T. HOLLAND.

Stop-Cock.

No. 165,827. Patented July 20, 1875.

Fig. 1.

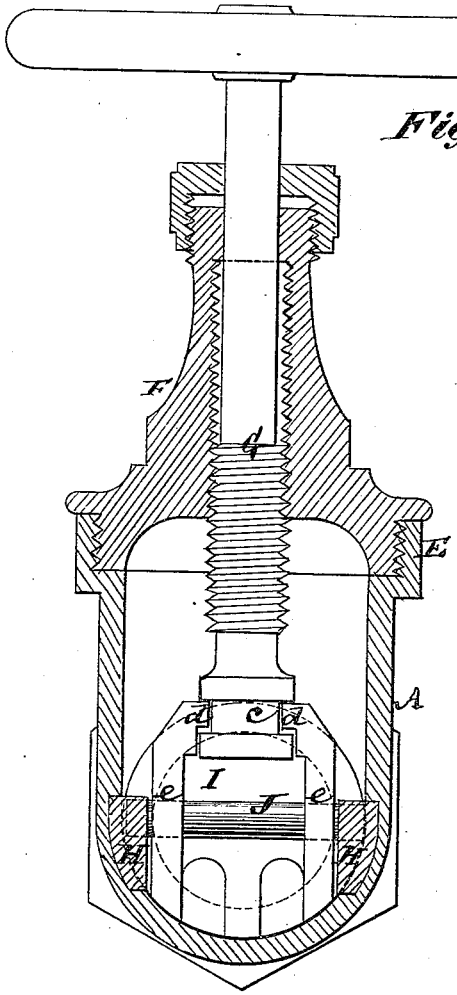


Fig. 2.

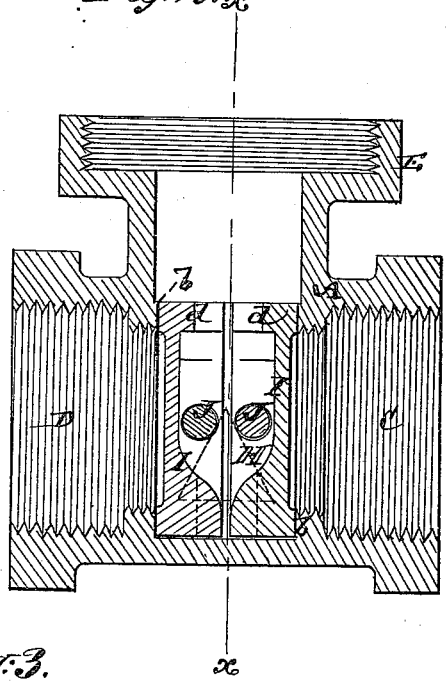
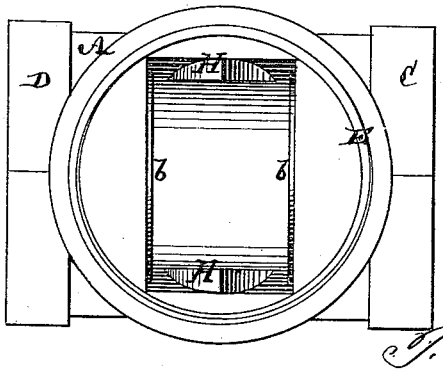


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

TIMOTHY HOLLAND, OF NEW YORK, N. Y.

IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. **165,827**, dated July 20, 1875; application filed July 1, 1875.

To all whom it may concern:

Be it known that I, TIMOTHY HOLLAND, of the city, county, and State of New York, have invented a new and useful Improvement in Straightway Stop-Valves; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates to that description of straightway stop-valves for steam and other fluid, vapor, or gas, in which two independent slides or valvular disks are used to open and close the inlet and outlet orifices of the valve box or case, said disks or valves operating as sliding gates to said orifices, and being forcibly pressed to their seats when closed by means of an inclined plane or planes, which, when the valves are opened, admit of the valves being slid free from contact with their seats.

The invention consists in a novel combination of parts, including rollers carried by the independent valvular disks, and extending across their inner faces or backs, double or reverse inclined planes or surfaces fast on the interior of the walls of the valve-chamber, and against which the opposite ends of the rollers bear when the valve is being closed, and a screw valve-stem in loose and rotating fit with the valvular disks, for the purpose of operating them.

A straightway stop-valve thus constructed is at once simple, efficient, very durable, and not liable to stick or get out of order, the rollers affording a ready release of the disks from their seats when the hand is applied to open the valve, and the said rollers and the fixed inclines combined giving a sharp and powerful forcing action of the disks to their seats when the valve is about closing only, thus doing away with all grinding and cutting of the disks or their seats at other periods—that is, during the general movement of the valve.

Figure 1 represents a vertical section on the line *x x* of a straightway stop-valve constructed in accordance with the invention; Fig. 2, a vertical section in a plane at right angles to Fig. 1, omitting the operating screw-stem and screw-box, or combined gland and stuffing-box, through which said stem works. Fig. 3 is a plan of the body of the valve box or case.

A is the body of the valve box or case, composed of a valve-chamber having valve seats, facings, or bearings *b b*, inlet and outlet branches C D, and a socket, E, within which is fitted the cap or combined gland and stuffing-box F, that forms a screw-box for the valve-operating screw-stem G. On opposite sides of the interior of the walls of the valve-chamber, between the inlet and outlet branches C D in the lower portion of said chamber, are double or reverse inclined plane surfaces or projections H H, contracting upward.

These double-inclined projections may be made of steel, and be inserted in the mold in which the body A is cast, so as to be rigidly united therewith. This making them of steel will greatly reduce wear and friction.

I I are the valvular disks or valves proper, which are slid up and down, or worked as gates, to simultaneously open and close the inlet and outlet branches C D, by means of the screw-stem G, accordingly as the latter is screwed or unscrewed within the cap or gland F. The disks I I are totally independent one of the other, and are connected in a free or loose manner with the inner end of the stem G, as by an annular groove, *c*, in the latter, and half shoulders or collars *d d* on the disks, so that the lower end of the stem is free to rotate in said disks while raising or lowering them. J J are loose pins or rollers extending across the inner faces or backs of the disks I I, and carried by the latter, with their ends projecting beyond their bearings *e e* in the disks.

These rollers it is preferred to make of steel, and they are so arranged that when the screw-stem G is worked inward, the outer opposite ends of the rollers come in contact with the fixed inclines H H when or at about the time the valves I I are closing, whereby said valves, by reason of the quick convexity of the rollers combined with the shape of the fixed inclined projections H H, are rapidly and forcibly thrust out laterally or facewise against their seats *b b*.

The same combination of rollers and fixed inclines affords a ready release for the valves, and avoids sticking when power is applied to

the stem G to lift or open the valves, and all grinding or cutting of the latter, or of the seats against which they bear when closed, is avoided, by reason of the perfect freedom of the valves from bearing contact or pressure during the greater portion of their movement in either direction—that is, when a full motion is given to them.

What I claim as new, and desire to secure by Letters Patent, is—

The combination of the rollers J J, attached to the backs of the valves or valvular disks I I, the fixed inclines H H in the valve box or chamber, the valve seats or bearings *b b*, and the valve-operating screw-stem G, all substantially as shown and described.

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Witnesses:

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