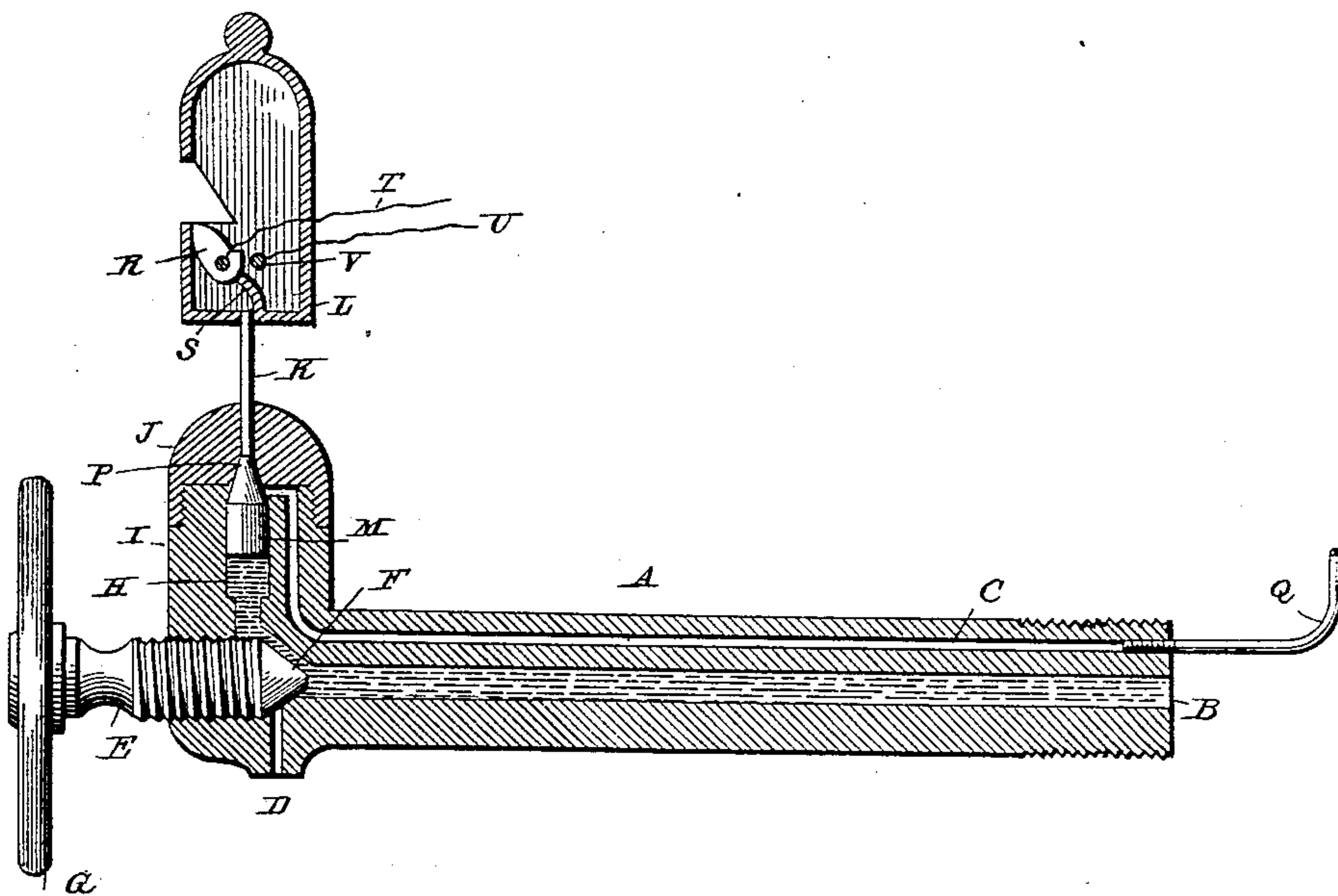


(No Model.)

S. LLOYD.
STEAM BOILER ALARM.

No. 393,911.

Patented Dec. 4, 1888.



WITNESSES.

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SAMUEL LLOYD, OF WASHINGTON, DISTRICT OF COLUMBIA.

STEAM-BOILER ALARM.

SPECIFICATION forming part of Letters Patent No. 393,911, dated December 4, 1888.

Application filed February 2, 1888. Serial No. 262,749. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL LLOYD, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Steam-Boiler Alarms; and I do 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, reference being had to the accompanying drawing, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to steam-boiler alarms designed to indicate automatically to a person or persons in the immediate vicinity of the steam-boiler, and also to persons at a distance from the steam-boiler, at what time the water in the boiler has passed below the low-water level in the boiler by simultaneously blowing a whistle connected with the boiler and sounding an electric alarm located at any convenient distant place for said purpose; and the invention consists in the construction and novel combination of parts, as will be hereinafter described, and particularly pointed out in the claims.

The object of the invention is to provide absolute safety from explosions caused by lack of information as to the condition of the steam-boiler after the water in the same has passed the low-water line or level by automatically giving an alarm to the engineer and to others in time to permit the explosion to be prevented by giving the necessary and proper attention.

The figure of the drawing is a vertical longitudinal sectional view of my improved steam-boiler alarm, the steam-pipe, try-cock valve, and circuit-closer being shown in full lines.

Referring by letter to the accompanying drawing, A designates the body of the alarm, which is provided with the larger water-passage, B, and the smaller steam-passage, C.

D is the water-discharge opening, and E is a threaded try-cock seated in the head of alarm-body and provided with a cone-point, F, at its inner end and a hand-wheel, G, on its outer end. The water-passage B communicates with the valve-chamber H in the head I of the alarm-body. The head I is covered by a cap, J, from which a small pipe, K, ex-

tends up into the bottom of the whistle-body L.

M is a valve in the valve-chamber H, which valve is preferably a cone-valve, as shown, and at the proper times closes and opens the valve-seat P at the lower end of the small pipe K.

The smaller or steam passage, C, communicates with the valve-seat P when the valve M is permitted by the lowering of the water in the boiler below the low-water line to fall in the valve-chamber H. The steam in the boiler will then enter the mouth of the small pipe Q in the inner end of the steam-passage C, pass thence through the steam-passage C and through the small pipe K into the whistle, and will blow the latter and cause it to sound an alarm.

Within the whistle-body is pivoted a circuit maker and breaker, R, which is so pivoted to a support, S, on the bottom of the whistle-body and within the same as to normally hold the electric circuit open. One of the electric wires, T, is connected to the circuit maker and breaker R, and the other electric wire, U, is connected with a binding post or stud, V, in such close proximity to the circuit maker and breaker as to permit the latter to come in contact with the stud V when the eccentrically-pivoted piece R is raised from its normal position, that being the position shown in the figure of the drawing, and sound the electric alarm at the same time the whistle is blown, so that a person within the sound of the electric alarm may be notified as well as the engineer of the condition of the water in the boiler, so that the boiler may be given the necessary attention.

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

1. In a steam-boiler alarm, the combination, with the alarm-body provided with the head having the valve-chamber and the water-passage and steam-passage communicating therewith, of the steam-pipe connecting the whistle to the valve-chamber, the valve in said valve-chamber, the steam-pipe connected with the inner end of the steam-passage, and the circuit-maker and circuit-breaker pivoted within the whistle-body and connected to electric alarm-wires, substantially as specified.

2. A steam-boiler alarm comprising a body

provided with a steam-conduit, a water-conduit, a valve-chamber, a valve-seat, and water-outlet passage, in combination with a try-cock, a cone-valve in the said valve-chamber,
5 a whistle, and a pipe adapted to be closed by said valve and to communicate with the steam-conduit in the body of the device, substantially as described.

3. The combination, with hollow steam-whistle body, of the circuit maker and breaker R,
10 pivoted to a suitable support located on one

side of a steam-pipe, K, the electric wire T, connected to said circuit maker and breaker, the binding-post V within range of the latter, and an electric wire, U, all adapted to operate
15 substantially in the manner described.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL LLOYD.

Witnesses:

J. MCNAMEE,

H. J. ENNIS.