

W. BEACH.
GAGE COCK.

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Patented Feb. 10, 1914.

Fig. 1.

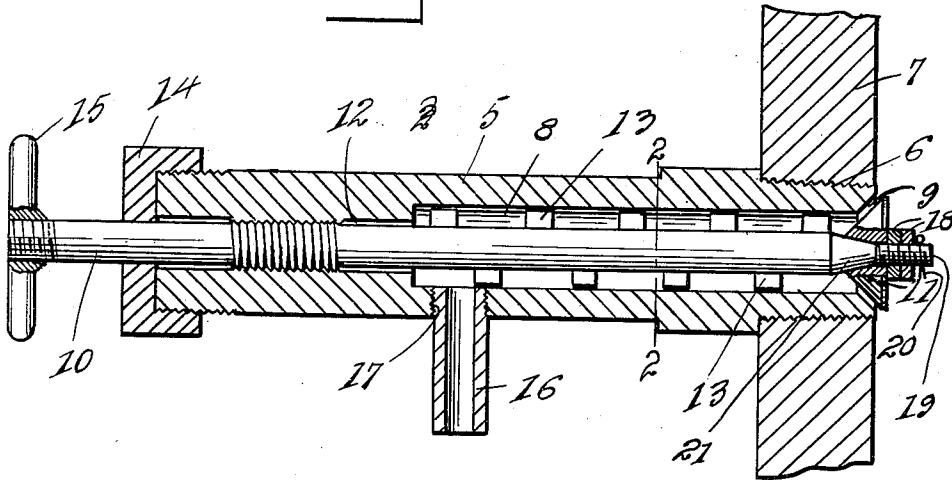
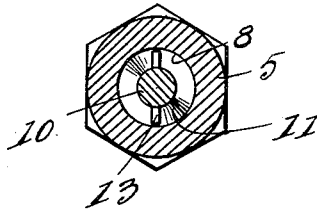


Fig. 2.



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GAGE-COCK.

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To all whom it may concern:

Be it known that I, WILLIAM BEACH, a citizen of the United States, residing at Calmar, in the county of Winneshiek and State of Iowa, have invented certain new and useful Improvements in Gage-Cocks; and I do hereby 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 comprehends improvements in gage cocks and relates more particularly to water gage cocks which are especially adapted for use on steam boilers.

The primary object of the invention resides in the provision of a gage cock of this nature which will not become clogged by sediment and other foreign matter accumulating therein.

Another and more specific object of the invention is to provide a water gage cock having a valve stem provided with cleaning blades which will scrape sediment and scales from the interior of the cock so as to prevent the same clogging.

As a further object the invention contemplates the provision of a gage cock for steam boilers which when closed will contain no water.

With these and other objects in view, as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination, and arrangement of parts, as will be hereinafter described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which,

Figure 1 is a longitudinal sectional view, partly in elevation, showing the cock attached to a boiler, and, Fig. 2 is a transverse section taken on the plane of line 2—2 of Fig. 1.

In the preferred embodiment of my invention, I provide a gage cock having an elongated cylindrical body 5 formed with a threaded tapered portion 6 adjacent its inner end for engagement in a threaded opening formed in a boiler indicated by the numeral 7. The body is provided with a longitudinal bore or channel which is cylindrical in cross section and enlarged for a portion of its length adjacent its inner end, as indicated by the numeral 8. The inner end of

the body is formed with a tapered valve seat 9, as clearly shown in Fig. 1. If desired the body may be made hexagonal in cross section adjacent the threaded portion 6, in order that a wrench may be used for the purpose of threading said body within the opening formed in a boiler.

A valve stem 10 extends longitudinally through the body and has a frusto-conical valve 11 secured to its inner end and adapted to engage the valve seat 9. The valve stem is threaded for a portion of its length within the portion 12 of the bore, and said bore is correspondingly threaded for engagement with the stem. That portion of the valve stem which is normally positioned within the enlarged chamber 8 is provided along opposite sides with a series of scraper blades 13. The blades in each series are spaced from each other and the blades of one series are arranged in staggered relation with the blades of the other series. A cap 14 is threaded upon the outer end of the body and is centrally apertured to permit the passage of the valve stem, said stem being provided with a hand wheel 15 so that it may be readily rotated. If desired, suitable packing may be placed within the outer end of the body around the valve stem so as to prevent leakage. A depending drain pipe 16 is threaded into an opening 17 formed in the bottom of the body adjacent the outer end of the chamber 8.

When the valve rod is threaded inwardly the valve will be unseated and water or steam will flow from the interior of the boiler through the chamber 8 and out through the pipe 16. It will be noted that after the valve has been returned to its seat the water or steam within the body will be discharged through the opening 17 and not retained within the chamber 8. Any sediment, corrosion, or scales which form upon the interior of the chamber 8 may be readily removed by rotating the valve stem 10 so as to cause it to move longitudinally a considerable distance. This movement of the valve will cause the scraper blades to thoroughly cleanse the interior of the body and the water or steam flowing through said body will force the impurities through the discharge pipe 16.

The scraper blades 13 also serve as guides for the valve stem 10, thereby insuring a proper seating of the valve 11.

To facilitate the grinding of the valve, I

secure the same to the valve stem by means of nuts 18, threaded upon the reduced portion 19 of the valve stem. A cotter pin 20 extends through the reduced portion 19 and forms a lock for the nuts. The valve stem is also provided with the tapered portion 21, which is fitted within the valve 11, so that, should the valve become loose upon the stem, it may be tightened by simply threading the nuts 18 toward the valve, so as to force the latter along the tapered portion 21.

From the foregoing description taken in connection with the accompanying drawings, it will be apparent that I have provided a very simple, self-cleaning gage cock which will not become clogged and which may be easily operated.

It is to be understood that while I have shown and described the preferred embodiment of my invention, I do not wish to be limited to this exact construction, combination, and arrangement of parts, but may make such changes as will fall within the spirit and scope of the invention as claimed.

Having thus described my invention, I claim:—

A gage cock comprising an elongated

body having a straight longitudinal bore extending therethrough, the inner portion of the bore being of an enlarged diameter 30 relative to the outer portion, and said outer portion being threaded, a valve stem extending entirely through the bore and having threads engaging the threaded portion of said bore, a valve mounted on said valve 35 stem, a longitudinal series of radial spurs mounted on the valve stem within the enlarged portion of the bore, and a second series of spurs mounted on the valve stem 40 within the enlarged portion of the bore and diametrically opposed to said first mentioned series, the spurs of one series being arranged in staggered relation to the spurs of the other series and all of said spurs engaging the interior of the bore, the body 45 being formed adjacent the outer end of the enlarged portion of the bore with a discharge port.

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

WILLIAM BEACH.

Witnesses:

HANS EVENSON,
CLARA OLSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."