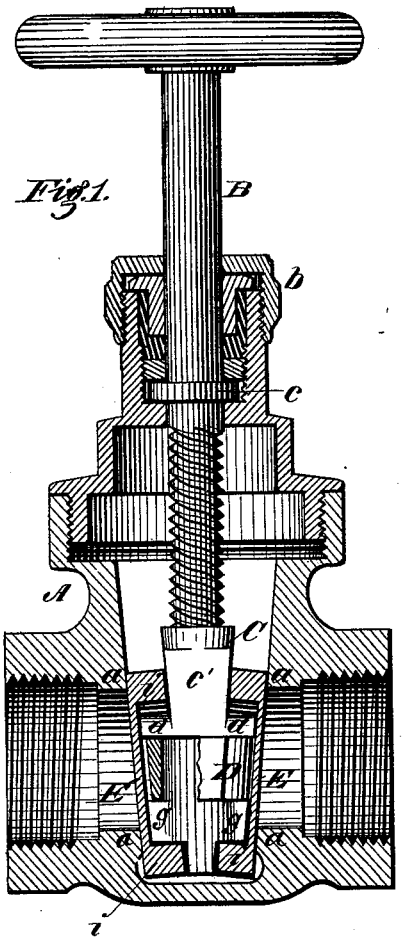
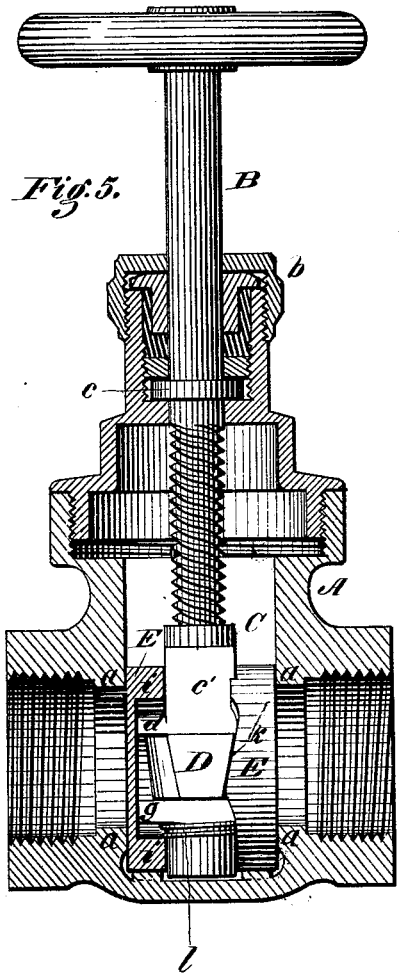
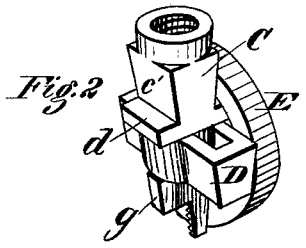
G. W. EDDY.

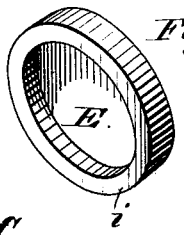
STOP-VALVE.

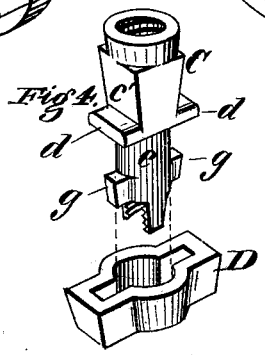
No. 187,970. Patented March 6, 1877.











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UNITED STATES PATENT OFFICE

GEORGE W. EDDY, OF WATERFORD, NEW YORK.

IMPROVEMENT IN STOP-VALVES.

Specification forming part of Letters Patent No. **187,970**, dated March 6, 1877; application filed January 19, 1877.

To all whom it may concern:

Be it known that I, GEORGE W. EDDY, of Waterford, in the county of Saratoga and State of New York, have invented certain Improvements in Stop-Valves, of which the following is a specification:

My invention relates to that class of stop-valves in which two seats or throats are employed in combination with two valve-plates arranged to seat themselves independently of each other; and the invention consists in the combination of peripherally-flanged valve-plates, in combination with a screw-stem or spindle, a nut or sleeve, and an equalizing bar or yoke for operating them, as hereinafter fully described and explained.

Figure 1 represents a longitudinal central section of my valve constructed with converging valve-seats and rotating valve-plates; Fig. 2, a perspective view, showing the nut or sleeve, the equalizing-bar, and one of the valve-plates represented in Fig. 1; Fig. 3, a perspective view of one of the valve-plates; Fig. 4, a perspective view of the nut or sleeve and the equalizing-bar disconnected from each other; Fig. 5, a vertical central section of a modified form of my valve, having parallel instead of converging valve-seats.

A represents the body or shell of the valve, similar in construction to the ordinary through-way valves, with two valve-seats, *a*, opposite to each other, and a lateral neck containing a screw-stem or spindle, B, which is passed through a stuffing-box, *b*, and provided with a collar, *c*, to prevent it from moving endwise in the usual manner.

In Fig. 1 the two valve-seats converge toward the back or bottom of the body or shell, so that the plates, upon being forced home between them, will be seated firmly thereon.

On the inner end of the screw-stem or spindle B there is mounted a sleeve or nut, C, such as represented in Figs. 2 and 4, having at its upper end a square or flat head, *c'*, and two ears or lugs, *d*, on opposite sides thereof, and having also, below said square head, a round neck, *e*, the lower end of which latter is provided with two lateral lugs, *g*, directly below the upper lugs *d*, as shown. On the round neck *e* of the sleeve or nut C I mount a loose transverse yoke or equalizing-bar, D, held in place by the lugs *g*, as shown, the bar being made, as in Fig. 4, with an elongated opening, which admits of its being slipped over said lugs onto the sleeve, and locked thereon, by giving it a quarter-turn to bring it to its required position. On opposite sides of the bar and sleeve there are mounted two circular valve-plates, E, provided on their inner or back sides with peripheral flanges *i*, which bear against the sides of the bar D, and engage over and under the lugs *d* and *g* respectively, as shown in Figs. 1 and 2.

The bar C should be allowed a free rocking and rotating movement on the sleeve, and should also have its sides beveled to correspond with the inclination of the valve-plates when they are in place on their seats. The lugs *d* and *g* should permit the valve-plates to have a limited play vertically in relation to the sleeve or nut C, and should also permit the plates to rotate freely.

The valve constructed in the manner above described operates as follows: While the valve is open the valve-plates E hang by their flanges loosely upon the studs *d* of the nut or sleeve C, but upon turning the screw in the proper direction it carries down the sleeve, together with the bar D and the valve-plates, the latter being held apart by the bar, and at the same time forced home by the studs *g* of the sleeve firmly between and against their seats *a*. The reverse movement of the screw, raising the sleeve, causes the latter to draw back the bar and the valve-plates above the line of the seats and throats, the backward movement of the plates being caused by the engagement of the studs or lugs *d* under their flanges. The bar D, seated between the two plates, serves not only to hold them to their seats, but also, being loose upon the sleeve, to equalize the pressure upon them, and to prevent the possibility of lateral strain on the stem or spindle.

The valve represented in Fig. 5 is the same as that shown in Fig. 1, except that its valve-seats are parallel instead of converging, and that, in order to effect the forcing of the plates against the seats, the former are provided on their backs with inclined bearings *k*, against which the beveled or inclined sides of the bar D rest, as shown.

When the valve is being closed the plates are carried home over their seats, and stopped by coming in contact with the back or bottom of the body A, and then, by the continued movement of the screw, the bar D is forced down between the inclines *k*, and caused to force the plates apart directly and firmly against their seats.

In order that the valve may be used upside down without danger of the plates sliding down and wedging fast before they reach their seats, a spring, *l*, may be mounted on the lower end of the sleeve C, and arranged to bear against the inside of the flanges of the valve-plates, as shown. The spring thus applied pushes the plates back in such manner that there is no danger of their binding or being forced apart by the bar until they come in contact with the back of the body or shell A.

By my construction I produce a valve which is both cheap and simple, which is positive in its action, and which admits of nearly all its parts being cast and fitted for use with very little labor.

It will be observed that in my valve there is no central bearing on the valve-plates, but that the entire bearing and pressure are applied to the periphery of the plates. This is an important and valuable feature, first, because it admits of the plates being made lighter and cheaper than usual without danger of their springing or becoming untrue under the pressure which is applied to them; and, second, because the pressure applied directly opposite to the seats or bearings causes the plates to fit more tightly and perfectly.

Having thus described my invention, what I claim is—

1. In combination with the body A, having the two valve-seats *a*, the screw-stem or spindle B, sleeve C, loose bar D, and flanged valve-plates E, substantially as shown and described.

2. In a stop-valve, the combination of two peripherally-flanged valve-plates, E, with an intermediate equalizing-bar, D, and a nut or sleeve, C, mounted on an operating stem or spindle, and provided with lugs *d* and *g*, substantially as shown and described.

3. In combination with the body A, having the seats *a* arranged parallel with each other, the stem or spindle B, peripherally-flanged plates E, having the inclines *k*, the bar D, and the sleeve C, with or without the spring *l*, as shown and described.

4. In a stop-valve, the combination of a peripherally-flanged valve-plate, a screw stem or spindle, and a nut or sleeve mounted on the screw, and provided with lugs or studs *d* and *g*, engaging within the flange to carry the valve-plate, substantially as shown and described.

5. The combination, in a valve, of two valve-plates and an intermediate bar, D, arranged to bear upon the periphery of the plates, for the purpose of holding them to their seats, substantially as shown.

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Witnesses:
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