

No. 818,474.

PATENTED APR. 24, 1906.

F. SCHREIDT.
VALVE.

APPLICATION FILED MAY 25, 1905.

Fig. 2.

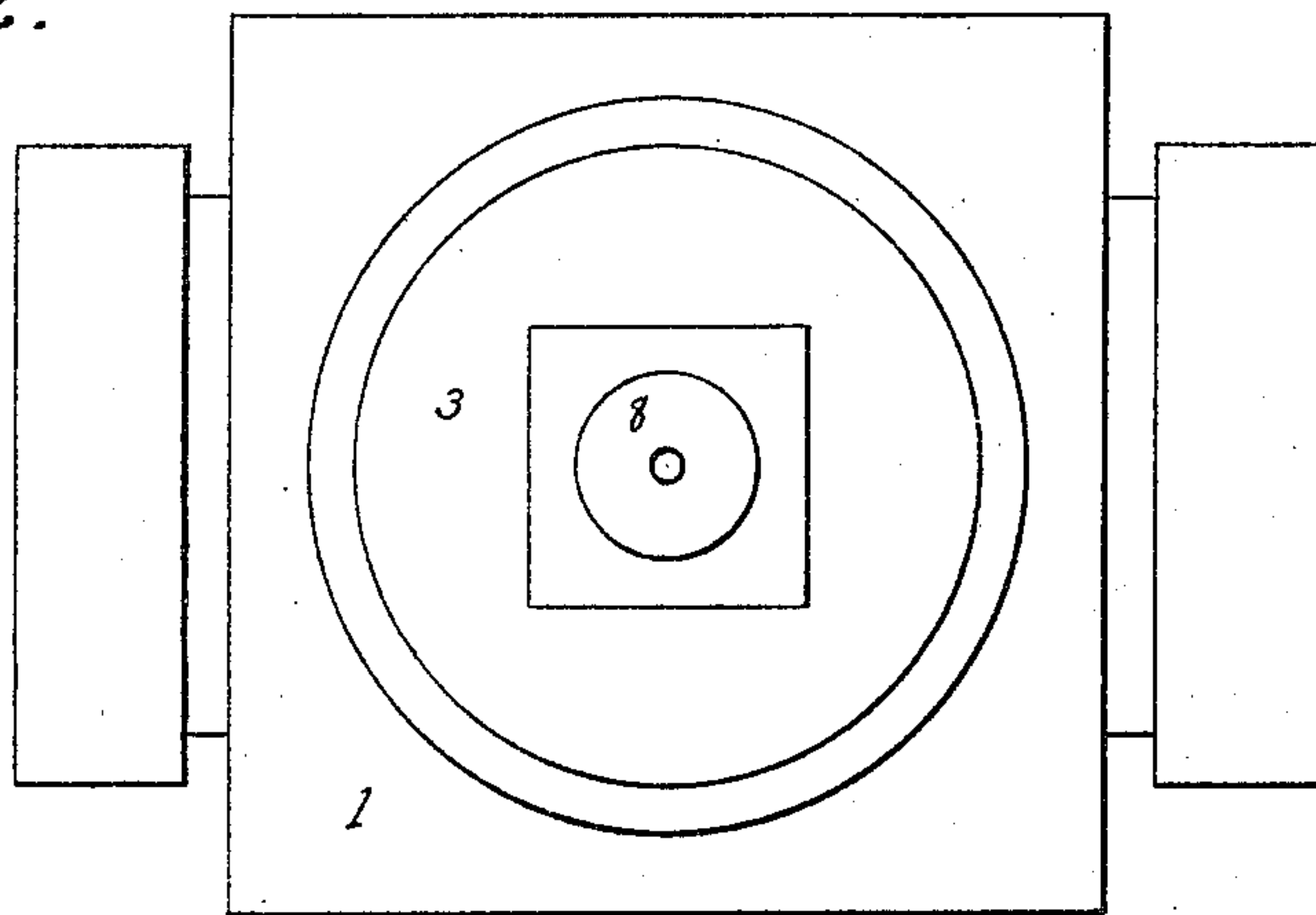
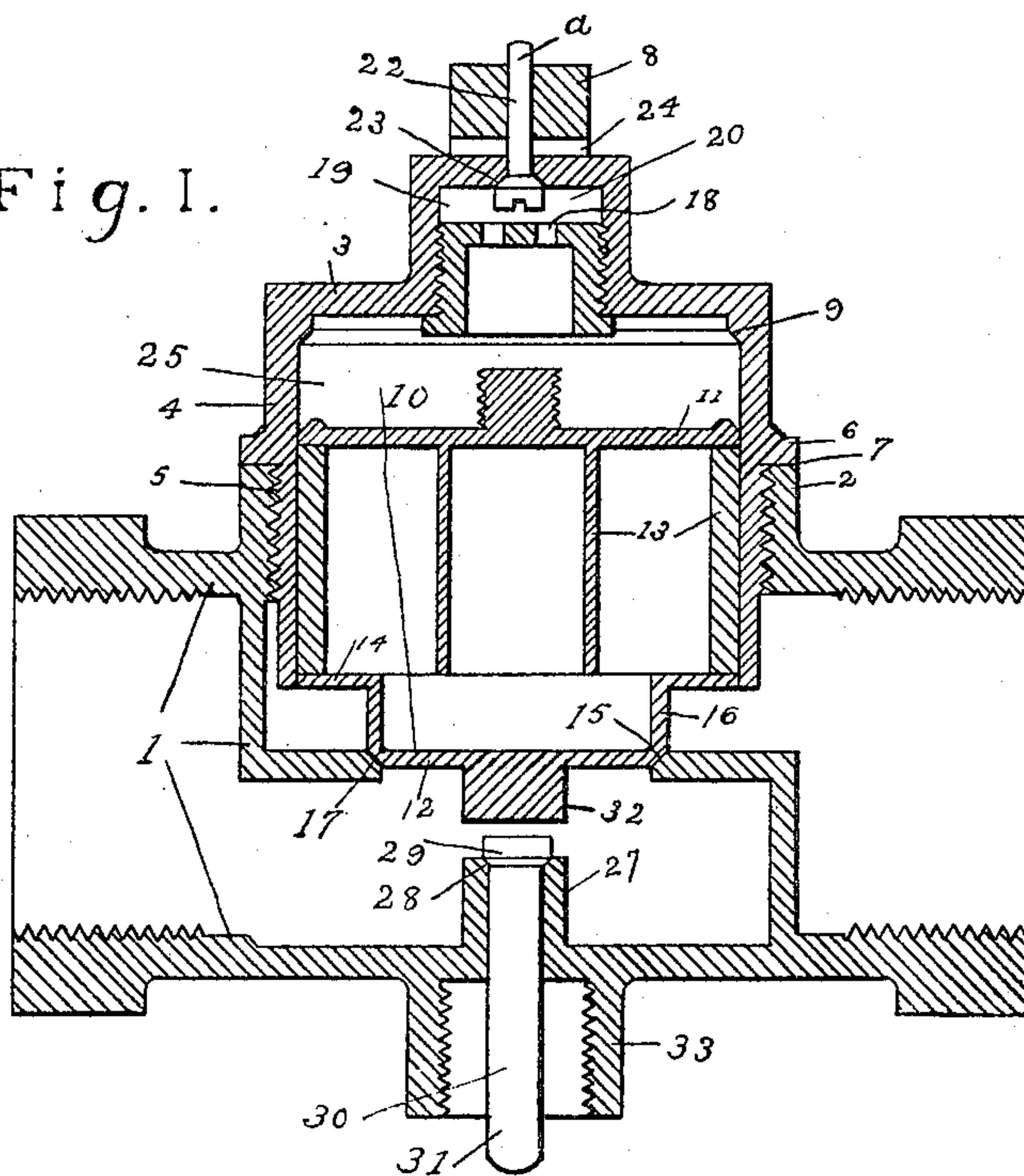


Fig. 1.



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FRANK SCHREIDT, OF MANSFIELD, OHIO.

VALVE.

No. 818,474.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed May 25, 1905. Serial No. 262,282.

To all whom it may concern:

Be it known that I, FRANK SCHREIDT, a citizen of the United States of America, and a resident of Mansfield, Richland county, Ohio, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to improvements in safety gas-valves, and especially to improvements in the valve described and claimed in my Letters Patent No. 792,353, bearing date of the 13th day of June, 1905, (Valve.)

The objects of my invention are to increase the area or surface of the lower disk without increasing the admission-aperture by means of a plate made integral therewith, which is made larger in diameter to increase the lifting power of the gas, so as to permit the valve being held open with a minimum pressure, thereby making its movement more sensitive to changes or variations in the pressure in the mains, and to provide a means for preventing the escape of the gas through the vent-apertures by an auxiliary vent-valve, which permits the air and gas to escape when the valve is closed and prevents air-cushioning when the valve is opened and held open by the pressure of the gas.

Another essential feature of my device is the means employed to raise and open the valve manually after the gas is turned on again or the pressure increased above a predetermined amount.

A further object of my improvement is to afford facilities for guiding the valve in its travel so as to keep it in perfect alinement when the valve is being opened or closed, whereby the valve and seats are brought in perfect contact.

I attain these and other objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical cross-section of an ordinary globe-valve, showing the application of my invention thereto with the valve in closed position. Fig. 2 is a top view.

Reference-figure 1 indicates the body of an ordinary globe-valve. An annular upwardly-extending flange 2, interiorly screw-threaded, is made integral with the body portion. A cap 3, having a depending annular flange 4, with the lower portion 5 of its periphery screw-threaded, is adapted to engage with the threaded portion of the flange 2. The cap is screwed down until the rib 6 is brought down in contact with the face 7 of the flange,

forming a closure. A projecting portion 8 is made integral with the cap, having the lower portion formed square or its equivalent shape for the purpose of providing a means for closing or removing the cap. An annular rib 9, with a face forming a valve-seat, is provided in the inner periphery of the depending flange 4 adjacent to the top of the cap. A valve 10, consisting of an upper disk 11 and a lower disk 12 of unequal diameter, is provided and connected together by the wings 13. The outer peripheries of the upper disk 10, the wings 13, and a guiding-plate 14 are fitted to the inner periphery of the flange 4, which keep the valve-disks in perfect alinement when movement is imparted thereto. The lower valve-disk 12 is smaller in diameter than the upper disk 11. The plate 14 is connected to the disk 12 by the depending flange 16. The construction of the lower disk and plate connected thereto as herein described permits the gas when the valve is open to come in contact with the larger area or surface, thereby making the operation of the valve more sensitive to the varying pressure of the gas in the main and providing a means of holding the valve open at a very low pressure.

Reference-figures 17 designate the lower valve-seat. A perforated bushing 18 is fitted to the inner periphery of the cap, leaving a space 19 between the top of the bushing and the face 20 of the cap. In the center of the cap an aperture is provided, into which a pin-valve 22, having a collar 23 made integral therewith, is adapted to contact with a similar surface surrounding the aperture in the cap, which forms a valve-seat. Air-vents are provided, so as to permit the air to escape from the chamber 25. When it is desired to raise the valve-disk for the passage of gas, the stem *a* of the pin-valve is pressed down, thereby permitting the gas or air to escape through the vents 24.

When the valve is closed, the gas that finds its way into the chamber 25 passes through the perforated bushing 18 and comes in contact with the collar 23 of the pin-valve, forcing it in contact with the valve-seat and effectually closing the chamber and preventing the gas from escaping. When the valve is open, the pin-valve drops down until the face of the collar comes in contact with the top of the bushing, which affords a means of support. The weight of the valve and its appliances is regulated to conform to the pres-

sure of the gas in the same manner as described in my former application.

It will be noted that while the gas is flowing through the pipes its escape is prevented by the pressure being used to close all outlets by valve mechanism. In the lower portion of the valve a boss 27, having an aperture in the center thereof, with an annular seat 28 formed therein, is provided. A combined releasing-pin and valve is fitted to the aperture with a portion of the collar 29, adapted to contact with the seat 28, which prevents the escape of gas by its own weight and the pressure of the gas. When the valve is automatically closed by low pressure in the mains or in case it is cut off or shut off and it is again turned on or the pressure increased, the gas is prevented from flowing through for consumption until the valve is opened by manually raising the valve by the pin-valve 30 and pressing down on the stem *a*. The pin-valve 30 is raised by exerting a pressure under the projecting portion 31 of the valve until the top is brought in contact with the boss 32, forcing the valve 12 from its seat, admitting the passage of gas through the valve, and sustaining and keeping the valve 12 open by the pressure of the gas. The lower boss 33 is for the purpose of protecting the stem of the valve 30.

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

1. A valve comprising a body portion, a flanged cap having an internal circumferential rib adjacent to the top, said rib ground on its lower surface to form a valve-seat, a seat formed in the valve-body, said valve composed of an upper and lower disk of different diameters.

2. A valve comprising a body portion, a flanged cap having an internal circumferential rib with a valve-seat formed thereon, a pin-valve fitted to the upper portion of said cap, a bushing having apertures provided therein secured to said cap affording a means of support for said pin-valve, a main valve composed of an upper and lower disk, an annular flange made integral with the lower

disk, wings secured thereto, a combined releasing-pin and valve fitted to an aperture in the body portion of the valve and located below the lower disk of the main valve substantially as described and for the purpose set forth.

3. A valve comprising a body portion, a cap having a depending annular flange with an internal rib, a perforated bushing fitted to the upper portion of said cap, a pin-valve supported by said bushing, an upper valve-disk adapted to contact with said rib, depending wings made integral therewith, a guiding-plate secured to said wings, a flange made integral with said plate and of smaller diameter, a lower valve-disk secured to said flange, a combined valve and releasing-pin fitted to the lower body portion of the valve.

4. In a valve comprising a body portion, a cap having a depending circular flange with a valve-seat formed on the inner periphery thereof, a main valve comprised of two disks of different diameter fitted to said circular flange, a pin-valve fitted to upper portion of said cap, a bushing secured to said cap and adapted to support said pin-valve with apertures provided therein for the escape of air from the main-valve chamber, a combined releasing-pin and valve fitted to the lower portion of the body of the valve below the main valve as described and set forth.

5. A valve comprising a body portion, a flanged cap having an internal rib forming a valve-seat, a bushing secured to the upper portion of said cap, a pin-valve fitted to an aperture in the upper portion of said cap, a main valve composed of two disks of different diameters, a combined releasing-pin and valve secured to the lower portion of the valve below the main valve, means for opening the main valve, substantially as described and set forth.

Signed at Mansfield, Ohio, this 19th day of May, 1905.

FRANK SCHREIDT.

Witnesses:

JOHN H. CASS,
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