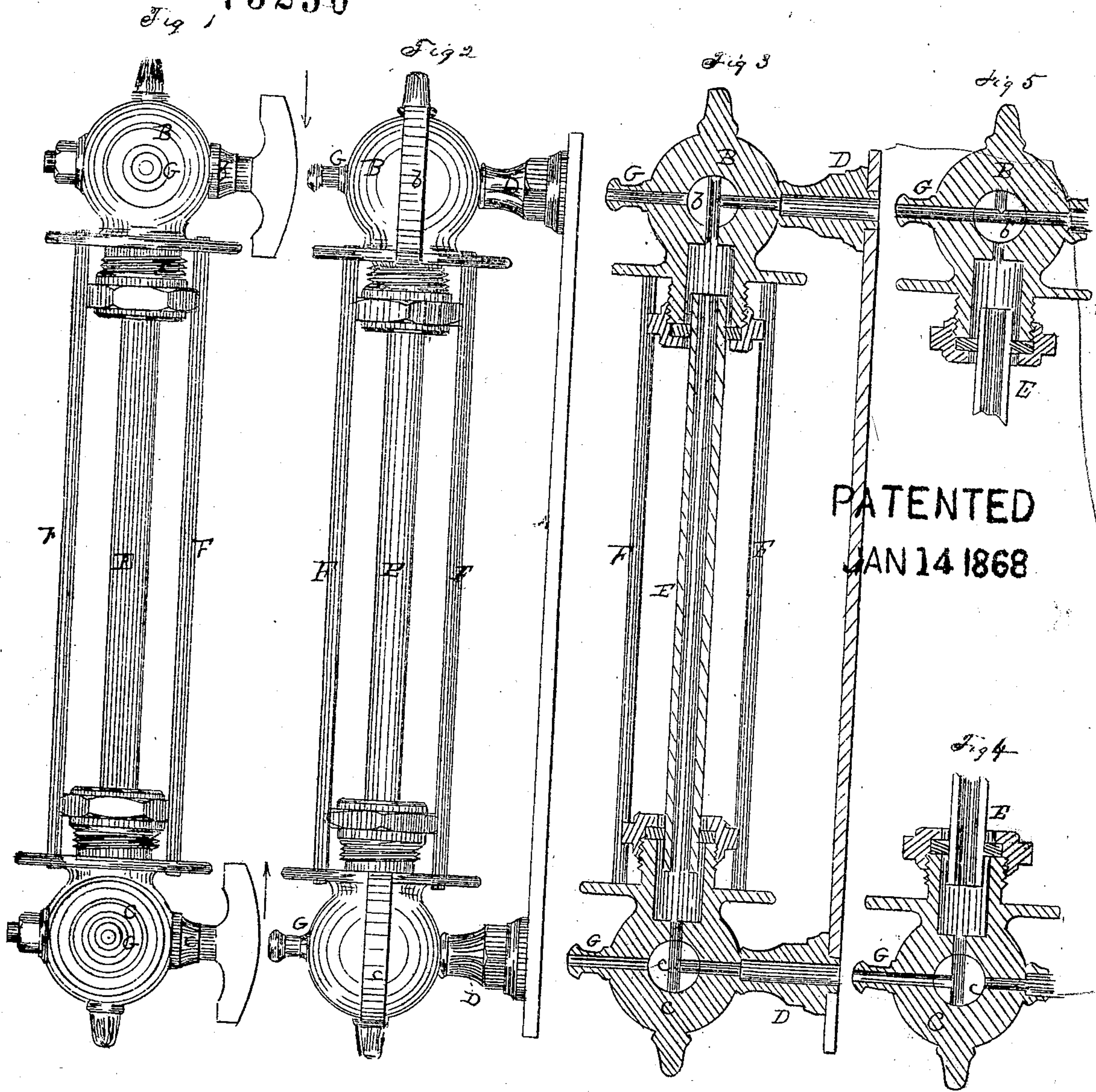


JOHN S. HUNTER'S IMPROVEMENT IN WATER GAGE FOR Steam Boilers

73250



PATENTED  
JAN 14 1868

Witnesses,  
John H. Thompson  
of Little

John S. Hunter  
Inventor  
By his Attorney

John E. Carle



# United States Patent Office.

JOHN S. HUNTER, OF HARTFORD, CONNECTICUT.

*Letters Patent No. 73,250, dated January 14, 1868.*

## IMPROVEMENT IN STEAM-GENERATOR WATER-GAUGES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JOHN S. HUNTER, of Hartford, in the county of Hartford, and State of Connecticut, have invented a new Improvement in Water-Gauge for Steam-Boilers; and I do hereby declare the following, when taken in connection with the accompanying drawings, and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view,

Figure 2 a side view,

Figure 3 a vertical central section, and in

Figures 4 and 5, sectional views of the cocks to illustrate the operation.

This invention is designed to denote the height of water in steam-boilers, and other similar purposes, its object being to construct the gauge so that it may be readily freed from obstructions which naturally flow into the cocks or tube, and consists in the peculiar arrangement of the cocks, whereby the whole or either part may be quickly relieved from any obstruction.

In order to the clear understanding of my invention, I will proceed to describe the same as illustrated in the accompanying drawings.

A represents the boiler-head or the sides of the vessel to which the gauge is placed to indicate the position of the fluid therein; B is the upper head, and C the lower head, each fixed to the boiler-head, and communicating through the neck D directly into the boiler, and each provided with its cock *b* and *c*. Between the two heads is arranged a glass tube, E, fitting tightly into a neck on the heads B, as denoted in the drawings, and the said tube is protected by rods F or otherwise, to prevent its accidental breakage. The two cocks *b* and *c* are what are termed three-way cocks, and when turned in the position denoted in figs. 1, 2, and 3, an opening is formed around through the tube into the boiler above and below the water-line, as seen in fig. 3. In this position the water rises in the tube to the level of the water in the boiler, and so remains, always indicating the exact position of the water. Thus far my gauge is not unlike gauges now in use.

In this class of gauges a difficulty frequently arises from obstructions in some of the several parts, therefore making it uncertain as to the positive working of the gauge, there being no way provided for a speedy or immediate relief from such obstructions. Separate cocks have been applied to each of the heads, so as to communicate directly through, but this makes a complication of parts, and does not fully accomplish the desired result, inasmuch as the tube cannot itself be relieved. To fully accomplish the desired result, I form upon the two heads, opposite their respective necks D, a nozzle, G, having an opening corresponding to the opening through the neck, so that when the cock is turned to the position denoted in fig. 5, it makes an opening directly from the boiler out into the atmosphere, and in this position any obstruction therein would be quickly removed, and both heads are cleared in the same way. To clear the tube, one of the cocks remains in the position denoted in fig. 3, communicating with the boiler, the other cock turned to the position in fig. 4, communicating from the tube to the atmosphere, so that the steam or water, as the case may be, under the pressure, rushing out through the tube, will cleanse the tube and remove all obstructions therefrom, and when the several parts or channels are thus relieved, turn the cocks again to the position in fig. 3, and the gauge is set for use and in perfect order. By this arrangement the gauge may be frequently tested, to be sure of its proper working, and thus render certain that which has heretofore been a dangerous uncertainty.

I am aware of the patent of Paul Stillman, July 31, 1855, and disclaim anything therein contained.

I do not wish to be understood as broadly claiming the application of a three-way cock to a water-gauge for steam-boilers, as such, I am aware, are not new.

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

The arrangement of the three-way cocks *b* and *c*, with their respective outlets G, in combination with the tube E, the connections D, so as to operate substantially in the manner and for the purpose herein set forth.

J. S. HUNTER.

Witnesses:

SAMUEL F. JONES,

WM. W. SHIPMAN.