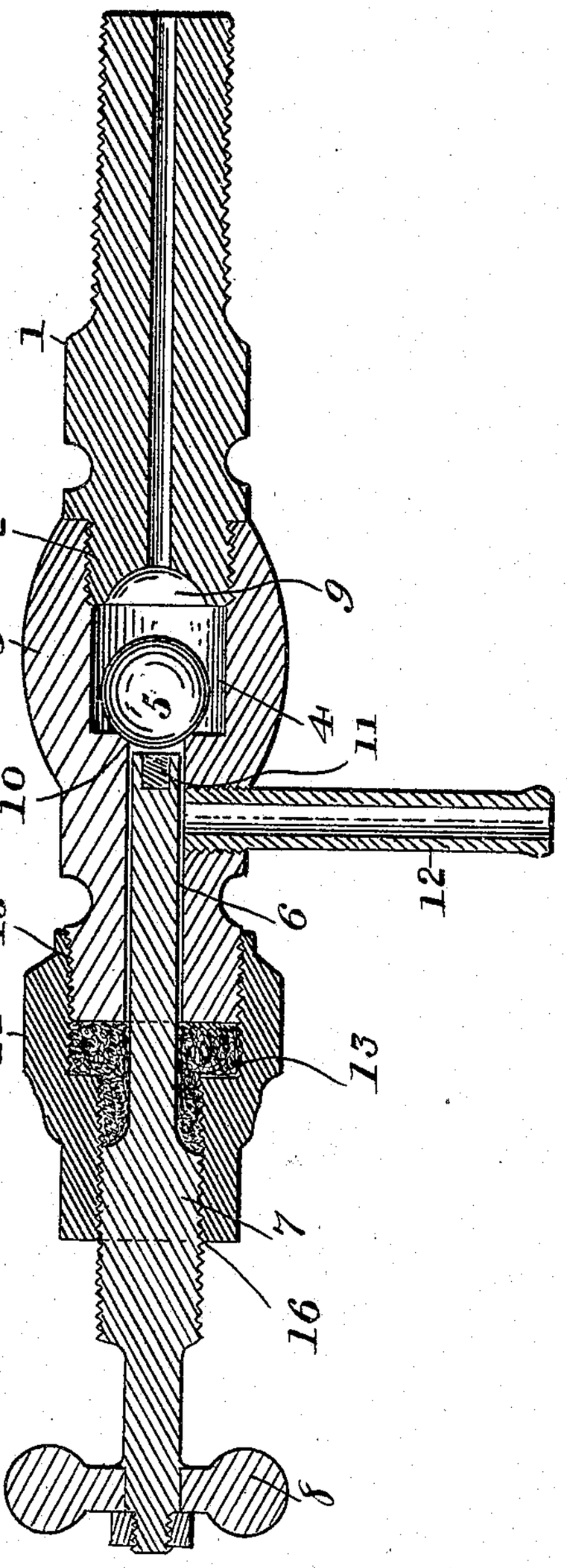
C. F. WATERMAN.

GAGE COCK FOR STEAM BOILERS.

APPLICATION FILED OCT. 30, 1908. RENEWED JULY 15, 1909.

931,004. Patented Aug. 10, 1909.



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UNITED STATES PATENT OFFICE.

CHARLES F. WATERMAN, OF PORTLAND, MAINE.

GAGE-COCK FOR STEAM-BOILERS.

No. 931,004. Specification of Letters Patent. Patented Aug. 10, 1909.

Application filed October 30, 1908, Serial No. 460,224. Renewed July 15, 1909. Serial No. 507,771.

To all whom it may concern:

Be it known that I, CHARLES F. WATERMAN, citizen of the United States, residing at Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Gage-Cocks for Steam-Boilers, of which the following is a specification.

My invention pertains to gage cocks for steam boilers. Numerous advantages attend its use, among them may be mentioned ability to prevent escape of steam or hot water and liability of scalding attendant or operator in event of accidentally unscrewing the valve controlling spindle from the packing-retaining nut, or the like happening of said nut; to provide for the ready disposal of a scale passing in between the valve and its seat, and, accordingly, preventing impairing the valve-seat from an otherwise grinding action at that point as heretofore experienced; to facilitate the insertion, and especially the removal of the valve when for any purpose the latter may become necessary, as in renewing the valve or for regrinding its seat. Also it is noted that the invention is characterized for increased convenience and celerity of operation and economy of construction and simplicity of application and use.

It consists of certain instrumentalities or features substantially as hereinafter fully disclosed and defined by the claims.

In the accompanying drawing, illustrating the preferred embodiment of my invention: the figure represents a longitudinal central section thereof.

In carrying out my invention, I provide a nozzle-member 1 suitably screwed at one end to a steam-boiler, at the usual point as well understood by those familiar with this art. Said nozzle-member has a reduced opposite end screw-threaded nipple-like portion 2; and screwed upon the latter is a tubular and chambered member or section 3, its chamber 4 containing and adapted to allow the requisite action or play of the spherical valve or ball 5, and its bore or passage 6 receiving the otherwise valve stem or spindle 7, provided with the usual actuating handle 8. The reduced nipple-like portion 2 of the nozzle 1 has in its end a concavity or recess 9 for conformity to the outline of the valve 5 when the latter is forced mechanically into contact with said portion 2 for effecting a water or steam-tight joint at that point at that time. Also around the edges of the point of union between the bore 6 and the valve-chamber 4 is formed a concaved seat 10 for the valve 5 into which it is automatically seated by the action of the steam or water pressure when the spindle or stem 7 is disengaged from said valve, as well understood. The chamber 4, it will be noted, is of greater cross-section, as well as of otherwise greater area, than the valve 5, to allow steam-space all around the latter to provide for its effective retention in its seat when under steam or water pressure. The stem or spindle 7, preferably of brass, as is also the valve 5, has its inner free end hollowed out and filled with babbitt, or soft metal as at 11 as a preferable surface or point of contact with the valve for reducing wear or impairment of the latter therewith to the minimum, as will be readily appreciated. A drain tube or outlet 12 is screwed into, or connected with the section or member 3 near the valve-chamber 4, and communicates with its spindle encompassing and receiving bore or passage 6 for the escape of the waste water or steam as will be understood. A steam and water tight packing 13 is applied around the stem or spindle 7, against the end of the section or member 3 and effectively thus held by a stepped nut 14, with the threaded surface of its greater diameter engaging a corresponding surface of said member as at 15 and the like surface of its less diameter engaging a corresponding threaded surface of the spindle or stem as at 16.

It will be noted that, as already indicated, the seating of the valve 5 is automatic under the steam or water pressure from the boiler through the member 1. When, however, it may be required to cut off the steam or water pressure from the boiler, the spindle or stem 7 is screwed inwardly, carrying the valve 5 into the recess 9 closing the bore of the member or nozzle 1. Also, as previously stated, should the nut member be accidentally turned off either the spindle-member 7 or the member 3, there would be no liability of the steam escaping and scalding the attendant or operator, since the valve would be always seated under the pressure of the water or steam from the boiler, as is apparent.

Other benefits of the invention have been above recited, which, it is believed, have been made apparent from the preceding de-

scription of the construction and arrangement of the parts and therefore it is not thought necessary to further refer thereto.

I claim:

1. A device of the character described, comprising a tubular body-member having a nozzle for attachment to a boiler or source of pressure, said nozzle having screw-threaded connection with said tubular body-member and a concaved valve-seat in that end thereof within said said body-member, said body-member having a chamber intermediate of its bore proper and the bore of said nozzle, said chamber having that wall thereof distant from, and opposed to said valve-seat also provided with a valve-seat around its bore, a spherical valve adapted to initially occupy one of said seats under pressure exerted through said nozzle, and manually actuated means independent of, and for disengaging said valve from its initially seated position and for engaging it with the other of said seats.

2. A device of the character described comprising a tubular body-member having a nozzle provided around one end of its bore within said body-member with a concaved valve-seat, said body-member also having a chamber, intermediate of its bore proper, and said chamber having that wall thereof distant from said seat also provided with a valve-seat, a spherical valve initially positioned in one of said seats, and a hand-wheel equipped stem having screw-threaded connection with said tubular body-member and adapted for disengaging said valve from its initially seated position and engaging it with said concaved seat, said stem having its valve-engaging end filled in with soft metal as a preferred bearing for said valve.

In testimony whereof I affix my signature, in presence of two witnesses.

CHAS. F. WATERMAN.

Witnesses:

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