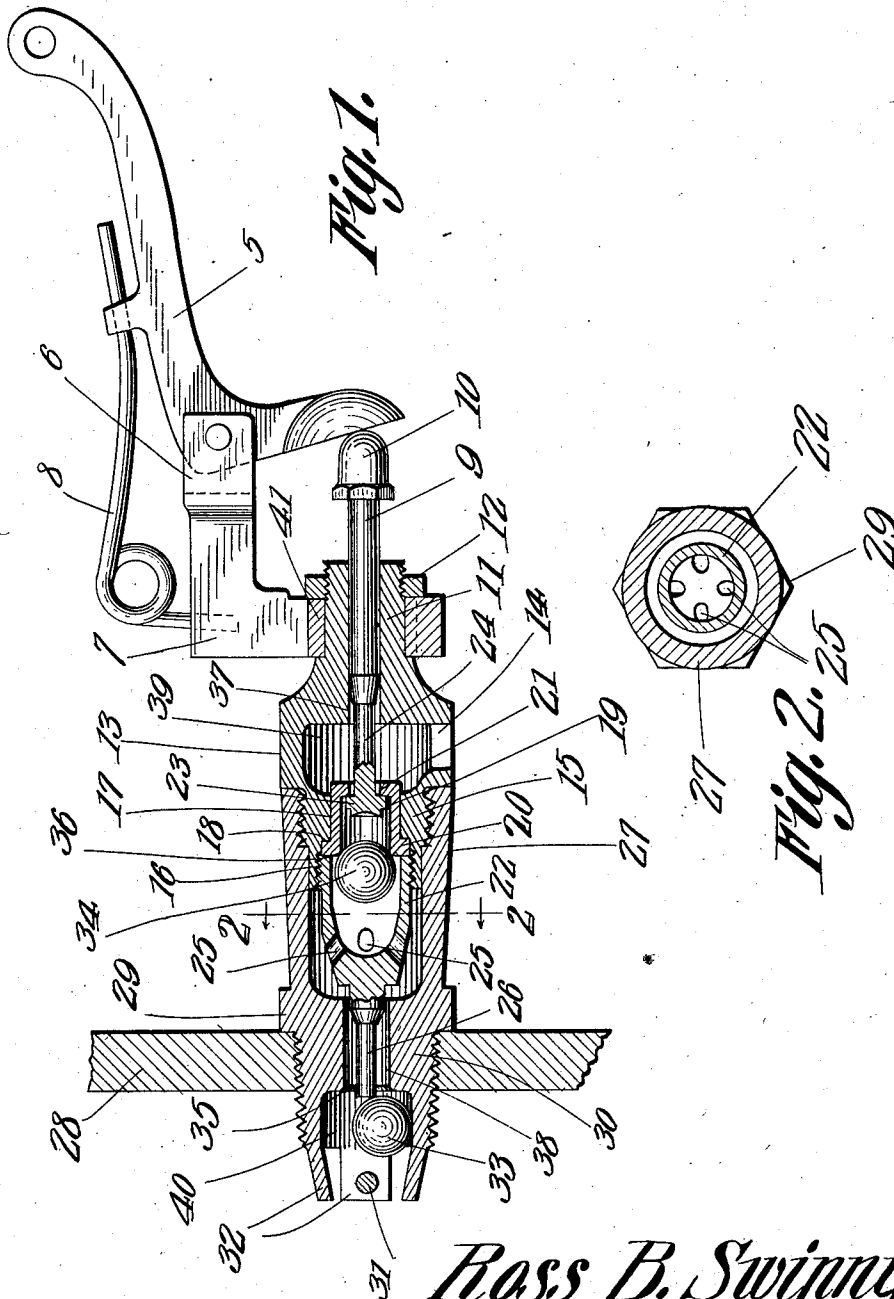


R. B. SWINNY.
GAGE COCK.
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1,023,051.

Patented Apr. 9, 1912.



Witnesses

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UNITED STATES PATENT OFFICE.

ROSS B. SWINNY, OF BELPRE, OHIO, ASSIGNOR OF ONE-HALF TO DORA P. SHAW, OF BELPRE, OHIO.

GAGE-COCK.

1,023,051.

Specification of Letters Patent.

Patented Apr. 9, 1912.

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To all whom it may concern:

Be it known that I, ROSS B. SWINNY, a citizen of the United States, residing at Belpre, in the county of Washington and State of Ohio, have invented a new and useful Gage-Cock, of which the following is a specification.

This invention relates to gage cocks for steam boilers, and has for its object to provide an improved device of this character, embodying certain improvements over the gage cock disclosed in my former Patent No. 799,202, issued September 12, 1905.

One of the improvements contemplated by the present invention is to provide an additional valve for preventing the water from escaping from the boiler when there is no steam pressure within the boiler.

Another improvement is to provide a novel means for retaining the inner or supplemental valve in position.

With the above and other objects in view this invention is embodied in the construction and arrangement of parts as hereinafter described and as illustrated in the accompanying drawings, wherein similar reference characters indicate similar parts, and wherein:—

Figure 1 is a longitudinal central section of the gage cock embodying the present invention. Fig. 2 is a section on the line 2—2 of Fig. 1.

Referring in detail to the drawings, the casing of the gage comprises an inner section 27 and an outer section 13, the outer section having a nipple 15 projecting therefrom and screw-threaded into the inner section to detachably connect the sections together. The bore of the nipple 15 is designated at 17 which has the inner end thereof counterbored as designated at 16 to provide a shoulder 18 within the nipple. A cup shaped member 19 fits in the bore of the nipple with its open end disposed inwardly and the said member is provided with an outwardly projecting flange 20 at its open end seating against the shoulder 18 in the nipple, and at the other end the said member is provided with an opening 21. A valve pocket 22 has the open end thereof screw threaded into counter-bore 16 of the nipple against the cup-shaped member and in the other end thereof is provided with a plurality of ports 25. Within the pocket 22 is arranged a ball valve 34 that is adapted to

seat against the seat 36 of the open end of the cup shaped member 19. A push rod 9 is mounted in the bore 37 of the nipple 11 provided at the outer end of the outer section 13, and the inner end thereof is reduced in diameter as designated at 24 and passes through the opening 21 in the member 19. On the inner end of the push rod 9 is provided a valve head 23 seatable against the end of the cup-shaped member to close the opening 21 therein. The inner section 27 of the casing is provided with a nipple 30 at its inner end, the bore of which is designated at 38, and at its inner end the bore is increased in diameter as at 40 to provide a valve seat 35 at the inner end of the bore 38. A ball valve 33 is arranged in the enlarged portion 40 of the bore in the nipple 30 and is arranged to seat against the seat 35, but the said valve is normally displaced inwardly from the said seat by a finger 26 projecting from the inner end of the valve pocket 22. The ball valve 33 is retained within the nipple 30 by means of a cage provided at the inner end of the nipple and consisting of a plurality of ears 32 converging from the inner end of the nipple and a pin 31 connecting a pair of the opposite ears 32. The inner section 27 is also provided with a hexagonal portion 29 for convenience in screwing the nipple 20 into the boiler plate 28 of the boiler.

To actuate the push rod 9 the bell crank lever 5 is pivoted within the bifurcated end 6 of an arm 7 secured to the nipple 11, which lever is arranged to swing against the head 10 of the push rod 9 to force the said rod inwardly. This arm 7 has an eye 41 surrounding the nipple 11 and a nut 12 is screw-threaded on the outer end of the nipple to hold the ring 41 in position. A spring 8 secured to the arm 7 normally retains the lever 5 in inactive position.

In use, the valve 34 is normally forced against the seat 36 within the nipple 15 by the pressure of the steam within the boiler to prevent the escape of steam or water from the boiler, the push rod lying dormant, and by forcing the push rod 9 inwardly by means of the lever 5 the valve head 23 at the inner end thereof is moved inwardly and displaces or unseats the ball valve 34, thus permitting the steam or water to pass through the inner section of the casing and through the pocket 22 to pass into the chamber 39 within the

outer section 13 through the opening 21 in the member 19 and then escape through the port 14 in the section 13. Upon the push rod being released the valve 34 is again seated within the nipple 15. When repairs are necessary, or for any other reason, the outer section of the casing may be detached from the inner section 27 and in the event that the outer section is unscrewed from the inner section the finger 26 is withdrawn from the bore 38 through which it extends and permits the supplemental ball valve 33 to be forced against the seat 35 thus preventing the escape of steam or water from the boiler. Upon the outer section being replaced, the ball valve is again displaced from the seat to permit the water and steam to pass through the bore 38 of the inner section.

When there is no steam pressure within the boiler so as to force the ball valve 34 against its seat, the water causes the push rod 9 to slide outwardly and thus seat the valve head 23 against the end of the member 19 to close the passage through the gage and prevent the escape of the water. By forcing the push rod inwardly the water may be discharged through the gage.

What is claimed is:—

1. In a gage cock, a casing comprising an inner and an outer section, the outer section having a nipple threaded into the inner section, a valve pocket secured to the end of the said nipple and having ports therein, a ball valve disposed within the said pocket and arranged to seat within the nipple, a push rod slidable through the outer section and having a valve head on its inner end seatable within the nipple, the said push rod

in being forced inwardly unseating the said valve head and the ball valve, and a supplemental valve within the inner section, the said valve pocket having a finger projecting from the inner end thereof to normally unseat the said supplemental valve.

2. In a gage cock, a casing comprising an inner and an outer section, the outer section having a nipple threaded into the inner section, the bore of the nipple being counter-bored at its inner end to form a shoulder within the nipple, a cup-shaped member fitting the bore of the nipple with its open end disposed inwardly and having a flange at its open end seating against the said shoulder and having an opening in the other end thereof, a valve pocket having its open end screw threaded into the counter-bore of the said nipple against the said cup shaped member and having ports in its other end, a ball valve arranged within the said pocket and seatable against the said cup-shaped member, a push rod slidable through the outer end of the outer section of the casing and passing through the opening in the cup shaped member and having a valve head on its inner end seatable against the said cup-shaped member, a supplemental valve within the inner section and seatable therein, and a finger projecting from the said pocket to normally unseat the said supplemental valve.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROSS B. SWINNY.

Witnesses:

R. L. KENT,
GEORGE W. MILLER.