M. S. WILCOX.

VALVE.

APPLICATION FILED FEB. 21, 1907.

900,811. Patented Oct. 13, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

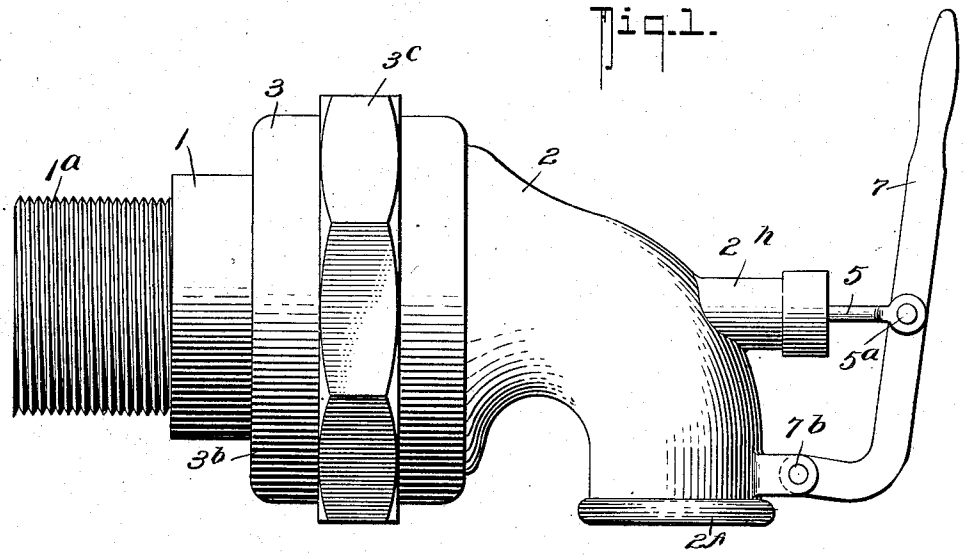
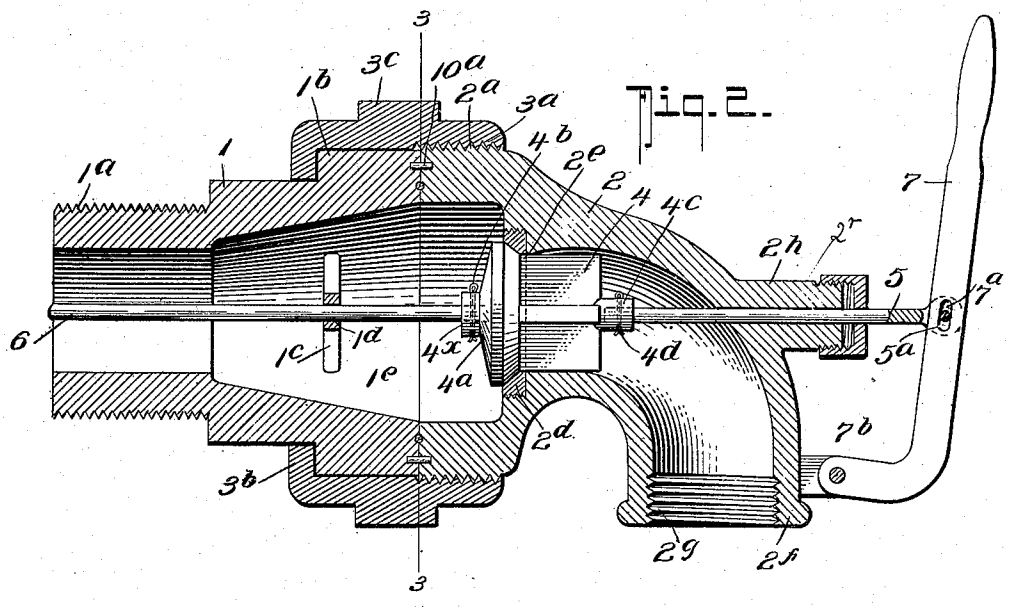


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

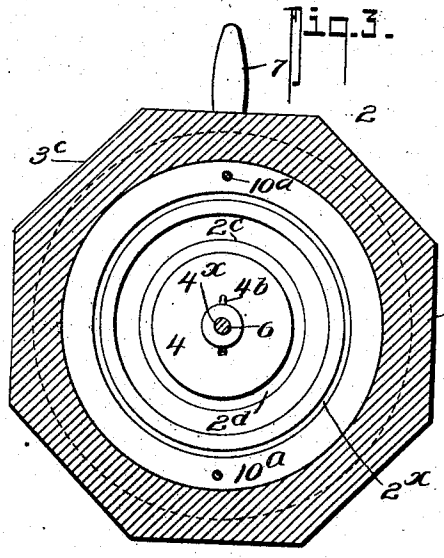


Fig. 4.

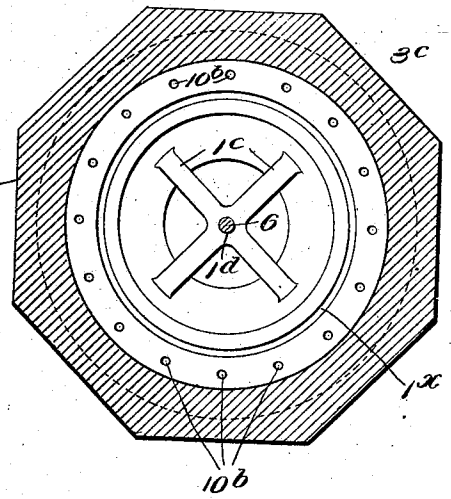


Fig. 5.

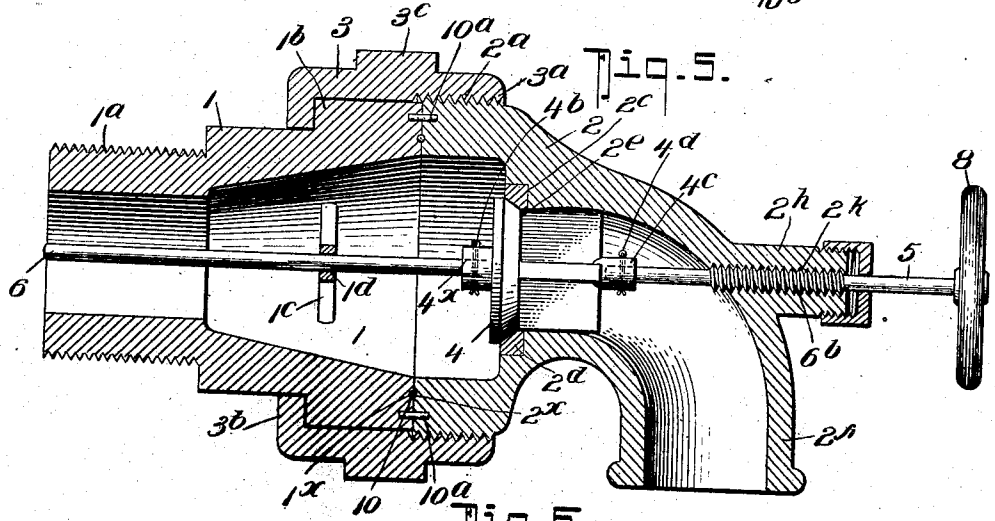
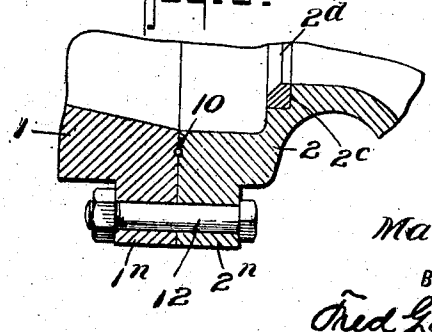


Fig. 6.



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UNITED STATES PATENT OFFICE.

MARTIN S. WILCOX, OF MIDDLEPORT, OHIO.

VALVE.

No. 900,811. Specification of Letters Patent. Patented Oct. 13, 1908.

Application filed February 21, 1907. Serial No. 358,618.

To all whom it may concern:

Be it known that I, MARTIN S. WILCOX, residing at Middleport, in the county of Meigs and State of Ohio, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to certain new and useful improvements in valves, and it more particularly relates to valves for use on boilers or tanks, and it primarily has for its object to provide such a valve which is particularly adapted for use as a blow-off valve, and is of such design and construction as to be easily and cheaply manufactured and which will readily and effectively serve its intended purposes.

Generically my improved valve comprises a front and back sectional valve casing and means for coupling the sections together, the back section having means whereby it may be attached to the boiler or tank and the front section having a removable valve seat to coöperate with the valve proper, while the back section has a web through which a valve guide rod passes. A stuffing box is formed on the front section through which the valve stem passes and joins with the operating mechanism.

In its more detail nature my invention includes certain novel construction, combination and arrangement of parts, all of which will be first described in detail, and then be specifically pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1, is a side elevation of my invention. Fig. 2, is a central, vertical longitudinal section thereof. Fig. 3, is a cross section on the line 3—3 of Fig. 2, looking toward the front section. Fig. 4, is a similar view on the same line looking toward the back section. Fig. 5, is a central, vertical longitudinal section of a modified form of my invention. Fig. 6, is a detail view of a modified form of my invention, showing the modified arrangement for joining the casing sections.

Referring now to the accompanying drawings, in which like letters and numbers of reference indicate like parts in all of the figures, 1 designates the rear section of the valve casing which comprises a threaded end 1^a to screw into the boiler aperture, the flange 1^b and the internal web 1^c within the fluid passage 1^e, as shown. The web 1^c has a bearing aperture 1^d to permit passage of the valve guide rod 6 hereinafter again referred to. The front section 2 has a threaded end 2^a to correspond with the flange 1^b of the rear section 1 and to coöperate with the union 3 whose flange 3^b abuts the flange 1^b and whose internally threaded end 3^a cooperates with the threaded end 2^a of the section 2. A nut portion 3^c is provided on the union 3.

Each section 1 and 2 has its abutting face formed with a shallow annular groove 1^x—2^x to receive a washer 10 which may be in the nature of a copper or other soft metal wire and the two sections are further locked together from turning with respect to one another by dowel pins 10^a. One section is provided with a series of dowel pin receiving apertures 10^b to enable the sections to be relatively rotated to adjust them to any desired position.

The front section 2 has a passage 2^e and a valve seat or socket 2^c to receive the valve seat 2^d which may be held therein by friction, as shown in Fig. 5, or by threading the socket and seat together, as shown in Fig. 2.

2^f designates the spout portion of the front section 2 whose mouth may be threaded as at 2^g if desired to receive an off-take pipe, not shown.

The valve 4 is preferably of the winged type and has a center boss projecting from its rear face, which boss has a bore 4^x to receive the end of the rod 6 which is secured in place by a pin 4^b or otherwise. At the front the valve 4 has a second boss 4^c likewise apertured to receive the valve stem 5 which, like the rod 6, is secured to the valve by a pin 4^d, as indicated.

The stem 5 passes through the projection 2^h which has an aperture 2^r for the stem, the stem being pivoted to the operating lever 7 by a pin 5^a which passes through an elongated slot 7^a in the lever 7, the lever 7 being pivoted at 7^b to lug projecting from the spout portion of the section 2.

Instead of securing the stem 5 to the lever 7 to be operated as a push stem, and as shown in Fig. 1, the arrangement shown in Fig. 5 may be adopted, *i. e.*, the stem 5 may be threaded as at 6^b and the projection 2^h also threaded to coöperate with the threaded portion 6^b of the stem 6, and a hand wheel 8 may be secured on the stem whereby the same may be turned to seat or unseat the valve as the case may be.

If desired the valve 4 may be coned as at 4^a on its rear face, (see Fig. 1) to enable it to

be readily opened against fluid pressure, and when the form of my invention shown in Fig. 1 is used the valve will automatically seat itself by fluid pressure.

By providing the rod 6 as shown and described should any mud or sediment lodge at the rear of the web 1^c or at the opening of the chamber 1^e in the rear section 1, the movement of opening and closing of the valve will cause the rod 6 to reciprocate and thereby loosen the sediment and permit the same to blow out. The web 1^c also serves to limit the movement of the valve 4 when being opened and prevents its being totally withdrawn from its seat.

From the foregoing description taken in connection with the accompanying drawings it is thought that the complete construction, operation and numerous advantages of my invention will be readily understood by those skilled in the art to which the invention appertains, and it will furthermore be seen that I have provided a valve of a very simple and effective construction in which the parts can be easily repaired when necessary, by simply loosening the union 3 to release the front section when the parts may be separated and the valve seat (and the valve if necessary) may be easily taken apart and renewed.

What I claim:—

1. A valve comprising a sectional casing, means for removably securing the sections together, packing devices for the joint between said sections, the first section having a fixed web and the second section having a valve seat, a valve held in said second section to coöperate with the valve seat, a valve guide rod removably secured to said valve and passing through a bearing aperture in said web member and projecting through the first section, a valve stem secured to the rod and projecting through an aperture in the second section, said second section having a projection surrounding said valve stem, and means for operating the valve.

2. A valve comprising a sectional casing, means for removably securing the sections together, packing devices for the joint between said sections, the first section having a fixed web and the second section having a valve seat, a valve held in said second section to coöperate with the valve seat, a valve guide rod secured to said valve and passing through a bearing aperture in said web and projecting through the first section, a valve stem secured to the valve and projecting through an aperture in the second section, said second section having a projection surrounding said valve stem, means for operating the valve, said valve operating means comprising a pivoted lever and means for pivotally connecting the lever to the valve stem.

3. A valve comprising a casing formed of two sections removably secured together, the first section having an internal apertured web, the second section having a valve seat receiving portion, a valve seat removably held therein, a valve held in said second section to coöperate with the valve seat, a supporting rod secured to the valve and passing through the apertured web and through the first section, said second section having an apertured projection, a valve stem secured to the valve and passing through the aperture in said second section projection, and means for operating said valve.

4. A valve comprising a casing formed of two sections removably secured together, the first section having an internal apertured web, the second section having a valve seat receiving portion, a valve seat removably held therein, a valve held in said second section to operate with the valve seat, a supporting rod secured to the valve and passing through the apertured web and through the first section, said second section having an apertured projection, a valve stem secured to the valve and passing through the aperture in the said second section projection, means for operating said valve, said means comprising a lever pivotally secured to the valve stem and to the second section of the valve casing.

5. A valve comprising a casing formed of two sections removably secured together, the first section having an internal apertured web, the second section having a valve seat receiving portion, a valve seat removably held therein, a valve held in said second section to coöperate with the valve seat, a supporting rod secured to the valve and passing through the apertured web and through the first section, said second section having an apertured projection, a valve stem secured to the valve and passing through the aperture in the said second section projection, means for operating said valve, said means comprising a lever pivotally secured to the valve stem and to the second section of the valve casing, said valve casing sections having their abutting faces provided with coincident annular grooves and a packing wire adapted to be held in said grooves.

6. A valve comprising a casing formed of two sections removably secured together, the first section having an internal apertured web, the second section having a valve seat receiving portion, a valve seat removably held therein, a valve held in said second section to coöperate with the valve seat, a supporting rod secured to the valve and passing through the apertured web and through the first section, said second section having an apertured projection, a valve stem secured to the valve and passing through the aperture in the said second section projection, means for operating said valve, said means comprising a lever pivotally secured to the valve stem and to the second section of the

valve casing, said valve casing sections having their abutting faces provided with coincident annular grooves and a packing wire adapted to be held in said grooves; and dowel pins connecting said sections together, one of said sections having a series of dowel pin receiving apertures.

7. A valve comprising a two-part casing, having abutting faces and internal chambers, packing means between said abutting faces and means for removably securing the two parts of the casing together, a valve held within said casing, said valve comprising a seat engaging portion and crossed wings and having a rod receiving socket projecting from each end, a valve stem removably secured in one of said sockets and projecting through one casing section, means for operating said valve stem, and a guide rod secured to the other socket and projecting through an apertured web in the other casing section, substantially as shown and described.

MARTIN S. WILCOX.

Witnesses:
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EBEN HYSEL.