W. H. WAFER & J. MURRIN.

GAGE OR TRY COCK.

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Patented Apr. 24, 1917.

1,223,749.

Fig. 1.

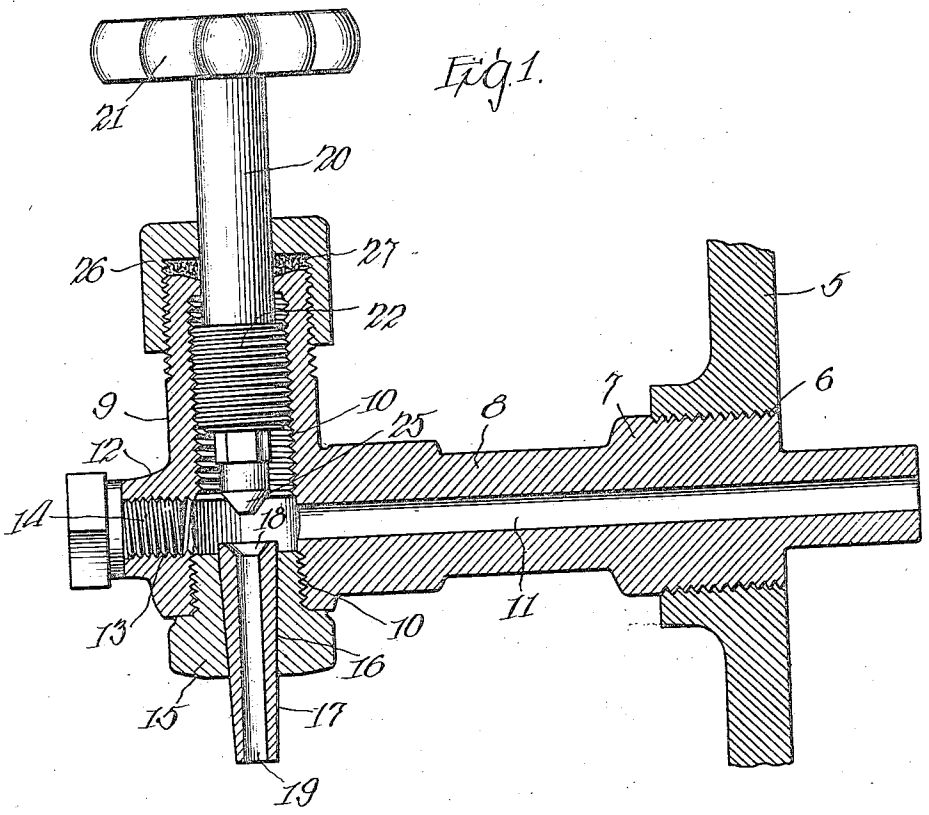


Fig. 2.

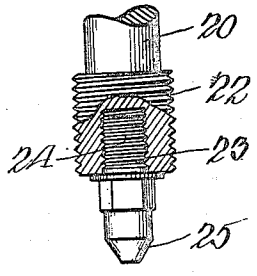


Fig. 4.

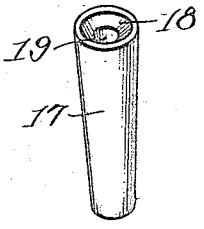
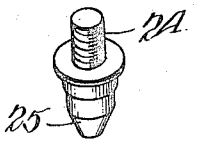


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM H. WAFER AND JOHN MURRIN, OF CHICAGO, ILLINOIS.

GAGE OR TRY-COCK.

1,223,749. Specification of Letters Patent. Patented Apr. 24, 1917.

Application filed April 27, 1916. Serial No. 93,856.

To all whom it may concern:

Be it known that we, WILLIAM H. WAFER and JOHN MURRIN, citizens of the United States, and residents of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gages or Try-Cocks, of which the following is a specification.

This invention relates to improvements in that class of devices or cocks used on steam-boilers for gaging or determining the quantity of water contained by the boiler, and it consists in certain peculiarities of the construction, novel arrangement and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

As is well known to engineers, and those skilled in the art to which our invention pertains, there is a law in effect which requires the tubes of such cocks leading into the boilers and communicating with the water therein, to be routed out every time the boiler is washed, and that the valves and other parts of the cocks shall be frequently inspected, cleaned, repaired or renewed, in fact, that such cocks shall be kept in perfect working condition at all times, and, that by reason of the construction of the cocks heretofore in common use, in order to rout out the water tubes thereof, the valves, valve-seats, packing and the like, had to be removed, in order to gain access to the interior of said tubes with the routing instrument, and that after the routing had been done, the valves, and said other parts of the cocks would have to be reassembled, all of which required a great deal of time, skill and labor.

To provide a gage or try-cock, which shall be simple and inexpensive in construction, strong, durable and efficient in operation, and so made as to avoid the above named difficulties and objections by affording means for routing the water tube thereof, by the removal of but one of the members or parts of the cock, is the principal object of the invention. Another and important object of the invention, is to provide means whereby the valve and valve-seat, or either of them, should they become defective or require cleaning, grinding or repairs, can be readily removed, and new ones, or others, replaced in their stead without waiting for the cleaning or repairing of the old ones.

Other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In the accompanying drawing, which serves to illustrate our invention—

Figure 1 is a central vertical sectional view through a gage or try-cock embodying our improvements, showing it mounted on a portion of the wall or front plate of a boiler.

Fig. 2 is a view partly in elevation and partly in section of the lower part of the valve stem showing the construction of the valve and the manner of mounting the same on said stem.

Fig. 3 is a detached perspective view of the valve and

Fig. 4 is a detached perspective view of the valve seat of the cock.

Like numerals of reference refer to like parts throughout the different views of the drawings.

The reference numeral 5 designates a portion of the boiler, for instance the front face or wall thereof, which is provided with a screw-threaded opening 6 in which an externally screw-threaded enlargement 7, on the water tube or extension 8 of the cock is fitted. The outer end of the extension or member is provided with a valve casing 9, which is transversely arranged with respect to the part 8, and by preference, vertically thereon as shown. This valve casing is provided with a longitudinally extended opening 10 therethrough, which opening is furnished with screw-threads in its upper and lower portions, but by preference, that part of the said opening 10 with which the opening 11, in the tube or extension 8 intersects, is without screw-threads. That portion of the casing 9 opposite the outer end of the channel or opening 11 in the extension 8 is provided with a boss 12 which has an internally screw-threaded opening 13 to receive a screw plug 14, which can be removed when it is desired to rout or clean the opening 11 of the water tube or extension 8 of the cock. Located in the lower portion of the opening 10 of the casing 9 and in screw engagement therewith is a screw-threaded plug 15 which has extended therethrough a downwardly tapered opening 16, in which is removably located a downwardly tapered valve seat tube 17 which, as is clearly shown in Figs. 1 and 4 of the drawing has in its upper end a flared or inwardly and downwardly beveled cavity 18 which communi-

cates with the opening 19 which extends longitudinally through said tube. This tube is by preference somewhat longer than the plug 15 and so tapered that it will fit within the opening 16 of the said plug, so that its upper end will normally be about flush with the lower surface of the channel 11 in the extension or water tube 8 of the cock, and so that its lower end will project some distance below the lower end of the plug 15, as is clearly shown in Fig. 1 of the drawings. By this arrangement, it is obvious that the screw plug 15 can be removed from the opening 10 in the casing 9, by turning said plug in the proper direction, when, if it is desired, the valve seat tube 17 can be removed from the plug 15 by simply striking the lower end of the tube 17 on a solid body, when it will be driven upwardly in the plug 15 and can be easily removed, to permit of the insertion in the opening 16 of said plug, of another valve seat tube of the same construction.

Located in the upper portion of the opening 10 of the valve casing 9 is a valve carrying stem 20 which may have fitted on its upper end a wheel or handle 21 for turning said stem. This stem is by preference provided with an enlarged screw-threaded portion 22 which engages the screw-threads in the upper part of the opening 10 of the casing and said enlarged portion has in its lower end a screw-threaded opening 23 to receive and engage a screw-threaded extension 24 on the upper portion of a valve 25, which is shaped to fit the valve seat 18 in the upper end of the removable valve seat tube 17, when the valve 25 is screwed down so as to prevent the passage of water through the cock.

Located in screw-threaded engagement with the upper portions of the casing 9 and surrounding the valve stem 20 is a gland or cap 26 between the upper portion of which and the upper end of the casing 9, packing 27 of any suitable kind may be interposed.

From the foregoing and by reference to the drawings it will be readily understood and clearly seen, that by screwing the valve stem 20 downwardly a sufficient distance, the valve 25 will rest in the valve seat 18 and thus prevent the passage of water through the channel 11 of the extension 8 and the opening 19 of the tubular valve seat, but if it is desired to gage the water in the boiler, the valve stem 20 may be screwed upwardly so as to remove the valve 25 from its seat, when, if there is water in the boiler up to the level of the channel 11, it will pass through said channel and the tubular valve seat 17 as is apparent. Now, when it is desired to clean or rout the channel 11, all that is necessary, is to raise the valve stem 20 by turning it in the proper direction so that the valve 25 will be located above the upper portion of the opening 11 in the extension 8, and remove the screw plug 14, when it is apparent that the routing or cleaning instrument can be inserted through the opening 13 and into or through the opening 11 of said extension. If it is desired to remove the valve 25, so that it may be ground or replaced by another one, this can be done by removing the plug 15 and screwing the stem 20 downwardly until the upper portion of the valve 25 can be reached by a wrench or the fingers, when it is obvious that by turning it in the proper direction it will be unscrewed from the stem 20 and a new or repaired one can be inserted in its stead.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is—

1. A gage or try-cock consisting of a casing having a channel adapted to be placed in communication with a boiler and provided with an opening located vertically and transversely with respect to said channel and intersecting the same and also provided with an opening in alinement with the outer end of said channel, of removable means to close the last named opening, an apertured plug removably located in the transverse opening on one side of said channel, a tube located in the opening of said plug and having a valve seat in its inner end, a valve stem adjustably mounted in the opposite portion of said transverse opening and a valve removably connected to the inner end of said stem and adapted to open and close said valve seat.

2. A gage or try-cock consisting of a casing having a channel adapted to be placed in communication with a boiler and provided with a screw-threaded opening located vertically and transversely with respect to said channel and intersecting the same and also provided with a screw-threaded opening in alinement with the outer end of said channel, of a screw-threaded plug located in the last named opening, an apertured and externally screw-threaded plug located in the lower portion of the transverse opening, a tube located in the opening of said plug and having a valve seat in its inner end, a valve stem screw-threaded in the opposite portion of said transverse opening and a valve removably connected to the inner end of said stem and adapted to open and close said valve seat.

3. A gage or try-cock consisting of a substantially L-shaped casing having its longer and shorter members channeled, the longer member of said casing being externally screw-threaded near its free end to engage an opening in the vertical wall of a boiler and the shorter member of said casing having its channel internally screw-threaded, the said shorter member also having a screw-threaded opening in alinement with the

outer end of the channel in the longer member of the casing, a screw-threaded plug located in the last named opening, an apertured and externally screw-threaded plug located in one end of the opening in the shorter member of the casing, a tube removably located in the opening of the last named plug and having a valve seat in its inner end, a valve stem screw-threaded in the opposite portion of the shorter member of the casing and a valve removably connected to the inner end of said stem and adapted to open and close said valve seat.

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