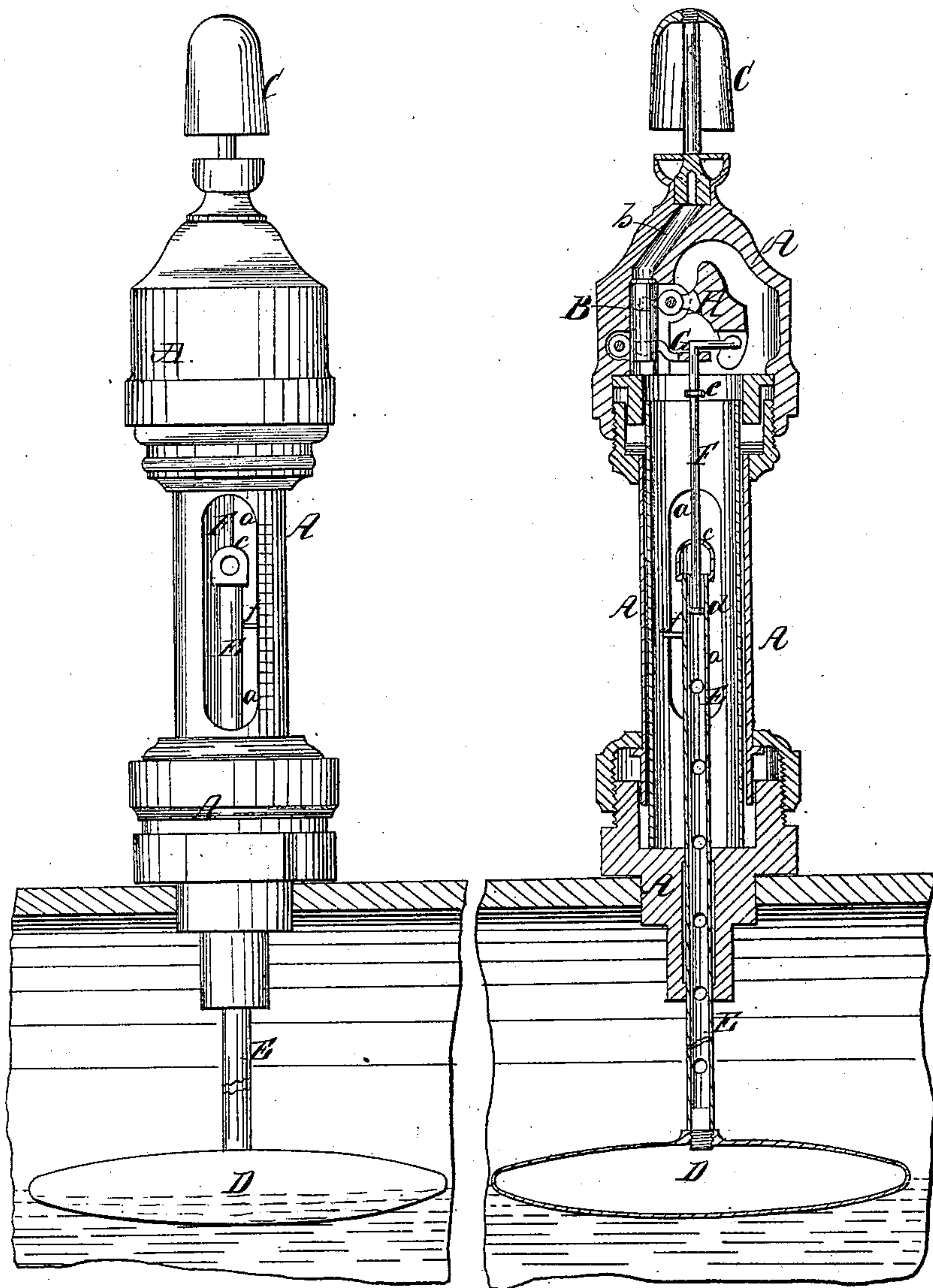


T. Flinn,
Steam-Boiler Indicator.
No 77,809. Patented May 12, 1868.

Fig: 1.

Fig: 2.



Witnesses.
H. C. Ashkett
Geo. Ensch

Inventor.
T. Flinn
per Munnell
attorneys

United States Patent Office.

THOMAS FLINN, OF BROOKLYN, NEW YORK.

Letters Patent No. 77,809, dated May 12, 1868.

IMPROVEMENT IN WATER-INDICATORS AND ALARMS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THOMAS FLINN, of Brooklyn, in the county of Kings, and State of New York, have invented a new and improved Water-Indicator and Alarm-Attachment; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of my improved water-indicator.

Figure 2 is a vertical section of the same.

Similar letters of reference indicate corresponding parts.

This invention relates to a new device for indicating the height of water in steam-boilers, and for sounding an alarm if the quantity of water should rise or fall in the boiler beyond the required limits.

The invention consists in the use and combination of a cylindrical vessel, which is screwed or otherwise secured upon the boiler, with a rod, which is supported by a float above the water, and which fits into the cylindrical attachment; having a pin, by means of which the height of the water will be indicated on a graduated scale arranged on the cylindrical vessel.

In the tubular upper end of the rod plays the lower part of another rod, which is suspended from a valve that keeps the steam from a whistle, arranged in the upper part of the cylinder. If the water falls below a certain level, a shoulder on the end of the floating rod will press upon a shoulder on the lower end of the suspended rod, and will thereby draw the latter, and with it the valve, down, opening the way for the steam to the whistle. If the water rises above a certain desired level, the shoulder on the upper end will strike against a shoulder on the suspended rod, and will thus raise the latter. The upper end of the suspended rod will thereby be pushed against a lever, which is pivoted to the cylindrical vessels, and which is connected with the valve to the whistle, so that when one end of the lever is raised by the rod, the other end will be lowered, and will lower the valve, thereby giving the steam access to the whistle. Thus, if the water is too high or too low, will the alarm be sounded through the same whistle.

A, in the drawing, represents a tube or cylindrical vessel, screwed or otherwise fastened upon a boiler, of which a section is indicated by red lines in the drawing. The tube is made of metal or other suitable material, and may, if desired, have a section, *a*, of glass, or other transparent substance, put into it, so as to allow the inspection of the interior. The upper end of the tube is covered by a perforated cover, the channel *b* of which is closed from the under side by means of a plug-valve, B, which is pressed against its seat by the steam entering the vessel A, and by the weight of the lever H.

Above the channel *b* is mounted, upon the tube A, a steam-whistle, C, which, as soon as the valve B is opened, is sounded by the steam which passes through the tube A.

A float, D, swimming on the water in the boiler, supports a rod, E, which fits into the tube, as shown. This rod is either tubular and perforated, as shown, or it is of such small diameter that the steam can freely pass from the boiler into the tube A. If the rod E is tubular, its upper end fits around another rod, F, which is suspended from a lever, G, pivoted to the upper part of the tube A, said lever passing through the valve B, as shown.

If the water is too low in the boiler, the float will sink, and the upper end, *c*, of the rod E will strike against a shoulder, *d*, on the rod F, and will draw the latter down, so that the lever G will be drawn down, thereby lowering the valve B.

If the water is too high in the boiler, the end, *e*, of the rod E strikes against a shoulder, *e*, on the rod F, and pushes the latter up. The upper end of the rod F is thus pushed against a lever, H, which has its fulcrum near its middle, in the stationary tube A, while its other end is fitted into the valve B, and thus as its one end is raised, the other end is lowered, and lowers the valve off its seat. The valve is thus opened both by the raising and lowering of the rod F. If the rod E is not tubular, then the rod F should be so, and then the shoulders *d*, &c., should be on E, and the closed end on F.

By having a pin, *f*, or other indicator, on the rod E, the height of the water in the boiler would be indicated on a graduated scale, which is provided on the tube A, as shown in fig. 1.

The invention may also be connected with an ordinary water-gauge, if desired. It will be noticed that the gauge or index is thus operated without friction.

Having described my invention, I claim as new, and desire to secure by Letters Patent—

1. The arrangement of the rods E and F, connected so that the upper suspended rod, F, will only be operated by the lower floating rod, when the water in the boiler is at too high or too low a level, substantially as herein shown and described.

2. The rod F, when operated as described, in combination with the levers G H and with the valve B, all made and operating so that the valve will be opened both when the rod F is raised and when it is lowered, as set forth.

3. The above, in combination with the pin *f*, or other indicator on the floating-rod E, whereby the apparatus is provided with an index, as set forth.

THOMAS FLINN.

Witnesses:

WM. F. McNAMARA,

ALEX. F. ROBERTS.