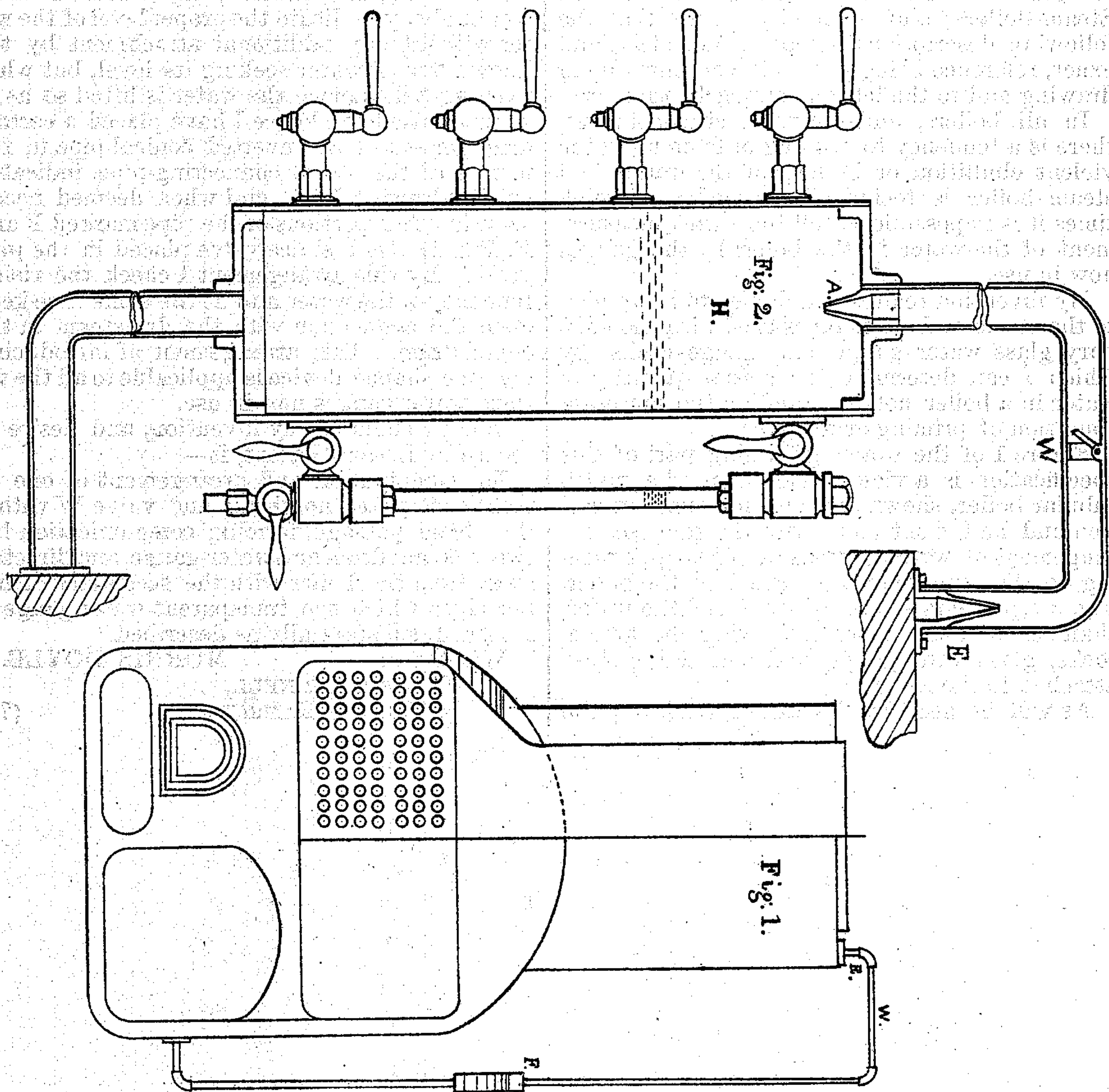


MORRIS DOYLE.

Improved Water Gauge.

No. 119,454.

Patented Oct. 3, 1871.



Witnesses;

H. Ashton Ramsay,
Rich'd Morton,

Inventor

Morris Doyle.

UNITED STATES PATENT OFFICE.

MORRIS DOYLE, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN WATER-GAUGES FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. 119,454, dated October 3, 1871.

To all whom it may concern:

Be it known that I, MORRIS DOYLE, of the city of Baltimore, in the State of Maryland, have invented a certain new and useful Improvement in Gauges for Determining the Height of Water in Steam-Boilers; and do hereby declare that the following description thereof is full, clear, and exact, reference being had to the accompanying drawing and to the letters and marks thereon.

In all boilers, under certain circumstances, there is a tendency to priming or foaming as the violent ebullition or boiling of the water, in a steam-boiler is technically termed. At such times it is impossible to tell the exact measurement of the water in the boiler by the gauges now in use.

My invention relates to a device to be applied to the steam and water-pipes used with the ordinary glass water-gauge and gauge-cocks, by which I can determine the actual quantity of water in a boiler notwithstanding the aforesaid condition of priming or foaming.

Figure 1 of the drawing forming part of this specification is a view in elevation of a multi-tubular boiler, shown one-half in transverse section and half front view, with the proposed arrangement of water-gauge and pipes appertaining to the same shown attached to the boiler. Fig. 2 represents a vertical section of the water-chamber on a larger scale, showing the gauge-cocks, glass water-gauge, and connecting-pipes attached to the same.

As will be seen by the drawing, Fig. 1, the

water-chamber H communicates with the boiler by two pipes, one attached near the bottom and the other applied to the highest part of the boiler, the top of the steam-drum. Provided the water in the boiler is quiescent, the water-chamber would always indicate the proper level of the water without any additional attachment by the known law of water seeking its level, but when foaming takes place the water is lifted so as to show a false level hence I have placed a certain arrangement of an inverted conical-pipe in the mouth of the steam connecting-pipe, indicated on the drawing by A, and when deemed necessary, in other portions of the pipe marked F and E, Fig. 1; also a sluice-valve placed in the pipe at W. By this arrangement I check the rising tendency of the water and at the same time keep open the connection with the dry steam in the steam-drum. This arrangement of introducing my cone-shaped device is applicable to all the various water-gauges now in use.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination and arrangement of one or more constricted nozzles A and valve W within the steam passage, forming communication between steam-drum and water-gauge, and directed away from the boiler with the secondary chamber H, to which the transparent water-gauge is attached, substantially as described.

Witnesses: MORRIS DOYLE.

JAMES S. GRINELL,
H. ASHTON RAMSAY.

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