W. M. TOLLES.

BLOW-OFF VALVE.

APPLICATION FILED JUNE 6, 1908.

911,782. Patented Feb. 9, 1909.

Fig. 1.

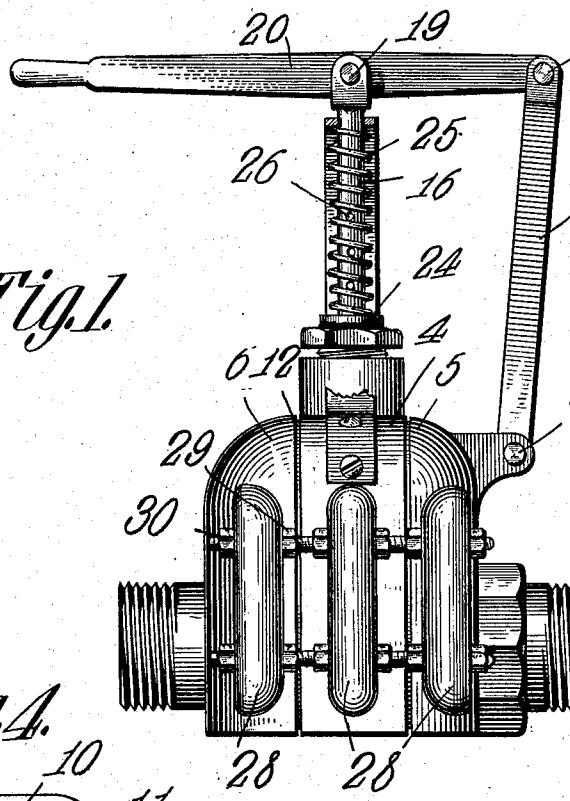


Fig. 3.

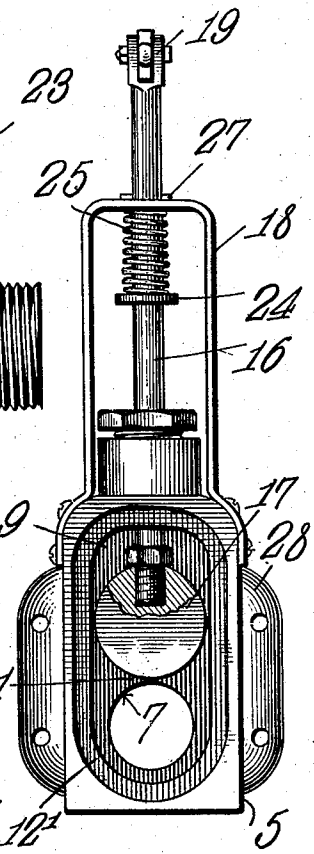


Fig. 4.

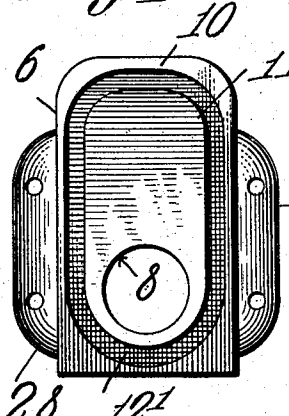
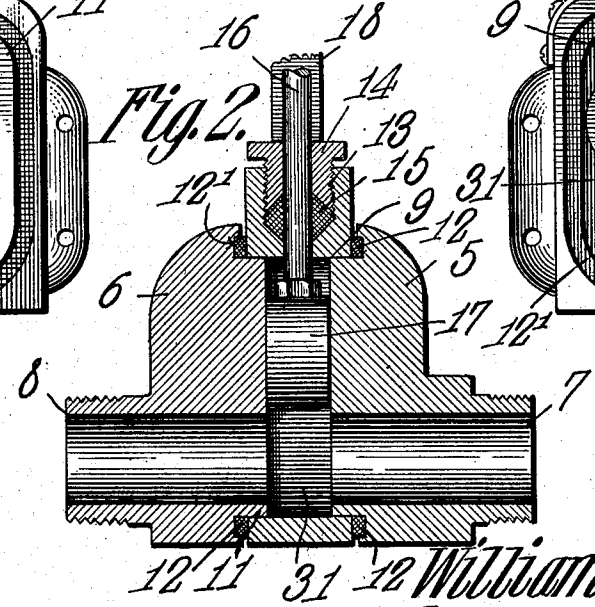


Fig. 2.



Witnesses

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BLOW-OFF VALVE.

No. 911,782. Specification of Letters Patent. Patented Feb. 9, 1909.

Application filed June 5, 1908. Serial No. 436,944.

To all whom it may concern:

Be it known that I, WILLIAM M. TOLLES, a citizen of the United States, residing at East Toledo, in the county of Lucas and State of Ohio, have invented a new and useful Blow-Off Valve, of which the following is a specification.

This invention relates to blow off valves for steam boilers and the like and has for its object generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claim.

In the accompanying drawings forming a part of this specification: Figure 1 is a side elevation of a blow off valve constructed in accordance with my invention. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a front elevation with one of the casing sections removed. Fig. 4 is a front elevation of the other casing section.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved blow off valve forming the subject matter of the present invention comprises a casing, preferably formed in three sections 4, 5 and 6, the side sections 5 and 6 being provided with inlet and discharge ports 7 and 8, the walls of which are extended laterally and threaded exteriorly for detachable connection with a boiler and exhaust pipe, respectively. The intermediate section 4 is provided with a recess constituting a valve chamber 9, while the opposite side sections 5 and 6 are each provided with a rabbeted edge 10 defining a reduced extension 11 adapted to enter the valve chamber and bear against the interior walls thereof, as best shown in Fig. 2 of the drawings, there being suitable gaskets 12 seated in grooves or channels 12′ in the rabbeted edges 10 of the sections 5 and 6 and bearing against the adjacent side faces of the intermediate section 4 thereby to prevent leakage between the parts. The upper portion of the intermediate section 4 is provided with a threaded opening 13 which receives a correspondingly threaded gland 14, the latter being arranged to bear against a suitable packing 15 seated in the opening 13 and surrounding the valve stem 16. One end of the stem 16 is threaded for detachable connection with the valve 17, while the opposite end thereof extends through an opening formed in a yoke 18 and is provided with a bifurcated terminal 19 for pivotal connection with the intermediate portion of an operating lever 20. One end of the operating lever 20 is reduced to form a handle, while the opposite end thereof is pivotally connected at 21 with the adjacent end of a link 22. The opposite end of the link 22 is pivotally mounted at 23 on an ear or lug extending laterally from the side section 5. The operating lever 20 and lug 23 are preferably employed when the valve is used as a cut off valve for water mains, but when the device is used as a blow off valve these parts may be dispensed with.

Interposed between the top of the yoke 18 and a collar 24 on the valve stem is a coiled spring 25, the normal tendency of which is to yieldably support the valve 17 in closed position. The valve stem is provided with one or more openings 26 adapted to receive a pin or suitable fastening device 27 by means of which the tension of the spring may be regulated at will, said pin by engagement with the upper end of the yoke also serving to lock the valve in open position, as best shown in Fig. 3 of the drawing.

Extending laterally from the exterior walls of the casing sections 4, 5 and 6 are lugs 28 having alined openings formed therein for the reception of bolts or similar fastening devices 29. Suitable clamping nuts 30 engage the threaded walls of the bolts and bear against the opposite faces of the adjacent lugs 28 so that the casing sections may be securely clamped together and thus prevent leakage. By arranging the clamping nuts in the manner described, the side sections 5 and 6 may be adjusted laterally with respect to the intermediate section 4 and securely locked in adjusted position, thereby to compensate for any wear on the valve and also to prevent undue friction between the valve and casing sections.

Attention is here called to the fact that the opposite interior walls of the casing sections 5 and 6 are disposed parallel with each other and parallel with the adjacent side faces of the valve 17 to assist in preventing wedging action between the parts and thus facilitate movement of the valve. It will also be noted that when the valve is in open position the latter extends above the upper wall of

the valve seat 31 so as not to offer any obstruction to the passage of the water from the boiler and thus prevent the accumulation of slime, mud and other foreign deposits at said valve seat when blowing off the boiler.

By forming the valve casing in two sections the same may be readily separated so as to expose the valve chamber and valve should for any reason the latter need repairing.

While the device is principally designed for use as a blow off cock for locomotive boilers it is obvious that the same may be used with equally good results as a gate or water valve.

Having thus described the invention what is claimed is:

A blow off valve comprising a casing having inlet and discharge ports and including intermediate and side sections, the walls of the side sections at the ports being extended laterally and threaded exteriorly for connection with a steam boiler and exhaust pipe, respectively, the intermediate section being provided with a recess constituting a valve chamber and the side sections formed with rabbeted edges defining reduced extensions adapted to partially enter the valve chamber, a yoke secured to the intermediate section and having an opening formed therein, a valve operating within the chamber, a stem having one end thereof secured to the valve and its opposite end extended through the opening in the yoke, there being a plurality of transverse apertures formed in the stem, an operating lever pivotally connected with the upper end of the valve stem, a collar secured to the stem, a coiled spring interposed between the collar and yoke, and a pin adapted to enter one of the apertures in the stem for regulating the tension of the spring, said pin by engagement with the upper end of the yoke also serving to lock the valve in open position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM M. TOLLES.

Witnesses:
A. W. PAYNE,
HARVEY LEVISON.