

March 18, 1941.

R. W. GRANEY

2,235,612

VALVE

Filed July 22, 1939

2 Sheets-Sheet 1

Fig. 1.

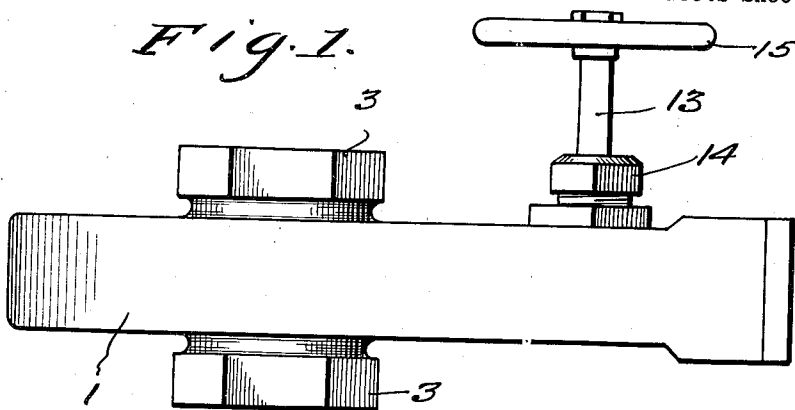


Fig. 2.

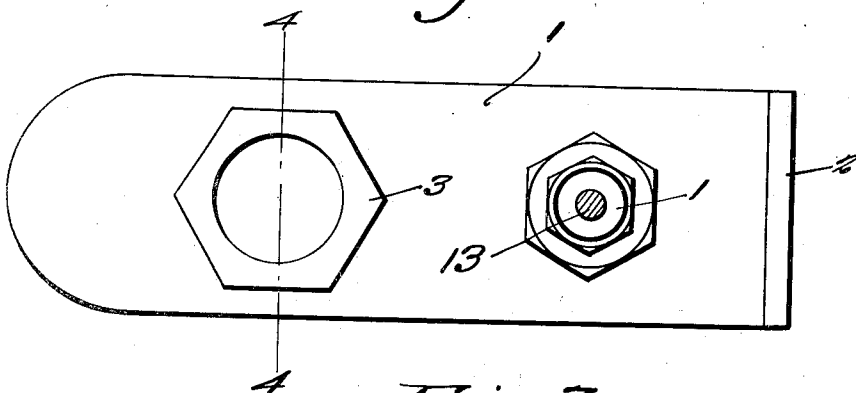


Fig. 3.

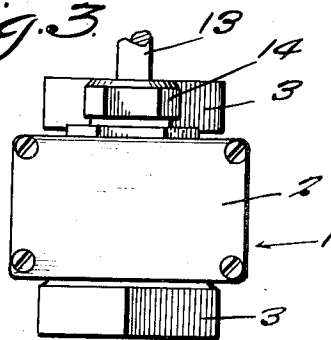
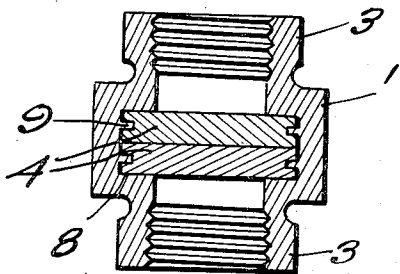


Fig. 4.



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Fig. 5.

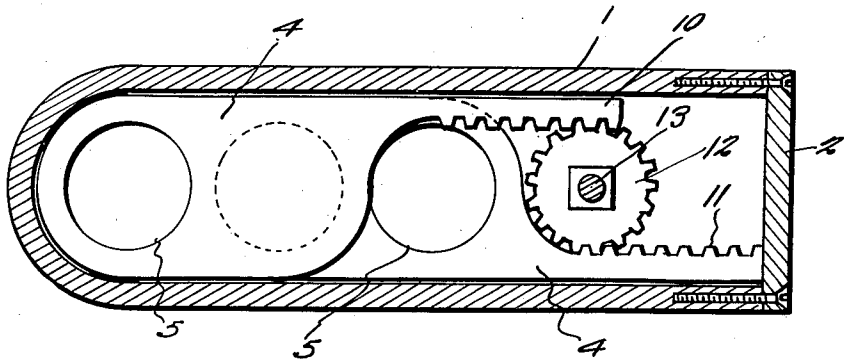


Fig. 6.

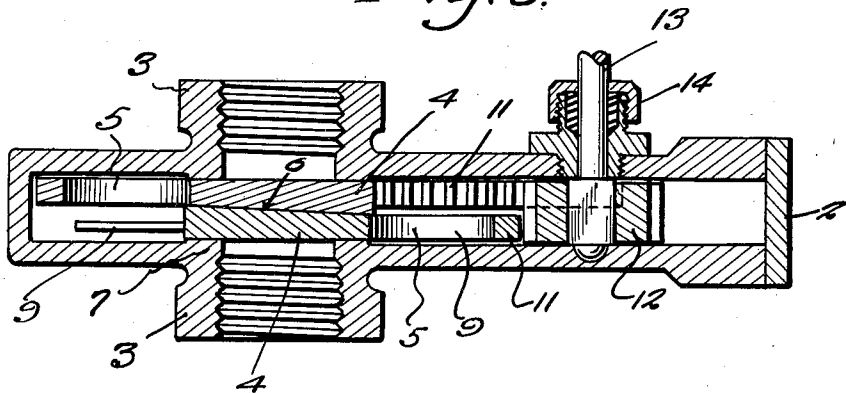


Fig. 7.

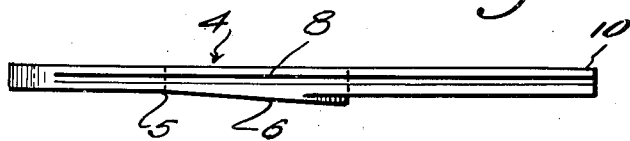
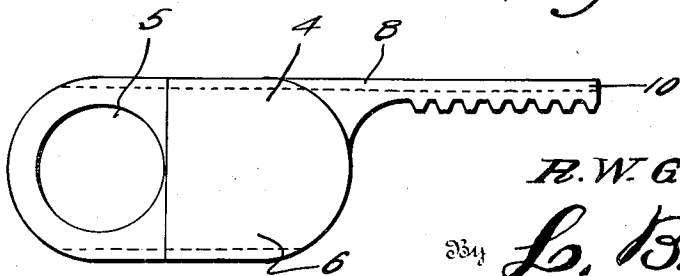


Fig. 8.



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UNITED STATES PATENT OFFICE

2,235,612

VALVE

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Application July 22, 1939, Serial No. 285,993

2 Claims. (Cl. 251—60)

This invention relates to a shutter valve, the general object of the invention being to provide a casing having an opening passing therethrough and a pair of sliding shutters for opening and closing the opening, with a single actuating element for moving the shutters to open and closed positions.

The invention also consists in certain other features of construction, combination and arrangement of the several parts, to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a top plan view of the device.

Figure 2 is an elevational view thereof.

Figure 3 is an end view thereof.

Figure 4 is a section on line 4—4 of Figure 2.

Figure 5 is a longitudinal sectional view through the device.

Figure 6 is a similar view but taken at right angles to Figure 5.

Figure 7 is an edge view of one of the shutters.

Figure 8 is a face view of a shutter.

In these drawings, the numeral 1 indicates an elongated casing which has one end rounded and the other end open, said open end being closed by a detachable cover plate 2. Aligned nipples 3 extend outwardly from the sides of the casing adjacent the rounded end, these nipples being in communication with the casing and being internally threaded to receive pipes, the flow of fluid through which is to be controlled by the valve.

A pair of shutters 4 is slidably arranged in the casing and each shutter has its ends rounded and each shutter has an opening 5 therein. These openings 5 will align with each other and with the nipples when the shutters are in a certain position, so that fluid can pass through the casing but in another position the openings in the shutters are out of alignment with each other and with the nipples so the fluid cannot flow through the casing. In this latter position inclined parts 6 on the adjacent faces of the shutters will contact each other and these parts are so arranged that the shutters will be pressed tightly against the walls of the casing at the nipple extensions 7 so as to form a fluid-tight junction between the shutters and the walls of the casing around the openings leading to the nipples. The inclined parts are located on the solid parts of the shutters.

The side edges of each shutter are formed with guide grooves 8 for receiving ribs 9 on the interior walls of the casing and one shutter is formed with a rack bar at the upper part of one end thereof, the teeth of which face downwardly and the other shutter is formed with a rack bar 11 at the lower part of a similar end, the teeth of which extend upwardly. A pinion 12 is placed in the casing and is located between the rack bars with its teeth meshing with the teeth of both bars and said pinion is attached to a shaft 13 journaled in the casing and passing therefrom through a packing gland 14 connected to one side of the casing. The outer end of the shaft has a hand wheel 15 attached thereto.

Thus it will be seen that by turning the shaft 13 the shutters will be moved in opposite directions and when the shaft is moved in one direction the shutters will be moved to a position to register their openings with the nipples so that fluid can pass through the casing. By turning the shaft in an opposite direction the shutters will be moved to place their solid parts in engagement and across the passage formed by the nipples so the casing will be closed to the passage of fluid.

This valve device can be manufactured to sell at low cost as it has but a minimum of parts which can be easily formed and the device can be easily and quickly actuated to open or closed position. The fluid has a straight flow through the device and the seats are self cleaning.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction, combination and arrangement of the several parts, provided such changes fall within the scope of the appended claims.

What I claim and desire to protect by Letters Patent is:

1. In a valve device, a casing rectangular in cross-section and having internally opposed and parallel sides and top and bottom faces having axially aligned inlet and outlet openings surrounded by inset annular parallel valve seats, a pair of sliding shutters in said casing with one of said shutters overlapping the other, said shutters having openings therein movable into and out of registry with said openings, said shutters having closing portions for said openings oppositely tapered from end to end, said casing having its side walls provided each with a pair of parallel grooves and the shutters being provided

on their lateral edges with ribs fitting in said grooves, and means for moving said shutters simultaneously in opposite directions to bring the shutter openings into and out of alinement
5 with the casing openings.

2. In a valve device, a casing rectangular in cross-section and having internally opposed and parallel sides and top and bottom faces having axially alined inlet and outlet openings surrounded by inset annular parallel valve seats, a
10 pair of sliding shutters in said casing with one of said shutters overlapping the other, said shutters having openings therein movable into and out of registry with said openings, said shutters hav-

ing closing portions for said openings opposedly tapered from end to end, said casing having its side walls provided each with a pair of parallel grooves and the shutters being provided on their lateral edges with ribs fitting in said grooves, and
5 means for moving said shutters simultaneously in opposite directions to bring the shutter openings into and out of alinement with the casing openings, said means comprising opposed rack bars carried by and extending from said shutters, 10 a gear journaled in said casing and engaging said rack bars, and means to rotate said gear.

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