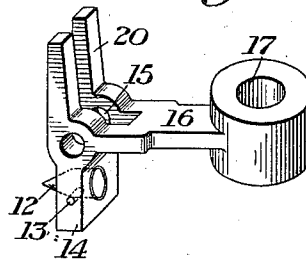


Fig. 6.

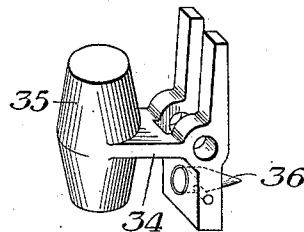


Fig. 5.

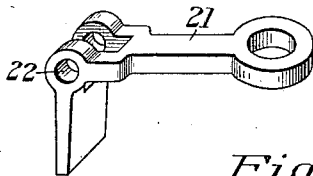
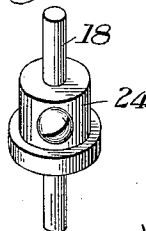


Fig. 7.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ALARM WATER-COLUMN FOR BOILERS AND THE LIKE.

1,045,294.

Specification of Letters Patent.

Patented Nov. 26, 1912.

Application filed January 18, 1912. Serial No. 671,335.

To all whom it may concern:

Be it known that I, JOHN A. JAMISON, of Pittsburgh, Allegheny county, Pennsylvania, have invented a new and useful Alarm Water-Column for Boilers and the Like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of one form of water column embodying my invention; Fig. 2 is a similar view, on a slightly larger scale, of a modified form of column, with the lower portion broken away; Fig. 3 is a sectional detail view of the valve and levers of Fig. 1; and Figs. 4, 5, 6 and 7 are detail perspective views of several of the parts hereinafter more particularly referred to.

My invention has relation to alarm water columns for boilers, and the like, and is designed to provide a simple and efficient device of this character which will automatically operate to sound an alarm in case the water level in the boiler falls below or rises above a predetermined level; also to provide a device of this character which may be used for giving either a low water or a high water alarm, as may be desired.

Referring to the accompanying drawings, the numeral 2 in Fig. 1 designates the body of the water columns, and 3 the removable cover portion thereof, the body and cover portion having the interfitting bolting flanges 4 secured by bolts 5.

6 indicates the water connection for the boiler, and 7 and 8 the steam connections. Connection may be made with the steam space of the boiler or the vessel at either 7 or 8, the connection which is not used being closed by a suitable plug.

9 is a port or passage formed in the cover portion 3 and leading to a suitable alarm whistle 10. Screwed into the lower portion of the passage 9 is a tubular plug 11, the chamber of which forms a continuation of said passage and has an inlet opening communicating with the steam space within the column. This opening is normally closed by a valve 12, which is loosely pivoted at 13 in one arm 14 of a three-armed lever, which is pivoted at 15 to the plug 11. A second arm 16 of this lever has an opening 17 therethrough to receive the stem 18 of a float 19. The third arm 20 of the lever extends upwardly adjacent to the plug 11 and

is engaged by the depending arm of a second lever 21, which is pivoted to the plug at 22. The horizontal arm of the lever 21 also has an opening therethrough for the float stem 18.

23 and 24 designate two collars, which are adjustably secured on the stem 18.

25 designates openings, to which a suitable water gage may be connected.

The operation is as follows:—When the water in the column falls to a predetermined level, the downward movement of the float and its stem will cause the upper collar 24 to engage the horizontal arm of the lever 21, and rock said lever on its pivot to cause its vertical arm to engage the upwardly extending arm of the lower three-armed lever, and thereby rock said three-armed lever sufficiently to unseat the valve 12 and admit steam to the plug 11 and to the port or passage 9 to blow the whistle. When the water in the column rises above the predetermined level the upward movement of the float and its stem brings the lower collar 23 into engagement with the horizontal arm of the lower three-armed lever and unseats the valve 12 to admit the steam to the whistle. The weight of the horizontal arms of the two levers is proportioned to normally hold the valve closed. Owing to the fact that the valve 12 is pivoted and can be moved slightly on its pivot, its proper seating is insured. By adjusting the collars 23 and 24, the water levels at which the alarm will be sounded can be changed.

In the modification shown in Fig. 2, I have shown the cover portion of the column as having two vertical ports or passages 26 and 27, the port or passage 26 corresponding to the port 9 in the form first described, while the port 27 is a similar port at the opposite side of the cover. In this form two whistles 28 and 29 are employed, these two whistles being preferably of different tone, or pitch, whereby their sounds can be audibly distinguished from each other. Two tubular plugs 30 and 31 are employed, each similar to the plug 11 first described, the plug 30 being screwed into the lower portion of the port 26, while the plug 31 is screwed into the lower portion of the port 27. Pivoted to the plug 30 is a three-armed valve lever 32 similar to the lower three-armed lever 16 first described, and having a

similar pivoted valve 33. Pivoted to the plug 31 is a three-armed lever 34, which is weighted at 35 and which has a pivoted valve 36 controlling the inlet to the tube 31, and similar to the valve 33. 37 is a two-armed lever also pivoted to the plug 31 and corresponding to the upper two-armed lever of Fig. 1, its vertical arm engaging the upwardly extending arm of the three-armed lever 34. When the water falls to the predetermined level, the upper collar 24 on the float stem will engage and actuate the horizontal arm of the lever 37, and thereby the lever 34, to open the valve and sound the whistle 29. When the float rises to the predetermined point, the lower collar 23 engages the lever 32 and unseats the valve 33 to sound the whistle 28.

It will be obvious that if it is desired to use the column only as a low water alarm, that the high-water alarm whistle and its actuating devices may be omitted, the port 26 being plugged up. Similarly, if it is desired to use the column only as a high-water alarm, the whistle 29 and the parts controlling the same may be omitted, and the port 27 can be plugged up.

The advantages of my invention will be apparent, since it provides a very simple and effective alarm column, which can be relied upon to automatically indicate either

a high or low-water condition in the boiler or other vessel, or both of such conditions. It will be understood that as soon as the condition giving rise to the alarm has been taken care of, the movement of the float will leave the levers free to act to close the previously opened valve by gravity.

I claim:—

An alarm column having an alarm and a port leading to the same and also communicating with the column, a lever having an arm carrying a valve which controls the communication of said port with the column, said lever also having a weight arm which acts to normally hold the valve closed, and also a third arm, and a second lever having a portion which is arranged to be moved into actuating contact with the said third arm to thereby open the valve, together with a float actuated member arranged to engage one of said levers upon movement in one direction and the other of said levers upon movement in the opposite direction; substantially as described.

In testimony whereof, I have hereunto set my hand.

JOHN A. JAMISON.

Witnesses:

GEO. B. BLEMING,
G. M. VIERS.

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