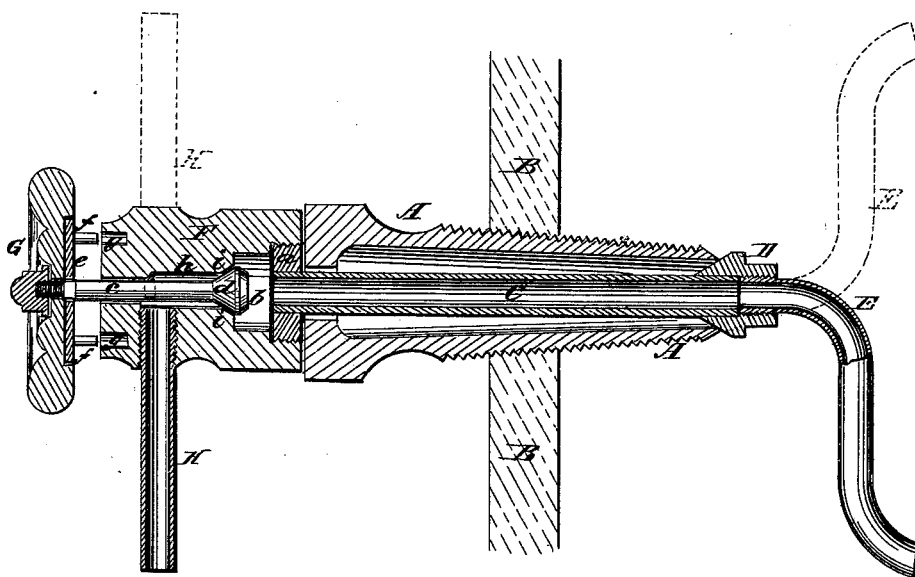


J. B. LÉGER.  
Gage-Cock.

No. 213,669.

**Patented Mar. 25, 1879.**



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

JOSEPH B. LÉGER, OF HANDSBOROUGH, MISSISSIPPI.

## IMPROVEMENT IN GAGE-COCKS.

Specification forming part of Letters Patent No. **213,669**, dated March 25, 1879; application filed January 22, 1879.

*To all whom it may concern:*

Be it known that I, JOSEPH B. LÉGER, of Handsborough, in the county of Harrison and State of Mississippi, have invented a new and Improved Gage-Cock for Boilers, of which the following is a specification:

The object of this invention is to provide a strong, durable, and simply-constructed gage-cock for boilers capable of indicating the height of the water in the boiler through a wide range with perfect accuracy.

It consists of a hollow cylinder or barrel screwed into the boiler-head, through which is passed a tube that connects on the inside with a bent tube, while at the outside end it is fixed to a head in which is a chamber guarded by a valve, beyond which there depends from the head a tube in the same direction as the inner bent tube. By means of a hand-wheel fixed to the valve-stem projecting from the head the valve is unseated, permitting the steam and water to flow through the gage-cock, and the head and connecting-tubes rotated, so that the testing or gaging tubes are made to deliver the water, and indicate at the same time its exact height in the boiler.

In the accompanying drawing a longitudinal section of my improved gage is shown.

Similar letters of reference indicate corresponding parts.

Referring to the drawing, A represents the barrel or cylinder of the gage-cock, threaded on its exterior surface to enable it to be screwed into the boiler-head B, so as to project partly within the boiler and partly without. Through this barrel is placed a tube, C, the inner end being socketed into a bushing or plug, D, entered into the inner end of the barrel, and joining with the bent siphon-tube E. The outer end is fixed to a bushing, *a*, which is screwed into the head F, and opens into a chamber, *b*, in said head. From the opposite end of this head a valve-stem, *c*, is passed through a hole into the chamber *b*, where it terminates in a conical valve, *d*.

To the outside end of the stem is fixed a hand-wheel, G, by which it is operated.

On the side of the hand-wheel adjacent to the head is fixed a plate, *e*, from which project two studs, *f f*, and in the opposite part of

the head are two stud-holes, *g g*, at the same radial distance from the axis of the valve-stem, so that the studs can enter them.

From the head depends a tube, H, which communicates with a chamber, *h*, surrounding the valve-stem in the head and extending from chamber *b*.

Tubes E and H project from their respective connections in the same directions, thus forming the two legs of a siphon, as clearly shown in the drawing.

The pressure of the steam and water through the communicating tubes against the head of the valve *d* holds it in its seat *i*, and thus prevents leakage.

The tube C rotates freely in the barrel A, extending its motion to the bushing D, and through it to the bent tube E, which is in this manner rotated about its axis. This rotary motion is given to the tube by the hand-wheel G in the following way: The wheel can be rotated freely, and by pushing it in, allowing the studs *f* to enter the holes *g*, this motion can be extended to the head F, and as this is connected rigidly to the tube C it follows that by rotating the hand-wheel the head F, siphon-tube H, tube C, and tube E are all turned on their axis. Hence, to test the water in the boiler, the device is operated as follows: The pressure of the steam or water against the valve keeps it in its seat; but when the water is to be tested the hand-wheel is pushed toward the head until the studs enter the holes. This unseats the valve and gives a free passage from the tube E to tube H. The hand-wheel is then rotated until the siphon-tubes E H are in an upright position, as indicated by the dotted lines. Then they are turned down, and when the bent tube E touches the water it immediately passes through the communicating tubes and is expelled from tube H, and the position of this latter at the time indicates accurately the height of the water in the boiler, as it agrees precisely with the position of the bent tube E. As soon as the hand-wheel is released the pressure of the water and steam forces the valve into its seat and stops the outflow.

By giving the testing-tubes a rotary movement it will be readily seen that a wider testing-range is obtained than with stationary

tubes of any kind, and therefore greater accuracy is acquired. So, too, as the gage-cock is in the form of a siphon the height of the water can be ascertained when steam is out of the boiler so long as it is within reach of the tube E.

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

1. The head F, fixed to the tube C, and provided with chambers *b h*, delivery-tube H, and stud-holes *g*, in combination with hand-wheel G, with studs *f* to enter holes *g*, for the purpose of rotating said head and tubes C and E, substantially as described.

2. In a gage-cock, the combination of the barrel or cylinder A, tube C, incased therein, bushing D, connecting-tubes C and E, head F, fixed to tubes C, communicating-chambers *b h*, provided with a valve, *d*, exit-tube H, and hand-wheel adapted to open the valve and rotate the tubes, substantially as and for the purpose described.

JOSEPH B. LÉGER.

Witnesses:

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J. J. WASHINGTON.