P. WERTZ.

BLOW-OFF VALVE.

APPLICATION FILED FEB. 17, 1919.

1,394,657. Patented Oct. 25, 1921.

FIG. 1.

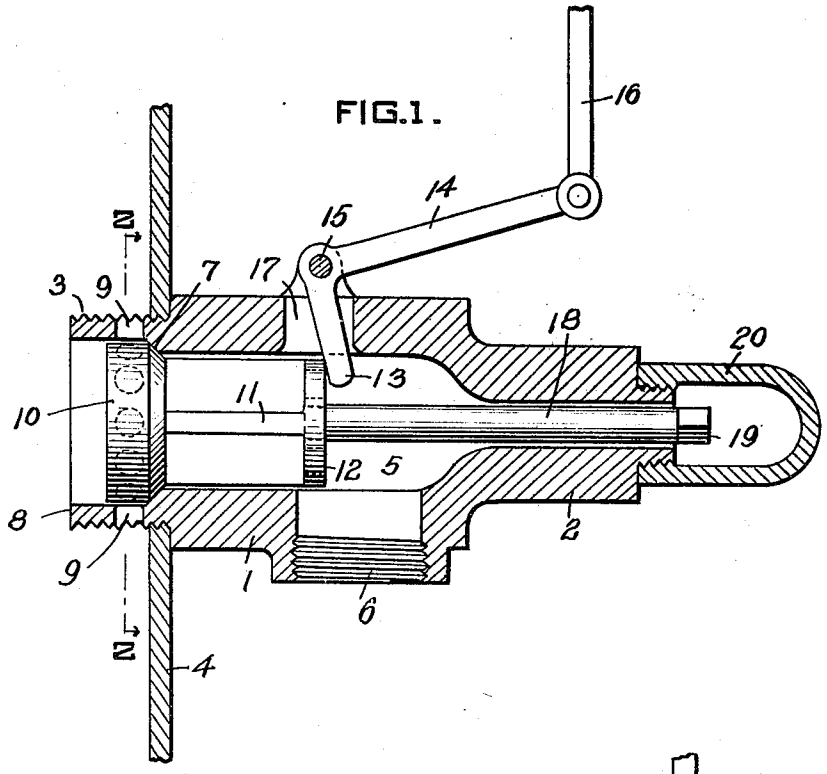


FIG. 2.

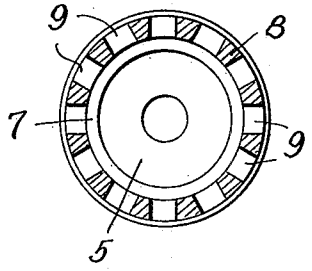
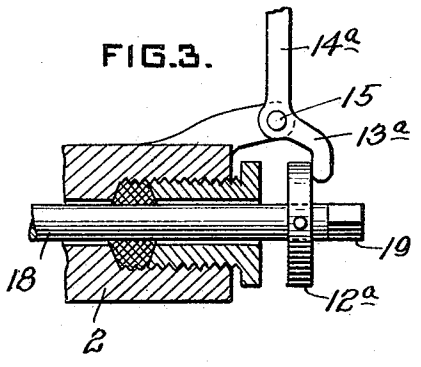


FIG. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

PETER WERTZ, OF PITTSBURGH, PENNSYLVANIA.

BLOW-OFF VALVE.

1,394,657. Specification of Letters Patent. Patented Oct. 25, 1921.

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To all whom it may concern:

Be it known that I, PETER WERTZ, a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Blow-Off Valves, of which the following is a specification.

This invention relates to blow off valves, blower valves or gage cocks, such as used on locomotive and other boilers.

The object of the invention is to provide a valve of the character specified which cannot clog, which can be readily kept from leaking, and one in which the valve and valve seat can be kept fitting perfectly tight without the necessity of removing the valve from the boiler or putting the boiler or locomotive out of commission.

The invention comprises the construction and arrangement of parts hereinafter described and claimed.

In the accompanying drawing Figure 1 is a longitudinal section through the valve arranged as a blow off valve; Fig. 2 is a transverse section on the line 2—2 of Fig. 1; and Fig. 3 is a detail view showing a modification.

In the drawing, 1 indicates the casing of the valve, which is of general cylindrical form having a reduced outer end 2, and having its inner end provided with suitable means, such as the threads 3, for attaching it to the boiler or other structure. 4 indicates the boiler sheet showing the valve attached thereto to serve as a blow off valve. Interiorly the valve is provided with a substantially cylindrical chamber 5 opening through the inner end of the casing and communicating with a side opening 6 through which the muddy water and other deposit from the boiler is blown. At the inner end of the casing interiorly is a valve seat 7, and said end of the casing has an extension 8 of larger dimension internally than the valve seat and projecting beyond the same, said extension being provided with a transverse opening or openings 9 which communicate with the interior of the boiler.

In the chamber 5 is a reciprocating valve comprising the disk shaped valve 10 coöperating with the seat 7 and having guiding wings or extensions 11 fitting in the cylindrical chamber 5 and provided toward their outer ends with an annular shoulder 12 which is arranged to be engaged by the inner end 13 of the operating lever 14, fulcrumed to the casing at 15 and having its longer arm arranged to have connected thereto any suitable operating connector, such as a rod 16. The casing 1 is provided with a slot 17 to admit the lever arm 13. It is apparent that the pressure within the boiler keeps the valve 10 closed against the seat 7, and that by actuating the lever 14 said valve will be pushed inwardly, thus allowing the mud and other deposits of the boiler to be blown out through the side opening 6. When the valve is open the mud and deposit must enter through the transverse holes 9 so that large solid pieces cannot enter the valve and get between the valve and its seat, thus obviating any possibility of accidentally locking the valve against closing and preventing leakage for this reason.

The valve is provided with a stem 18 which extends through the outer end of the casing and has its outer end squared, as shown at 19, or otherwise formed to receive a suitable wrench by means of which the valve can be rotated to grind it on its seat, in case ordinary wear causes it to leak. This obviously can be done while full pressure is on the boiler, as the valve is automatically held against its seat so that the grinding-in can be accomplished without danger of scalding the workmen. A stuffing box, if desired, may be provided around the outer end of stem 18, or other means provided for preventing leakage at this point. As shown, a cap 20 is threaded onto the outer end of the casing and forms a tight closure therefor.

The valve described is of simple construction, prevents clogging, automatically seats the valve, and the valve can be ground-in without putting the boiler out of commission and without taking the valve out of the boiler sheet. Consequently, the cost of keeping the valve in perfect condition is very greatly reduced as compared with such valves as at present constructed.

Fig. 3 shows a modification showing a stuffing box 21 at the outer end of the casing, surrounding the valve stem 18, and in which the annular shoulder is a collar 12^a pinned to the valve stem and with the lever 13^a 14^a modified in form to suit the different arrangement of parts.

The valve described can also be used as a blower valve, in which case the valve casing is threaded into an opening in the boiler to connect with the steam space therein, and has its side opening 6 connected to the stack

of the locomotive. For this purpose slight changes in the shape of the parts may be necessary but the general construction and mode of operation will be identical with that illustrated and described. It can also be used as a gage cock, in which use its inner end will communicate with the boiler or other vessel whose liquid content is to be gaged, while the side opening 6 will communicate with the glass of the gage.

I claim:

A valve for the purpose described, comprising a casing provided with a continuous passage therethrough from end-to-end thereof, a valve seat formed in the casing adjacent to its inner end, a disk valve coöperating with said seat, a stem secured to said valve and extending beyond the outer end of said passage and provided with a laterally projecting shoulder, an operating lever pivotally connected to the casing and having an arm engaging said shoulder, a portion of the casing projecting inwardly beyond the valve seat and surrounding the valve and provided with transverse inlet openings, the inner end of the casing being open and placing the rear end of the valve in communication with the pressure fluid controlled by the valve, and a member closing the outer end of the casing.

In testimony whereof, I have hereunto set my hand.

PETER WERTZ.

Witness:

J. A. GIBSON.