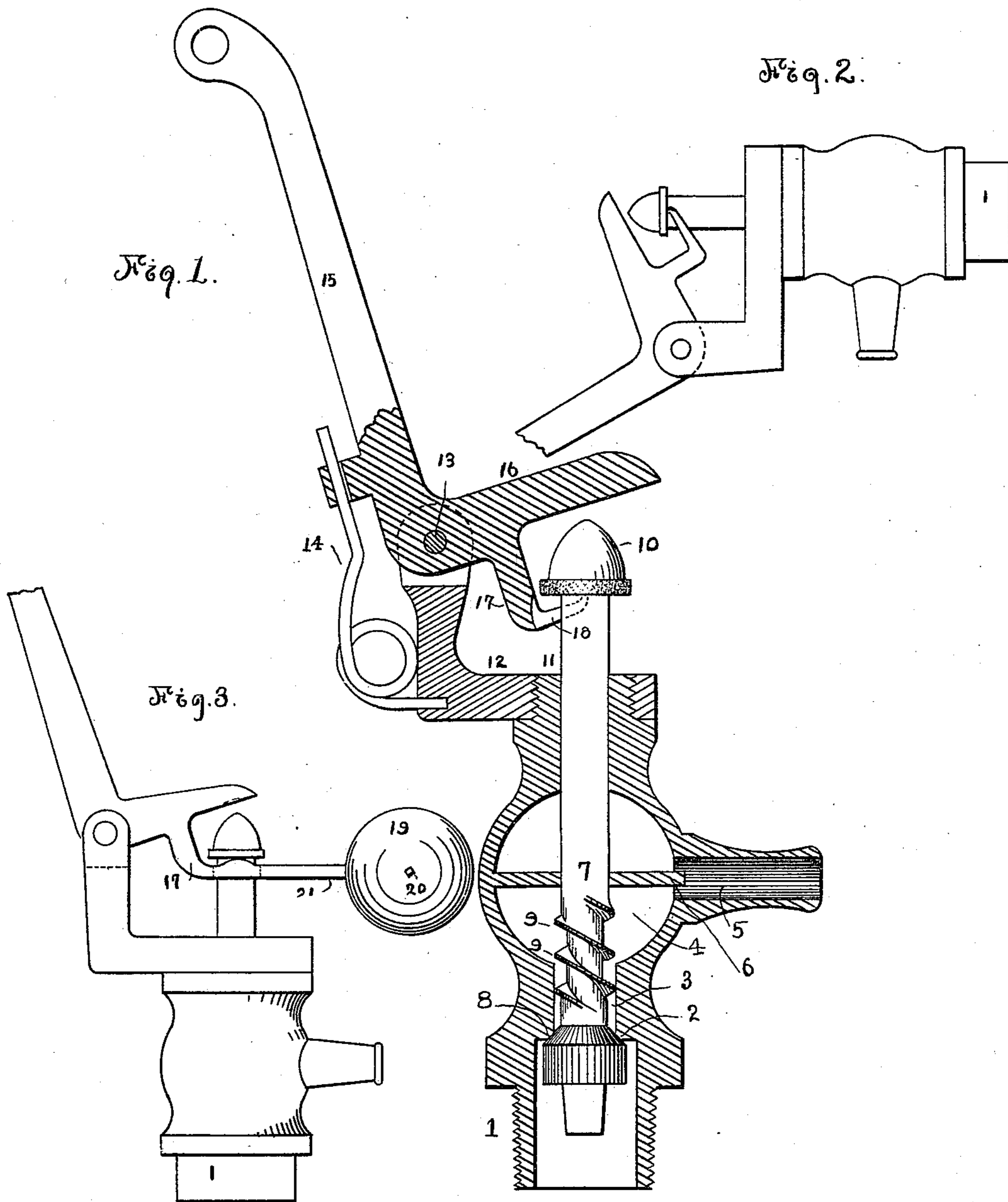


(No Model.)

J. H. GRUBB, W. L. RODGERS & J. BONAR.  
GAGE COCK.

No. 532,779.

Patented Jan. 22, 1895.



Witnesses:

*Geo. H. Harvey*  
*William Beal*

Inventors  
*Joseph H. Grubb, William L. Rodgers and James Bonar,*  
*by their attorney,*  
*Wm. L. Pierce.*

# UNITED STATES PATENT OFFICE.

JOSEPH H. GRUBB, WILLIAM L. RODGERS, AND JAMES BONAR, OF PITTSBURGH, PENNSYLVANIA, ASSIGNORS TO THE PITTSBURGH GAUGE COMPANY, OF SAME PLACE.

## GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 532,779, dated January 22, 1895.

Application filed April 21, 1894. Serial No. 508,518. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH H. GRUBB, WILLIAM L. RODGERS, and JAMES BONAR, citizens of the United States, residing at  
5 Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented or discovered new and useful Improvements in Gage-Cocks, of which the following is a specification.

10 In the accompanying drawings which make part of this specification, Figure 1, is a central longitudinal section of the gage cock with the lever partly in elevation. Fig. 2, is a side elevation of a modification, and Fig. 3, a like  
15 view of another modification.

Our invention relates to water gage cocks for steam boilers, and has, for its object, certain devices for keeping the valve normally up against its seat, as well as the more satisfactory draining of the valve chamber, a  
20 better reseating of the self-grinding valve so as to prevent leakage, and means for preventing the blowing out of the steam or water around the upper end of the valve stem.

25 In the accompanying drawings, which make part of this specification, the case of the cock has the usual threaded projection 1, for screwing into the boiler or into a shank to be screwed into the boiler. Above said projection 1, is the valve-seat 2, followed by a short  
30 cylindrical chamber 3, which opens into a spherical chamber 4 provided with vent 5. 6 is a partition across said spherical chamber, perforated for the passage of the valve stem  
35 7. 8 is the valve on said stem. 9, 9, are the spirals above said valve, and 10 a detachable cap for said stem. Suitably secured, here shown as screwed upon the upper part 11 of  
40 the case, is a bracket 12, to which at 13 is pivotally secured a hand lever. 14 is a spring attached to the hand lever and to the bracket. The hand lever consists of an L with long arm 15 and short arm 16, the latter adapted when  
45 cap 10 of the valve stem.

Projecting from the under side of the short arm 16 is a smaller L-shaped lever 17 terminating in a claw, 18, which is adapted to engage the under side of cap 10, owing to spring 14.  
50 When a gage cock can be set in the position

shown in Fig. 2, the weight of the hand lever can be made sufficient without any spring to pull the valve stem out of the case and seat the valve.

In the form shown in Fig. 3, a weight 19, 55 preferably sliding and secured by set screw 20, is put upon arm 21, which forms an extension of L-shaped lever 17, said lever having an opening for the passage of the valve stem. 60

The advantages of our invention are these. Since the cylindrical chamber 3 is short and opens abruptly into chamber 4 of much larger capacity, when the valve 8 is open the steam will rush with great force through the cylindrical chamber expanding into the spherical chamber. The spirals on the valve stem will cause the same to rotate with great rapidity and the valve will be very accurately and satisfactorily ground into its seat; also the rapid expansion of the steam into the spherical chamber will bear along all sediment and dirt and discharge the same through the vent, preventing clogging in the valve-chamber, the spirals conveying away the sediment. To prevent the steam or water blowing through and along the valve-stem we prefer to insert the partition wall 6, but this is not indispensable. The partition 6 forms a siphon by projecting slightly into the vent, tending to assist in the drainage and forming a guide for the stem. When the valve is to be closed, the pressure of the hand being removed from the lever, the valve will shut either through the action of the spring, the weight, or the weight of the lever alone. 85

The hand lever acts both as a knocker on the cap to push the valve stem in as well as a pull on the valve stem when the hand pressure ceases. These various styles of hand levers are applicable to all kinds of gage cocks having a moving valve stem, and we intend to claim the same broadly. 90

Obviously the positions of the spring and weight may be varied and the support for the hand lever much modified. 95

The claw engaging the under side of cap of valve stem may have one or more fingers.

Having described our invention, we claim—

1. In gage cocks, the combination of a case; 100

a movable rotary valve stem in said case, means for rotating the valve when opened and a hand lever connected with said case adapted normally to tend to pull the valve stem outwardly from the case, and to push the valve stem in when power is applied to the lever.

2. In gage cocks, the combination of a case; a rotary movable valve stem in said case; means for rotating the valve when opened, a hand lever pivotally secured to said case and means for retracting the hand lever whereby an outward pull will be exerted on the valve stem.

3. In gage cocks, the combination of a case; a movable rotary valve stem in said case; a hand lever pivotally secured to said case, and having two projections, one adapted to engage the under side of the cap of the valve stem, and the other the top of said cap when the hand lever is actuated.

4. In gage cocks, the combination of a case; a movable valve stem in said case; a hand lever pivotally secured to said case and having a projection to engage the cap of the valve stem when the lever is operated, a second projection and means for retracting the hand

lever whereby an outward pull will be exerted upon the valve stem and adapted to engage the under side of said cap of the valve stem.

5. In gage cocks, the combination of a case; a movable valve stem in said case, and a spring actuated hand lever pivotally secured to said case, and having one projection adapted normally to engage with the under side of the cap of said valve stem, and a second projection adapted to push in said valve stem when the lever is actuated.

6. In gage cocks, the combination of a case; a movable valve stem in said case and a spring actuated hand lever pivotally secured to said case, and having a claw adapted normally to engage with the under side of the cap of said valve stem.

In testimony whereof we have hereunto set our hands this 14th day of April, A. D. 1894.

JOSEPH H. GRUBB.  
WILLIAM L. RODGERS.  
JAMES BONAR.

Witnesses:

C. C. LEE,  
WILLIAM L. PIERCE.