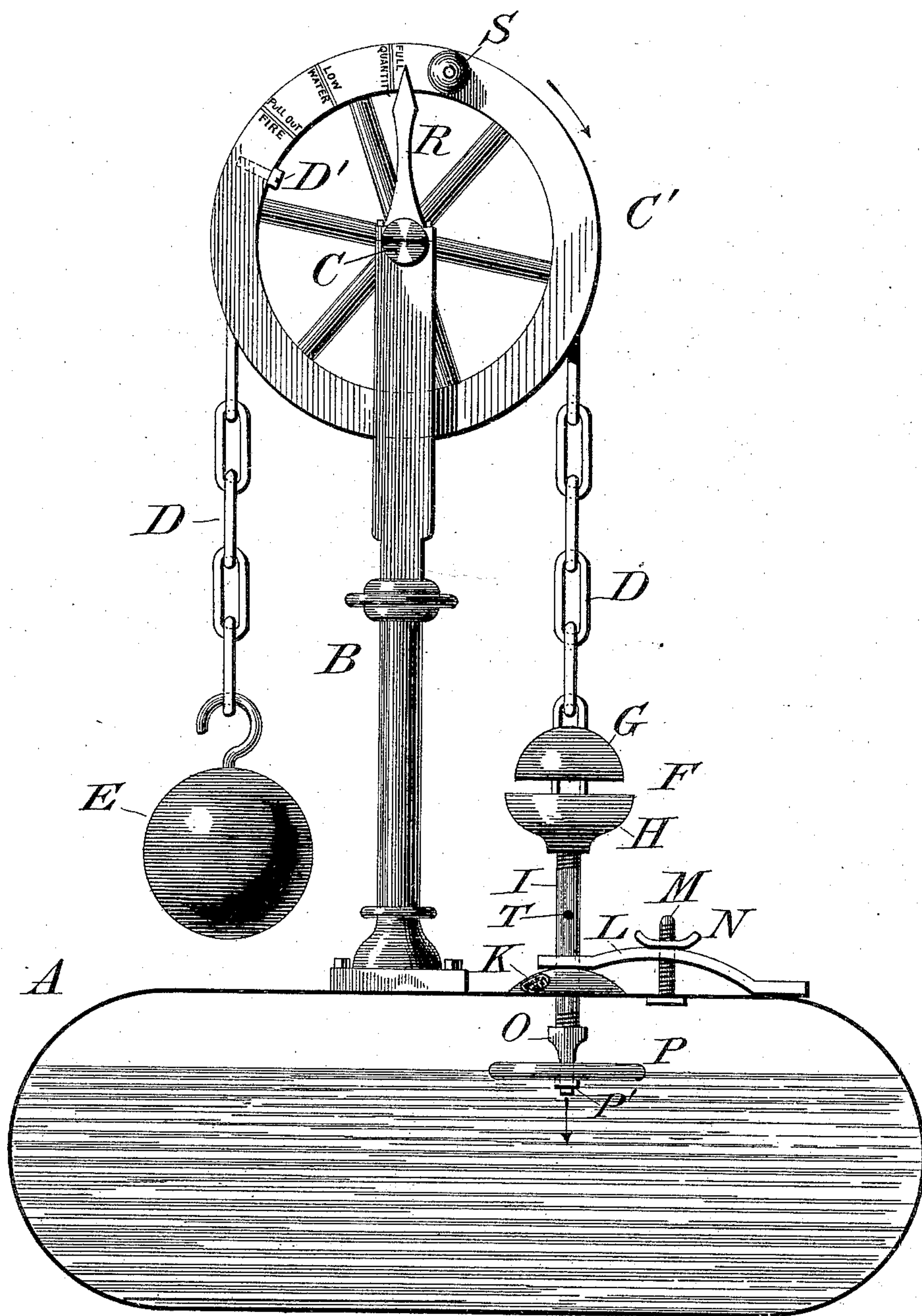


(No Model.)

G. HODGSON.
INDICATOR FOR STEAM BOILERS.

No. 344,905.

Patented July 6, 1886.



Witnesses

J. H. Schott
A. W. Breckford

Inventor

George Hodgson
By his Attorney
W. A. Ruff

UNITED STATES PATENT OFFICE.

GEORGE HODGSON, OF CONKLIN STATION, NEW YORK.

INDICATOR FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 344,905, dated July 6, 1886.

Application filed March 13, 1886. Serial No. 195,185. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HODGSON, of Conklin Station, in the county of Broome and State of New York, have invented certain new and useful Improvements in Indicators for Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in indicators for steam-boilers, the object of the same being to provide a device whereby the quantity of water in a boiler may be automatically registered, and to provide means whereby the attendant will be notified, by means of an automatic alarm, of the necessity either of supplying the boiler with water or of shutting off the supply thereto.

A further object is to provide means of the above character which shall be simple and economical in construction, and durable and efficient in use; and with these ends in view my invention consists in the certain features of construction and combinations of parts, as will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawing my invention is shown partly in section and partly in elevation.

In the drawing, A represents a section of a boiler partially filled with water; B, a standard of any preferred material, and is suitably secured to the boiler. The upper end of the standard is grooved to accommodate the shaft C of the wheel C', which is suitably journaled therein. The wheel C' is provided on its rim with a furrow or groove adapted to accommodate the chain D, the same being held thereon against movement by means of the pin or bolt D'. To one end of the chain is secured a balance-weight, E, the opposite end thereof having secured thereto a steam-whistle, F, consisting of the upper and lower cups, G and H. The lower cup is slightly larger in diameter than the upper one, and the two are fastened close together, so that the escaping steam passing between them will create the desired whistle. A steam-whistle of any general construction may be used in this connection. The lower cup, H, is provided centrally with a suitable opening adapted to admit the passage

of the pipe I, which is secured to the said cup by means of a screw-thread, or in any other preferred manner. The pipe I passes into the boiler through a suitable opening, and is allowed a free vertical movement therein. The pipe I is provided a short distance beneath the cup H with a perforation, J, through which steam is admitted to the pipe when the same enters the interior of the boiler. A cap, K, is placed around the pipe at its entrance to the boiler, the said cap being provided with any suitable packing material, in order to prevent the escape of steam at this point.

The cap K is held in position on the boiler by means of a spring, L, which is suitably secured at one end to the boiler. The free end thereof is forked, whereby it is adapted to embrace the pipe I on either side. The spring is provided centrally with a suitable hole, through which passes the screw-threaded bolt M, the same being secured to the boiler, as shown, and is provided at its upper extremity with the thumb-screw N, by means of which the pressure of the spring on the cap K may be varied at pleasure.

The lower end of the pipe I is screw-threaded and is secured in the plug O, the lower end of which passes through the float P at or near its center, and is secured thereto by means of the nut P', or in any other desired manner.

An index-finger, R, having its lower end grooved to span the upper half of the shaft C, is firmly secured to the top of the standard B.

The wheel C' is provided with the indication-points, as shown—i. e., "Pull out Fire," "Low Water," and "Full Quantity." Other notices may be added, if desirable. To the wheel is secured at a suitable distance from the mark "Full Quantity" an alarm-bell, S, which should be of such construction that when brought in contact with the finger R it will immediately ring.

The operation of the device is as follows: The float is of such construction as will enable it to be constantly affected by the rise and fall of the water in the boiler, so that when water is pumped into the boiler the float rises with it, and when the boiler has a full quantity the same is indicated on the wheel, and in the event of this being unobserved by the attendant the indicator will strike the bell and the alarm will ring. Again, as the water becomes

exhausted the float will sink therewith, registering the condition upon the wheel. As the float sinks the pipe I is drawn downward until the water reaches a point where it may become dangerous to the safety of the boiler, unless it is resupplied, at which time the perforation J will have entered the interior of the boiler, and the steam will at once enter the pipe through the said hole, and passing through the pipe will encounter the whistle, and will cause the same to blow until the water rises sufficiently to remove the perforation from the interior of the boiler and away from the point of danger.

I would have it understood that I do not limit myself to the exact construction shown and described. A steam-whistle of any general construction and application may be used. Likewise any construction of bell. It will also be noticed that the application of the device need not be confined to one boiler, as the same may with equal effect be attached to a nest of boilers.

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

1. In a steam-boiler indicator, the combination, with a boiler having a standard secured thereto, and an index-finger located on the standard, of a rotary wheel journaled in said standard, and an alarm-bell secured on the

wheel and adapted to engage the index-finger, and means for connecting the wheel and the boiler, substantially as described.

2. In a steam-boiler, the combination, with a boiler and a standard secured thereto, of a rotary wheel journaled in the standard, a chain connecting the wheel and boiler, a tube secured to the lower end of the chain, communicating with the boiler, a steam-whistle secured to the chain above the tube, and a perforation in the tube adapted for the escape of steam when the water is low, whereby the whistle is sounded, substantially as set forth.

3. In a steam-boiler indicator, the combination, with a boiler, a standard having an index-finger secured thereto, and a rotary wheel journaled in the standard, of an alarm-bell on the wheel, a chain secured thereto, a steam-whistle secured to the chain and communicating with the steam in the boiler, so that when the chain ascends to a given point the alarm will ring, and when it descends the whistle will sound an alarm, substantially as and for the purpose set forth.

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

GEORGE HODGSON.

Witnesses:

THOS. N. Y. HODGSON.

M. E. WOODBRIDGE.