

A. G. LUNDBOM.
VALVE.

(Application filed July 8, 1901.)

(No Model.)

Fig. 1.

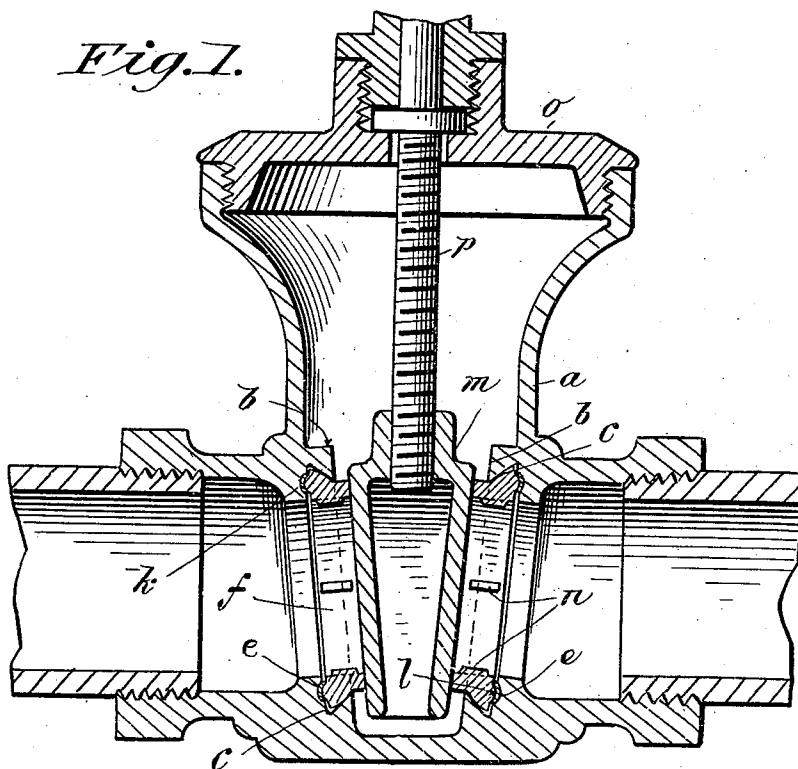


Fig. 2.

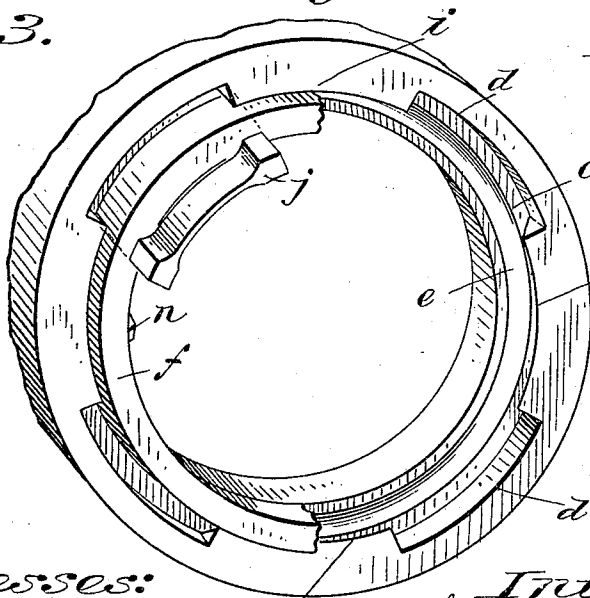


Fig. 3.

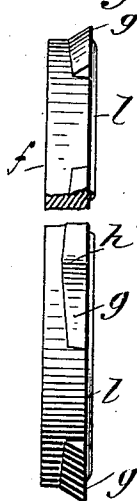
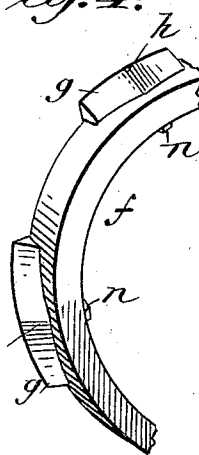


Fig. 4.



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UNITED STATES PATENT OFFICE.

ANDERS G. LUNDBOM, OF SPRINGFIELD, MASSACHUSETTS.

VALVE.

SPECIFICATION forming part of Letters Patent No. 683,695, dated October 1, 1901.

Application filed July 8, 1901. Serial No. 67,452. (No model.)

To all whom it may concern:

Be it known that I, ANDERS G. LUNDBOM, a citizen of the United States, 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 valve constructions and has special reference to the construction of the removable seat for gate-valves, the object of the invention being to provide a seat of this character adapted to valves of any size which may be readily removed from the valve-body and replaced without disturbing the latter.

A further object of this invention is to provide a seat of this character which may adjust itself to the surface of the gate if not normally in the same plane as the latter.

In the drawings forming part of this specification, Figure 1 is a sectional elevation of a portion of a gate-valve constructed according to this invention, the section being taken longitudinally of the axis of the inlet and outlet portions of the valve-body. Fig. 2 is a portion of the valve-body having a valve-seat therein, partly broken away and showing means for locking the seat in its operative position. Fig. 3 is a side elevation of the valve-seat broken away at one point. Fig. 4 is a perspective view of a part of the valve-seat.

In constructing a valve according to this invention the body *a* is provided usually with two annular surfaces *b*, surrounding the inner ends of the inlet and exit passages through said body, which surfaces have cast therein an undercut groove *c*, which groove has at equidistant points therearound portions of its overhang cut away, as at *d*. In the bottom of the groove there is formed an annular depression *e*. The valve-seat, which is indicated by *f*, is in the form of a ring having thereon ears. (Shown clearly in Figs. 3 and 4 and indicated by *g*.) These ears are formed with a high point *h* in the center thereof, which bears against the under side of the overhanging portions *i* of said groove *c*. The length of the ears *g* is such that they may pass through the cut-away portions *d* of the surface *b* to a bearing at the bottom of the groove *c* therein, the seat after coming to said

bearing being rotated to force the ears *g* under said overhanging portions *i*. The latter and the cut-away portion *d* and the ears *g* all being equal, when the ear *g* is under the overhanging portion *i* if a block, as *j*, having a height equal to the depth of the groove *c* be forced into one of the cut-away portions *d* the valve-seat will be locked and cannot be rotated into position for removal until said block has been removed. Preferably said block is made with a thinned-down central portion and of a length slightly in excess of the cut-away parts *d*, whereby the ends of the block must be sprung together before the latter can be forced down into its proper position. By this means the block may be made to hold itself in one of said recesses *d*.

Before the seat is introduced into the groove *c*, as described, a thin annular packing-ring (indicated by *k*, Fig. 1) is introduced into the annular depression *e*, the valve-seat being forced down thereagainst when it is introduced into place in the groove *c*. This thin packing-ring or gasket may be made of any suitable material, and when the seat is in operative position in the valve it bears solely on this gasket, said seat being provided with an annular rib *l*, (shown in Fig. 3,) and its outline conforming in cross-section substantially to said annular depression *e*. When the seat receives the pressure of the gate *m*, said gasket will permit it to adapt its surface to the surface of the gate.

The valve-seat is provided with suitable lugs *n*, whereby it may be readily engaged by a suitable tool for rotating it when it is desired to remove it; but very little machine-work is required to fit this valve-seat to its position in the body of the valve and but very little machine-work is required on the groove *c* to adapt it to receive this seat, practically the only machining required being the finishing of the surface of the seat against which the gate bears and a mere smoothing off of the bottom thereof, which enters the groove *c*.

The ears *g* require no finishing, the high point *h* thereon being smoothed off with a file to permit the easy introduction thereof under the overhanging parts *i* of the groove *c*.

As far as I am aware there is no valve-seat as at present constructed requiring as little labor for finishing it and being as easily re-

movable from the valve-body as is the seat which forms the subject of this invention. In removing one of these seats the cap *o*, carrying the stem *p*, and the gate *m* are removed, thus leaving room for the lifting out of the seat. This seat while particularly adapted to gate-valves may be with equal advantage applied to a globe-valve in a manner which would be at once apparent to one skilled in the art.

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

1. The combination with the body of a valve, of an annular undercut groove having parts of its overhanging portion cut away; a valve-seat, ears thereon for entering said annular groove through said cut-away portions, and means for preventing the rotation of the seat when the latter is in operative position, substantially as described.

2. The combination with the body of a valve, of an annular undercut groove having parts of its overhanging portion cut away; a valve-

seat, ears thereon for entering said annular groove through said cut-away portions, and means for preventing the rotation of the seat when the latter is in operative position, a channel in said annular groove, a packing-ring in said channel, and a rib on the valve-seat bearing against said ring, substantially as described.

3. The combination with the body of a valve, of an annular undercut groove encircling the inner end of the inlet or outlet passage through said body, a valve-seat, ears thereon; said groove having parts of the overhanging portion thereof cut away, whereby said ears may be introduced into said groove, and a block for entering said cut-away portion of the groove to prevent the rotation of said seat when the latter is in operative position, substantially as described.

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Witnesses:

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