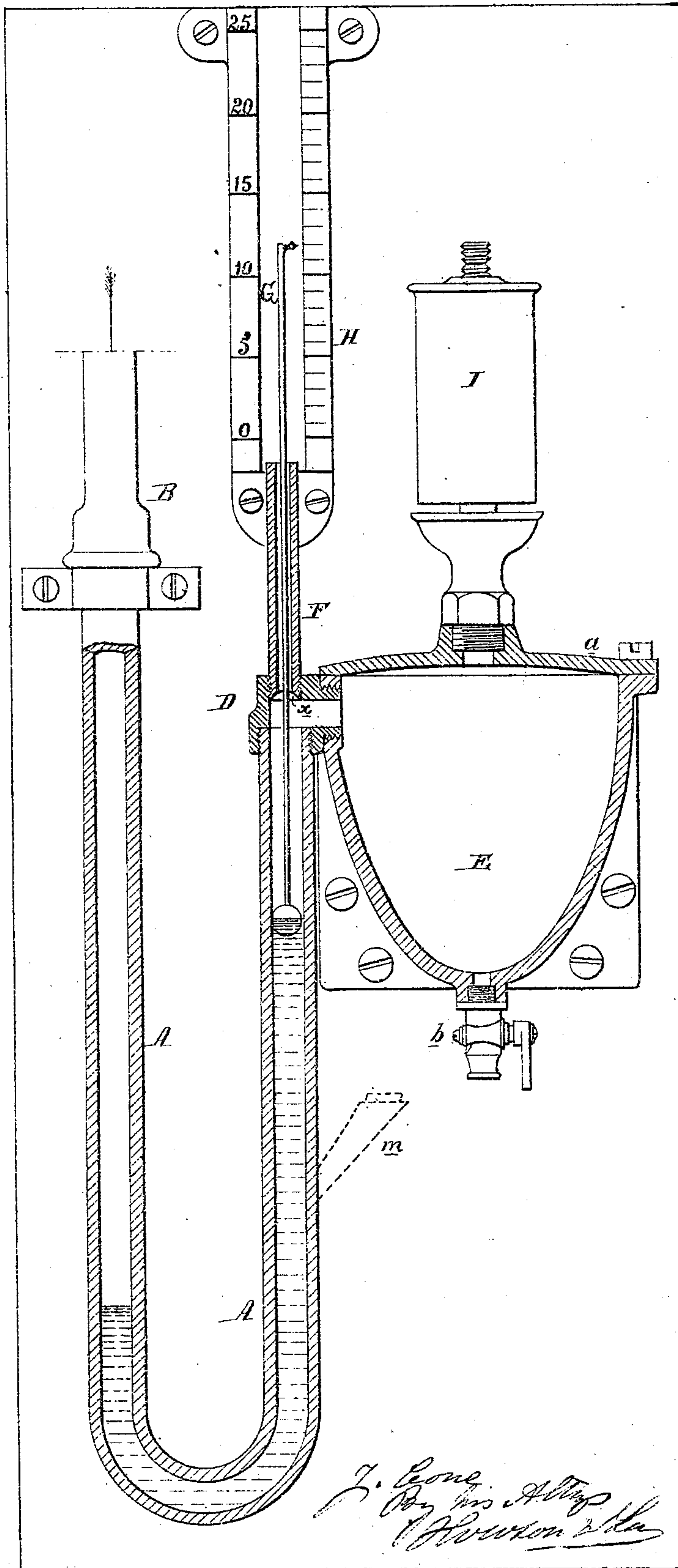


JONATHAN CONE.
Improvement in Steam Pressure Alarms.
No. 123,455. Patented Feb. 6, 1872.



WITNESSES,

Harry Smith
Thos. H. Brown

J. Cone
By his Attys
Harrison & Co

UNITED STATES PATENT OFFICE.

JONATHAN CONE, OF BRISTOL, PENNSYLVANIA.

IMPROVEMENT IN STEAM-PRESSURE ALARMS.

Specification forming part of Letters Patent No. 123,455, dated February 6, 1872.

Specification describing an Alarm for Steam-Boilers, invented by JONATHAN CONE, of Bristol, Pennsylvania.

My invention consists of an alarm for steam-boilers, whereby any excess of the maximum pressure of steam will be at once indicated to the attendant engineer, the said alarm being too fully explained hereafter to need preliminary description.

The figure in the accompanying drawing represents a vertical section of my alarm for steam-boilers.

A is a bent tube, one leg of which is secured to a socket, B, communicating with the steam-space of a boiler, the other leg being secured to and communicating with a branch, D, which also communicates with a vessel, E, and with a tube, F, smaller in diameter than the tube E, this tube being open at the top for the admission and movement of a light rod, the lower enlarged or spherical end of which floats in mercury contained in the bent tube A, this enlarged end serving, under the circumstances explained hereafter, as a valve, of which the lower end *x* of the smaller pipe F is the seat. A graduated plate, H, with proper figures, is in the present instance attached to the tube F, or to any adjacent permanent object, so that the upper end of the rod G will, in conjunction with the figured and graduated plate, indicate the pressure of steam. The vessel E has a cover, *a*, to which is secured a steam-whistle, I, and the vessel is provided at its lower end with a cock, *b*. As long as the steam in the boiler does not exceed the maximum pressure, the duty of the above-described apparatus is restricted to the indicating of the exact pressure

of the steam, as in any other mercury gauge; but should the steam exceed the maximum pressure the mercury will be forced from the bent tube A through the branch D into the vessel E, and the spherical end of the rod G will be forced against the seat *x*, so that the steam will have free access to the vessel E and to the whistle, the alarm sounded by which will prompt the engineer to take the proper steps for relieving the boiler of its excessive pressure, after which the mercury may be withdrawn from the vessel E through the cock *b* and re-introduced into the bent tube through a branch, *m*, which is furnished with a detachable plug.

It is not essential in all cases that the gauge should be combined with the alarm, although the combination is to be preferred for obvious reasons. Other alarms which admit of being acted on directly or indirectly by the pressure of steam may be substituted for the whistle.

I claim as my invention—

1. The bent tube A, containing mercury and communicating with the steam-space of a boiler and with a vessel, E, in combination with a whistle or other equivalent alarm.

2. The combination, substantially as described, of a mercury-gauge with the vessel E and a whistle or other equivalent alarm, when the rod of the gauge serves as a valve, in the manner described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

J. CONE.

Witnesses:

LOUIS BOSWELL,
HARRY SMITH.