

W. E. BARNES.
VALVE.
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1,019,747.

Patented Mar. 12, 1912.

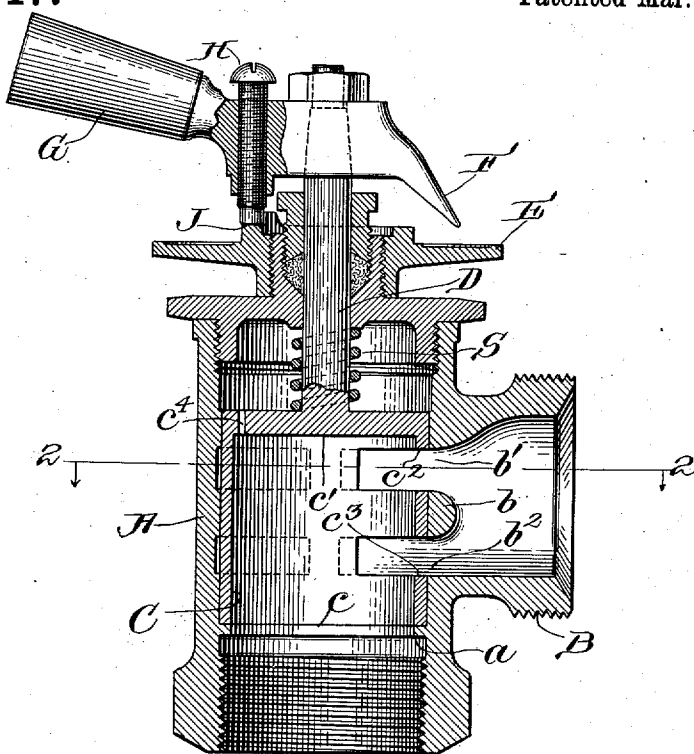


Fig. 1.

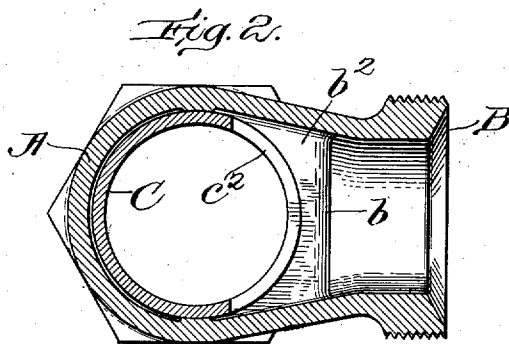


Fig. 2.

Witnesses:

Josephine H. Ryan
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Inventor:

Walter E. Barnes,
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UNITED STATES PATENT OFFICE.

WALTER E. BARNES, OF MALDEN, MASSACHUSETTS.

VALVE.

1,019,747.

Specification of Letters Patent.

Patented Mar. 12, 1912.

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To all whom it may concern:

Be it known that I, WALTER E. BARNES, a citizen of the United States, and resident of Malden, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Valves, of which the following is a specification.

This invention relates to valves for radiators or coils for hot water heating systems. Its object is to provide a valve of the class described wherein the maximum or wide open area between the inlet and outlet passages may be varied or adjusted to the capacity of the heating coil or radiator so as to insure the maximum of efficiency and economy. Owing to inaccuracies or variations in various parts of the heating apparatus, or owing to special conditions, such as remoteness of a radiator from or nearness to the source of supply, or to other conditions, it frequently happens that a valve, having a passage sufficiently large to insure the necessary supply to coils of a given cross sectional area under all conditions, has too large a passage for similar coils under certain conditions, and it becomes necessary in order to insure the greatest economy and the greatest efficiency to be able to regulate the maximum area of the passage of the valve to the needs of the particular radiator or coil to which it is connected. This is accomplished by the improvements herein-after pointed out.

Referring to the drawings, which illustrate an embodiment of my invention,—Figure 1 is a vertical central section of a valve embodying my invention; and Fig. 2 is a horizontal section on line 2—2 of Fig. 1.

A is a valve casing having a branch B as usual. The port or opening through branch B is preferably divided by a bar b into two openings in the form of two slots b' and b'' .

C is a cylindrical valve fitted to rotate within said valve casing A, open at one end as shown at c , and closed at the other end as shown at c' , excepting for the perforation c^4 for equalizing the pressure between the spaces on each side of the wall c' . The valve C is provided with a pair of elongated openings or slots, c^2 , c^3 , corresponding with the slots, b' b'' , respectively, in the valve casing. From the closed end c' of said valve the valve-stem D extends upwardly through the top of the valve casing, and a spring S surrounding the valve-stem and

abutting at one end against the wall of the casing and at the other end against the top c' of the valve, normally presses the valve toward a flange a provided on the interior of the valve casing, which acts as a stop to limit the movement of the valve in that direction. Upon the top of the valve casing may be mounted a disk or plate E provided with suitable figures or characters to indicate the position of the valve as to whether open, partially open, or shut, the pointer F turning with the valve to indicate the position thereof. Secured to the valve-stem D is the handle G for operating the valve. The handle G is provided with the adjustable screw H passing therethrough, the end of which abuts against a guideway J partially surrounding the valve-stem D. By turning the screw H, the valve C may be adjusted vertically, or in the direction of its axis, with relation to the valve casing, with the result that the slots or openings, c^2 , c^3 , in the valve will be offset with relation to their corresponding slots, b' , b'' , in the valve casing, thus varying the area of the passage through which water is admitted to the coil, by varying the sum of the areas of the passages through c^2 — b' and c^3 — b'' . In order to provide a sufficiently wide range of adjustment of the handle to secure the degree of adjustment of the area of the water passage which may be required, I provide a plurality of openings as described, with the result that the effect of the vertical adjustment of the valve by screw H to a given extent will be to multiply the extent of the variation of the sum of the areas of the passages by the number of such passages. Thus, with a relatively slight adjustment of the valve C in a direction of its axis by the operation of screw H, a very material variation may be had in the maximum area of the passages.

I claim:

In a valve of the class described, a valve casing having a passage provided with a plurality of openings, a rotatable cylindrical valve within said casing having a plurality of openings adapted to register with the openings of the casing, a valve stem upon said valve extending through said valve casing provided with a handle, a coil spring surrounding said valve stem and abutting at its ends against said valve and the wall of said casing, a track upon said

valve casing partially surrounding the valve stem, and a screw passing through said handle and abutting against said track whereby the position of said valve may be adjusted
5 in the direction of its axis with relation to the casing, and said valve is held in adjusted position by said screw and spring.

Signed by me at Boston, Massachusetts
this ninth day of May 1910.

WALTER E. BARNES.

Witnesses:

ROBERT CUSHMAN,
CHARLES D. WOODBERRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
