

J. R. BROWN & W. A. FOSKETT.

Low Water Alarms for Steam-Boilers.

No. 135,519.

Patented Feb. 4, 1873.

fig. 1.

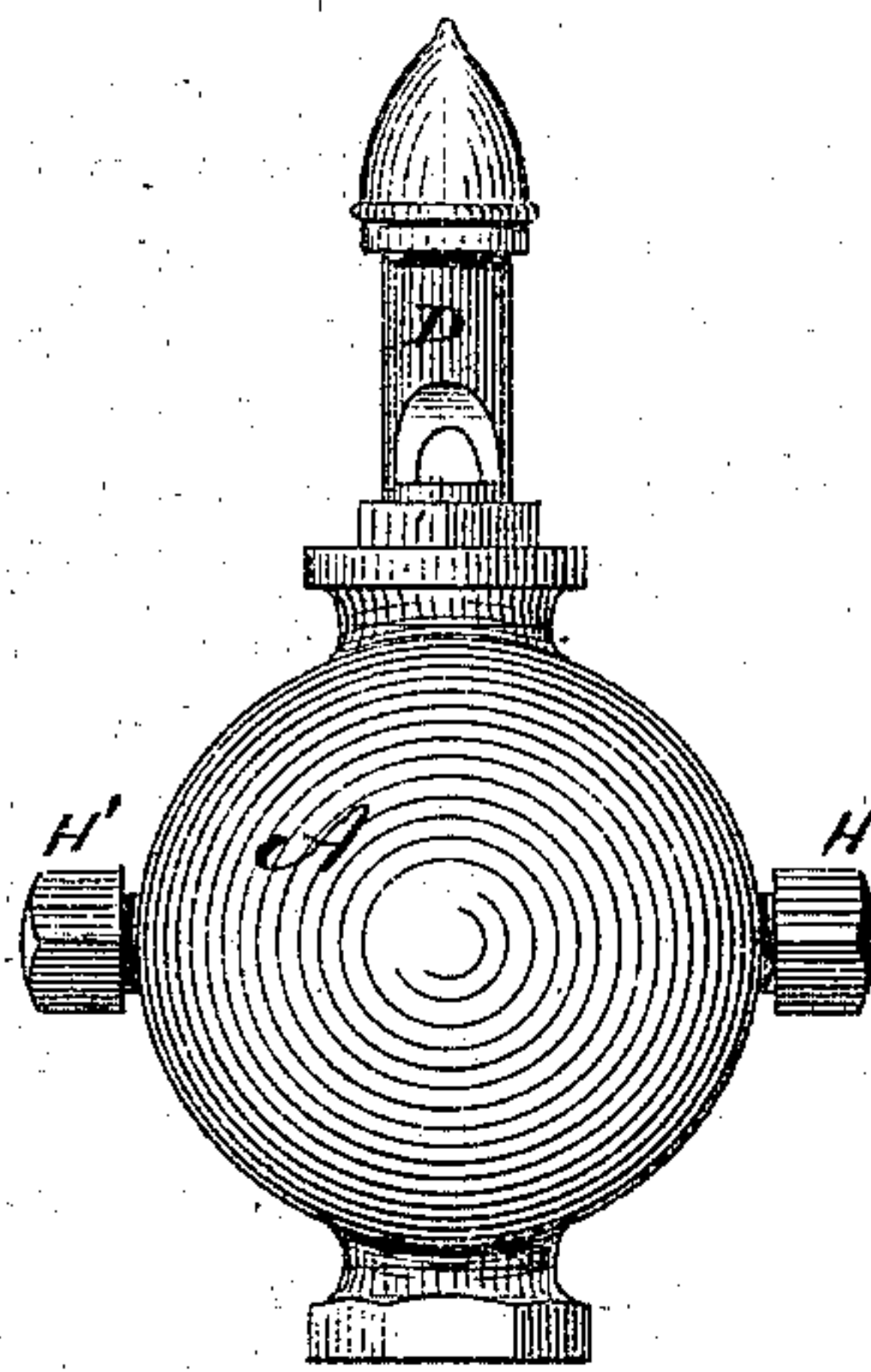
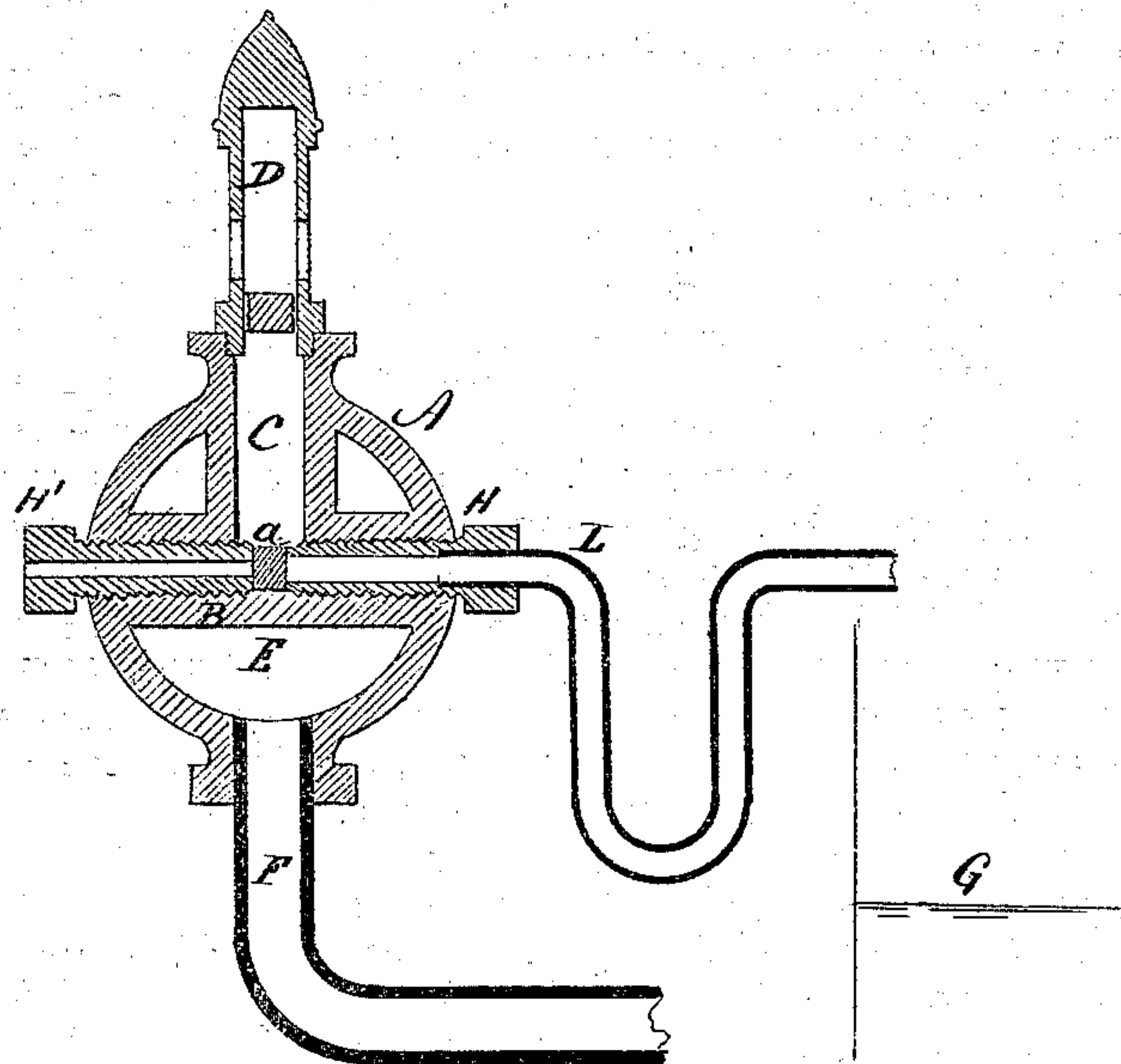


fig. 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN LOW-WATER ALARMS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **135,519**, dated February 4, 1873.

*To all whom it may concern:*

Be it known that we, JOSEPH R. BROWN and WILLIAM A. FOSKETT, both of New Haven, in the county of New Haven and State of Connecticut, have invented a new Improvement in Low-Water Detector; and we do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents, in—

Figure 1, a front view; Fig. 2, a vertical central section of the device as applied to a steam-boiler.

This invention relates to a device to indicate by an alarm when the water in the boiler has fallen below a certain defined point, the object being to employ a fusible plug, by the melting of which the alarm will be opened, and this plug arranged in a position independent of the water-communicating tube, and so that the steam which sounds the alarm will be taken from above the water-mark independent of the water-tube.

A is a shell of any desirable form, through which extends a hollow bar, B, and from this hollow bar an opening, C, communicates directly to a whistle, D, or other alarm device. Into the chamber E within the shell A a tube, F, is arranged, communicating with the boiler below the water-line, here represented as at G. Into the hollow bar B, from either end, a tubular screw, H H', is inserted, and between the two the fusible material *a* is placed and held in that position by the said screws. From one of the screws H a tube, L, leads to the boiler above the water-mark, but is bent so that the water will stand in the bend, preventing the steam from coming in contact with the fusible material *a*; and this bend being outside the boiler the water in the bend will be cool, or so low a temperature as not to affect

the fusible material. The chamber E will also be filled with water so long as the water remains above the tube F, but so soon as the water falls below the tube F then the water in the chamber and tube F will flow back into the boiler and be replaced by hot steam, which will quickly heat the bar B to the temperature required to fuse the material *a*. So soon as this fusion takes place the steam driving through the tube L will force the fused metal into and through the tube H', leaving a communication direct from the boiler to the whistle, so that steam only can reach the whistle. The water which may have been in the tube L, and is there by condensation, will quickly pass out.

In most of the devices of this class the communication with the whistle is made directly with the water-communicating tube; hence more or less water will be thrown from the whistle when the alarm is sounded, making it difficult to approach the boiler for the rearrangement of the fusible material; but as steam only by this device can reach the whistle this difficulty is overcome.

It is not positively essential that the plug or screw H' should be tubular; but practically we find it convenient to make it so.

We claim as our invention—

In combination with the chamber E having the hollow tube B arranged therein, and a passage, C, communicating to the alarm, the water-tube F, steam-tube L, and the fusible material *a*, the said fusible material arranged in the hollow tube B, so as to close the steam-tube L, substantially in the manner described, and for the purpose specified.

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Witnesses:

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