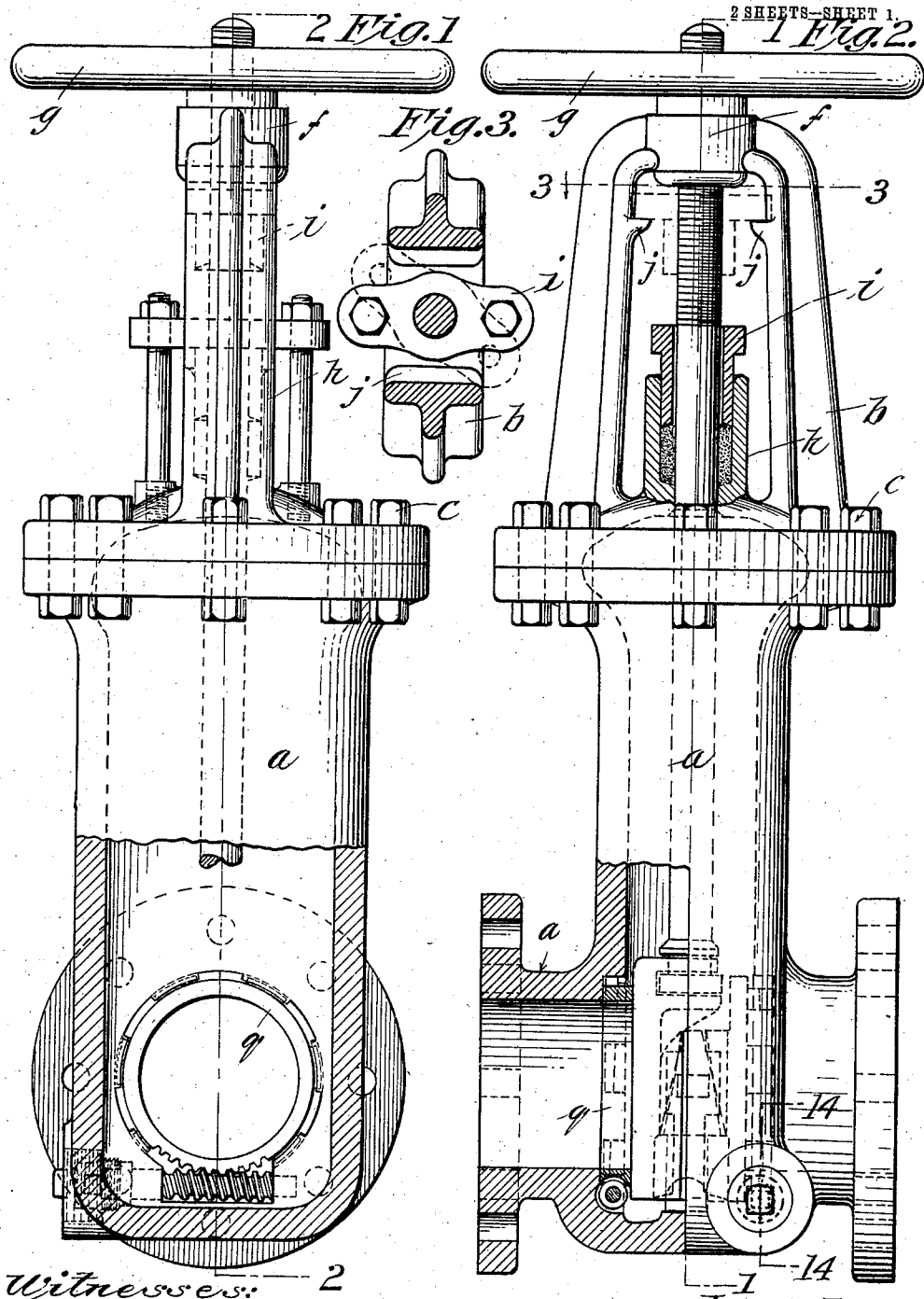
No. 851,161. PATENTED APR. 23, 1907.

C. O. CHURCHILL.

VALVE.

APPLICATION FILED NOV. 14, 1905.

2 SHEETS—SHEET 1.



Witnesses:
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2 SHEETS—SHEET 2.

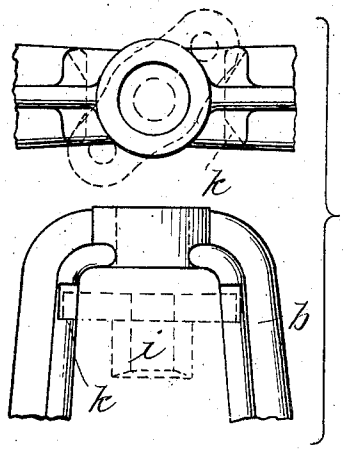


Fig. 4.

Fig. 5.

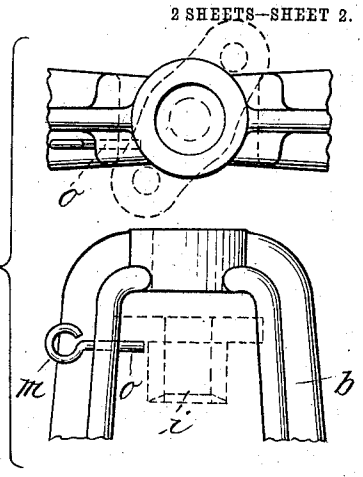


Fig. 6.

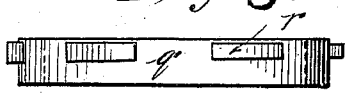


Fig. 7.

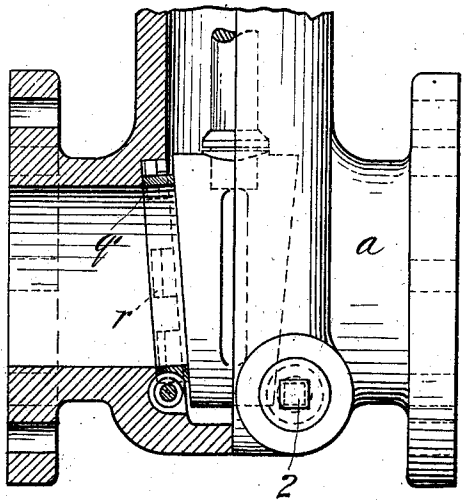


Fig. 8.

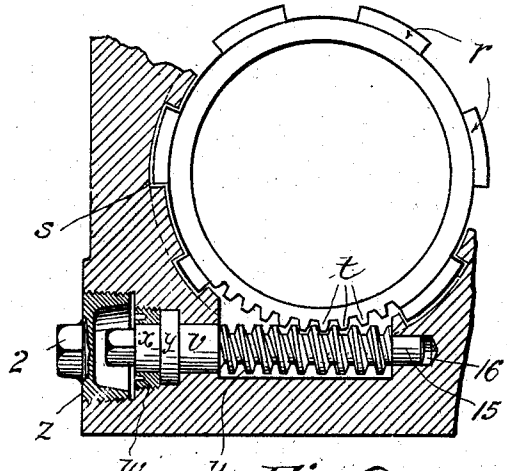
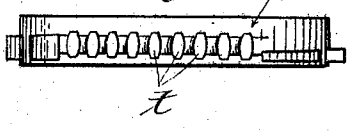


Fig. 9.



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UNITED STATES PATENT OFFICE

CHARLES O. CHURCHILL, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO THE FAIRBANKS COMPANY, OF NEW YORK, N. Y., A CORPORATION.

VALVE.

No. 851,161. Specification of Letters Patent. Patented April 23, 1907.

Application filed November 14, 1905. Serial No. 287,251.

To all whom it may concern:

Be it known that I, CHARLES O. CHURCHILL, a citizen of the United States of America, residing at Springfield, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Valves, of which the following is a specification.

This invention relates to the class of valves and more particularly to that class in which there is a sliding gate which is operated in the ordinary manner by a hand-wheel located on the upper end of the valve-stem or by a lever, both means being well known in the art, and one of the particular objects embodied in this improvement is in the removable seat against which the plug or gate is moved.

The invention, broadly, has for its object in providing on the periphery of the removable seat a series of mutilated teeth which are cut on the spiral, and adapted to engage correspondingly shaped recesses in the body of the valve;

A further object of the invention consists in rotating this valve-seat by means of a threaded bolt which extends to the outside of the casing and having a squared end by which it can be turned by a wrench in the ordinary manner so as to securely hold the valve-seat in the casing;

A further object consists in providing means to hold the follower gland of the valve in an elevated position on the stem so that the gland may be easily packed in the ordinary manner.

In the drawings forming part of this application,—Figure 1 is an end elevation, partly in section, on line 1—1 of Fig. 2. Fig. 2 is a side elevation, partly in section, on the line 2—2 of Fig. 1. Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2, and showing in detail the lugs on the casting for supporting the follower gland. Figs. 4 and 5 are modified forms of supporting the follower-gland. Fig. 6 is a top plan view of the rotatable valve-seat. Fig. 7 is a modification showing partly in section the valve-seat when used in an inclined position, and the plug engaging the same. Fig. 8 is a detailed view on the line 14—14 of Fig. 2, showing the valve-seat about to be rotated in place. Fig. 9 is a bottom plan view of the rotatable valve-seat showing the worm-gear teeth thereon.

Referring to the drawings, *a* indicates the body of the valve-casing; *b* a yoke which is bolted to the body *a* in the ordinary manner by means of the bolts *c;*

d indicates the valve-stem containing threads at the upper end thereof and adapted to engage the internally threaded top of the yoke *b;*

g indicates the hand-wheel secured to the upper end of the valve-stem;

h indicates the stuffing-box containing the packing material around the valve-stem;

i indicates the follower-gland engaging said stuffing-box. This following-gland is shown in the dotted line position in Fig. 1 engaging the lugs on the yoke *b.*

When the follower-gland is lifted into the dotted-line position and rotated on the valve-stem, as shown in Fig. 3, so as to engage the lugs *j*, the same is held out of the way while the valve-stem is being packed and prevented from dropping onto the hand of the workman.

Referring to Fig. 4, which shows a modified means of supporting the follower-gland, recesses *k* are cut in the yoke *b* for holding the follower-gland in an elevated position, while in Fig. 5 a pin *m* is inserted through a hole *o* drilled in the yoke *b* in which the pin *m* may be inserted for holding the follower-gland in an elevated position.

Referring more particularly to the valve which is shown in section in Figs. 1 and 2, wherein the removable seat *q* is shown in place, this removable seat is shown in detail in Figs. 6 and 9 and clearly in side elevation in Figs. 1 and 8. In the construction of this removable seat, the lugs *r* are finished in the same manner as an ordinary thread, that is on the spiral, but separated from each other thus forming a mutilated thread. These lugs or threads are adapted to engage correspondingly shaped portions or recesses *s* which are bored or turned in the body of the valve-casing, and cut in the same manner as an ordinary internal thread is. On the lower side of the removable seat *q* are a series of worm gear-teeth *t* which are adapted to be engaged by the teeth *u* on the bolt *v* in order that the removable valve-seat may be rotated so as to securely lock the removable seat in place in the casing or body of the valve.

The reference letter *w* designates a thrust-gland which encircles the reduced part *x* of

the bolt *v* and also engages the collar *y* to prevent any lost motion of the bolt. The inner end 15 of the bolt turns in a socket 16.

z indicates a plug which is removably secured to the casting by means of a screw-thread for protecting the end of the bolt *v*.

2 designates the squared end of the plug *z* so that the same can be removed by a wrench in the ordinary way, and the bolt *v* then rotated by a wrench.

When it is necessary to replace the valve-seat and put in a new one, all that it is required to be done is to rotate the bolt *v* backward thus turning the removable valve-seat *q* so that the mutilated threads on the valve-seat are brought opposite the openings *s* in the casing, when the seat may be easily removed by hand through the upper part of the casing in the ordinary way.

Fig. 7 shows the valve-seat *q* in an inclined position, the same means being provided to remove the same as described above.

The improvement herein described is adapted to the open or closed type-valve. By this I mean that when the valve-stem is exposed, as shown in the drawings, it is termed the open-type, and when inclosed by a casing the closed type.

The improvement is also applicable to the ordinary globe-valve now in extensive use.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:—

1. In a valve, the combination of a removable seat, a mutilated thread on part of the periphery of said seat, a worm gear on the remaining part, a rotatable threaded bolt in the lower part of the casing, the threads engaging said worm-gear, a collar on said bolt, a reduced part on said bolt adjacent the collar, a thrust-gland for engaging said collar and a removable plug in the casing for protecting the end of said bolt.

2. In a valve, the combination with the casing, a yoke secured thereto, a valve-stem in said yoke, a stuffing-box integral with said yoke, a follower-gland on said valve-stem, means on said yoke adjacent the upper end thereof for supporting said follower-gland in an elevated position, said means consisting of lugs integral with the yoke and at the upper inner side of the same and extending toward each other, whereby the follower gland may be supported in elevated position thereon, as described.

3. In a valve, the combination with the casing, a yoke secured thereto, a valve-stem in said yoke, a stuffing-box integral with said yoke, a follower-gland on said valve-stem, lugs on said yoke adjacent the upper end thereof for supporting said follower-gland in an elevated position.

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