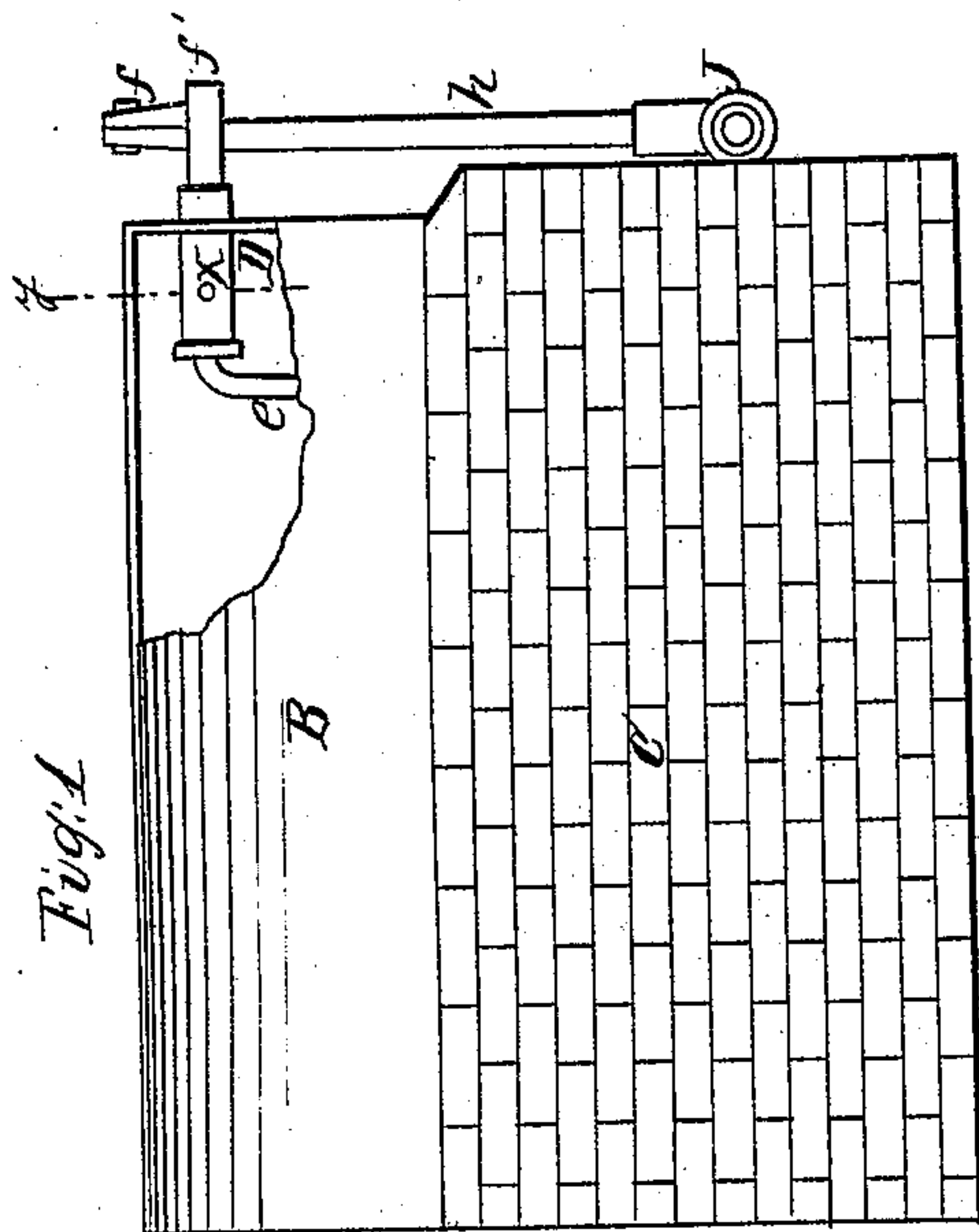
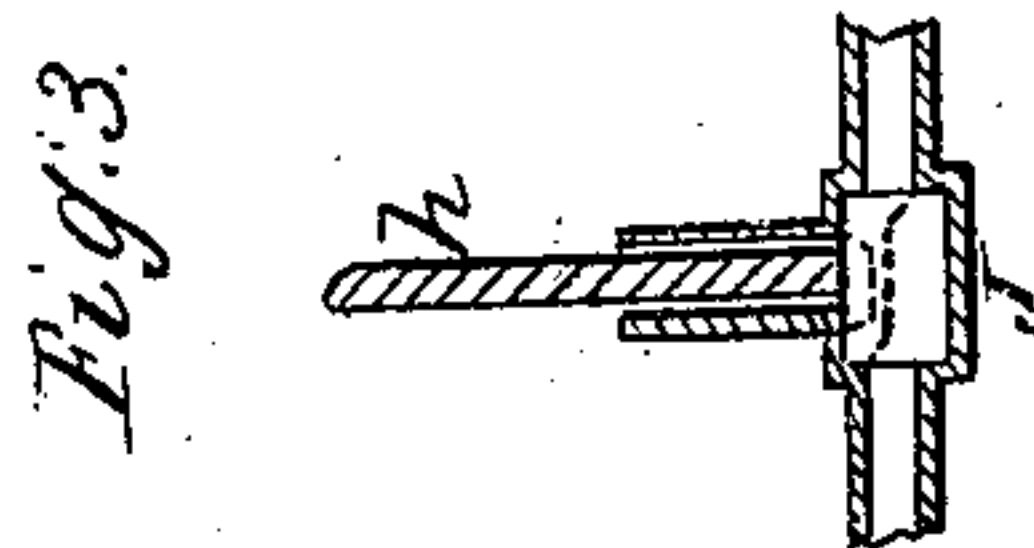
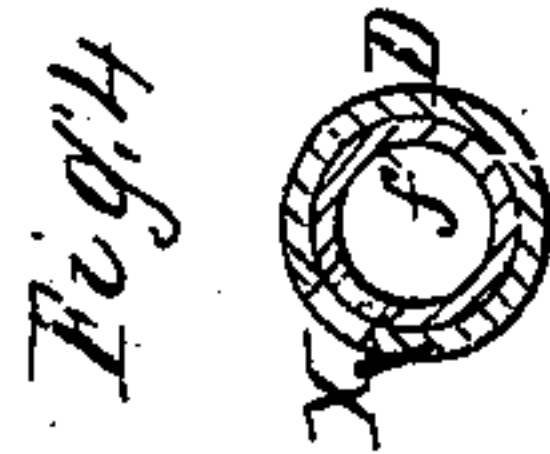
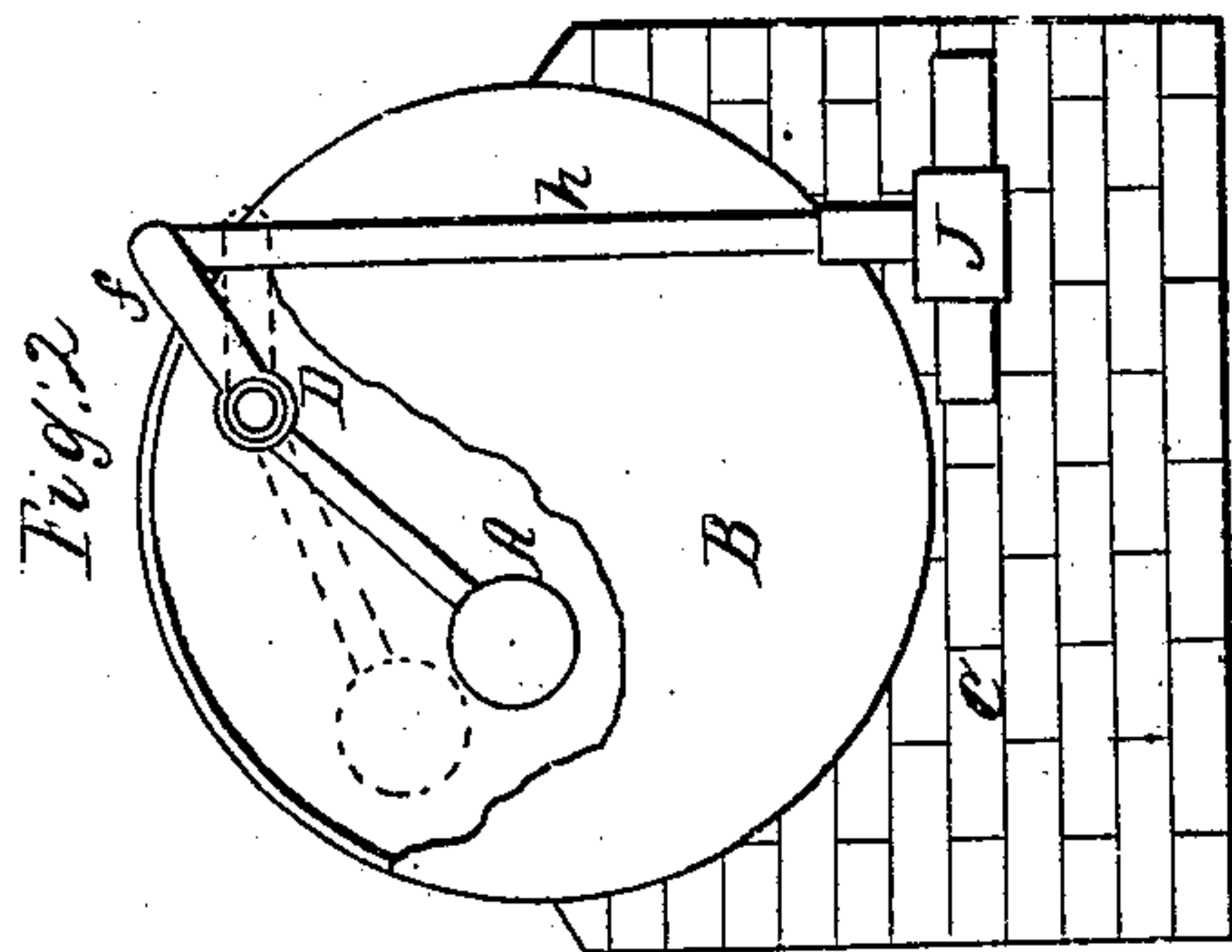


W. G. Bell

Steam Boiler Indicator

No. 98,464.

Patented Jan. 4, 1870.



Witnesses
Chas. Headaway
P. Boland

Inventor
W. G. Bell, By his attorney
James J. Johnston

United States Patent Office.

W. G. BELL, OF PITTSBURG, PENNSYLVANIA.

Letters Patent No. 98,464, dated January 4, 1870; antedated December 30, 1869.

IMPROVEMENT IN WATER-INDICATORS FOR STEAM-GENERATORS.

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, W. G. BELL, of Pittsburg, in the county of Allegheny, and State of Pennsylvania, have invented a new and useful Improvement in "Steam-Generators;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and arrangement of a float and valve with relation to the boiler, so that the float will, through the medium of suitable gear, connected with the valve in the water-supply pipe, cause the valve to close when the water is at the desired height in the boiler, and open gradually as the water becomes low; and when the water is below the line of safety, to open the valve to its full capacity, and also give an alarm.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, which form part of my specification—

Figure 1 is a side elevation of a steam-generator provided with my improvement:

Figure 2 is an end view of the same.

Figure 3 represents a section of a valve which may be used in connection with the float.

Figure 4 is a transverse section of the stuffing-box, cut through at line *y*, in which is placed a hollow pivot-shaft, and represents the relation of openings in the stuffing-box and hollow shaft, when the water is low in the boiler.

Figure 5 represents the position of said openings when the water is at the proper height in the boiler.

In the accompanying drawings—

B represents an ordinary steam-generator.

C represents its furnace.

In one end of the boiler is secured a stuffing-box, D, in which is fitted a hollow shaft, *f*, provided with an opening, *o*, corresponding in position and size

to an opening, X, in the stuffing-box D, so that by rotating the hollow shaft *f*, the openings X and *o* will be brought opposite each other, as represented in fig. 4.

To the inner end of the shaft *f* is attached an arm, *e*, on the end of which is secured a float, A, which may be of any desired form, and made of any suitable material.

On the outer end of the hollow shaft *f* is attached an arm, *f*, to which is secured the rod *h*, for manipulating the valve in the water-supply pipe J.

The valve in pipe J may be of any desired form, and the pipe may be connected with and to the boiler in any known manner.

When the float is in the position represented in fig. 2, the valve in pipe J will be opened to its full capacity, to allow the water to flow freely through pipe J into the boiler, and the openings X and *o* will be opposite to each other, thereby allowing steam to escape through the hollow shaft *f*, and thereby give the alarm as to the condition of water in the boiler.

When the float is in the position represented by the dotted lines in fig. 2, the valve in pipe J and the openings X and *o* will be closed.

Having thus described my invention,

What I desire to secure by Letters Patent, is—

1. The float A, attached to a hollow axis, which passes through the stuffing-box, provided with a steam opening, X, said float, axis, and opening being so constructed with relation to the water-supply as to give an alarm when the water is below the desired water-line in the boiler, substantially as described.

2. The combination and arrangement of the float A with the valve in the supply-pipe, for regulating the flow of water into the boiler, substantially as herein described.

W. G. BELL.

Witnesses:

JAMES J. JOHNSTON,
CHAS. HADAWAY.