

A. H. HUMPHREY.  
VALVE OPERATING DEVICE.  
APPLICATION FILED DEC. 19, 1912.

1,095,209.

Patented May 5, 1914.

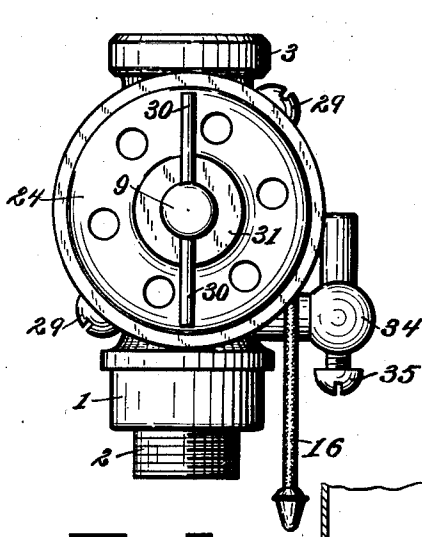


FIG. I.

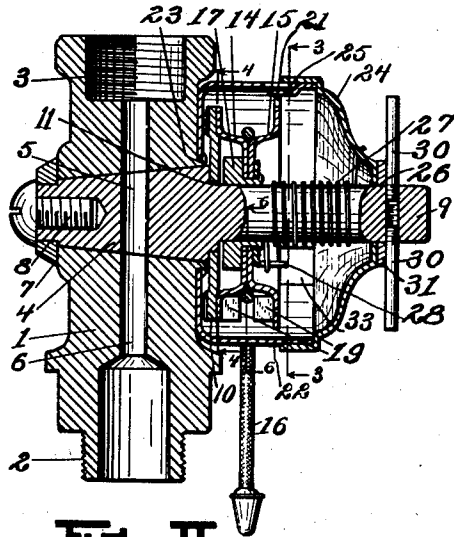


FIG. II.

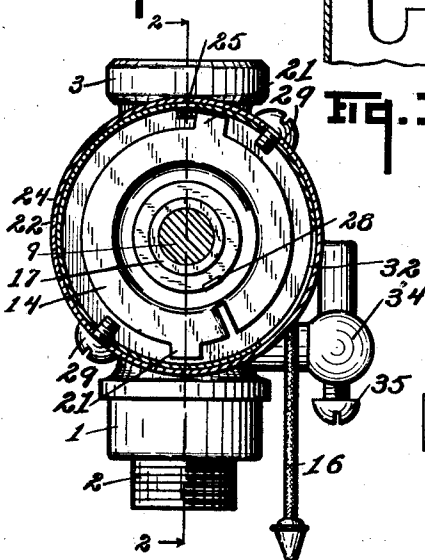


FIG. III.

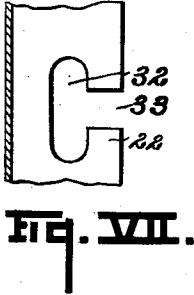


FIG. VII.

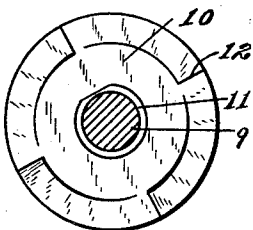


FIG. IV.

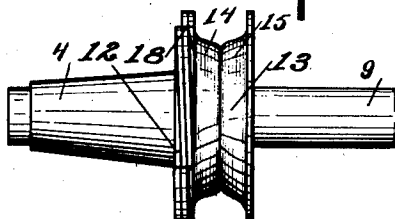


FIG. V.

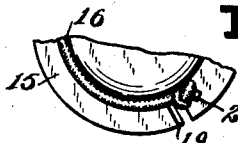


FIG. VI.

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# UNITED STATES PATENT OFFICE.

ALFRED H. HUMPHREY, OF NEW YORK, N. Y.

## VALVE-OPERATING DEVICE.

1,095,209.

Specification of Letters Patent.

Patented May 5, 1914.

Application filed December 19, 1912. Serial No. 737,617.

*To all whom it may concern:*

Be it known that I, ALFRED H. HUMPHREY, a citizen of the United States, residing at 46 West Broadway, New York city, New York, have invented certain new and useful Improvements in Valve-Operating Devices, of which the following is a specification.

This invention relates to improvements in valve operating devices.

The main objects of this invention are: First, to provide an improved valve operating device which is very compact in structure, and one which is attractive in appearance. Second, to provide an improved valve operating device in which the parts are simple and economical to produce and very easily assembled. Third, to provide an improved valve operating device in which the valve is opened and closed by alternate pulls of a cord or chain which is positive in its operation and not likely to get out of repair.

Further objects, and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification.

The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing forming a part of this specification, in which:

Figure I is an elevation of a structure embodying the features of my invention. Fig. II is a vertical section on a line corresponding to line 2—2 of Fig. III, the valve stem and the spring 26 being shown in full lines. Fig. III is a vertical section on a line corresponding to line 3—3 of Fig. II. Fig. IV is a section through the valve stem, on a line corresponding to line 4—4 of Fig. II, showing the actuated member 10. Fig. V is a side elevation of the valve or plug 4 with the actuated and actuating members thereon. Fig. VI is a detail section on a line corresponding to line 6—6 of Fig. II. Fig. VII is a detail view of the casing member 22, showing the opening therein, for the depending operating chain.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are

taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, the valve body 1 is adapted as a gas jet fixture and is provided with a coupling nipple 2 at its lower end and a threaded socket 3 at its upper end. The rotary valve 4 is tapered and provided with a passage-like port 5 adapted to be brought into and out of register with the passage 6 through the valve casing as the valve is turned. The valve is retained in its seat by the means of the washer 7 and the screw 8 tapped into the valve as clearly shown in Fig. II.

On the valve stem 9 is a disk-like ratchet member 10, the ratchet member being mounted on a shoulder 11 at the inner end of the valve stem to rotate with the valve. This member 10 is the actuated member of the operating mechanism and is, in the structure illustrated, a sheet metal stamping provided with ratchet teeth 12 formed by slitting the edge of the member 10 radially and striking laterally portions between the slits, as is clearly shown in the drawing. The actuating member or wheel 13 is formed of a pair of sheet metal stampings 14 and 15 for having offset flanges which coact to provide a peripheral channel for the operating cord 16. The members 14 and 15 are mounted upon a hub-like bearing member 17 and are rotatably mounted on the stem 9 on the outer side of the actuated member 10. The flange of the inner member 14 of the actuated member is provided with teeth 18 formed by slitting the flange of the member radially and laterally deflecting portions of the flange, as clearly shown in Fig. IV. The flanges are provided with inwardly-turned lugs 19 which coact to provide a cord securing means, the cord being knotted at 20 to engage these lugs. The flange of the member 15 is provided with peripheral stops 21.

The parts are inclosed and protected and a finish is given to the structure by a casing consisting of the member 22 mounted upon a shoulder 23 on the side of the valve body and a member 24 mounted upon the member 22. The fixed member 22 is provided with the stop 25 coacting with the stops on the actuating member. The stop 25 is formed by striking in a portion of the casing member 22. The member 24 is arranged

upon the member 22 and is provided with an opening 26 through which the valve stem projects. The coiled spring 27 is arranged on the stem and its inner end engaged with the pin 28 projecting laterally from the actuating member 13. The outer end of the spring is engaged with the casing section 24. The casing section 24 is adapted to be rotated upon the section 22 and by thus adjusting or rotating the same, tension may be applied to the spring 27. The section 24 is retained in position by the screws 29.

The pins 30 screwed into the stem on the outer side of the casing section 24, retains the same thereon for rotative adjustment. A washer 31 is arranged between the pins 30 and the ends of the casing. These pins 30 serve as a finger piece by means of which the valve may be manipulated if desired. The operating cord 16 depends through a hole 32 in the casing section 22, there being a slot 33 extending to the edge of the section 22, so that the parts may be readily assembled. The section 24 closes this slot when in place. With the parts thus arranged, the spring 27 serves a triple function, namely, that of holding the actuated and actuating ratchets in operative relation, returning the actuated member to its initial position and tending to hold the valve yieldingly in its seat.

My improved valve operating device is very simple in its parts and they are very easily and quickly assembled. The structure is not likely to get out of repair in use and it is compact and attractive in appearance. The structure illustrated is shown with a pilot fixture 34 having a regulating valve 35. As the details of this pilot form no part of my present invention I do not illustrate or describe the same herein.

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

1. In a structure of the class described, the combination with the valve body, of a rotary valve provided with a stem, an actuated ratchet mounted on said stem to rotate therewith, a cord operated actuating member rotatably mounted on said stem on the outer side of said actuated ratchet and provided with a ratchet coacting with said actuated ratchet and with peripheral stops and a laterally projecting pin on its outer side, a casing member mounted on said valve body and provided with a stop coacting with said stops on said actuating member and having an opening through which the actuating cord depends and a slot from its edge opening into said cord opening, a casing member mounted on said fixed member for rotative adjustment thereon and having an opening through which said stem projects, a finger piece arranged on said stem on the outside of said adjustable casing member and adapted to retain the same for rotative adjustment, means for securing said adjustable casing member to said fixed casing member, and a coiled spring arranged on

member and adapted to retain the same for rotative adjustment, means for securing said adjustable casing member to said fixed casing member, and a coiled spring arranged on said stem with its inner end engaged with said laterally projecting pin on said actuating member and its outer end with said adjustable casing member, whereby the tension of the spring may be regulated by adjustment of said casing member, said actuating member and actuated ratchet being retained in cooperative relation, said actuating member being returned to its initial position and said valve being held yieldingly to its seat by said spring.

2. In a structure of the class described, the combination with the valve body, of a rotary valve provided with a stem, an actuated ratchet mounted on said stem to rotate therewith, a cord operated actuating member rotatably mounted on said stem on the outer side of said actuated ratchet and provided with a ratchet coacting with said actuated ratchet and with peripheral stops and a laterally projecting pin on its outer side, a casing member mounted on said valve body and provided with a stop coacting with said stops on said actuating member and having an opening through which the actuating cord depends, a casing member mounted on said fixed member for rotative adjustment thereon, means for securing said adjustable casing member to said fixed casing member, and a coiled spring arranged on said stem with its inner end engaged with said laterally projecting pin on said actuating member and its outer end with said adjustable casing member, whereby the tension of the spring may be regulated by adjustment of said casing member, said actuating member and actuated ratchet being retained in cooperative relation, said actuating member being returned to its initial position and said valve being held yieldingly to its seat by said spring.

3. In a structure of the class described, the combination with the valve body, of a rotary valve provided with a stem, an actuated ratchet mounted on said stem to rotate therewith, a cord operated actuating member rotatably mounted on said stem and provided with a ratchet coacting with said actuated ratchet and with stops, a casing member mounted on said valve body and provided with a stop coacting with said stops on said actuating member, a casing member mounted on said fixed casing member for adjustment thereon and having an opening through which said stem projects, a finger piece arranged on said stem on the outside of said adjustable casing member and adapted to retain the same for rotative adjustment, means for securing said adjustable casing member to said fixed casing member, and a coiled spring arranged on

said stem with its inner end connected to said actuating member and its outer end with said adjustable casing member, whereby the tension of the spring may be regulated by adjustment of said casing member.

4. In a structure of the class described, the combination with the valve body, of a rotary valve provided with a stem, an actuated ratchet mounted on said stem to rotate therewith, a cord operated actuating member rotatably mounted on said stem and provided with a ratchet coacting with said actuated ratchet and with stops, a casing member mounted on said valve body and provided with a stop coacting with said stops on said actuating member, a casing member mounted on said fixed casing member for adjustment thereon, and a coiled spring arranged on said stem with its inner end connected to said actuating member and its outer end with said adjustable casing member, whereby the tension of the spring may be regulated by adjustment of said casing member.

5. The combination with the valve body, of a rotary valve provided with a stem, a ratchet disk mounted on said stem to rotate therewith, an actuating wheel provided with a ratchet coacting with said disk rotatably mounted on the stem on the outer side of said disk, a casing member mounted on the valve body, an adjustable casing member mounted on said fixed casing member, and a coiled spring arranged on said stem with its inner end connected to said actuating member and its outer end to said adjustable casing member, whereby said actuating member is held yieldingly in engagement with said ratchet disk and returned to its normal position and the spring acts to hold the valve in its seat.

6. The combination with the valve body, of a rotary valve provided with a stem, a ratchet disk mounted on said stem to rotate therewith, an actuating wheel provided with a ratchet coacting with said disk rotatably mounted on the stem on the outer side of said disk, a casing member mounted on the valve body, a casing member mounted on said fixed casing member, and a coiled spring arranged on said stem with its inner end connected to said actuating member and its outer end to the outer casing member, whereby said actuating member is held yieldingly in engagement with said ratchet disk and returned to its normal position and the spring acts to hold the valve in its seat.

7. The combination with the valve body, of a rotary valve provided with a stem, an actuated ratchet member mounted on said stem to rotate therewith, an actuating member provided with a ratchet coacting with said actuated member rotatably mounted on the stem, a casing member mounted on the valve body, a casing member adjustably

mounted on said fixed casing member, and a coiled spring arranged on said stem with one end connected to said actuating member and the other to said adjustable casing member.

8. The combination with the valve body, of a rotary valve provided with a stem, a ratchet member mounted on said stem to rotate therewith, an actuating ratchet member rotatably mounted on said stem, a coiled spring arranged on said stem, and a casing member mounted on the valve body to inclose the parts mounted on the stem, the outer end of the spring being connected to said casing whereby the ratchet members are held yieldingly together and the actuating member returned to its normal position and the spring acts on the valve to hold it in its seat.

9. In a structure of the class described, the combination with the valve body, of a rotary tapered valve provided with a stem at its large end; an actuated ratchet mounted on said stem to rotate therewith; an actuating ratchet rotatably mounted on said stem on the outer side of said actuated ratchet; and a coiled spring arranged on said stem on the outer side of said actuating member to hold said ratchet members yieldingly together and connected to the actuating ratchet to return it to its normal position, and through said ratchet members acting on said valve to hold it in its seat, the outer end of said spring being supported by a member on said valve body.

10. In a structure of the class described, the combination with the valve body, of a rotary valve; an actuating member rotatably mounted on said stem on the outer side of said actuated member; and a coiled spring arranged on said stem on the outer side of said actuating member to hold said members together and to hold said valve in its seat, said spring being connected to the actuating member to return it to its normal position, the outer end of said spring being supported by a member on said valve body.

11. In a structure of the class described, the combination with the valve body, of a rotary valve; a cord operating actuating member for said valve; a fixed casing member mounted on said valve body and having a key-hole slot in its outer edge through which the actuating cord depends, the actuating member being within the casing member on the body; and a second casing member mounted on said casing member on said body to close the neck portion of said slot.

12. In a structure of the class described, the combination with the valve body, of a rotary valve; a cord operating actuating member for said valve; a fixed casing member mounted on said valve body and having a slot in its outer edge through which the actuating cord depends, the actuating mem-

ber being within the casing member mounted on said body, and a removable casing member mounted on said fixed member to close the slot and retain the cord therein when the removable casing member is in position.

In witness whereof, I have hereunto set

my hand and seal in the presence of two witnesses.

ALFRED H. HUMPHREY. [L. s.]

Witnesses:

JOHN F. BLANDY,  
J. P. CONROY.