D. F. McGILL.

VALVE.

APPLICATION FILED OCT. 12, 1915. RENEWED MAY 19, 1919.

1,325,303. Patented Dec. 16, 1919.

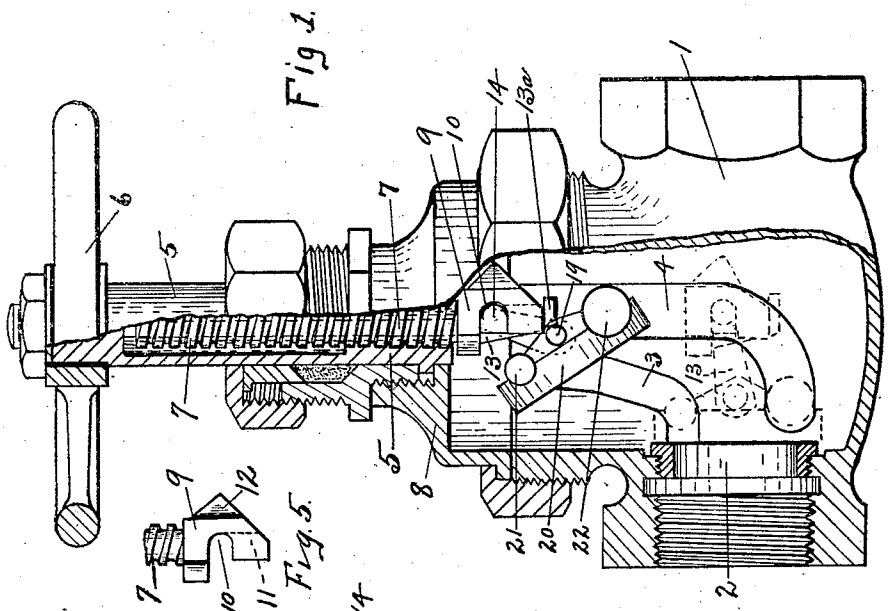


Fig. 1.

Fig. 5.

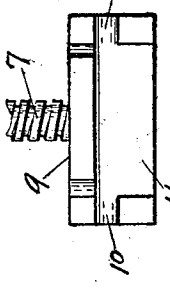


Fig. 4.

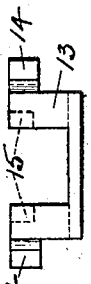


Fig. 6.

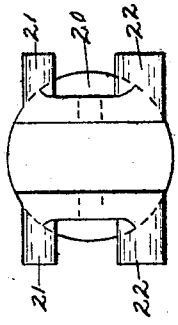


Fig. 3.

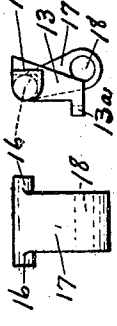


Fig. 8.

Fig. 7.

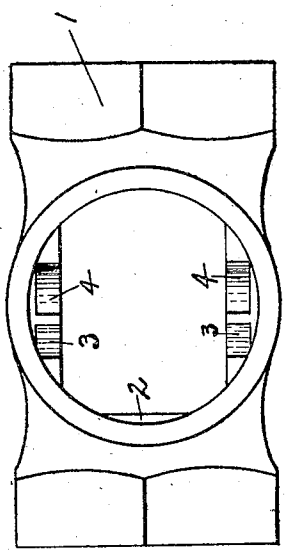


Fig. 2.

WITNESSES:

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VALVE.

1,325,303. Specification of Letters Patent. Patented Dec. 16, 1919.

Application filed October 12, 1915, Serial No. 55,535. Renewed May 19, 1919. Serial No. 298,347.

To all whom it may concern:

Be it known that I, DANIEL F. McGILL, a citizen of the United States, residing in the city of Portland, county of Multnomah, and State of Oregon, have invented certain new and useful Improvements in Valves, of which the following is a specification.

The principal object of my invention is to provide in combination with a valve body having a passageway therethrough, and a valve seat formed in said passageway, a valve member adapted to be moved up into the valve body and wholly out of the passageway through said valve body, whereby to give full clearance in said passageway through said valve body. In the present application I have provided an improved construction of valve member, with improved means for operating the same from its seated to its out-of-the-way positions.

In order that others may fully understand my invention, I have illustrated the same in the accompanying sheet of drawings, which I will now describe.

Figure 1 is a side elevation of a valve embodying my invention, with a portion broken out to show the interior construction and arrangement thereof;

Fig. 2 is a top plan view of the valve body with the top and valve mechanism removed;

Fig. 3 is a back view of the valve member,

Figs. 4 and 5 are fragmentary face and end views of the lower end of an operating stem for moving the valve member;

Fig. 6 is a detailed view of a part adapted to be set into the part shown in Figs. 4 and 5;

Fig. 7 is a connecting link member adapted to connect the part shown in Fig. 6, with the valve member shown in Fig. 3; and

Fig. 8 is an end view showing the parts shown in Figs. 6 and 7, as they are put together, and adapted to be set into the part shown in Figs. 4 and 5.

Referring now more in detail to the drawings, 1 designates a valve body, of globe valve type, having a passageway through the same longitudinally thereof. 2 designates a valve seat member screwed into the inside of said valve body, as clearly shown in Fig. 1, and forming an interchangeable valve seat therein. Said valve body is provided interiorly at opposite sides of said passageway with guideways 3 and 4, there being two of said guideways at each side of said valve body, as illustrated in Figs. 1 and 2, said guideways turning at their inner ends toward said valve seat, as clearly indicated in Fig. 1.

The upper portion of my valve member, as here shown, is constructed substantially like the present modern construction of such valves with the exception that I have provided an operating sleeve 5, provided at its upper end with an operating wheel or hand piece 6, and threaded interiorly to receive a screw member 7, said sleeve being seated at its lower end in a cap, or top, member 8, as clearly illustrated in Fig. 1. The lower end of said screw is provided with a head member 9, of substantially the form shown in Figs. 1, 4 and 5, and having the open sockets 10, at its opposite ends, and the cut-away portion 11, as indicated in Figs. 4 and 5, said head having a thickened portion, as at 12, to give it increased strength. The opposite ends of said head are adapted to move in the guideways 4—4, in the opposite sides of said valve member. A yoke member 13, shown in Figs. 6 and 8, and having the arms 14—14, is adapted to be set into the head 9, with the arms 14—14 seated in the sockets 10—10, said yoke being provided in its opposite sides with two sockets, as 15, adapted to receive the ears 16—16, of a link member 17, when said link member is placed therein, in the manner indicated in Fig. 8, said link member having an opening 18, in its lower end to which it is attached, as by means of a pin 19, to the valve member 20, shown in Figs. 1 and 3. The yoke 13, has a lip 13^a, across its lower side which fits under the lower edge of the head 9, in the manner indicated in Fig. 1. The valve member 20, is provided at each of its opposite sides with two laterally projecting lugs, 21 and 22, adapted to move, respectively, in the guideways 3 and 4, formed in the opposite sides of the interior wall of said valve member. Thus it will be seen that the parts connecting the valve member 20, with the head 9, upon the lower end of the screw 7, are readily detachable one from the other, and at the same time form a connection which will allow any necessary movement of the valve member 20, in order to make a perfect seat of said valve member 20, upon the valve seat 2, as indicated in dotted lines in Fig. 1.

It will also be noted that the screw 7, which carries the head 9, and the valve member 20, is adapted to be raised and lowered within the sleeve 5, as said sleeve 5 is turned

by means of the wheel, or hand member, 6, thus lifting the screw, as well as the valve member, wholly out of the passageway through the body of said valve and giving fullest possible clearance of said passageway through said valve body.

The operation of the device may be briefly described as follows: Assuming that the valve member 20, is in its raised and out-of-the-way position to fully open the passageway through said valve member, as shown in Fig. 1, by turning the wheel, or hand member, 6, and the sleeve 5, the screw is caused to move downwardly, moving the head 9, downwardly in the guideways 4—4, and also moving the valve member 20, downwardly, said valve member being guided by means of its lugs 21—21 and 22—22, moving respectively, in the guideways 3—3 and 4—4, until said valve member 20 is seated facewise, or flat-wise, upon the valve seat 2, clearly indicated in dotted lines in Fig. 1. The latter part of the movement of the head 9, downwardly, operates through the link 17, to force said valve member 20, on to the valve seat 2, said head being anchored in the guideways 4—4, at the point where said guideways commence to turn inwardly.

I am aware that changes in details can be made in the invention as here embodied for purposes of illustration, without departing from the spirit thereof, and I do not, therefore, limit the invention to the particular details here shown and described, except as I may be limited by the hereto appended claims.

I claim:

1. In a valve of the character referred to, a valve body having a passageway therethrough and a valve seat therein, a valve member adapted to said valve seat, a screw with means pivotally connecting its lower end to said valve member, means adapted to move said valve member backwardly away from said valve seat and then into a tilted position, a sleeve threaded interiorly and adapted to receive said screw for substantially its full length thereinto, said sleeve being rotatably mounted in the upper part of said valve body, and means for rotating said sleeve, whereby to cause said screw to move up into said sleeve and to move said valve member away from said valve seat.

2. In a valve of the character referred to, a valve casing with a passageway therethrough, a valve seat formed circumferentially thereof intermediate its ends, a valve member adapted to said valve seat to close said passageway, guiding means at opposite sides within said valve casing adapted to move said valve member backwardly away from its valve seat and then into a tilted position, said valve member having portions adapted to said guiding means, an operating screw connected to said valve member, a sleeve threaded interiorly and adapted to receive said screw for substantially its full length, said sleeve being rotatably mounted in the upper part of said valve casing, and means for turning said sleeve, whereby to cause said screw to be raised therein and to lift said valve member away from said valve seat and out of said passageway through said valve casing.

3. In a valve of the character referred to, a valve body having a passageway therethrough and a valve seat therein, a valve member adapted to said valve seat, an operating screw provided with a head, a yoke member detachably seated within said head and a link member pivotally detachably connecting said yoke to said valve member, and means operating on said screw to lift said valve member away from said valve seat.

4. In a valve of the character referred to, a valve body having a valve seat formed therein, a valve member adapted to said seat, means for causing a combination backward, tilting, and upward bodily, movement away from said valve seat, a screw mounted in the upper part of said valve body and provided with a head at its lower end, a yoke connected to said head and a link connecting said valve member to said yoke, a sleeve operating upon said screw and adapted to receive the same for substantially its full length, packing means around said sleeve, and means for turning said sleeve, whereby to raise said screw and to lift said valve member away from said valve seat.

5. In a valve of the character referred to, a valve casing having a passageway therethrough and a valve seat formed therein, a valve member adapted to said valve seat, interfitting guiding connections between said valve member and the sides of said valve casing, a screw provided with a head, a link connecting said valve member with said head, guiding means between the opposite ends of said head and the opposite sides of said valve casing, a sleeve rotatably mounted in said valve casing and threaded to receive said screw, for substantially its full length, and means for turning said sleeve, whereby to lift said screw up into said sleeve and to move said head and said valve member upwardly away from said valve seat and out of said passageway through said valve casing.

6. In a valve of the character referred to, a valve casing having a passageway therethrough and a valve seat formed therein and having guideways in its opposite sides turning toward said valve seat, a valve member adapted to said valve seat and having portions adapted to said guideways, a

screw mounted in the upper part of said valve casing provided at its lower end with a head adapted at its opposite ends to said guideways, means adjustably connecting said valve member to said head, a sleeve rotatably mounted in the upper part of said valve casing and threaded to receive said screw for substantially its full length, and means for rotating said sleeve, whereby to raise said screw within said sleeve and to lift said head and said valve member upwardly in said guideways, away from said valve seat and wholly out of the passageway through said valve casing, substantially as described.

Signed at Portland, Multnomah county, Oregon, this 7th day of October, 1915.

DANIEL F. McGILL.

In presence of—
ARTHUR LAIDLAW,
I. M. GRIFFIN.