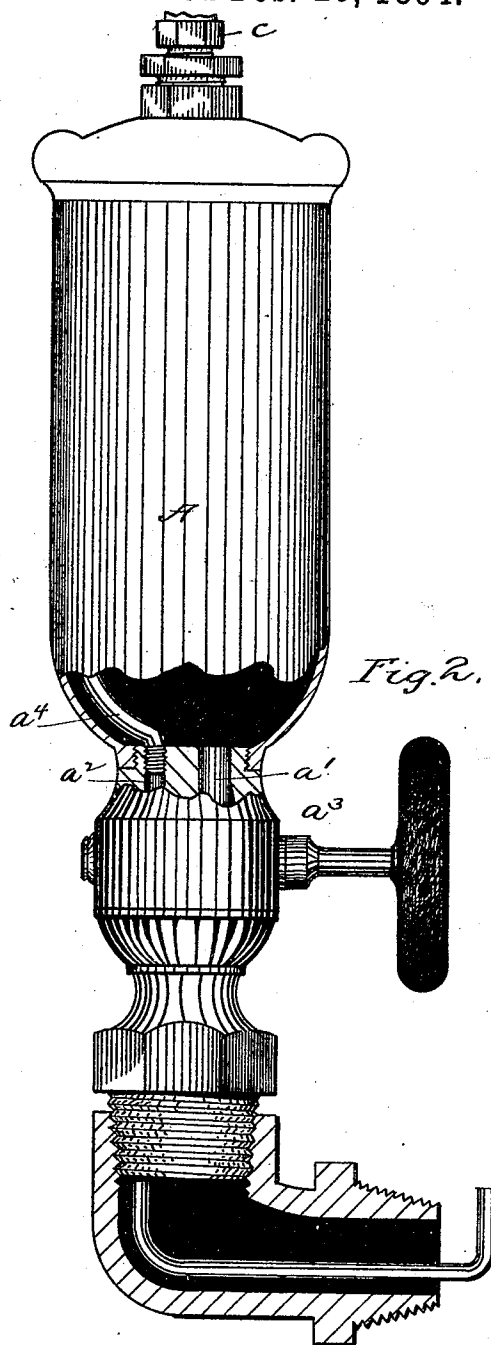
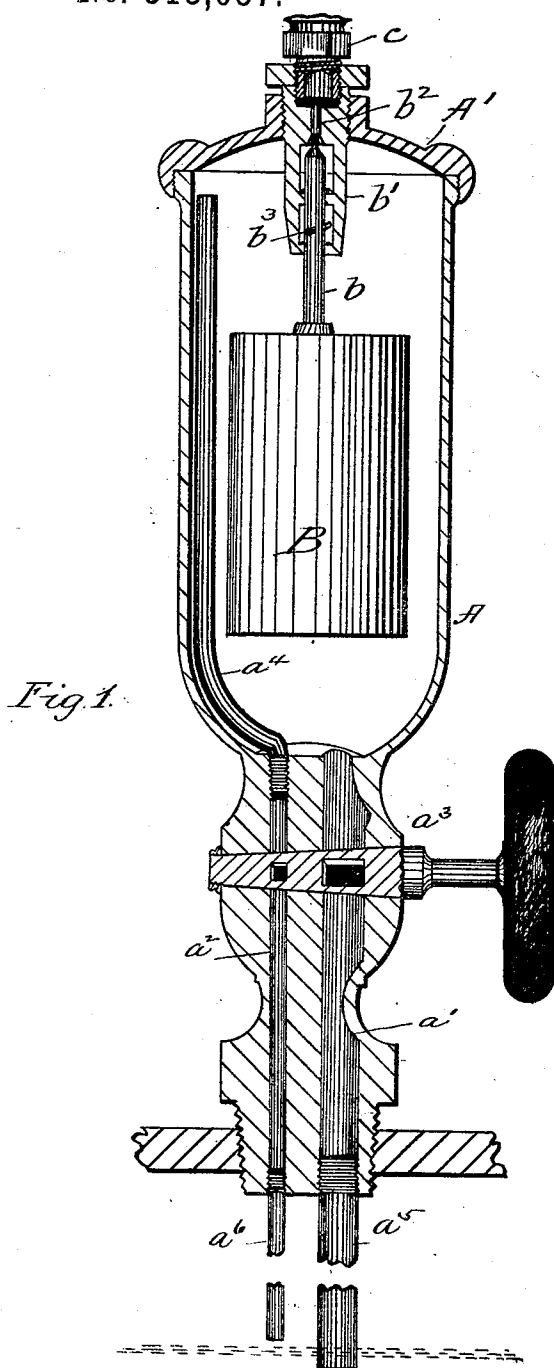


(No Model.)

F. M. ASHLEY.
LOW WATER BOILER ALARM.

No. 515,037.

Patented Feb. 20, 1894.



WITNESSES:

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FRANK M. ASHLEY, OF HAWTHORNE, NEW JERSEY.

LOW-WATER BOILER-ALARM.

SPECIFICATION forming part of Letters Patent No. 515,037, dated February 20, 1894.

Application filed July 20, 1892. Serial No. 440,610. (No model.)

To all whom it may concern:

Be it known that I, FRANK M. ASHLEY, a citizen of the United States, residing at Hawthorne, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Low-Water Boiler-Alarms, of which the following is a full, clear, and exact description.

My invention relates to low water alarms for steam boilers, the object being to provide an alarm cheap and simple in construction and having but a single connection with the boiler.

The invention consists of the details of construction which will hereinafter be described and claimed.

In the accompanying drawings, Figure 1 is a longitudinal section of my improved alarm, and Fig. 2 is a side elevation of the same, parts being broken away and showing a right angle connection with the water.

Referring to the drawings by letter, A represents a vessel having a neck or stem cast upon its lower end and provided with two longitudinal passages a' a^2 , respectively. The lower end of the neck is screw-threaded whereby it may be screwed into the shell of a boiler when the alarm is applied to the upper side of a horizontal boiler. A valve a^3 is located in the neck and controls both of the passages a^2 a' . The passage a' opens directly into the lower end of the vessel A, but the passage a^2 connects with a curved pipe a^4 which leads up the side of the vessel and ends near the top thereof. Into the outer or lower ends of the passages a' a^2 are screwed two pipes a^5 and a^6 , respectively, the latter being a little shorter than the former and both being of such length that the lowest water line of the boiler will come between the ends of the pipes.

The vessel A contains a float B having a vertical stem b extending through bearings in a plug b' . Its upper end is cone shaped to form a valve which is adapted to enter the lower opening of the passage b^3 in the plug and thus close said passage. The plug itself is screwed into a removable cap A' and an alarm or whistle c is screwed into the end of the plug. The drawings only show the end of the whistle. It may be of any approved construction. The float stem b is provided

with a pin b^3 which prevents the stem from falling out of its bearings.

Fig. 2 shows an elbow connection to be used when the alarm is applied to the side of a vertical boiler. In this case the pipe a^5 is not required, but the pipe a^6 is used and is bent so as to pass through the elbow and lead up to a point slightly above the lower end of the passage a' at which point the lowest water line occurs. The valve a^3 is normally open and is only used to close the passages when the float is to be removed or repairs are to be made while steam is up.

The operation is as follows: The normal water line is above the lower end of pipe a^6 and while in this position the steam pressure of the boiler forces the water through the passages a' a^2 and fills the vessel A thus lifting the float and holding the passage b^3 closed. When the water line falls below the end of the pipe a^6 steam enters the vessel A through said pipe and balances the pressure in the boiler and in the alarm, so that the water will flow out of the alarm into the boiler. This allows the float to drop and open the passage b^3 , the steam then rushes out into the whistle and gives the alarm.

Heretofore so far as known to me all alarms have had two connections with the boiler through which the passages a' a^2 , respectively, were made. My construction saves the extra connection and thereby cheapens and simplifies the alarm.

Having thus described my invention, I claim—

1. In a low water alarm for steam boilers, the combination with a boiler, of a vessel provided with a float controlling the passage to an alarm, and a neck connecting the vessel with the boiler, and provided with two passages, one of which has an extension leading to the upper end of the vessel and having a permanently open upper end, and the other opening directly into the vessel at its bottom, for the purpose set forth.

2. In a low water alarm for steam boilers, the combination of the boiler, the vessel A, provided with a passage b^3 , float B, in said vessel and controlling said passage b^3 , a neck connecting said vessel to the boiler, two passages extending through said neck, two pipes connecting respectively with the lower ends

of said passages, and extending into the boiler, one pipe being shorter than the other, and another pipe connecting with the opposite end of the passage having the shorter pipe
5 and leading to the upper portion of the vessel and having a permanently open upper end, for the purpose set forth.

3. A low water alarm for steam boilers consisting of a vessel provided with a passage to
10 the alarm, and a float for controlling said passage, a neck with passage-ways, one of which opens into the bottom of the vessel and has

an extension at its other end, and the other having an extension at its lower end, shorter than the said extension of the first, and an
15 extension at its upper end terminating in a permanently open end within the upper part of the vessel.

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

FRANK M. ASHLEY.

Witnesses:

FRANK S. OBER,
JOS. J. UHL.