(No Model.) 2 Sheets—Sheet 1.

H. F. LOGEE.

STEAM BOILER INDICATOR AND ALARM.

No. 331,801. Patented Dec. 8, 1885.

Fig. 1.

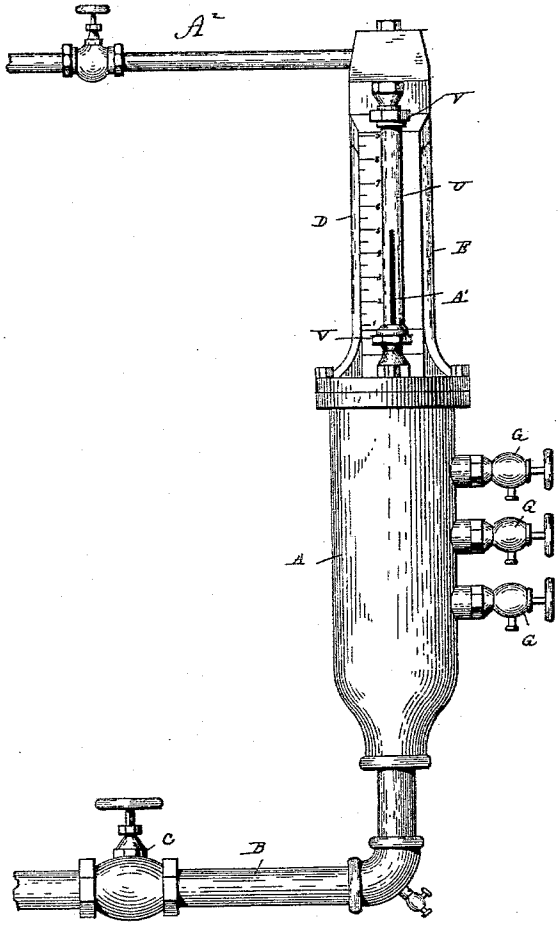
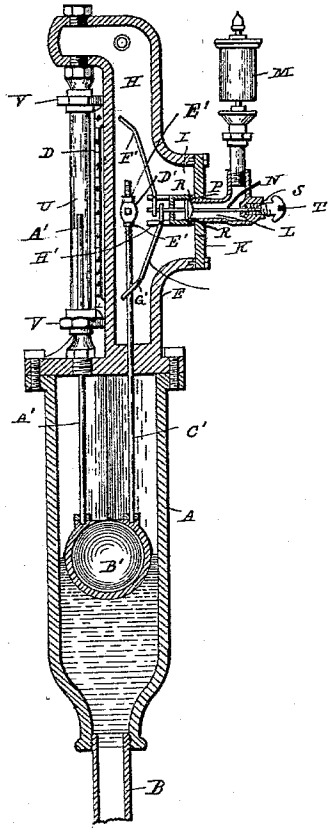


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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STEAM BOILER INDICATOR AND ALARM.

No. 331,801. Patented Dec. 8, 1885.

Fig. 3.

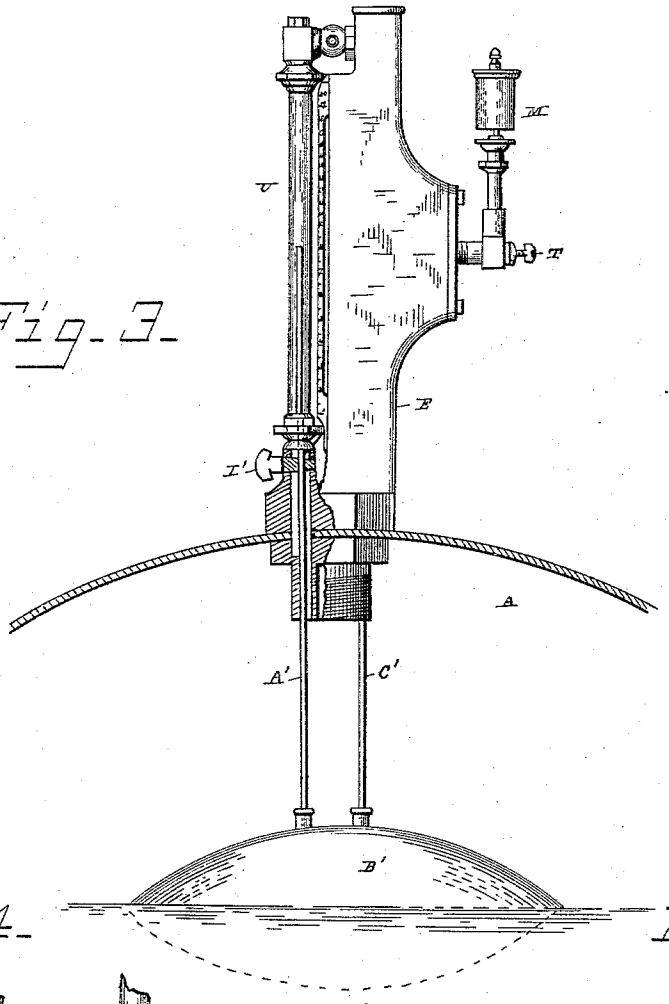


Fig. 4.

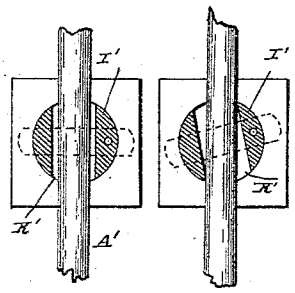
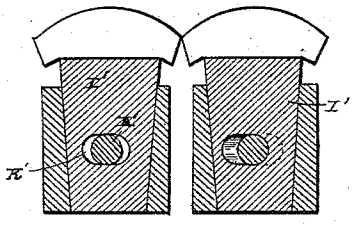


Fig. 5.



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UNITED STATES PATENT OFFICE.

HENRY F. LOGEE, OF STILLWATER, MINNESOTA.

STEAM-BOILER INDICATOR AND ALARM.

SPECIFICATION forming part of Letters Patent No. 331,801, dated December 8, 1885.

Application filed March 9, 1885. Serial No. 158,177. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. LOGEE, a citizen of the United States, residing at Stillwater, in the county of Washington and State of Minnesota, have invented certain new and useful Improvements in Steam-Boiler Indicators and Alarms, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain improvements in high and low water gages for steam-boilers; and it has for its object to provide improved means of indicating the height of the water in the boiler in a more certain and better manner than heretofore. This object I attain by the means illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of my improved gage or indicator. Fig. 2 represents a vertical sectional view of the same. Fig. 3 indicates a view, partly in side elevation and partly in section, of a modification of my invention applied to a steam-boiler; and Figs. 4 and 5, sectional views of a valve employed in connection with said modified form of the device.

A indicates a strong cylinder or tube of metal, of suitable dimensions, which is contracted at its lower end, and connected by means of a pipe, B, with the lower part of the steam-boiler, the pipe having a valve, C, for the purpose hereinafter described. The upper end of the cylinder is flanged for the reception of the lower flanged end of the upper section, E, of the device, which carries the indicating devices. The cylinder is provided with the try-cocks G, which are ordinarily applied to the boiler direct. The upper section, E, is provided with a chamber, H, having an extension, I, at one side, which is provided with a detachable cover, K. The upper end of said upper section is connected with the upper part of the boiler by means of a pipe, A^2. Through the center of said cover passes a pipe, L, which is bent upward on the outside, and has attached to it a steam whistle or alarm, M. Through said pipe extends a valve-rod, N, which is provided with a beveled valve, P, which is seated normally against a valve-seat, R, and is held to its seat by the spring S when no pressure of steam is against the valve.

T is a screw-plug, which closes the chamber in which the spring is located. The upper section of the device is provided with a glass tube, U, which is secured by means of steam-tight connections V between the upper and lower parts of the upper section of the device. The lower connection is provided with a stuffing-box, through which passes a vertical rod, A′, which is secured at its lower end to a float, B′, located in the chamber A. The said float has also secured to it a vertical rod, C′, which passes through a suitable stuffing-box in the lower part of the upper section of the device into the hollow chamber thereof. The said rod has near its upper end a loose boss, D′, which is held adjustably in place by means of check-nuts E′, screwed upon the rod. This boss is arranged to operate the levers F′ and G′, which are pivoted to lugs H′ and connected with the valve-stem, to open the valve and allow the steam to sound the whistle or alarm when the water is too high or low in the boiler. Back of the glass tube, and properly secured to the upper section, is a graduated scale, of porcelain or other vitreous or enameled surface, having a white body and indication or scale marks to indicate the height of the water in the boiler as the tube or the rod rises and falls.

In the modifications shown in Figs. 3, 4, and 5 of the drawings the lower or tubular section of the device is dispensed with, and the upper section is secured directly to the top of the boiler. In this case the float is placed in the boiler, and the steam-connection is made directly through the lower end of the glass tube to the top of the chamber of the upper section of the device. The cut-off steam-valve is placed in the lower connection, as indicated by the letter I′, and has an oblong opening, K′, through which the rod passes. When the valve is open, the steam passes through the spaces at each side of the valve-rod; but when closed the sides of the aperture K′ bear against the valve-rod and shut off the steam.

The operation of my invention will be evident from the above description, in connection with the drawings, without further explanation.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of the cylinder A, hav-

ing a pipe, B, adapted to connect with the lower part of a boiler, and the upper section, E, having a pipe, A^2, adapted to connect with the upper part of the boiler, and the alarm M, connected with said upper section, the valve-stem N, valve R, levers G′ and F′, and actuating-rod C′ and float B′, all arranged to operate substantially as specified.

2. The combination, with the cylinder A, of the float B′, the vertical rods A′ C′, the adjustable boss D′, the levers F′ G′, the valve-rod N, the valve P, and the alarm and index devices, whereby the height of the water in the boiler is indicated, substantially as specified.

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

HENRY F. LOGEE.

Witnesses:
F. H. LEMON,
M. F. BUTLER.