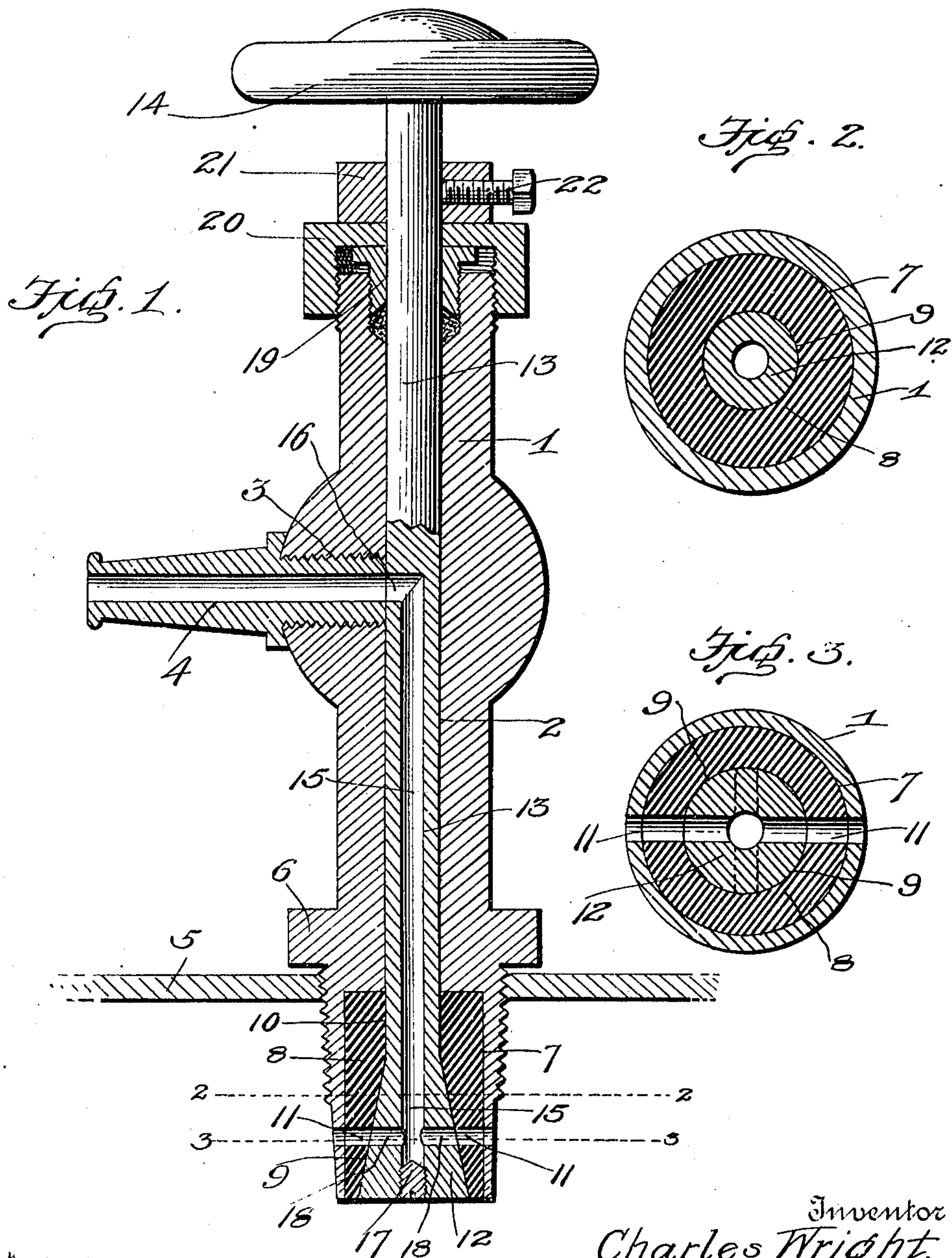


C. WRIGHT.
GAGE COCK.
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978,256.

Patented Dec. 13, 1910.



Witnesses

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GAGE-COCK.

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To all whom it may concern:

Be it known that I, CHARLES WRIGHT, a citizen of the United States, residing at Youngwood, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Gage-Cocks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in gage cocks.

One object of the invention is to provide a gage cock having an improved construction and arrangement of valve seat and valve whereby these parts are self adjusting, thus always insuring a perfectly tight fit.

Another object is to provide a valve which will be held in tight engagement with its seat by the pressure of steam or other fluid and having means whereby the valve may be held in tight engagement with its seat when the fluid pressure is removed therefrom.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a central longitudinal section of a gage cock constructed in accordance with the invention; Fig. 2 is a cross sectional view of the same on the line 2—2 of Fig. 1; Fig. 3 is a similar view on the line 3—3 of Fig. 1.

In the embodiment of the invention, as shown in the accompanying drawings, 1 denotes the casing of the cock in which is formed a longitudinally disposed passage 2 extending throughout the entire length of the casing, as shown. At a suitable point the casing is enlarged and in said enlargement is formed a threaded passage 3, which is connected with the passage 2 and is here shown as being at right angles thereto. Adapted to be screwed into the passage 3 is a discharge nozzle 4. The inner end of the casing 1 is slightly tapered and is threaded whereby said end may be screwed into the boiler 5 or other device to which the cock is to be attached.

At the inner end of the threaded tapered

portion of the casing is formed an annular stop shoulder 6, which engages the outer side of the boiler. In the tapered inner end of the casing 1 is formed a socket or recess 7, in which is arranged a filling or lining 8 formed of fiber. In the fiber filling or lining 8 is formed a substantially conical valve seat 9 and a short bore or passage 10, which connects the seat 9 with the passage 2 in the casing 1. Formed through the inner portion of the inner end of the casing and through the corresponding parts of the filling 8, at diametrically opposite points, are inlet passages or ports 11 which open through the valve seat as shown.

Engaged with the valve seat 9 in the fiber filling or lining 8 is a substantially conical valve 12 formed on the inner end of a valve stem 13 which extends entirely through the passage 2 of the casing and is provided on its outer end with a suitable handle 14. Formed in the valve 12 and stem 13 is a passage 15 which terminates in a laterally extending discharge opening 16 formed in one side of the stem opposite the nozzle 4. The end of the passage 15 in the valve is closed by a plug 17, as shown. In the valve 12 is formed a transversely disposed passage 18, which intersects the passage 15 and which, when the valve is turned in the proper position, will bring the outer ends of the passage 18 into alinement with the inlet ports 11. The discharge passage 16 in the stem 13 is also arranged in such position that, when the passage 18 is brought into alinement with the ports 11, said passage 16 will communicate with the nozzle 4. When the valve is turned to bring the passage 18 out of alinement with the ports 11, the passage 16 will also be turned out of alinement with the nozzle 4 and closed by the walls of the passage 2.

In the outer end of the casing 1 around the stem 13 is a packing gland 19, and on said outer end of the casing is screwed a packing nut 20. On the stem 13 and adapted to engage the nut 20 is a stop collar 21 having a set screw 22, whereby the same is adjustably secured to the stem 13 to hold the valve 12 into close engagement with its seat when no pressure is applied to the valve from within the boiler. By thus holding the valve into tight engagement with its seat, any sediment or foreign matter is pre-

vented from getting between the valve and seat and thus causing the same to leak. When the boiler is in use, the steam pressure therein holds the valve into close engagement with its seat, and when thus held, the stop collar is not required.

It will be noted that the ports 11 in the inner end of the casing and the passage 18 in the valve are of less diameter than the passage 15 through the stem so that any particles of scale or other matter, which are small enough to pass through the ports 11 and passage 18 will be readily carried off through the passage 15 and discharged from the nozzle. It will also be noted that by arranging the fiber filling as herein shown and described, the same will always be held in place by the valve and a very small surface or part of the fiber is exposed to the heat or action of the steam or other fluid.

By arranging the valve so that it is held closed by the pressure of the steam in the boiler when the valve is in closed position, no steam whatever can escape from the boiler if the cock be broken off at any point outside of the boiler. By reason of this safety feature of the cock, the same is particularly adapted for use on locomotive boilers but can also be used with beneficial results on any form of boiler.

While I have herein shown and described my improved valve and its fiber seat in connection with a gage cock for boilers, I do not wish to be understood as confining the same to this use, as it is obvious that these parts may be used in connection with any kind of cock or faucet for water, air, gas or any other fluids.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various 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 as defined in the appended claims.

Having thus described my invention, what I claim is:—

1. In a device of the character described, a valve casing having in one end a recess and oppositely disposed inlet ports, a fiber lining arranged in said recess, said lining having ports formed therein to coincide with the ports in the casing, a conically shaped valve seat formed in said lining and communicating with the ports therein, a valve stem operatively mounted in said casing, a conical valve on said stem adapted to engage said valve seat, said valve and stem having formed therein discharge passages which are adapted to be brought into and out of communication with the ports in said casing

and lining to open and close the valve, and a discharge nozzle communicating with the passage in said valve stem.

2. In a gage cock, a casing having a recessed inner end adapted to be engaged with a boiler, said recessed end having formed therein oppositely disposed inlet ports, a fiber lining arranged in the recessed end of said casing, said lining having formed therein inlet ports communicating with the ports in said casing, a conically shaped valve seat formed in said fiber lining, a conically shaped valve arranged in said seat and adapted to be held in tight engagement therewith by the pressure of the fluid in the boiler, said valve having formed therein a transverse passage adapted to be brought into and out of alinement with the ports in the casing and fiber lining, an operating stem formed on said valve and projecting through said casing, said stem having a passage communicating with the passage in said valve, and a discharge nozzle adapted to communicate with the passage in said stem when the valve is in an open position.

3. In a gage cock, a casing having a recessed inner end and a central longitudinal bore extending therethrough and communicating with said recessed end, a discharge nozzle connected with said casing, a fiber lining arranged in said recessed end, said lining and end having formed therein oppositely disposed inlet ports, a conical valve seat formed in said lining, a conical valve engaged with said seat, said valve having formed therein a transverse passage adapted to communicate with the ports in said fiber lining, a stem formed on said valve and projecting through the bore in said casing, said stem having a passage communicating at its inner end with the transverse passage in said valve and opening at its outer end through the side of the stem, opposite said discharge nozzle, said passage having a greater diameter than the transverse passage in said valve, a packing nut arranged on the outer end of said casing around the projecting end of said stem, and means on said stem to hold the valve in tight engagement with its seat.

4. In a gage cock, a casing having arranged therethrough a centrally disposed bore, a discharge nozzle communicating with said bore, a fiber filling or lining arranged in the inner end of said casing, a conical valve seat formed in said filling, a conically-shaped valve adapted to be engaged with said seat, said valve filling and casing having formed therein inlet ports and passages adapted to be brought into and out of alinement by the turning of the valve in its seat, a stem formed on said valve and projecting through the bore in said casing, said stem having formed therein a discharge passage opening through the end of the valve and

communicating at its inner end with the
discharge nozzle when the valve is turned
to an open position, a plug to close the inner
end of said passage, a packing gland and
5 nut arranged on the outer end of the casing
around said stem, a stop collar arranged
on the stem, a set screw adapted to hold
said collar in adjusted engagement with the
valve stem whereby the valve will be held

in tight engagement with its seat, and a 10
handle on the outer end of said valve stem.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

CHARLES WRIGHT.

Witnesses:

J. Q. TRUXAL,
E. H. WRIGHT.