

(No Model.)

W. VOGEL.
REGULATING VALVE.

No. 400,275.

Patented Mar. 26, 1889.

Fig. 1.

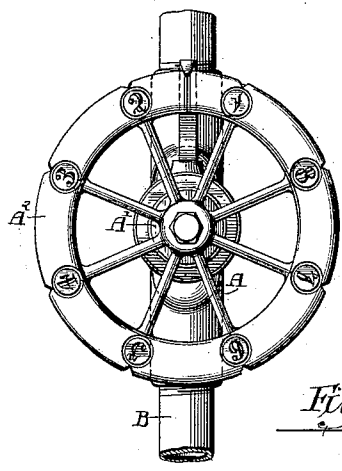


Fig. 2.

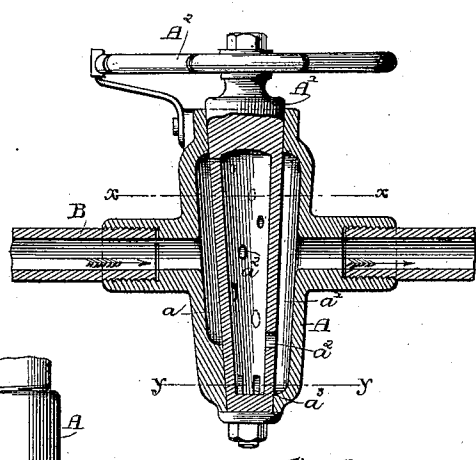


Fig. 3.

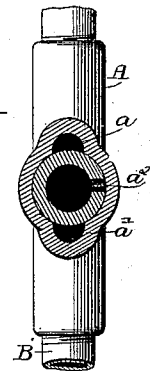


Fig. 4.

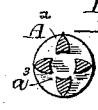


Fig. 6.

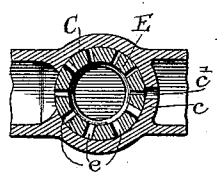
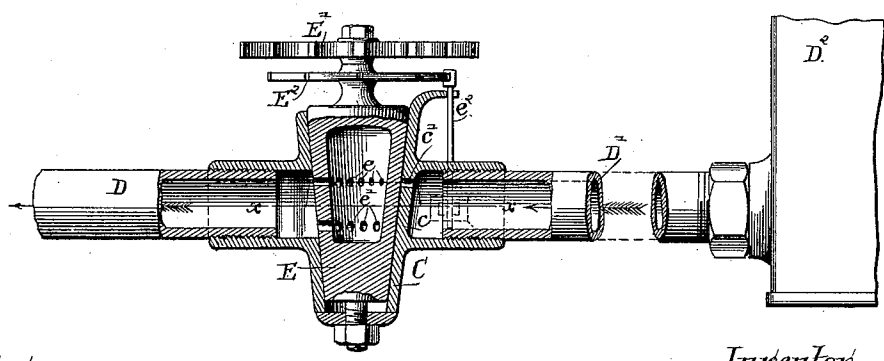


Fig. 5.



Witnesses:-
Amos M. Whitehead.

John Phillips.

Inventor:-
William Vogel.

by:- *Hayton & Poole*
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAM VOGEL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE VOGEL PETROLEUM HEATING COMPANY, OF SAME PLACE.

REGULATING-VALVE.

SPECIFICATION forming part of Letters Patent No. 400,275, dated March 26, 1889.

Application filed April 15, 1887. Serial No. 234,906. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM VOGEL, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Regulating-Valves; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon,
10 which form a part of this specification.

This invention relates to a novel regulating-valve, intended more especially for centralizing the flow of oil or other liquid fuel to a burner or burning device.

15 The invention consists in the matters hereinafter described, and pointed out in the appended claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a view of a valve
20 provided with a series of different-sized orifices for the passage of fluid, and an external indicator, whereby the valve may be adjusted to supply a desired quantity of oil. Fig. 2 is a central vertical section of the same. Fig. 3
25 is a horizontal section taken upon the line xx of Fig. 2. Fig. 4 is a horizontal section taken upon the line yy of Fig. 2. Fig. 5 is a longitudinal section of a valve different in some respects from that shown in Figs. 1 to 4. Fig.
30 6 is a sectional view of the same, taken upon line xx of Fig. 5.

As illustrated in Figs. 1, 2, 3, and 4, the head A of the valve is provided with a seat for a hollow conical plug, A', and at the inner
35 extremities of the inlet and outlet passages of the valve are provided the recesses $a a'$, running lengthwise of the valve-seat, the recess a at the inlet side terminating at its lower end at a somewhat higher point than the recess a' at the outlet side. The plug A' is provided with a series of unequal passages, $a^2 a^2$,
40 located vertically out of line with each other, by which the oil enters the interior of the plug from the recess a , said passages being so placed that but one can at the same time stand in communication with said recess a .
45

At the bottom of the chamber in the plug A', and below the end of the recess a , a series of lateral openings, a^3 , are provided, which
50 communicate with the lower end of the passage a' , so that liquid entering the plug

through any one of the passages a^2 will find egress into said recess a' , and thus be permitted to flow through the pipe B. Upon the upper end of the plug A' is fixed a wheel, A²,
55 or its equivalent, having a series of numerals placed in line with the several graded holes a^2 , so that the valve may be set by aid of this device with a desired size of passage a^2 in communication with the recess a . By the use of
60 the valve thus made it is obviously practicable to supply a definite and predetermined quantity of oil or other fluid in a given time, and thus, when the device is used in connection with a burner, to maintain a regular fire
65 of any required volume or intensity. When used for regulating the feed to a burner, the capacity of the largest hole, a^2 , should not exceed the capacity of the burner, and if so overflow of oil in the burner can never occur.
70

Another valve having the same general principles of construction above set forth is shown in Figs. 5 and 6, and is constructed as follows:

C is a valve-casing connected at one side with the part of the supply-pipe D communicating with a supply-tank, D', and at its opposite side with the part of the supply-pipe D
75 which leads to the burner.

E is the valve-plug, which is made hollow, and is provided at its upper part with a series
80 of openings, e , of varying diameter, placed in the same plane at right angles to the axis of rotation of the plug, and at its lower part with a series of holes, e' , preferably larger than the holes e , said holes e' being all of the same
85 diameter and arranged in a plane parallel with that of the holes e .

The valve-casing is provided at its inlet side with a wall, c , covering the side of the plug at said inlet side, and said wall c is provided with
90 a single aperture, c' , located in the same plane with the holes e , the said aperture c' being of the same diameter as or larger than the largest of the said holes e . At the exit side of the casing the plug is uncovered or exposed, so
95 as to allow the free egress of the oil from both series of holes $e e'$, Fig. 5. The plug E is provided with a hand-wheel, E', and also, preferably, with a notched index-wheel, E², against which bears the free end of a spring-arm or
100 detent, e^2 , attached to the valve-casing. The hand or index wheel is provided with a series

of numerals placed opposite the several holes e —as, for example, with the numeral 1 in line with the smallest hole and the higher numbers in line with the larger of said holes, in the same manner as above described, and shown in Figs. 1, 2, 3, and 4. By the employment of said hand and index wheels the plug may obviously be set at pleasure with any one of the holes e therein in communication with the aperture e' , the detent e^2 indicating by its engagement with the disk E^2 the point at which said holes and apertures are exactly in alignment with each other. By placing either one of the holes e opposite the said aperture c oil will obviously flow through the hole so placed into the interior of the plug and will then pass freely from the holes e' . In the use of the valve thus made the quantity of oil flowing to the burner may obviously be accurately regulated according to the capacity of the hole e , so placed in opposition to the said opening c .

The advantage of this form of the regulating-valve over the one first above described is that the plug herein shown is shorter and the valve more compact by reason of the location of the several holes e in the same plane instead of in different planes, as is the case in the valve shown in Figs. 1, 2, 3, and 4.

I claim as my invention.

1. The combination, with a valve-casing provided with a single channel for the passage

of the fluid therethrough, of a valve-plug fitted to turn in said casing, and provided with a series of passages of unequal size adapted to be brought separately into register with the said channel of the valve-casing and arranged at such distances apart that one only of the said passages can be brought into register at the same time, a stem extending from the plug for turning the same, and a hand-wheel or other device engaging said stem and carrying figures or characters indicating which of the passages in the plug is in position to give passage to the fluid, substantially as described.

2. The combination, with the valve-casing provided with recesses a a' , constituting a single channel for the passage of fluid therethrough, of a hollow valve-plug formed with a plurality of openings of unequal size in the walls thereof, said openings being adapted to be brought separately into register with the recess a , and passages extending from the interior of the plug to the recess a' , substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

WILLIAM VOGEL.

Witnesses:

C. CLARENCE POOLE,
CHARLES T. LORING.