No. 765,524. PATENTED JULY 19, 1904.

J. R. TYSON.

MEANS FOR REMOVABLY MOUNTING GAGE COCKS.

APPLICATION FILED MAY 12, 1903.

NO MODEL.

Fig. 1.

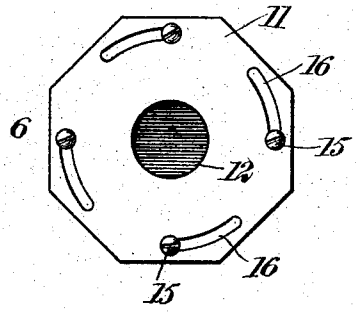


Fig. 2.

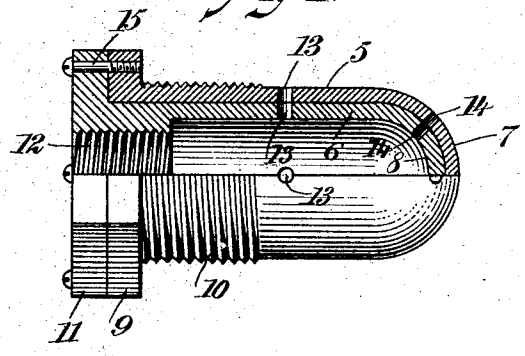


Fig. 3.

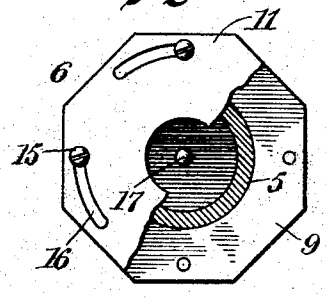


Fig. 4.

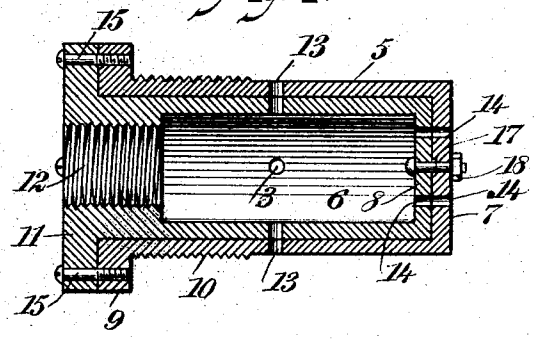
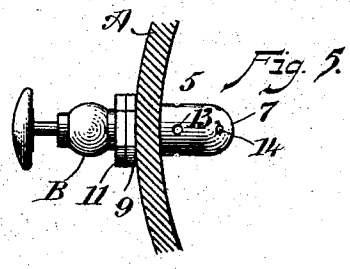


Fig. 5.



WITNESSES:

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No. 765,524. Patented July 19, 1904.

UNITED STATES PATENT OFFICE.

JAMES ROBERT TYSON, OF READING, PENNSYLVANIA.

MEANS FOR REMOVABLY MOUNTING GAGE-COCKS.

SPECIFICATION forming part of Letters Patent No. 765,524, dated July 19, 1904.

Application filed May 12, 1903. Serial No. 156,780. (No model.)

To all whom it may concern:

Be it known that I, JAMES ROBERT TYSON, a citizen of the United States, and a resident of Reading, in the county of Berks and State of Pennsylvania, have invented new and useful Improvements in Means for Removably Mounting Gage-Cocks, of which the following is a full, clear, and exact description.

My invention relates to a device by which gage-cocks may be easily and quickly disconnected from steam-boilers without reducing the boiler-pressure.

In the practical use of gage-cocks it is found that they fail to indicate the true water-level of a boiler owing to clogging of the passage in the cock by the accumulation of sediment which is present in the water. It is customary to dismount the gage-cock for the purpose of cleaning it or replacing it by a new cock; but with ordinary appliances this necessitates "drawing" of the fires under the boiler and the reduction of pressure therein.

The object of this invention is to overcome these objections by the provision of a simple, cheap, and efficient contrivance adapted to form a part of the boiler when in place and capable of adjustment in a way to cut off communication between the gage-cock and the interior of the boiler, so that the cock can be attached and detached without reduction of the boiler-pressure.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty will be defined by the annexed claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is an elevation looking at the outside of my improved device for mounting gage-cocks in a boiler. Fig. 2 is a sectional elevation through the improved device. Fig. 3 is a front elevation, partly broken away and in section, of another embodiment of the invention. Fig. 4 is a longitudinal section of the device shown by Fig. 3. Fig. 5 is a sectional view showing a portion of a shell in which a gage-cock is mounted by a device of my invention.

A designates a portion of a boiler-shell in which it is desirable to detachably mount a gage-cock B. It is customary to fit the gage-cock directly in the shell; but when the gage-cock is clogged the pressure in the shell must be reduced before the cock can be withdrawn. I overcome this objection by the provision of a bushing, which is mounted in the shell and to which the gage-cock is detachably connected. In Figs. 1 and 2 of the drawings I have shown one form of construction of my improved bushing, the same consisting of an outside member 5 and an inside member 6. The members 5 6 are closed at their inner ends by means of heads 7 8, respectively, which, as shown by Fig. 2, are curved on concentric lines, whereby the inside shell 6 and its hood 8 may be fitted snugly or tightly within the outside shell 5 and its head 7. The external shell is provided at its front extremity with a flange 9, preferably of hexagonal shape, in order that a wrench or other implement may be applied thereto for the purpose of securing the external shell in a threaded aperture provided in the shell A of the tank or boiler. It is to be understood that this external shell 5 is provided with a male thread 10 for a part of its length, thus enabling the bushing to be screwed into the shell A. The internal shell or member 6 of the bushing extends through the open front end of the external member 5, said internal shell or member 6 having at its front extremity a flange 11, which is provided with angular faces or edges for the application of a suitable wrench. The internal shell or member 6 is provided with a female thread 12 for a part of its length, said threaded part of the internal member forming a socket, into which the gage-cock B or other device may be screwed. The external and internal members 5 6 are provided with transverse ports 13 14, said ports 14 being formed in the heads 7 8 of said members 5 6, while the ports 13 are in the cylindrical portions of said members. The internal member 6 is fitted steam-tight in the external member 5, preferably by grinding one member within the other in a manner well known to those skilled in the art, and this internal member 6 is capable of a turning movement on its

longitudinal axis for the purpose of adjusting the ports 13 14 therein out of coincidence with the similar ports 13 14 in the external member. The extent of turning movement of said internal member within the external member is limited by stops 15, which are shown in the form of screws that are tapped into the flange 9 of the external member and are arranged to play in segmental slots 16, which are formed in the flange 11 of the internal turnable member 6.

The form of construction shown by Figs. 3 and 4 comprises a two-part bushing having its members fitted fluid-tight one within the other in a similar way to the construction shown by Figs. 1 and 2. The modification consists in the change of the shape of the inner ends of the members and in the employment of a pivotal bolt 17, which passes through the heads 7 8 of said members. The members 5 6 are cylindrical throughout their length and are provided with the heads 7 8, which are at right angles to the axes of said members 5 6. The member 5 has the threaded portion 10 and the flange 9 and the ports 13, while the head 7 of said member 5 has the ports 14 on opposite sides of the pivotal bolt 17. The internal member 6 has the flange 11, the socket 12, and the ports 13, while the head 8 of said internal member is formed with the ports 14. The flange 11 of the internal member is provided with arcuate slots 16, through which pass the stop-screws 15, that are attached to the flange 9 of the external member. The pivotal bolt 17 is shown as passing through the heads 7 8 of the members to receive an external nut 18. This pivotal bolt is located centrally with respect to the members in order that the member 6 may turn on its axis within the limits permitted by the slots 16 and the screws 15, and said bolt 17 serves to strengthen or reinforce the bushing at the inner ends of the members. It is evident that the construction shown by Figs. 1 and 2 may embody the pivotal bolt 17, which passes through the curved heads 7 8 thereof.

In the service of my improved device the threaded part 10 of the external member 5 is screwed into a threaded hole provided in the shell A. The inner end of the bushing extends into the chamber, which contains a fluid under pressure, while the flange 9 of the external member 5 has abutting engagement with the outside of the shell A, thus placing the angular flanges 9 11 within convenient reach of the operator. The gage-cock B may now be screwed into the threaded socket 12 of the internal member 6, after which this member should be turned on its axis for a sufficient distance to bring its ports 13 14 into registration with the corresponding ports in the external member 5. The fluid under pressure is now free to enter the bushing and the gage-cock B, which is attached to said bushing. To dismount the gage-cock, the operator should first turn the member 6 in a backward direction in order to adjust its ports 13 14 out of registration with the ports of the external member in order to close said ports of the internal member and prevent the fluid under pressure from passing from said shell A into the bushing. The gage-cock B may now be dismounted without reducing the pressure in the shell A, so that said gage-cock may be cleaned and replaced or a new cock may be connected to the bushing.

An important advantage connected with the practical use of my invention consists in the quick adjustment of the bushing for cutting off the escape of steam in the event of a railroad accident. It is well known that human lives are sometimes lost by escape of steam when a locomotive under full boiler-pressure is wrecked; but the use of my bushing enables the connections to be easily and quickly cut off from communication with the boiler.

In my construction the screws 15 have threaded engagement with the flanged outer member, and the heads thereof bear on the slotted flange of the inner member, said screw heads being normally exposed outside of the bushing and the boiler-shell, so that ready access may be obtained to the screws for adjusting them. This construction is advantageous because provision is thereby made for clamping the two members of the bushing solidly together in a way to effectually overcome leakage of the fluid under pressure and while the bushing and the gage-cock are applied to the boiler. The two members of the bushing are ground together to secure a tight friction-joint; but it is found that leakage is liable to occur after a time. To overcome this, I provide the set-screws, which are always accessible to tighten up the members and which serve the further purpose of a stop in limiting the axial turning movement of the inner member when opening or closing the bushing.

Cross reference is hereby made to my companion application filed December 3, 1903, Serial No. 183,573, the subject-matter of which is a bushing comprising two members, each having an opening and a flange, the outer member being threaded and the inner member having a socket, the flange of the inner member being provided with arcuate slots, and screws threaded in the flange of the outer member and effective in clamping the two members endwise and in limiting the axial turning movement of the inner member.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A means for mounting and dismounting gage-cocks in boilers comprising a two-part bushing, each member of which is provided with a rounded inner end and with a flanged outer end, the rounded end of the inner member fitting snugly to the corresponding end of the outer member, and both members having a plurality of ports which are adapted to be brought

into or out of registration by an axially-turning movement of the inner member, said inner member having in its flange a plurality of arcuate slots, and externally-accessible screws threaded in the flanged outer member and passing through the slots of the flange of the inner member.

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

JAMES ROBERT TYSON.

Witnesses:

F. PIERCE HUMMEL,

GEO. S. HUMMEL.