M. Peck,

Steam-Boiler Indicator.

No. 52,194. Patented Jan. 23, 1866.

Fig: 1

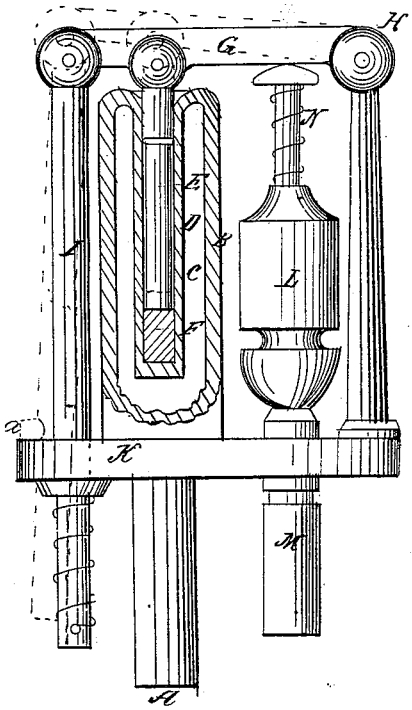
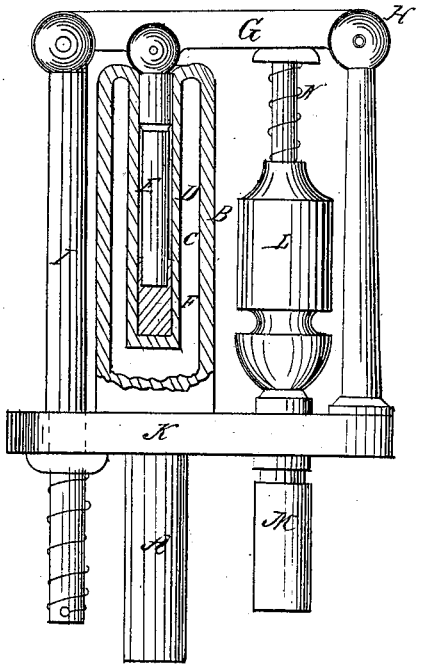


Fig: 2



Witnesses:

John C. Earp.

John H. Shumway

Inventor

Milo Peck.

UNITED STATES PATENT OFFICE.

MILO PECK, OF NEW HAVEN, CONNECTICUT.

IMPROVEMENT IN LOW-WATER DETECTERS.

Specification forming part of Letters Patent No. **52,194**, dated January 23, 1866.

To all whom it may concern:

Be it known that I, MILO PECK, of New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Low-Water Detecters; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a sectional view showing the detecter in the position as at high water, and in Fig. 2 a like view in the position when water in the boiler has fallen below low-water mark.

My invention relates to an improvement in detecters which sound an alarm when the water within the boiler to which the detecter is attached has fallen to or below low-water mark.

To enable others to construct and use my invention, I will proceed to describe the same, as illustrated in the accompanying drawings.

A is a pipe communicating with the boiler at or above low-water mark; B, a cylinder, forming a chamber, C, into which the pipe A opens. Within the chamber C a second cylinder, D, is placed, into which a spindle, E, is inserted, resting upon a fusible metal, F—that is, a metal fusible at a low degree of heat—the said spindle E supporting a lever, G, which has its fulcrum at H, and to the other end a weight is attached, or, as I prefer, a rod, I, passing down through the plate K, with a spring beneath, as denoted in blue. Onto the said plate K, which supports the several parts mentioned, I place a common steam-whistle, L, communicating, by a pipe, M, to the boiler to receive steam therefrom.

The spindle N of the whistle extends up to the lever G, so that when the lever G is depressed it will force down the spindle N and admit steam to the whistle to sound the alarm. This completes the construction of my detecter.

Its operation is as follows: When the boiler is filled with water at any point above low-water mark (or the opening of the pipe A into the boiler) and steam generated within the boiler, water will be forced through the pipe A and fill the chamber C around the cylinder D, (the cylinder C should be placed above the top of the boiler,) the water thus forced into the chamber C being so remote from the boiler that it is little, if any, affected by the heated water in the boiler, and thus will remain until the water in the boiler has fallen below the opening of the pipe A. Then the water will fall from the chamber C into the boiler and its place supplied by hot steam, which, from its increased temperature, quickly fuses the metal F, so that the spindle E will sink into the metal, permitting the lever G to descend by the force of the weight or spring upon the rod I with sufficient force to depress the spindle N of the whistle, as seen in Fig. 2, and thus cause an alarm to be sounded, which will be prolonged until water is supplied to the boiler and again force water into the chamber C, as before described, to cool the metal F, or until such time as the lever G is raised, which must be done before the metal is allowed to cool. To do this, raise the rod I, as denoted in red, Fig. 1, until a projection, *a*, or other means, will permit it to support the lever G and spindle E, as denoted in red, Fig. 1, until the metal F shall have become sufficiently hardened to support the spindle E. Then return the several parts to the position first described, and the detecter is set for a second operation.

I do not broadly claim the employment of a metal fusible at a low degree for the purpose of detecting low water, as such is not new; but,

Having therefore thus fully described my improvement, what I do claim, and desire to secure by Letters Patent, is—

The arrangement of the double cylinder B D, in combination with a spindle, E, and a fusible metal, F, to operate substantially in the manner as herein set forth.

MILO PECK.

Witnesses:

JOHN E. EARLE,

LUCIEN W. SPERRY.