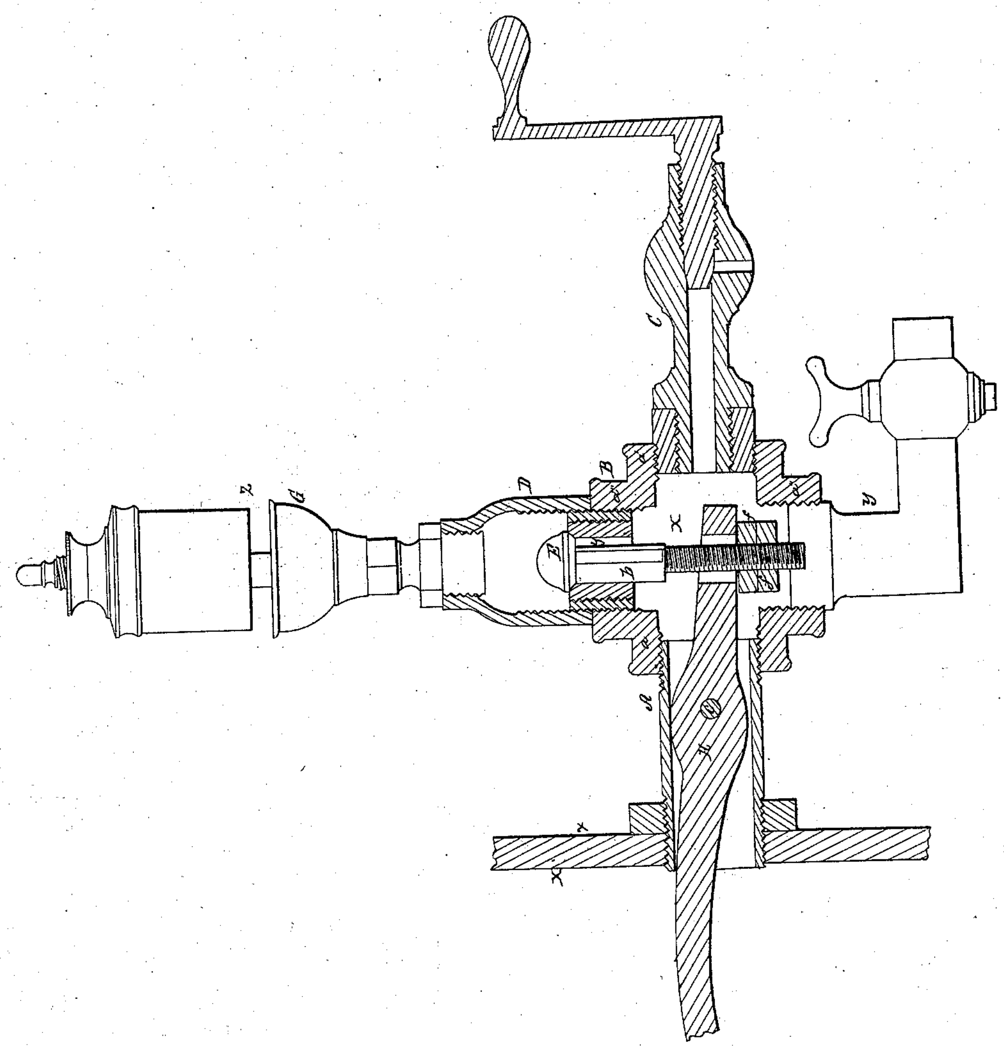
J. Cosfeldt,

Steam-Boiler Indicator.

No. 48,158. Patented June 13, 1865.



Witnesses;
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UNITED STATES PATENT OFFICE.

JOHN COSFELDT, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN LOW-WATER DETECTERS.

Specification forming part of Letters Patent No. **48,158**, dated June 13, 1865.

To all whom it may concern:

Be it known that I, JOHN COSFELDT, of Philadelphia, Pennsylvania, have invented certain Improvements in Low-Water Detecters for Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

My invention consists, first, in a tube or equivalent device forming a passage between the interior of the boiler and the chamber below the valve of the alarm-whistle, so that the rod or lever connected to and operating the said valve may project through the said passage into the boiler, as described hereinafter, without the necessity of employing the usual expensive packing-boxes; secondly, in the combination of the alarm-whistle, gage-cock, and blow-off cock, as described hereinafter, so as to render their operation more effective and reduce the expense of attaching them to the boiler.

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

The figure in the accompanying drawing, which forms a part of this specification, represents a sectional elevation of my improved low-water detecter.

A is a tube, which is secured to the head *x* of the boiler (represented by red lines) at a point corresponding to that at which the usual blow-off cock is placed, the outer end of the tube communicating with one of the branches, *a*, of a four-way pipe, B. To the opposite branch, *a'*, of the pipe B is attached an ordinary gage-cock, C, and to the lower branch, *a''*, a blow-off cock, Y. Into the upper branch, *a'''*, of the pipe B is inserted a screw-plug, D, in the upper face of which is a seat for a valve, E, the stem *b* of the latter projecting through an opening in the plug into the interior of the pipe B, and having upon its lower end two adjustable nuts, *f f*.

Above the screw-plug D is a short tube, D', contracted at the upper end, which has internal screw-threads adapted to those on the stem of a steam-whistle, Z.

To a pin, *c*, passing transversely through the pipe, A, is hung a lever, H, through a slot, *g*, in the front arm of which passes the valve-stem *b*, the nuts *f* in the latter being below the end of the lever.

To the inner arm of the lever, which projects through the pipe A into the boiler, is attached an ordinary hollow float.

When the boiler is filled to the proper level with water the float is raised, and with it the long arm of the lever, the short arm of the latter being consequently depressed, so as to bear on the nuts *f* and maintain the valve E perfectly tight on its seat. When, however, the water falls below the proper level, so as to raise the short arm of the lever, the valve E will be opened by the pressure of the steam, which, as it escapes, sounds the whistle G and indicates the necessity of replenishing the supply of water in the boiler.

By making a free communication between the interior of the boiler and the interior of the pipe B, a chamber is formed, through which the float-lever may project and operate on the valve without the necessity of employing the ordinary expensive packing-box; and it will be apparent that the lever cannot become clogged or the operation be interrupted by the accumulation of deposit on the same or from corrosion of the parts, as in cases where packing-boxes are employed.

It will also be seen that any accumulation of matter in the interior of the pipes A or B and around the lever or valve-stem will be removed by the frequent use of the gage and blow-off cock.

By combining the gage, whistle, and blow-off cock in the manner described, the necessity of tapping the boiler at several points is obviated, and the expense of attaching the devices to the boiler consequently greatly reduced.

Although I have described the lever H as being hung to a pin passing through the pipe A, it will be apparent that the fulcrum of the lever may, if required, be placed within the boiler. Under some circumstances, also, the lever may be entirely within the boiler, motion being communicated from the same to the valve by means of a connecting-rod.

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

1. The tube A, or its equivalent, forming a passage between the interior of the boiler and the pipe B, through which the end of the float-

lever H, or equivalent device, connected to and operating the valve E, may project into the boiler, substantially as specified.

2. The alarm-whistle G, and valve E, gage-cock C, blow-off cock Y, and float-lever H, combined with the four-way pipe B, substantially as set forth, for the purpose described.

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

JOHN COSFELDT.

Witnesses:
CHARLES E. FOSTER,
JOHN WHITE.