J. D. WALSH.

VALVE.

APPLICATION FILED AUG. 26, 1912.

1,174,915. Patented Mar. 7, 1916.

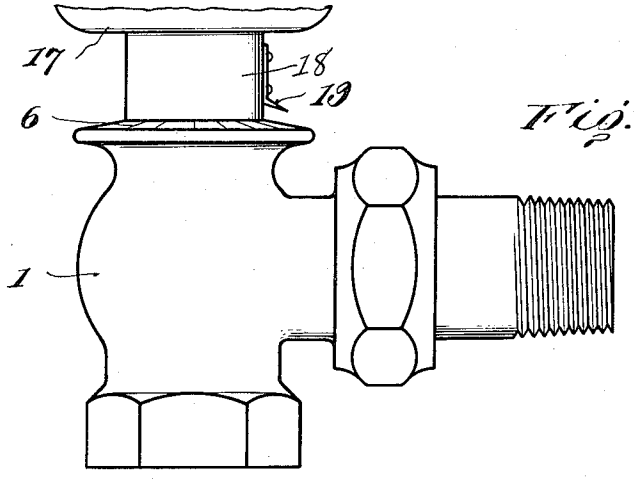


Fig. 1.

Fig. 2.

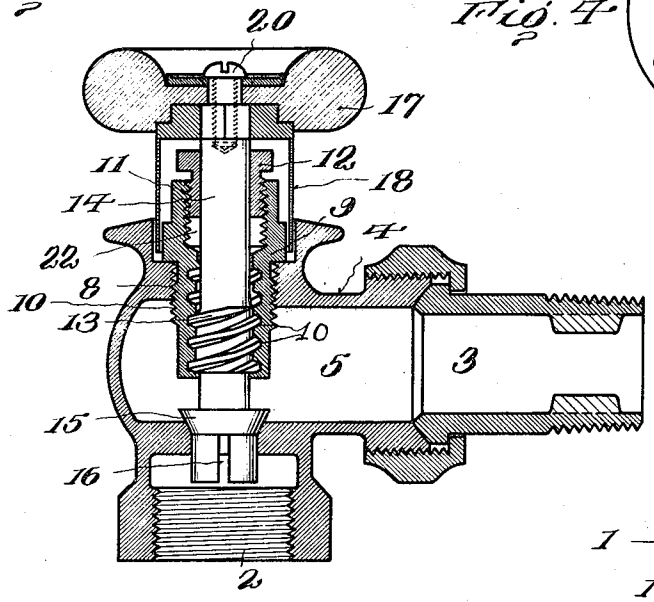


Fig. 4.

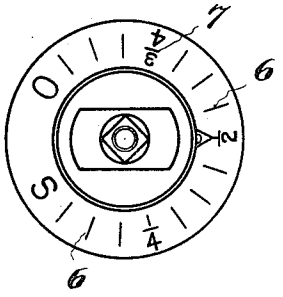
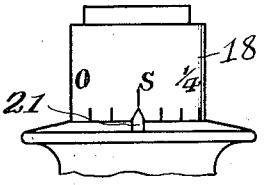


Fig. 5.



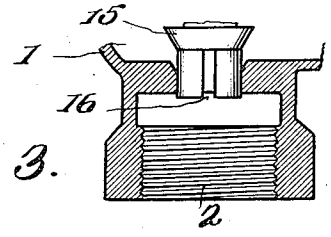


Fig. 3.

WITNESSES

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VALVE.

1,174,915. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed August 26, 1912. Serial No. 717,111.

To all whom it may concern:

Be it known that I, JOHN D. WALSH, a citizen of the United States, residing at North Tonawanda, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to valves and has especial reference to the class thereof utilized in connection with steam radiators.

It is an object of my invention to produce an effective form of steam valve of comparatively simple design and construction and in which instrumentalities are provided for predetermining the quantity of steam which it may be desired to have passing into the radiator.

It is a desideratum of my invention to provide means whereby the user may, in operating the valve, be able to regulate the quantity of steam passing through the valve and, also, to determine at a glance, for what quantity thereof the valve has been set to control.

To this end, the invention resides essentially in two components; one a casing provided with inlet and outlet ports, and the other component, fluid-controlling means; one of said components being provided with graduations and suitable indices to indicate that the valve is "open," "closed," "one-quarter open," "one-half open," or "three-quarters open;" and the other component carrying a pointer (coöperating with the port-controlling instrumentalities) to indicate the relative position of said instrumentalities.

The invention also resides in the novel arrangement and aggroupment of the parts and in the details thereof, all as hereinafter described and claimed.

In the accompanying drawings, I have illustrated, by way of example, one embodiment of my invention but which obviously may be varied and modified in various ways and still retain the underlying principles of the invention.

In these drawings: Figure 1 is a view in side elevation of a valve embodying my improvement; Fig. 2 is a central vertical section thereof, showing the position of the parts when the valve is closed; Fig. 3 is a fragmentary view showing the fluid-controlling parts in the position they occupy when the valve is open; Fig. 4 is a plan view of the graduated portion of the valve-casing; and Fig. 5 is a fragmentary view of a modification.

Referring to the drawings, the numeral 1 designates the casing which may be of any preferred form and construction so long as it includes an inlet port 2 and an outlet 3. In this instance, the outlet-port is formed in the portion 4 which in part forms a chamber 5. Upon the outside of said casing, it is provided with graduations 6 and indices 7, the purpose of which will presently be explained. This casing, etc., constitutes one component of the valve.

The casing is, preferably and as shown, provided with an upwardly-extending portion 8 which is threaded to receive an internally and externally threaded sleeve 9 which at its lower end extends into the chamber 5. The sleeve is provided at its lower and upper portions with threads 10 and 11 of relatively different pitch. Into the upper threaded portion a bearing member 12 is screwed. Extended through this bearing-member and provided with screw-threads 13 is a stem 14 carrying at its lower portion a head or enlargement 15 which is provided with vertical slots or apertures 16. This head and the stem on which it is formed constitute the active means for controlling the passage of steam or the like through the outlet-port and, according to its particular position therein, operates to close said port entirely, or to open it to varying degrees. The stem is rotated manually and this is facilitated by the hand-piece 17 which is secured to the upper end of the stem. Also secured to the upper end of the stem and adapted to turn therewith is a pendant collar 18, the lower portion of which occupies an annular recess formed between the inner wall of the upper portion of the casing and the outer wall of the sleeve 9.

Secured or otherwise suitably mounted on the sleeve is a pointer 19 adapted to occupy a position above, but to be moved in relation to, the graduations and indices, aforementioned.

The stem, collar, etc., constitute another or fluid-controlling component of my improved valve. Both components are so constructed and operated that, when the fluid-controlling component is manipulated, it

will be positioned to close the outlet-port entirely; or, if the pointer is opposite the "½"-index, the headed stem will open the valve one-half to permit the passage of steam to the extent of one-half of the valve's capacity. Similarly, the pointer may be positioned opposite the "¼"-index, or the "¾"-index to open the valve one-quarter or three-quarters, as the case may be. When the pointer is opposite the "0"-index the valve will be fully open; if opposite the "s"-index, it will be closed. In other words, the valve will be "on," or shut off, as the case may be.

To dismantle the valve, it is only necessary to remove the screw 20, whereupon the hand-piece will come off to permit removal of the collar. Access being thus had to the sleeve, it may be unscrewed from the casing and this, also, will carry the stem, etc., which may then be removed from said sleeve.

In Fig. 5, I have shown a modification which contemplates the mounting of the pointer 21 on the casing in lieu of being on the collar, as already described, and, then, the collar will be provided with the graduations and indices.

It is to be understood that the slots in the stem head are cut according to predetermined calculations in order that they may be of such size as to permit a predetermined quantity of steam to pass therethrough. In other words, their size bears a definite ratio to the normal pressure of the steam and the volume and size of the radiator to be supplied. In other words, if the valve be size "60," say, the slots will be cut so that no more steam under a 5-ounce pressure can pass through the valve and into the radiator than will fill, say, a sixty-foot radiator with 85% of its capacity or volume; wherefore, as will be seen, no steam will be wasted. In this particular, also, my valve differs from others with which I am familiar, because these others are provided with large openings, which permit overheating and waste.

As will be seen by referring to Fig. 2, a space 22 is provided below the bearing-member 12. This space is designed to receive any suitable packing to prevent leakage, and which is removably retained in said space by said member 12. I prefer to employ packing rather than springs because springs soon become ineffective by reason of the fact that they lose their tension under the action of strain.

What I claim is:

A valve comprising, in combination, a casing provided with an inlet-port and an outlet-port, and having a chamber with which said ports communicate; said casing also having a head-portion including a collar provided with an internally-threaded opening; a partition extending across the inlet-port and provided with an opening arranged to form a valve-seat; a sleeve threaded into the opening in the head of the casing and having its inner portion disposed within the chamber, and also threaded internally at its inner and outer extremities; a valve-stem having at one end a head adapted to seat in the opening on the partition, and having at its opposite end an operating instrumentality, and being externally threaded, intermediate its ends, into the interior of the sleeve; said valve-head having an elongated portion provided with a slot normally disposed within the opening in the partition and having a portion adapted to rest on the valve-seat to open and close said inlet-port; a bearing-member encircling said stem and threaded into the outer end of the sleeve-member; a pendant sleeve secured to the outer end of the stem and inclosing said bearing-member and the outer end of the threaded sleeve; and a pointer and indicia associated with the sleeve and collar to indicate the position of the head with relation to the seat.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN D. WALSH.

Witnesses:
W. H. WALLS,
R. C. HOLLEY.