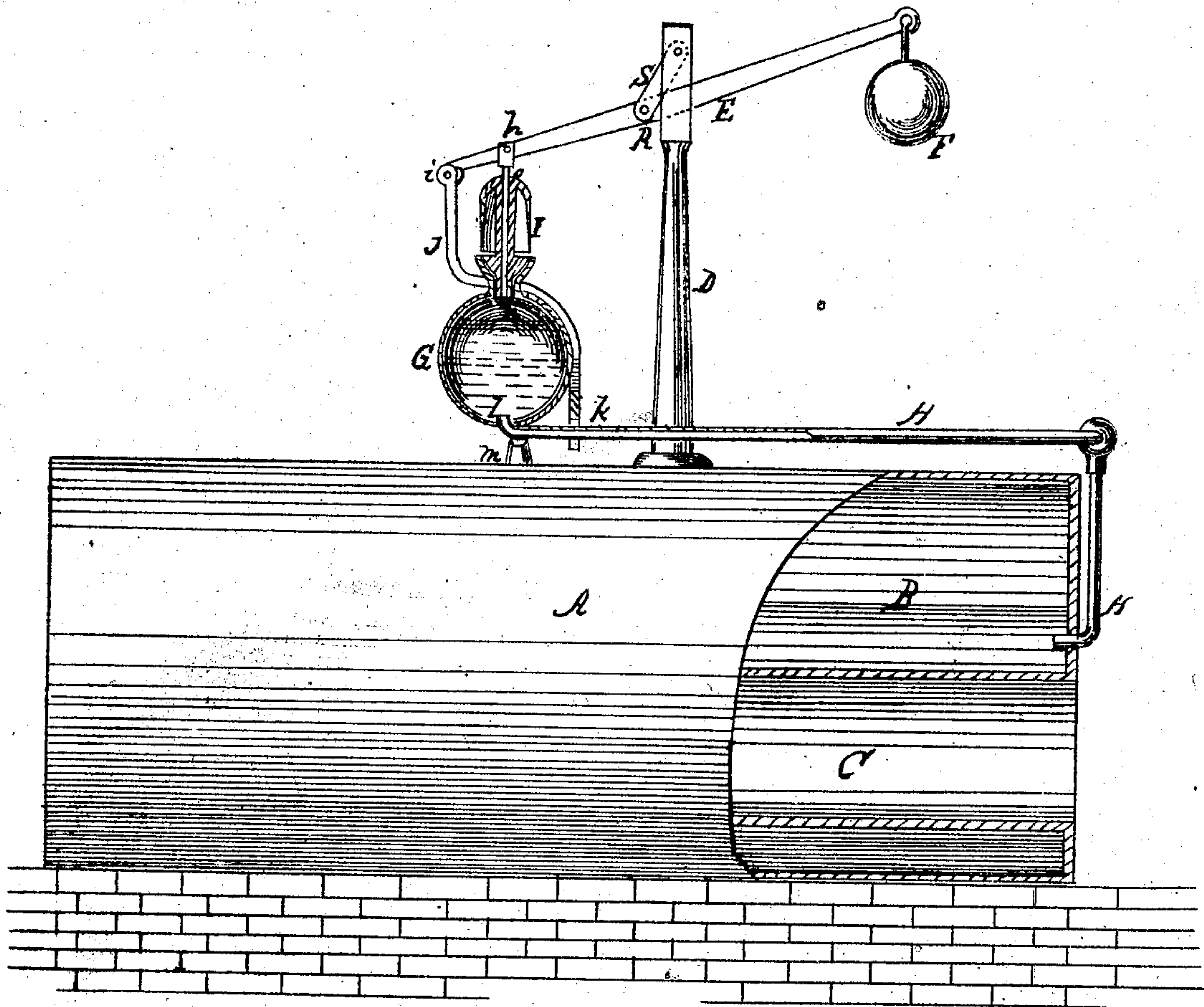


G. B. Massey.

Low-Water Detector for Steam Generator.

N<sup>o</sup> 74706

Patented Feb. 18, 1868.



Witnesses.

H. C. Ashkettle  
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# United States Patent Office.

G. B. MASSEY, OF NEW YORK, N. Y.

*Letters Patent No. 74,706, dated February 18, 1868.*

## IMPROVEMENT IN LOW-WATER DETECTORS 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, G. B. MASSEY, of the city, county, and State of New York, have invented a new and improved Low-Water Detector for Steam-Boilers; 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.

This invention relates to a new and useful device for ascertaining the height of water in steam-boilers, and for ascertaining the quantity of water or liquid contained in all vessels where steam is generated; and it consists in so arranging a lever or sway-bar on a fulcrum or centre attached to a standard, (which lever or sway-bar has a weight attached at one end, and is connected with a water-vessel at the other,) that the ends of the lever or sway-bar shall be raised or lowered, according as the water-line in the boiler rises or falls, and so that when the water in the boiler falls below a certain point, the alarm shall be given, as will be hereinafter more fully described.

The drawing represents a sectional elevation of a steam-boiler with my detector attached, being partly in section, for the purpose of showing more plainly the construction and operation.

A is the boiler, and B represents the water-line. C is the boiler-flue. D is the stand attached to the boiler. E is the lever or sway-bar. F is a weight attached to one end of the bar E. G is a globe or vessel which is connected with the boiler by a pipe which is marked H. I is a steam-whistle. J is a bent rod or iron strap which is connected with the sway-bar at *i*. The pipe H passes through a hole in the other end, as seen at *k*. The end of the pipe H enters the vessel G, as seen at *l*. The pipe (with the vessel) is supported on the stud *m*, when the weight of the vessel preponderates and raises the weight F. When there is a sufficiency of water in the boiler, the pressure will force water therefrom through the pipe H, and fill, or nearly fill, the vessel G, as represented in the drawing. When the water in the boiler falls below the pipe H, the water in the vessel G will flow into the boiler of its own gravity, and steam will take its place, thus giving the preponderance to the weight F, which raises the vessel and the end of the pipe H with which the sway-bar is connected. When this movement of the sway-bar takes place the steam-whistle is blown. The valve of the whistle is marked *n*, and it has its seat on the inside of the globe or vessel G, as seen in the drawing. The valve-rod *o* is attached to the sway-bar at *p*, so that when the movement takes place a lever-purchase will be obtained sufficient to force the valve from its seat and allow steam to escape to give the alarm. The fulcrum or centre R, from which the sway-bar is supported, is made variable by being attached to the swinging bars S, so that the sway-bar may adjust itself to the position of the vessel G, and keep it in an upright position. The angular joint in the pipe H may be a gas-pipe joint, as seen in the drawing; or a piece of elastic tubing may be attached, or the pipe, in one continuous piece, may be made to spring, so as to allow the vessel G to rise sufficiently, if it is desired to so construct it.

It will thus be seen that the water-line in the boiler will determine whether the vessel G shall contain water or steam. If the water in G has been expelled in sufficient quantity to cause the weight F to preponderate and raise the vessel G, the steam itself will give the alarm.

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

1. The movable vessel G, connected with a steam-boiler or other vessel in which steam is generated, and with the oscillating-lever or sway-bar E, substantially as and for the purposes shown and described.
2. The lever or sway-bar E, supported from a variable fulcrum or centre, and connected with and operating upon the vessel G, substantially as set forth, for the purposes specified.

The above specification of my invention signed by me, this thirtieth day of January, 1868.

Witnesses:

N. K. ELLSWORTH,  
LYSANDER HILL.

G. B. MASSEY.