D. T. ELLIS.

GAGE-COCKS FOR STEAM-BOILERS.

No. 191,663. Patented June 5. 1877.

Fig. 1.

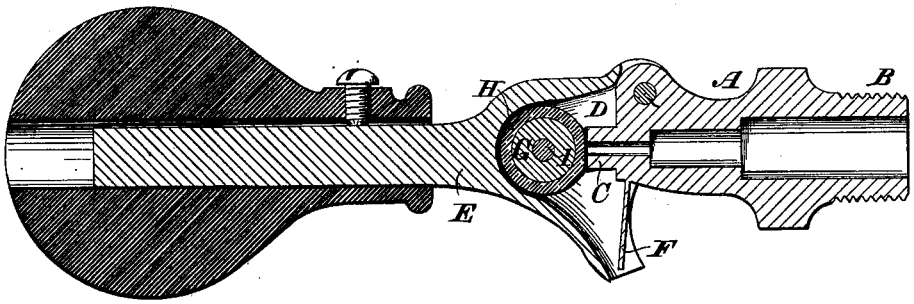


Fig. 2.

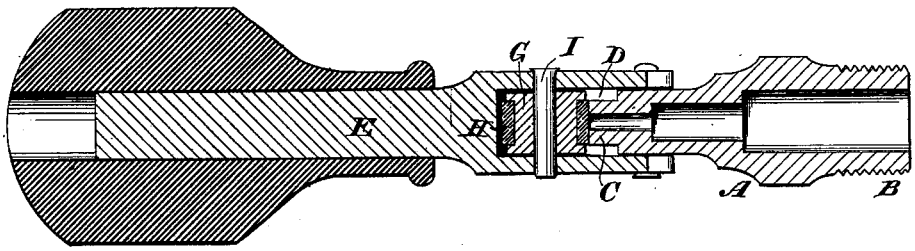
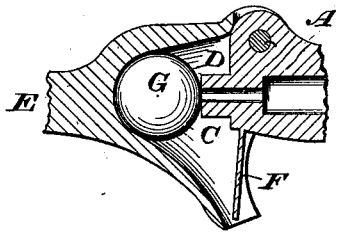


Fig. 3.



WITNESSES

Baltis H. Long.

Wm. Askinkle.

INVENTOR

David T Ellis

By his Attorneys.

Baldwin, Hopkins & Peyton.

UNITED STATES PATENT OFFICE.

DAVID T. ELLIS, OF WARE, MASSACHUSETTS.

IMPROVEMENT IN GAGE-COCKS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **191,663**, dated June 5, 1877; application filed May 16, 1877.

To all whom it may concern:

Be it known that I, DAVID T. ELLIS, of Ware, in the county of Hampshire and State of Massachusetts, have invented certain new and useful Improvements in Try-Cocks for Testing the Water-Level in Steam-Boilers, of which the following is a specification:

The objects of my invention are to provide a secure, simple, and inexpensive packing for the cock, which will not readily wear to an injurious extent or become inoperative by continuous use; and to these ends my improvements consist in the combination of a tube or nipple adapted to be secured to the boiler, as usual, and a rotating packing mounted or seated in the ordinary arm or lever pivoted to the outer end of the tube, so that it may be swung away from or against the tube to open or close the outlet therefrom, and be rotated when the cock is open by the steam or water impinging upon its periphery as it escapes from the boiler, whereby a new surface is presented to the tube at each closing of the cock, and the wear on the packing, produced both by contact with the tube end and the impact of the steam and water from the boiler, is distributed throughout the surface or periphery of the packing; and, further, my improvements consist in the combination of a weighted lever adapted to be pivoted to the boiler tube or nipple, a packing chamber or seat in said lever, and a circular packing or wheel valve detachably journaled in said seat, having a yielding surface to abut against the nipple, and free to revolve upon its axle.

In the accompanying drawings, Figure 1 is a longitudinal section through my improved gage-cock; Fig. 2, a like section taken at a right angle with Fig. 1; and Fig. 3, a section similar to Fig. 1 of a portion of a cock, with a modified form of valve or packing.

A hollow nipple or tube, A, is provided with a screw-shank, B, to secure it to the boiler, as usual, and has a teat or axial projection, C, at its discharge end, which projects into a valve-chamber or packing-seat, D, at the inner end of a weighted lever, E, pivoted in the customary manner to the tube A.

A deflecting arm or plate, F, upon the tube, and projecting downward therefrom, prevents the steam and hot water from being thrown against the surface of the boiler as it escapes, in such manner as to glance therefrom and scald the attendant. A valve or packing, G, is seated or mounted in the chamber E, so as to be in line with the nipple-vent when closed, as shown, and so as to be free to rotate.

Figs. 1 and 2 show the packing as composed of a hard body or center, such as metal or wood, with a soft or yielding surface, preferably composed of a rubber ring, H, held in a groove in the body. The ring or periphery portion may, however, be made of compressible wood, soft metal, &c. A pin, I, serves to journal the wheel in the chamber, and to admit of its ready removal for repairs or for the substitution of a new wheel. The entire wheel might obviously be made of the same material. In Fig. 3 a rubber globe or ball valve, loosely placed in the valve-chamber, forms the packing.

It will be apparent that, upon lifting the weighted lever to test the level of the water in the boiler, steam or steam and water will rush out and escape by the nipple, and in so doing will violently impinge upon the adjacent surface of the packing, and automatically revolve it. The lifting of the lever changes the relative positions of the axis of the packing and the discharge-opening in the nipple, thus causing the escaping steam and water to impinge upon the packing in such manner as to insure its rotation and present a new surface to the tube upon the lowering of the lever.

The advantages of my invention are obvious, for it will be seen that the cutting of the packing by the water and steam, which so frequently occurs when the ordinary non-rotating or rigid surfaces are acted upon by the escaping current, is prevented by the yielding or rotation of the packing. The wear is uniformly distributed over the packing surface, and repairs can be readily made should any be necessary.

I claim as my invention—

1. The combination, in a try-cock substantially as hereinbefore set forth, of the tube or

nipple, the chambered lever pivoted thereto, and the rotating packing, whereby the packing is automatically adjusted to present different portions of its surface to the tube and wear uniformly distributed over the packing.

2. The combination of the weighted lever, constructed as described, with the packing chamber or seat and the packing-wheel detachably mounted in said chamber, substantially as and for the purposes specified.

In testimony whereof I have hereunto subscribed my name.

DAVID T. ELLIS.

Witnesses:
WM. LITTLE,
J. C. MYERS.