H. R. MORSE.

Gage-Cock for Steam-Boilers.

No. 209,913. Patented Nov. 12, 1878.

Fig. 1

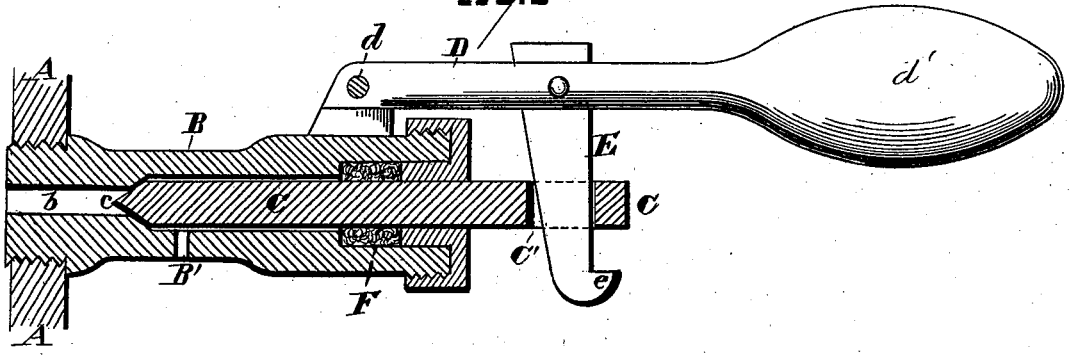
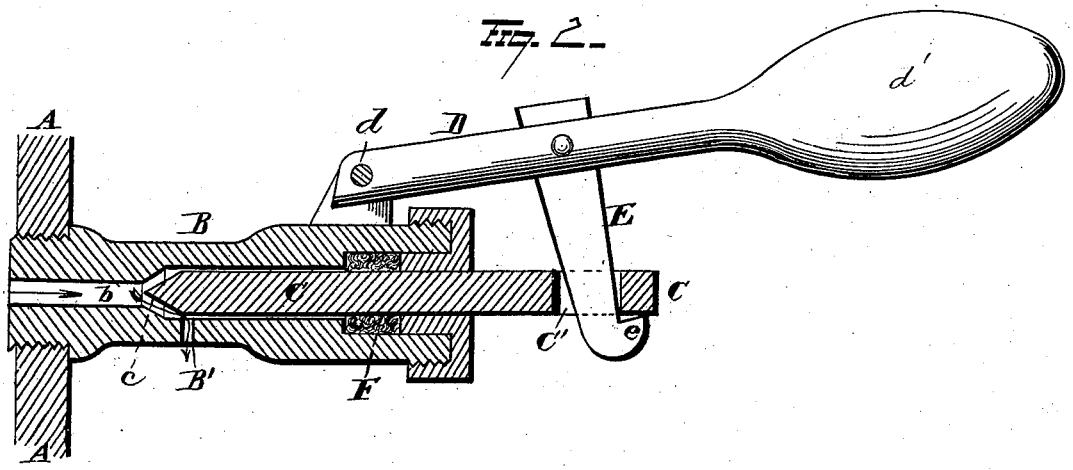


Fig. 2



WITNESSES

E. F. Nottingham

Geo. C. Seymour.

INVENTOR

H. R. Morse.

By Leggett & Leggett.

ATTORNEYS

UNITED STATES PATENT OFFICE.

HORACE R. MORSE, OF CONCORD, OHIO.

IMPROVEMENT IN GAGE-COCKS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **209,913**, dated November 12, 1878; application filed October 9, 1878.

To all whom it may concern:

Be it known that I, HORACE R. MORSE, of Concord, in the county of Lake and State of Ohio, have invented certain new and useful Improvements in Gage-Cocks for Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to a new and useful improvement in gage-cocks for steam-boilers, &c.; and consists in forming the cock in the nature of a stem-valve, made preferably conical at its inner end to fit a conical valve-seat, and at the other end provided with a slot, through which a wedge-key operates. The wedge-key projects from a pivoted lever, which stands parallel with the valve-stem, so that as the lever is raised or lowered the valve-stem is drawn out or is closed respectively, all as will be hereinafter more fully set forth and claimed.

In the drawings, Figure 1 is a longitudinal central section of a gage-cock embodying the features of my invention, representing the valve as closed. Fig. 2 is a similar view, representing the lever as raised and the cock-valve open.

A is a section of a steam-boiler. B is the body of the gage-cock. *b* is the water or steam passage leading from the boiler out through the cock. B′ is its exit beneath the cock.

C is the valve-stem. At *c* the stem is provided with or formed into a valve adapted to find a bearing in a corresponding valve-seat in the body of the cock B. This valve *c* may be of any desired form. It may be flat, spherical, wedge shape, or conical, or of any other desired form, though I prefer that it shall be wedge-shaped or conical, inasmuch as the valve of such form will find a better bearing on the valve-seat. The valve-stem C is provided at its outer end with a slot, C′.

D is a lever, pivoted at *d*, and provided with a handle, *d′*, which may or may not be weighted.

E is a wedge-shaped lug or arm, projecting from the lever D down through the slot C′.

Now, it is apparent that if the lever D be raised about the pivot *d* the arm E, bearing in the slot C′, will draw out the valve-stem and openthe cock, which will be closed again by dropping the lever.

It is also apparent that if the lever is slightly weighted at *d′* it will force the wedge-arm E downward, so as to always hold the valve tightly closed, and any pressure upon the valve from within would have no tendency to open it, because it will have no tendency to lift the arm E up through the slot.

e is a hook on the end of the arm E, which serves simply to prevent the arm from being drawn out through the slot C′ should the lever accidentally be raised too high.

F is a stuffing-box, of any ordinary description, and which may or may not be employed. I prefer generally to employ it, in order to prevent leakage around the stem when the valve is open.

The valve in this device is very readily accessible, for by simply removing pivot *d*, or if the stop *e* is made removable, then by simply removing the stop, the arm E may be lifted out of the slot C′, when the valve-stem C may be drawn out and examined.

With gage-cocks of the ordinary construction they are usually so formed that by long use they will fail to come to a snug seat after being used; but by my device it is always sure to be returned to a snug bearing, because it is closed by a wedge movement, which will always drive it home and compensate for any wear that may have occurred. Moreover there are no springs to get out of order.

What I claim is—

1. In a gage-cock, the combination, with the valve-stem, of a wedge connected with suitable means for being moved transversely to the movement of the valve-stem and open and close the valve, substantially as set forth.

2. In a gage-cock, the combination, with the

valve-stem, of a lever-handle having a wedge secured thereto, said wedge being arranged to engage with the valve-stem and operate the same as the lever-handle is raised or lowered, substantially as set forth.

3. In a gage-cock, the combination, with the body B, valve-stem C, provided with slot C′, of the lever D and wedge-shaped arm E, substantially as set forth.

4. In a gage-cock, the combination, with the valve-slide C, provided with slot C′, of the lever D and wedge-shaped arm E, the latter furnished with a stop, *e*, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HORACE R. MORSE.

Witnesses:
W. B. MURRAY,
IRA J. MORSE.