M. E. MALM.

CUT-OUT VALVE FOR GAGE COCKS.

APPLICATION FILED MAR. 16, 1917.

1,258,235. Patented Mar. 5, 1918.

Fig. 1.

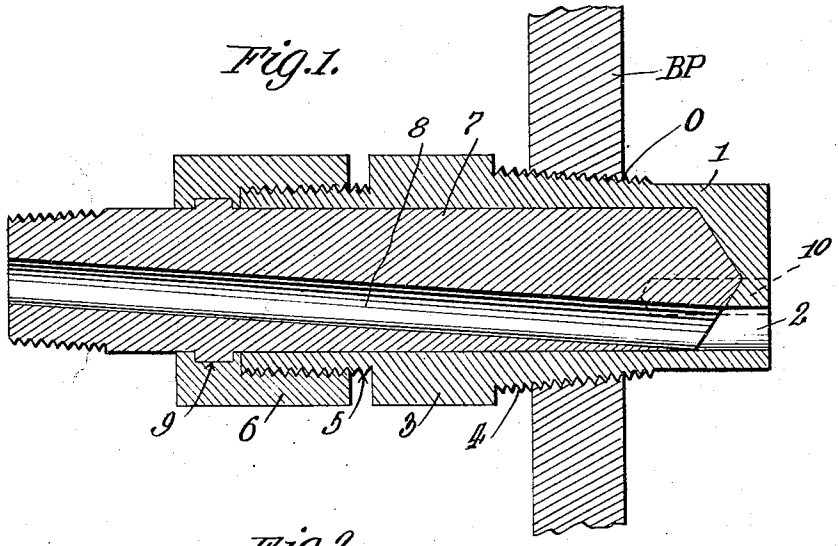


Fig. 2.

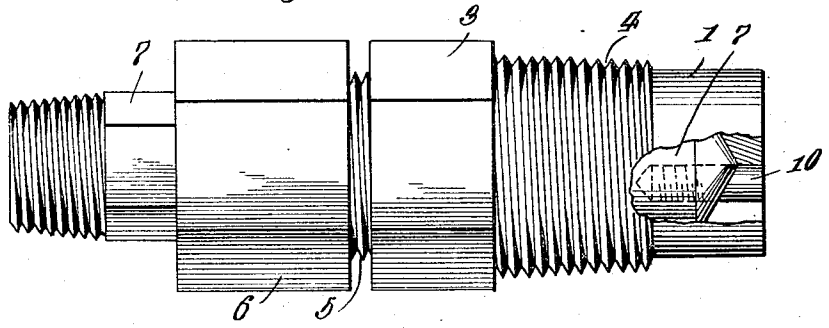
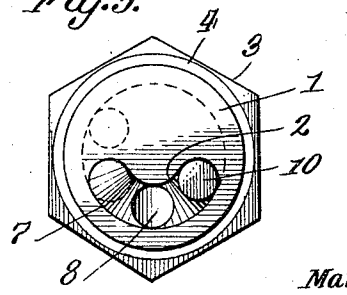


Fig. 3.



INVENTOR

Marvin E. Malm

WITNESSES

Guy M. Spring

S. M. McColl.

BY Richard B. Owen.

ATTORNEY

UNITED STATES PATENT OFFICE.

MARVIN E. MALM, OF CLINTON, IOWA.

CUT-OUT VALVE FOR GAGE-COCKS.

1,258,235. Specification of Letters Patent. Patented Mar. 5, 1918.

Application filed March 16, 1917. Serial No. 155,281.

To all whom it may concern:

Be it known that I, MARVIN E. MALM, a citizen of the United States, residing at Clinton, in the county of Clinton and State of Iowa, have invented certain new and useful Improvements in Cut-Out Valves for Gage-Cocks, of which the following is a specification.

This invention relates to improvements in cutout valves, and more particularly to those designed for use in connection with gage cocks for steam boilers.

It is well known to those skilled in the art to which this invention appertains that much annoyance is caused by the channel leading from the valve to the interior of the boiler becoming filled with sediment which cuts and destroys the valve seat and it is to overcome this objectionable feature that this invention is designed.

The object of the invention is to provide a valve of this character so constructed and applied that the gage cock used in connection therewith may be removed for cleaning, repairing or other purposes, while the full steam is on in the boiler.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 represents a longitudinal section through a valve constructed in accordance with this invention shown applied to a boiler plate, said plate being broken off for convenience and illustration,

Fig. 2 is a side elevation thereof, and

Fig. 3 is an end view of the valve taken from the inner end.

In the embodiment illustrated, a boiler plate BP is shown provided with a threaded opening O in which the outer member 1 of the improved valve constituting this invention has threaded engagement.

This valve member 1 is shown in the form of a substantially cylindrical casing, open at its outer end and closed at its inner end, said closed inner end having an arcuate slot 2 formed therein adjacent its periphery and concentric therewith for a purpose to be described. This casing 1 has an angular peripheral portion 3 for engagement by a wrench to facilitate its application and removal from the threaded opening in the boiler plate. On one side of this angular face 3, the casing 1 is exteriorly threaded as shown at 4 to engage the threaded opening O in the boiler plate and in advance of said portion 3 is reduced and exteriorly threaded as shown at 5 to receive a nut 6 carried by and swiveled on a core or valve proper 7.

This valve or core 7 has a bore 8 extending longitudinally therethrough, being shown arranged at an oblique angle and which is designed to register when the parts are applied with the slot 2 in the inner end of casing 1 when said valve is turned in one direction. This valve or core 7 is made to fit snugly in fluid tight relation in casing 1, sufficient play being provided however to permit its turning in said casing and it is made of a length greater than the casing with its outer end projecting some distance beyond the outer end of the casing and exteriorly threaded at its terminal to detachably receive a gage cock (not shown). An annular shoulder 9 is formed on the core 7 at a point beyond the outer end of casing 1 with which the nut 6 has a swiveled connection, said nut having an annular recess at its inner end adapted to rotatably engage said shoulder 9, the nut being threaded beyond said recess for engagement with the threaded outer end of casing 1 so that when said nut is screwed inwardly the core 7 will be forced into binding engagement with the casing and held against turning.

A projection 10 extends longitudinally from the inner end of core 7 through the arcuate slot or opening 2 in the inner end of the casing 1 and is preferably made in the form of a plug having threaded engagement with said core to provide for its removal should this become necessary for any purpose. This plug 10 is designed to move in the arcuate slot 2 on the turning of the valve member 7 to insure the proper cleaning of said opening and prevent the accumulation of sediment therein, such as would tend to render the device inoperative.

From the above description it will be obvious that when the valve 7 is turned into the position shown in Fig. 1 with the bore 8 thereof registering with the opening 2 in the casing 1, that the steam in the boiler

will be permitted to pass freely through said bore into the gage cock which is mounted on the outer end of said valve 7. When it is desired for any reason to remove the gage cock, the nut 6 is loosened on casing 1 sufficiently to permit the valve 7 to turn in said casing and the valve is so turned as to cut off communication between the bore 8 therein and the opening 2 in the casing thereby shutting off the steam from the gage cock and permitting it to be detached and a new one substituted and the old one repaired or cleaned, and this may be done while the boiler is under full steam pressure.

It will be clearly seen that the plug 10 will operate by the turning of valve 7 to remove any accumulation of sediment in the arcuate opening 2 and should the bore 8 in said valve become clogged it may be readily cleaned out by turning the valve to cut off communication with the interior of the boiler and then inserting a cleanout rod or other instrument within said bore.

This cut-off valve while simple in construction and cheap to manufacture, may be quickly and readily applied to a boiler and the gage cock connected therewith, and when so connected will overcome all of the objectionable features heretofore pointed out.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the claimed invention.

I claim:

In a valve of the class described, an outer cylindrical casing open at one end and closed at the other with an arcuate slot formed in its closed end adjacent its periphery, an elongated core-like valve mounted to turn in said casing and projecting beyond one end thereof with a bore extending longitudinally therethrough at an oblique angle, one end of said bore being positioned to register with the slot in the casing when turned in one direction, a plug carried by said valve and projecting through said slot operable to prevent the accumulation of sediment within the slot and to limit the turning movement of the valve, the projecting portion of said valve having an annular collar thereon, a nut having an annular recess to receive said collar thereby producing a swiveled connection between said nut and valve, the nut having threaded engagement with said casing whereby the valve may be locked in adjusted position by the screwing of said nut on said casing and released on the unscrewing thereof.

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

MARVIN E. MALM.

Witnesses:

ELLEN C. MALM,

MARGARET E. DELTGEN.

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