

(No Model.)

C. R. MOORE.
GAGE COCK.

No. 531,593.

Patented Dec. 25, 1894.

Fig. 1.

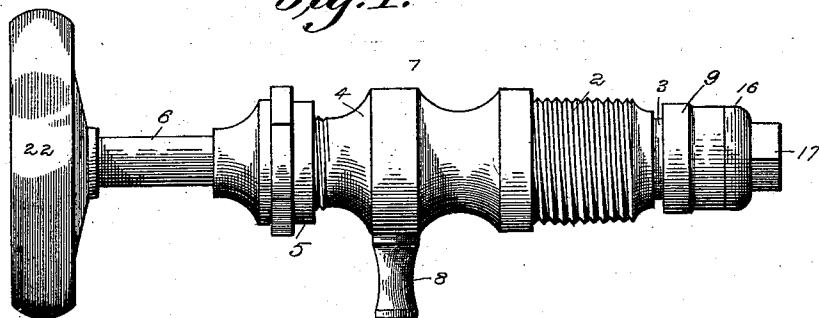


Fig. 2.

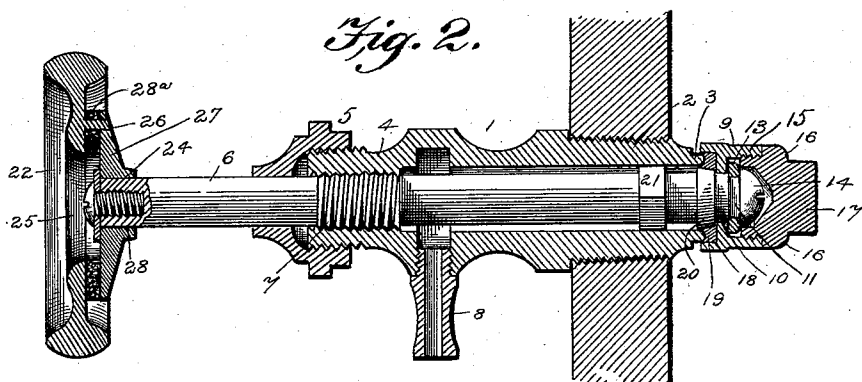


Fig. 3.

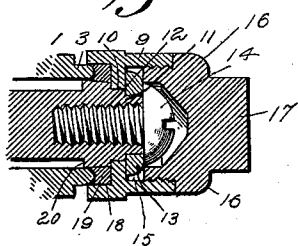
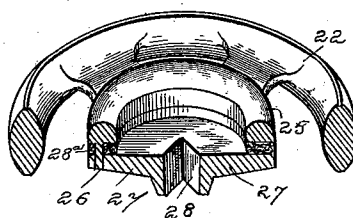


Fig. 4.



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Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES R. MOORE, OF NEWPORT, VERMONT.

GAGE-COCK.

SPECIFICATION forming part of Letters Patent No. 531,593, dated December 25, 1894.

Application filed July 20, 1894. Serial No. 518,135. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. MOORE, a citizen of the United States, residing at Newport, in the county of Orleans and State of Vermont, have invented a new and useful Gage-Cock for Steam-Boilers, of which the following is a specification.

This invention relates to gage cocks for steam boilers.

The main and primary object of the present invention is to effect certain improvements in gage cocks that are employed in connection with steam boilers for ascertaining the level of water therein, whereby such cocks will be more efficiently protected against accumulations of sediment and scale which usually are serious drawbacks to the easy manipulation of the cock, and also to provide means for quickly and readily renewing the packing of the valve.

The invention also contemplates an improvement in the hand wheel for operating the cock, which obviates the necessity of using the common fragile wooden hand wheels, while at the same time preventing the hand wheel from becoming too overheated to be touched.

With these and other objects in view which will readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation of a gage cock constructed in accordance with this invention. Fig. 2 is a central longitudinal sectional view thereof. Fig. 3 is an enlarged detail sectional view of the loosely turning or pivoted valve disk including the connections thereof with the reciprocating valve stem. Fig. 4 is a detail sectional perspective view of the hand wheel.

Referring to the accompanying drawings, 1 designates a straight bored tubular body provided at one end with an exteriorly threaded and tapered attaching neck 2, that is adapted to be fitted into the shell of a steam boiler at the proper point in the usual manner, and at its outer end the neck 2, of said tubular body is provided with a rounded annular valve seat flange 3 projected beyond said neck and adapted to be disposed inside of the boiler to

which the cock is fitted. The said tubular body 1, has the interior bore thereof reduced at its end opposite the neck 2, and is formed into an interiorly and exteriorly threaded collar 4, the interior threads of which are turned on a long pitch and the exterior threads of which receive thereon the stuffing box cap 5, through which works the longitudinally movable valve stem 6, which is provided at a point intermediate of its ends with a section of adjusting threads 7, formed on a long pitch and adapted to engage the interior threads of the collar 4, to provide for the longitudinal adjustment of the stem to open and close the valve, to be described, for the purpose of opening and closing the passage through the discharge nipple 8, fitted to one side of the body 1, and communicating with the interior thereof adjacent to the collar 4.

The longitudinally adjustable valve stem 6, is adapted to have one end thereof work through and beyond the attaching neck 2, of the valve body 1, and on this end of the valve stem is loosely or pivotally mounted the valve disk 9. The valve disk 9, is provided with a central bearing opening 10, that loosely fits on a cylindrical or round part of the stem 6, and the extremity of the stem on which the valve disk is fitted is provided with a squared projection 11, and a threaded socket 12, said squared projection 11, being adapted to have fit thereover a washer 13, with a squared opening, which is held in position by the pivot clamp screw 14, engaging the threaded socket 12, to pivotally or loosely secure the valve disk 9, on the valve stem 6. The pivot clamp screw 14, and the washer 13, are inclosed within the interiorly threaded annular flange 15, projected from one side of the valve disk, and which removably receives the threaded cap plug 16, provided with an exterior wrench nut 17, whereby the same may be conveniently removed and replaced, it being obvious that the said cap plug entirely incloses in the space confined within the flange 15, and therefore protects the screw and washer 13, from sediment and scale, so that no matter how long the cock may remain without being used the free turning of the valve disk is not interfered with.

The loosely turning or pivoted valve disk 9, is provided in the side opposite the flange

15, with the annular seat 18, in which is fitted the renewable soft metal packing ring 19, which ring is held clamped against the exteriorly tapered collar 20, formed on the stem 6, a short distance from the squared extremity thereof, and it will be understood that when the valve ring is secured in position on the stem by the means described, the ring that is fitted in the valve disk will be tightly secured and held in its seat by the contact thereof with the said collar 20, and the taper of said collar also affords means whereby the wear occasioned by the turning of the valve disk may be compensated for.

At one side of the collar 20, the valve stem 6, is further provided with a squared combined guide and cleaning collar 21, that substantially registers with the interior bore of the body 1, and holds the valve disk properly to its seat while at the same time keeping the passage through the said body perfectly free.

The longitudinal adjustment of the valve stem 6, carries the packing ring 19, of the valve disk, onto and away from the annular valve seat flange 3, at one end of the body 1, and this adjustment is effected by the metallic hand wheel 22, removably fitted on the outer squared end 24, of the said valve stem. The said hand wheel 22, is provided with a central hub rib 25, from one side of which is projected a series of rivet pins 26, that are secured in suitable holes or openings formed in the wheel plate 27, that is provided with a squared collar 28, to fit the outer squared end of the valve stem. An asbestos or other suitable heat non-conducting packing 28^a, is interposed between the wheel plate 27 and one side of the hub rib 25, to protect the main portion of the wheel against becoming overheated.

From the above it will be seen that the herein described gage cock has the valve portion thereof located inside of the boiler, so that sediment and scale can never accumulate inside of the valve body, while at the same time the opening of the valve can always be easily effected owing to the loose connection of the valve disk with the valve stem, and it will be understood that changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. In a gage cock, the combination of the

tubular body provided with a raised valve seat on its inner end, a longitudinally movable valve stem arranged to work through said body, and a valve disk loosely or pivotally mounted on one end of said valve stem and provided with a renewable packing ring adapted to work against said valve seat, substantially as set forth.

2. In a gage cock, the combination of a tubular body provided with a valve seat on its inner end, a longitudinally adjustable valve stem arranged to work through said valve body and provided near one end with a squared combined guide and cleaning collar adapted to work in said body, and a valve disk loosely or pivotally mounted on one end of said valve stem and working against said valve seat, substantially as set forth.

3. In a gage cock, the combination of a tubular valve body provided with a raised valve seat on its inner end, the longitudinally movable valve stem working in said body and provided at one end with a squared projection and a threaded socket, and adjacent to such end with an exteriorly tapered collar, a valve disk loosely mounted to turn on the valve stem between the squared projection and tapered collar thereof and provided at one side with an interiorly threaded annular flange and at its opposite side with an annular seat, a soft metal renewable packing ring fitted in said seat and adapted to be held against said tapered collar on the valve stem, a washer with a squared opening fitted over said squared projection, a pivot clamp screw working over said washer and engaging the threaded socket of the valve stem, and a threaded cap plug fitted in the interiorly threaded annular flange of the valve disk to inclose said washer and screw, substantially as set forth.

4. The combination with a valve stem or the like, of a metallic hand wheel provided with a central hub rib having a series of integral rivet pins projected from one side, a wheel plate spaced from the hub rib and secured on said pins and having a squared collar, and a heat non-conducting packing interposed between said plate and said rib, substantially as set forth.

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

CHARLES R. MOORE.

Witnesses:

HOMER THRASHER,
GEO. F. ROOT,
W. O. ADAMS.