

No. 866,906.

PATENTED SEPT. 24, 1907.

J. H. BERRY.
VALVE.

APPLICATION FILED JAN. 29, 1907.

Fig. 1.

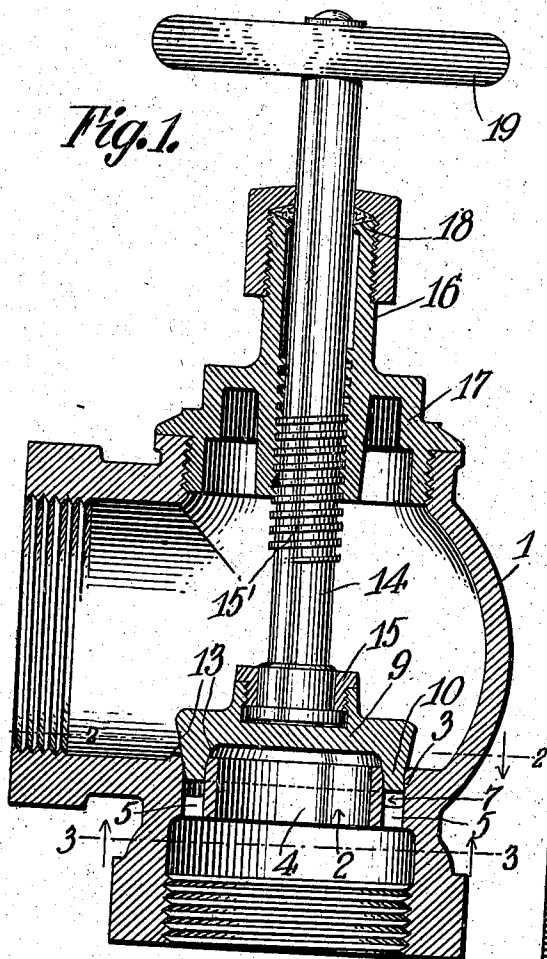


Fig. 2.

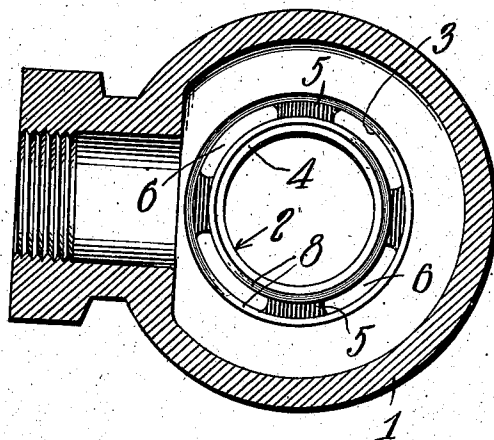


Fig. 3.

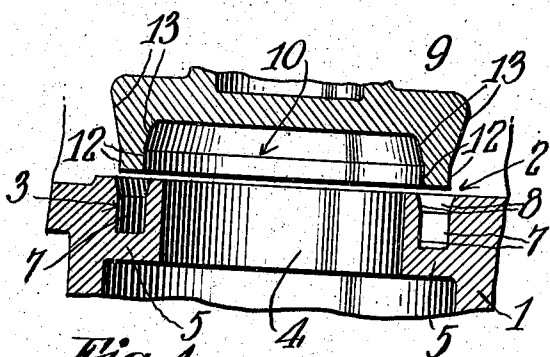
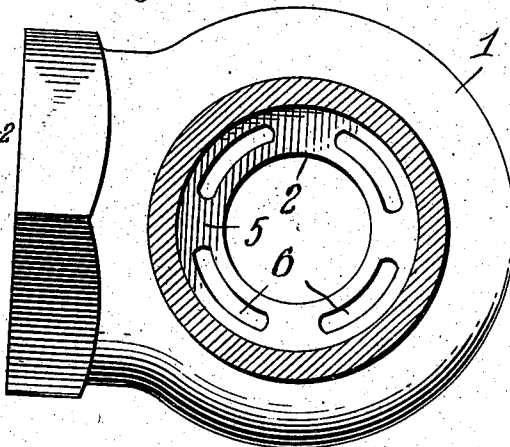


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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VALVE.

No. 866,908.

Specification of Letters Patent.

Patented Sept. 24, 1907.

Application filed January 29, 1907. Serial No. 354,743.

To all whom it may concern:

Be it known that I, JOHN H. BERRY, a citizen of the United States, residing at Mansfield, in the county of Richland and State of Ohio, have invented certain new and useful Improvements in Valves; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in reciprocating valves.

The object of the invention is to provide a valve of this character, the construction of which affords a firm and tight engagement with its seat when closed thereon.

A further object is to construct a valve seat in such a manner as to prevent the accumulation of any dirt or foreign matter which might tend to clog or interfere with the operation of the valve.

With the above and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be hereinafter described and claimed.

In the accompanying drawings:—Figure 1 is a vertical sectional view through a valve constructed in accordance with the invention; Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1; Fig. 3 is a similar view, taken on the line 3—3 of Fig. 1 and looking toward the lower side of the valve-seat; Fig. 4 is a detail, vertical sectional view through a portion of the valve and seat, showing the valve in an open position.

Referring more particularly to the drawings, 1 denotes the valve casing, which may be of any suitable form, but which is here shown as an ordinary globe valve casing. In the casing 1 is arranged a valve seat 2, said seat comprising an outer annular bearing wall 3 and an inner bearing ring 4. The ring 4 is spaced from the outer bearing wall 3 and is connected thereto by a series of integral lugs 5, between which are formed discharge spaces or openings 6, through which any foreign matter may pass, thus preventing the clogging of the space between the bearing ring 4 and the adjacent outer bearing wall 3. The lower portion of the outer bearing wall 3 and the lower portion of the adjacent wall of the bearing ring 4 are straight and parallel with each other, as shown at 7, while the upper portion of said walls flare or are inclined outwardly in opposite directions, as shown at 8.

Adapted to be engaged with the seat 2 is a valve 9, said valve being cup-shaped or provided on its lower side with a depending annular flange 10. The inner and outer walls of the lower portion of the flange 10 are straight and parallel with each other, as shown at 12, while the upper portions of the flange are provided with outwardly-flaring or inclined walls 13. When

the valve is engaged with its seat, the straight lower walls of the flange 10 will engage the parallel walls 7 of the channel formed between the bearing ring 4 and the outer bearing wall 3 of the seat, while the upper outwardly-flared portion of the flange 10 will engage the outwardly flared or inclined portions 8 of said bearing walls of the seat, thus providing for a firm and tight engagement between the valve and its seat. The inclined portions of the walls of the seat will facilitate the removal and discharge of any accumulations of refuse by the flange 10 of the valve when engaged therewith, thus preventing the clogging of the valve or interfering with the operation of the same.

In the upper portion of the valve is formed an interiorly-threaded annular recess in which is adapted to be swiveled the lower flanged end of a valve stem 14. This stem 14 is secured in swiveled engagement with the valve by means of a flanged exteriorly-threaded sleeve 15, which is screwed into the threaded recess of the valve and into engagement with the flange on the inner end of the valve stem, as shown. The stem 14 is provided with coarse operating threads 15', which are adapted to be engaged with an interiorly-threaded sleeve or cylinder 16 formed on the cap 17, which is screwed into the upper open end of the valve casing, as shown. The upper end of the sleeve 16 is provided with a packing gland 18, through which the stem 14 works. The upper end of the stem 14 is here shown as being provided with a hand-wheel 19, by means of which the same is screwed inwardly or outwardly to close or open the valve.

A valve constructed as herein shown and described may be employed in any capacity where a valve of this character may be used, the same, however, being especially constructed for use as a blow-off valve for steam-boilers.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, as defined by the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent, is:—

1. The combination of a valve casing, a seat formed therein and comprising a pair of spaced side walls forming a continuous channel; lugs connecting said walls and spaced relatively to provide discharge openings leading from the valve seat, a valve formed to close on said seat and having a depending flange to enter the channel between the spaced walls.

2. The combination with a valve casing, of a seat formed therein and comprising a pair of spaced continuous

- walls provided with connecting lugs, said lugs being spaced relatively to provide discharge openings leading from the valve seat, and the walls having parallel lower portions and beveled upper portions, a valve arranged to close on said seat and having a depending flange to seat between said walls, said flange having the lower portion of its inner and outer faces parallel and the upper portion of said faces divergently inclined to conform to the beveled portions of the walls, and means for operating the valve.
- 10 3. The combination with a valve casing, of a seat formed therein, said seat comprising an outer annular bearing wall and an inner bearing ring spaced from said outer bearing wall to form an annular space or channel, integral lugs to connect said inner ring with the outer annular wall of the seat, said lugs forming openings or spaces between themselves for the discharge of refuse, and a valve adapted to be engaged with said seat, substantially as described.
- 15 4. The combination with a valve casing, of a seat formed therein, said seat comprising an outer annular bearing wall and an inner bearing ring spaced from said outer bearing wall to form an annular space or channel, integral lugs to connect said inner ring with the outer annular wall of the seat, said lugs forming openings or spaces between themselves for the discharge of refuse, and a valve having an annular bearing flange adapted to be engaged with said inner bearing ring and outer bearing wall, substantially as described.
- 20 5. The combination with a valve casing, of a seat formed therein, said seat comprising an outer annular bearing wall and an inner bearing ring spaced from said outer bearing wall to form an annular space or channel, the upper portion of said outer bearing wall and the adjacent wall of said bearing ring being beveled or flared outwardly and having parallel, perpendicular lower walls, integral spacing lugs to connect said inner ring with the outer annular wall of the seat, said lugs forming discharge openings between said parts of the seat, and a valve adapted to be engaged with the latter, substantially as described.
- 25 6. The combination with a valve casing, of a seat formed therein, said seat comprising an outer annular bearing wall and an inner bearing ring spaced from said outer bearing wall to form an annular space or channel, the upper portion of said outer bearing wall and the adjacent wall of said bearing ring being beveled or flared outwardly and having parallel, perpendicular lower walls, integral spacing lugs to connect said inner ring with the outer annular wall of the seat, said lugs forming discharge openings between said parts of the seat, and a valve having an annular bearing flange, the inner and outer walls of the lower end of which are straight and parallel, said walls flaring outwardly toward the upper end of the valve, substantially as described.
- 30 In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.
- JOHN H. BERRY.
- Witnesses:
H. E. BELL,
JERRY S. BOLLMAN.