

No. 775,929.

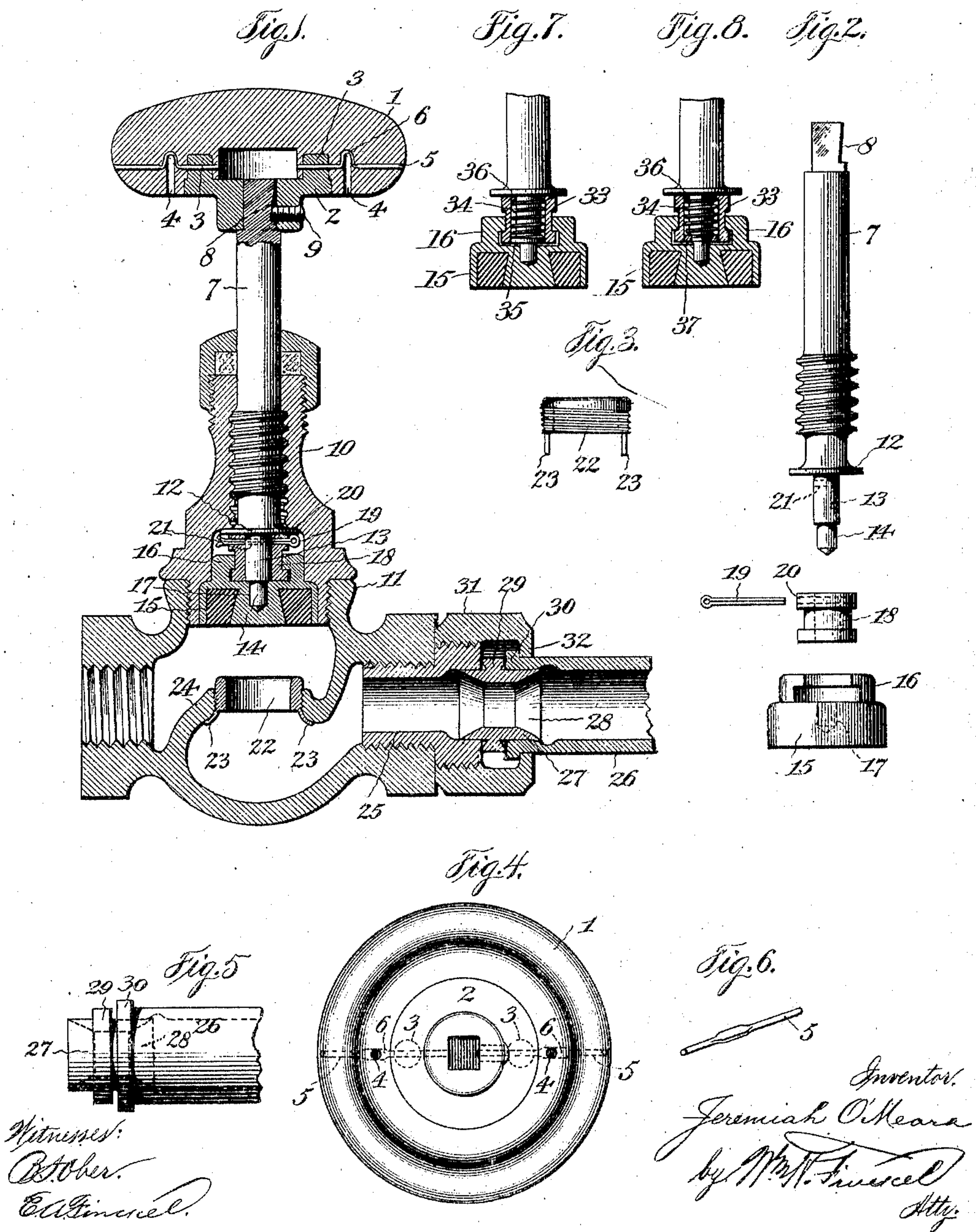
PATENTED NOV. 29, 1904.

J. O'MEARA.

VALVE.

APPLICATION FILED OCT. 26, 1903.

NO MODEL.



UNITED STATES PATENT OFFICE.

JEREMIAH O'MEARA, OF NEW YORK, N. Y.

VALVE.

SPECIFICATION forming part of Letters Patent No. 775,929, dated November 29, 1904.

Application filed October 26, 1903. Serial No. 178,449. (No model.)

To all whom it may concern:

Be it known that I, JEREMIAH O'MEARA, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Valves, of which the following is a full, clear, and exact description.

The object of this invention is to provide certain improvements in valves for use in steam, hot or cold water, chemical, and other fluid installations, whereby durability in the first instance is secured and repairs facilitated.

The invention comprises a knob or hand-wheel attaching device consisting of a socket-plate attached to the grip by wires, which are thereafter bent to prevent displacement, and the socket-plate is secured to the spindle by a lateral screw turned up into an undercut portion of the spindle. The spindle and the swivel plug or disk are connected by an arbor integral with the spindle and entering a socket in the disk and a flanged collar applied to said spindle and engaging the disk. The valve-seat is a removable screw-threaded bushing, secured in place against accidental displacement by lugs projecting from the bottom thereof and bent against the diaphragm in the valve-shell.

In the accompanying drawings, illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a vertical section illustrating a valve containing the several features of the invention. Fig. 2 is an elevation of the several parts of the spindle and disk connection detached. Fig. 3 is an elevation of the valve-seat detached. Fig. 4 is a bottom plan view of the knob or hand-wheel detached. Fig. 5 is an elevation of the coupling detached. Fig. 6 is a perspective view of the wire fastening. Figs. 7 and 8 are sectional views of two modified constructions applicable more particularly to valve-spindles not screw-threaded, such as used in safety and check valves.

The knob or hand wheel or grip 1 is provided with a socket-plate 2, having one or more lugs 3 perforated transversely and sunk in the material of the grip. The grip is pierced transversely in line with the holes in the lug or lugs, and it is also pierced at 4 at right an-

gles to the lateral piercings, and a wire 5 is introduced through the lateral piercings and the hole in the lug 3 to connect the grip and the socket-plate, and then, in order to prevent the displacement of the wire and consequently the theft or loss of the grip or knob, a punch or other device is introduced through the hole 4 and the wire upset or crimped, as shown at 6, thus securely uniting the grip and socket-plate. Any number of such lugs and wires may be used.

The fastening-wire 5 may be of any desired cross-section; but, as shown in Fig. 6, I prefer to use a round wire with a portion flattened, which flattened portion will lie substantially in the plane of the hole 4 and facilitate the crimping or upsetting of the wire for locking it in place.

The spindle 7 has its squared end provided with an undercut or slabbed-off portion 8, which is engaged by a screw 9 in the hub of the socket-plate to lock the knob, hand-wheel, or grip to the spindle.

As shown in Figs. 1 and 2, the spindle is of the screw-threaded variety, turning in a bonnet 10, screw-threaded into the top of the valve-shell 11. Said spindle has a laterally-projecting flange 12, which when the valve is opened, as shown in Fig. 1, fits up against the inside of the bonnet, so as to make a fluid-tight joint. The lower part of the spindle below the flange is reduced at 13 and further reduced at 14 to form an arbor for receiving the connection of the disk or plug 15. Either one or two such reduced portions may be provided. This disk or plug may be of usual construction, having the undercut lug 16, and it is provided with a socket 17. 18 is a double-flanged collar adapted to engage the undercut lug 16 of the disk and pierced longitudinally for the passage of the arbor and the entrance of the end 14 of said arbor into the socket 17 in the disk. When so assembled, the parts are locked together by the passage of a pin or cotter 19 through the transverse hole 20 in the collar and the transverse hole 21 in the arbor 13. By this construction the disk or plug is swiveled to the spindle, so that it may turn freely without grinding on the seat, and said disk is prevented from escaping laterally from

the spindle by virtue of the coöperation of the arbor with the disk, and it is also prevented from escaping longitudinally from the spindle by means of the double-flanged collar. The construction is such that by removing the pin or cotter 19 the parts may be readily separated for renewal of the disk or plug or any other part requiring renewal, and there is no danger of any of the parts becoming rusted or oxidized immovably.

In the use of screw-threaded seats they are sometimes worked out of place by the turning of the valve, and in order to obviate this I provide the seat 22 with lugs 23, projecting from the lower end thereof in any desired number, and after the seat is screwed to place in the diaphragm 24 of the valve-shell these lugs are bent back upon said diaphragm, and thereby serve to lock the seat against such accidental displacement.

It is often desirable to couple up pipes to a valve-shell without packing and of a different size from the valve-shell, and for this purpose a nipple 25 is screwed into the valve-shell and its outer end is adapted to receive a pipe of a different size. In order to make a tight joint and without packing, the pipe 26 is provided with a thimble 27, of relatively soft metal, such as brass, one end of which, 28, is headed up in a loose manner inside the pipe and provided with an angular collar 29, adapted to fit between the flange 30 on the end of the pipe and the end of the nipple 25, and then a coupling ring or nut 31 is applied to these parts so as to draw them together and to force the angular ends of the collar 29 against the metal of the adjacent parts. The coupling-nut 31 may be screw-threaded at one end to engage the external screw-thread on the nipple 25 and flanged, as at 32, at the other end to engage the flange 30 on the end of the pipe 26. As thus constructed a very simple and efficient fluid-tight joint is made, whereby pipes of different diameter from the valve-shell may be readily applied thereto.

A principal feature of this invention is the double-flanged collar for effecting a swivel connection between the spindle and the disk or plug, and this connection is applicable as well to screw-threaded spindles, such as are used in globe-valves and the like, as to those spindles which are not screw-threaded, such as those used in safety-valves, check-valves, and the like.

In Figs. 7 and 8 are shown two modifications particularly applicable to the last-named class of valves, and in these constructions the cotter may be dispensed with and the collar 33 hollowed out to receive an expansion-spring 34, resting on a flange 35, solid on the spindle, Fig. 7, and abutting against a flange 36 on the collar, or the flange 35 may be replaced by a washer or nut 37, screwed on the spindle, as in Fig. 8. In either case the pressure of the spring preserves the connection between the

spindle and disk. One very material advantage in the use of the spring is that it serves to hold the disk to its seat, and thus prevents the disagreeable rattling occurring in steam-pipes and the like installations where valves are used and not so safeguarded.

Other means for connecting the collar and disk may be used within the principle of the invention. Moreover, the invention is not limited to the form of the disk.

In using the term "knob" I mean to include any form of operating device for the spindle, whether in the form of a hand-wheel or otherwise.

What I claim is—

1. A knob, a socket-plate therefor, and a fastening device passed transversely through and engaging the knob and socket-plate and upset within the knob to prevent its displacement.

2. A knob pierced transversely and also at right angles, a socket-plate sunk into the lower side of the knob and having a laterally-pierced lug, and a fastening-wire inserted in the transverse opening and upset in the opening at right angles thereto.

3. A knob pierced transversely and also at right angles, a socket-plate sunk into the lower side of the knob and having a laterally-pierced lug, and a fastening-wire having a flattened portion, inserted in the transverse opening and upset at its flattened portion in the opening at right angles to the transverse piercing.

4. The combination of a valve-spindle, having an integral arbor at its end, a valve plug or disk provided with a socket and a flanged lug, a double-flanged collar interposed between the disk or plug and the arbor, and means to connect them.

5. A valve-spindle terminating in a reduced end, and a valve-disk having a socket to receive such end, and also having a flanged lug, combined with a flanged collar engaging said lug and also engaged with the spindle.

6. A valve-spindle terminating in a reduced end, and a valve-disk having a socket to receive such end and also having an undercut lug, combined with a double-flanged collar connecting the disk and spindle.

7. A valve-spindle terminating in a reduced end, and a valve-disk having a socket to receive said end and also having an undercut lug, in combination with a detachable double-flanged collar connecting the spindle and disk.

8. A valve-spindle terminating in a reduced end, and a valve-disk having a socket to receive said end, in combination with a detachable collar turning with the spindle and swiveled to the disk.

9. A valve-spindle terminating in a reduced end, and a valve-disk having a socket to receive such end, and also having a flanged lug, combined with a flanged collar detachably engaging said lug and spindle and thereby connecting them.

10. The combination of a valve-spindle, having an integral arbor at its end, a valve-disk provided with a socket and a flanged lug, a double-flanged collar interposed between the disk and the arbor, and a detachable pin
5 passed transversely through the spindle and collar.

11. A valve, having a detachable screw-threaded valve-seat provided with lugs adapt-

ed to be bent against the valve-shell to hold the seat in place.

In testimony whereof I have hereunto set my hand this 23d day of October, A. D. 1903.

JEREMIAH O'MEARA.

Witnesses:

WALTER L. CLARK,
GEO. W. M. CLARK.