

F. A. Hoyt.
Water Gauge.

N^o 43411.

Patented Jul. 5. 1864.

Fig. 1.

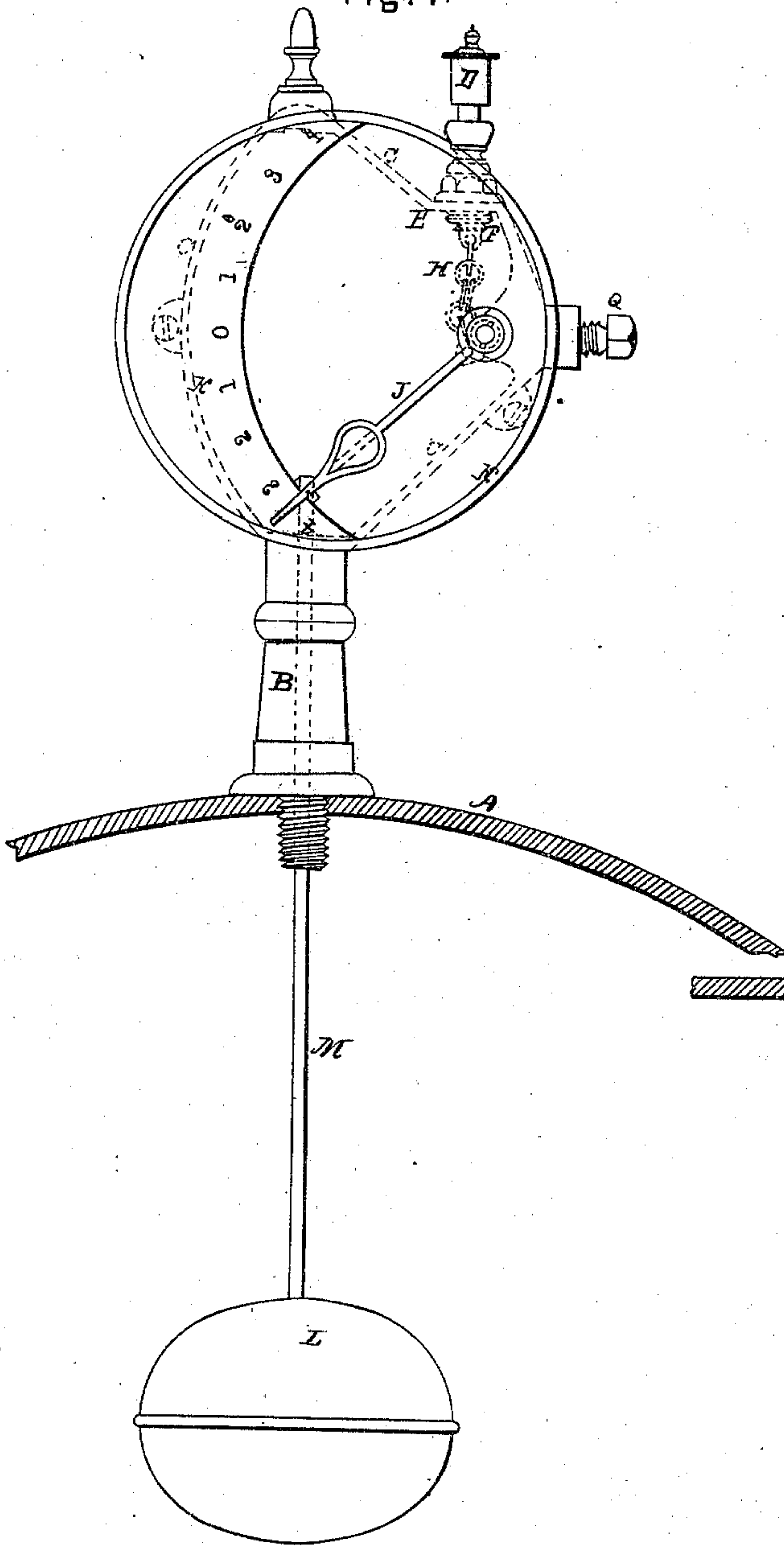
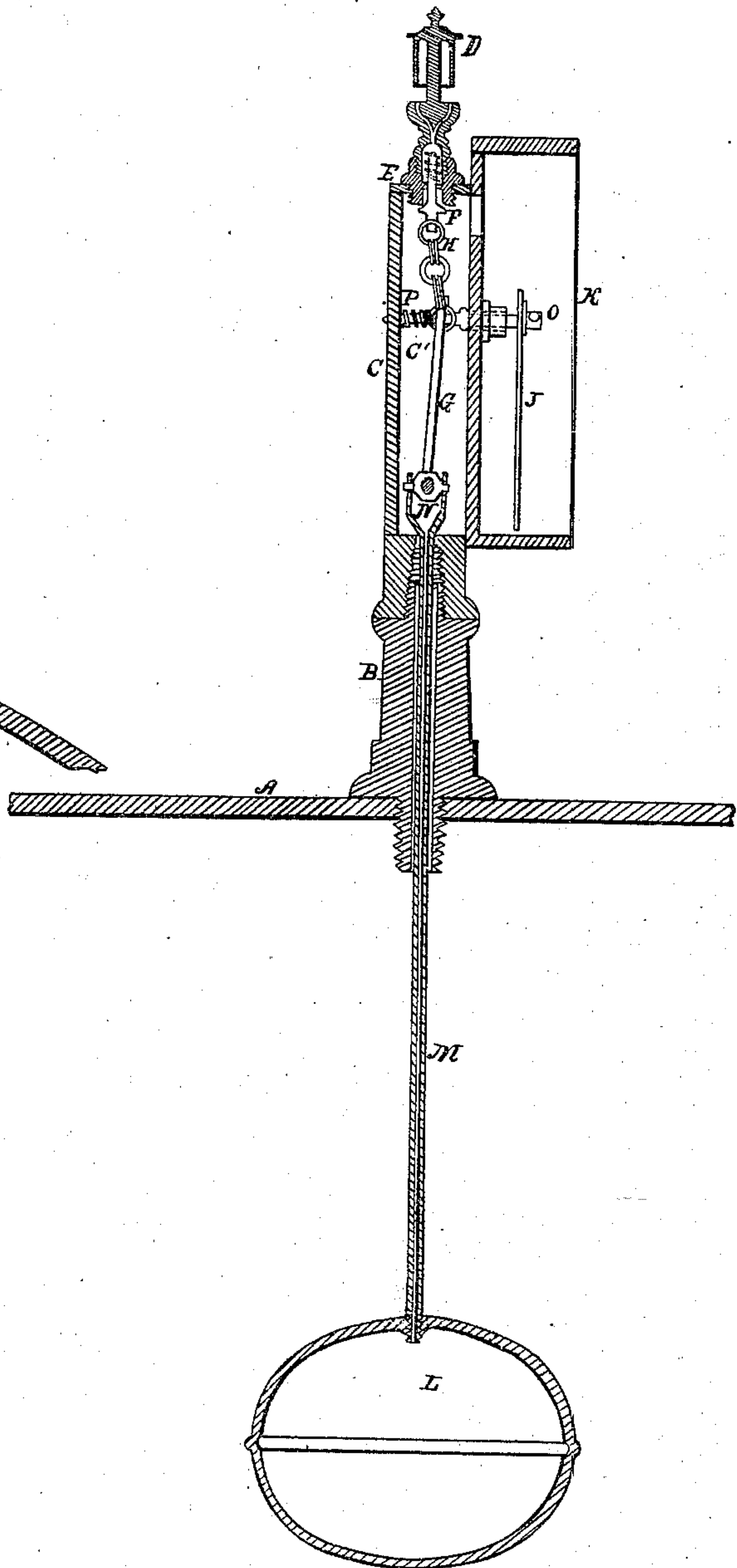


Fig. 2.



Witnesses:

E. B. Forbush
Geo. Wallace

Inventor:

James A. Hoyt

UNITED STATES PATENT OFFICE.

FRANCIS A. HOYT, OF BUFFALO, NEW YORK.

IMPROVEMENT IN WATER-GAGES.

Specification forming part of Letters Patent No. 43,411, dated July 5, 1864

To all whom it may concern:

Be it known that I, FRANCIS A. HOYT, now of the city of Buffalo and State of New York, have invented an Improved Safety Water-Gages for Steam-Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure I is a front elevation of my said improvement. Fig II is a vertical section of the same.

The nature of this invention relates, first, to arranging and operating the valve which connects with the steam-whistle within a dry-steam chamber below the valve-seat, the valve-seat being located in the upper portion of the dry-steam chamber, so that the valve must act upwardly against it.

The object of this invention is to provide means to remedy certain difficulties which exist in the inventions patented to me on the 26th of July and the 18th of October, 1859, which difficulties are as follows: The valve-seat in each of those patents presents a surface upon which sediment and certain gummy matter collect and adhere in a manner to prevent a full, easy, and sure operation of the valve. My present improvement avoids these difficulties by reason of the arrangement of the valve-seat in the upper part of the dry-steam chamber, and operating the valve below the valve seat so that the valve must move upwardly to take its place on the valve-seat.

In this improvement it is impossible for any sediment or gummy matter to settle or collect upon the valve-seat. A perfect fitting of the valve upon its seat and a free, easy, and perfect working of the valve are at all times insured.

Letters of like name and kind refer to like parts in each of the figures.

A represents a section of the boiler.

B is a hollow post, which screws into the boiler and supports a dry-steam chamber above and outside of the boiler.

C is a hollow disk supported upon the post B, and forms the dry-steam chamber C'.

D represents a steam-whistle, which is located at the upper part of the dry-steam chamber.

E is the valve seat, which is located in the upper portion of the dry-steam chamber.

F is the valve, which is connected to the operating-lever G by means of the chain H.

I is a spiral spring for the purpose of lifting the valve back to its place after it has been opened.

J is the index-hand, and K is the index-face.

L is the float, which may be made of thin, light metal, much lighter than it has heretofore been made, on account of filling it with dry steam.

M is a hollow stem, which screws into the float within the boiler, and passes up through the hollow post B, and by means of the hollow joint N connects with the operating-lever G within the dry-steam chamber c, so that the float L may fill with dry steam, and thereby equalize the pressure inside of the float with the pressure outside. This allows the float to be made very light and buoyant. The index-hand connects with the operating-lever G by means of the shaft O, as shown in Fig. I.

P is a spiral spring.

The index-hand will indicate the height of the water in the boiler. When the water falls to a dangerous point, the valve to the steam-whistle will be opened by means of the described mechanism within the dry-steam chamber and the alarm given.

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

The arrangement of the valve-seat in the upper part of the dry-steam chamber, in combination with the operating-lever G and connecting-chain H, for the purposes and substantially as described.

FRANCIS A. HOYT.

Witnesses:

E. B. FORBUSH,
GEO. W. WALLACE.