

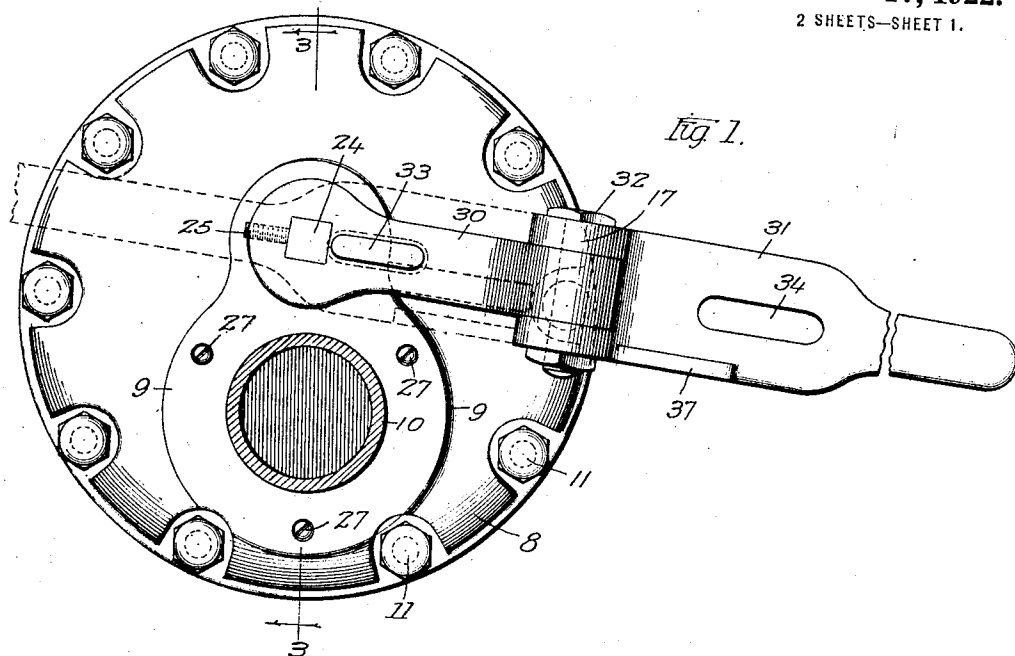
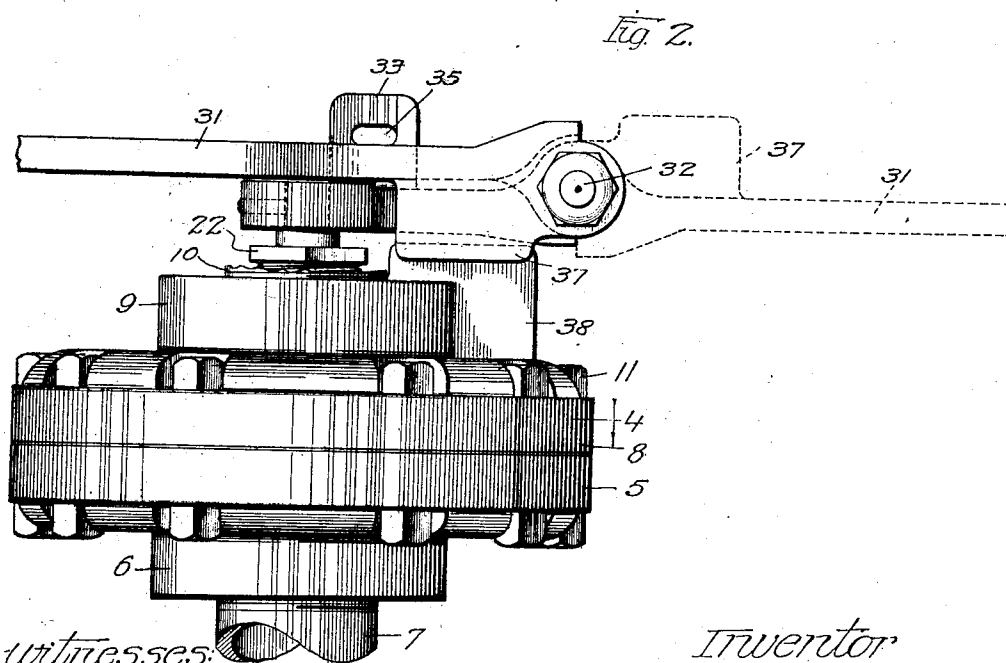
L. R. JONES.
VALVE.

APPLICATION FILED MAR. 6, 1919; RENEWED OCT. 27, 1921.

1,404,028.

Patented Jan. 17, 1922.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 3.

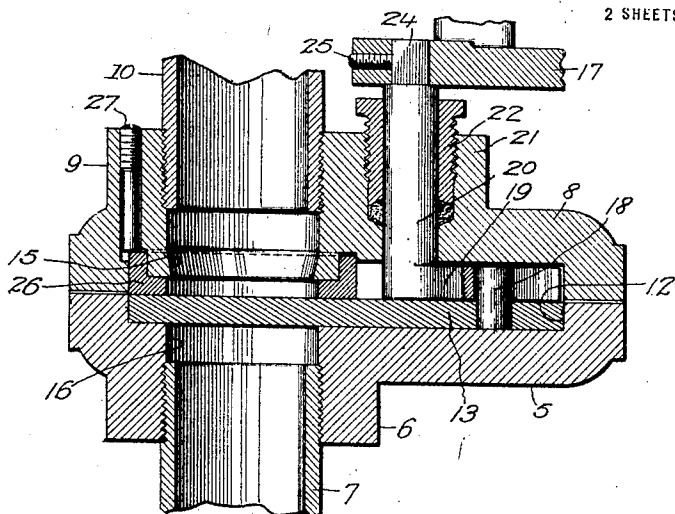
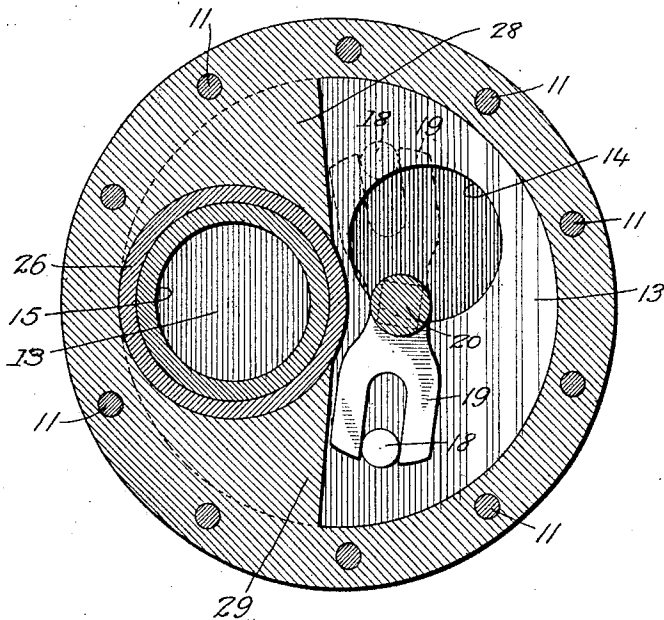


Fig. 4.



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UNITED STATES PATENT OFFICE.

LAWRENCE R. JONES, OF PERU, ILLINOIS.

VALVE.

1,404,028.

Specification of Letters Patent. Patented Jan. 17, 1922.

Application filed March 6, 1919, Serial No. 281,028. Renewed October 27, 1921. Serial No. 510,887.

To all whom it may concern:

Be it known that I, LAWRENCE R. JONES, a citizen of the United States, residing at Peru, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to improvements in valves.

One of the objects of my invention is generally to improve valves of the type herein disclosed.

Other objects are to provide a valve, subject to the balancing effect of back pressure in all positions of operation; which gradually opens and closes the valve port, thereby preventing explosive rush of steam while the valve is being opened; which provides an unobstructed port when open, permitting a straight blow; which possesses a continuous self-grinding valve seat, adjustable with respect to the valve; and leverage construction, between the valve plate and the operating handle, rendering the movement of the valve easy, after long continued use.

Probably the most trying situation in which a valve may be placed is when used as a blow-off, or mud valve for a steam boiler.

It is placed in a lower leg or drum of a steam boiler, in which the mud and sediment accumulates. To fashion a valve that will permit ready opening and closing; which will close tightly after the mud and grit has been blown out of the boiler through the valve port, and one which is sufficiently durable to withstand the hard use and abuse to which it is subjected, has taxed the ingenuity of engineers. Not only corrosion and sediment attacks the surfaces, resists and clogs the moving parts, but the moisture and heat produce electrolytic decomposition of the metal, in course of time, tending to cause leaks, hence self-facing and accurate adjustment are features that contribute to longevity of the working parts, and preserve the integrity of the structure.

Another feature of my invention is the advantages attained by the relatively long sweep of the handle, with reference to the movement of the valve, and the positive stop on each side of the cycle of operation of the handle, whereby to indicate when the valve is opened and closed.

Other, further and more specific objects of my invention will become readily apparent, to persons skilled in the art, from a

consideration of the description when taken in conjunction with the drawings, wherein:

Fig. 1 is a plan view of the valve showing the two part handle extended, ready for operation.

Fig. 2 is an elevation of the valve showing the handle folded over, ready to be locked, and showing it extended in dotted lines.

Fig. 3 is a section taken on line 3—3 of Fig. 1.

Fig. 4 is a section taken on line 4—4 of Fig. 2.

In all the views the same reference characters are employed to indicate similar parts.

5 is the lower part of the two part valve casing; providing a hub 6, screw threaded for a connecting pipe 7, and 8 is the upper portion of the casing providing a hub 9 for a pipe 10. The casing members are held together by bolts or cap screws 11. The casing member 5 is provided with an annular recess 12 to contain an annular valve plate, or disc 13. The valve plate is provided with an annular orifice 14, or valve port, that registers with the orifices 15 and 16 provided in the casing members 8 and 5, respectively.

In Fig. 4 the valve is shown closed, because the orifice 14 of the plate 13, does not register with the openings 15 and 16. Now when it is desirable to open the valve, it is only necessary to rotate the plate 13, and this is done by means of a handle 17. The plate 13 is provided with a laterally projecting stud 18 enclosed by a bifurcated arm 19 which is secured to, or is a part of the stem 20. The stem passes through a stuffing box 21 provided in the upper casing member 8, in which the packing is held around the stem by the rotatable gland 22. The upper end of the stem 20 is squared, preferably, as at 24, and the handle 17 is secured thereto, as by a screw 25. In the casing member 8, is an annular-flanged, valve-seat 26, and passing axially through the hub 9 are adjusting screws 27. These screws are adapted to adjust the valve 26 into close intimate contact with the valve plate 13. When the casing members 5 and 8 are separated, the adjustable valve seat 26 is easily insertable in an annular groove made into the casing member 8, after which it may be adjusted in position by turning the screws 27. Valve plate 13 is turned to closed position, then the bifurcated arm 19 which moves it, occupies its open position shown in dotted lines in Fig. 4, at which time the port 14 in the

valve plate 13 will register with the axially arranged openings 15 and 16, through the casing, and the arm 19 will be brought into contact with the positive stop or wall 28, whereas when the valve is rotated to closed position, the arm 19 will make contact with the positive stop or wall 29, and by this means the handle, at the terminal of each reciprocating movement, is positively stopped, which indicates to the operator that the valve is either fully closed or fully opened in accordance with the relative position of the handle.

The handle is made of two members, the member 30 and the member 31, the latter being hinged to the former, as at 32. The member 30 is provided with a staple or hasp 33, and the member 31 is provided with an opening 34, to receive the hasp. In folded position a lock may be placed in the opening 35 of the hasp, and thereby prevent the member 31 of the handle from being moved back to the dotted line position, shown in Fig. 2, thereby preventing the valve from being operated by unauthorized persons. The handle member 31 is also provided with a blade 37 which, when in folded position is behind a similar blade 38, projecting upwardly from the casing member 8, and therefore when the handle is in the position shown in Fig. 1, and folded over, as shown in Fig. 2, the valve cannot be opened until the handle members have been separated and extended.

While I have herein shown a single embodiment of my invention, for the purpose of clear disclosure, it will be manifest to persons skilled in the art, that considerable variation may be made in the general configuration and arrangement of the parts within the scope of the appended claims.

Having described my invention, what I claim is:

1. A valve structure having in combination a two-part casing, each casing part having a valve port for register with the port of the other part, one said casing part having a circular recess; a rotatable circular disc valve plate having a port registerable with the casing ports and located wholly within said circular recesses; a lever for rotating said plate to open and close said ports and positive means, within the casing, to stop the rotation of the plate.

2. A valve having in combination a two part casing providing registering straight-away ports; a circular rotatable valve plate between said ports, having a port adapted to register with the casing ports, when the plate is rotated; a valve seat surrounding the port of one casing part, adjustable toward and from the valve plate; means outside of the casing to adjust said valve seat; a stem passing through one casing part; arms between said casing parts; a pin extending from one side of the said plate between said arms; a wall between said casing parts, affording a positive stop for the said arm; a two part hinged-together handle, secured to the said stem, to rotate the valve plate, and means, afforded by one part of the handle to prevent movement of the valve when the two parts of the handle are folded together.

3. A valve having in combination a two part casing provided with registering straight-away ports; a rotatable valve plate having a valve port for register with said casing ports and located between said casing parts; a stem extending through one casing part, connected to said valve plate; a two-part foldable handle, secured to said stem, and a positive stop member on said casing part and a similar cooperating member of the folded part of the handle to prevent rotation of the valve plate when the handle is folded.

4. A valve having in combination a two part casing provided with registering straight-away ports; and a circular depression to receive a valve plate; a rotatable valve plate having a valve port for register with said casing ports and located between and guided by said casing parts; a stem extending through one casing part, connected to said valve plate; a two-part foldable handle, secured to said stem; a positive stop member on said casing part and a similar cooperating member on the folded part of the handle to prevent rotation of the valve plate when the handle is folded and a lock to prevent rotation of the valve plate when the handle is folded and means adapted to receive a lock to prevent unfolding the handle parts.

In testimony whereof I hereunto subscribe my name.

LAWRENCE R. JONES.