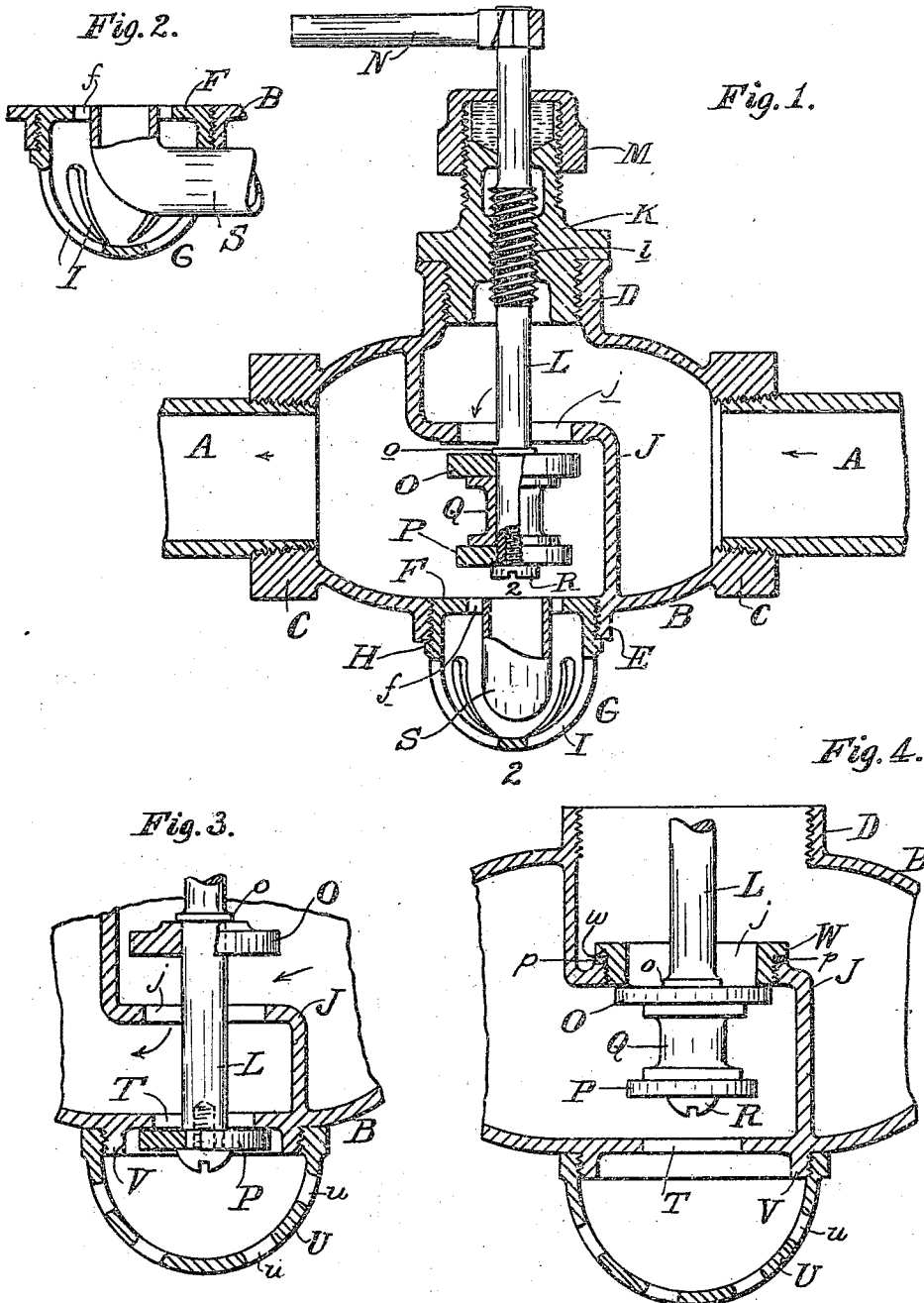


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VALVE.

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961,821.

Patented June 21, 1910.



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UNITED STATES PATENT OFFICE.

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VALVE.

961,821.

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To all whom it may concern:

Be it known that I, CHARLES WALKER, a citizen of the United States, residing at Knoxville, in the county of Knox and State of Tennessee, have invented a new and useful Improvement in Valves, of which the following is a specification, reference being had to the accompanying drawing.

My improvement relates particularly to valves designed to be placed into pipes through which water is supplied to buildings and rooms.

The object of the invention is to produce a valve containing efficient means for stopping the flow of water from the source of supply simultaneously with the opening of a lateral port through which water within the pipe at the side of the valve opposite the source of supply may drain out to avoid freezing or leakage during non-use.

In the accompanying drawings, Figure 1 is a section along the axis of the valve and parallel to the length of the line of pipe to which the valve is applied; Fig. 2 is a section along the axis of the valve in a plane which is perpendicular to the plane of Fig. 1; Fig. 3 is a section illustrating a modification of the form shown by Figs. 1 and 2; Fig. 4 is a section illustrating another modification of the form shown by Figs. 1 and 2.

Referring to said drawings, A, A are two sections of the line of pipe to which the valve is applied and in which the water flows from right to left.

B is the casing of the valve. Said casing has two lateral, interiorly screw-threaded tubular arms, C, C, which receive the exteriorly screw-threaded ends of the pipe sections, A. From the middle of the casing, B, rises a tubular interiorly screw-threaded neck, D. At the lower portion of said casing is a similar interiorly screw-threaded neck, E, axially in line with the upper neck, D. An exteriorly screw-threaded wall, F, extends across said neck and closes the latter, excepting for a central port, *f*, located at the center of said wall. In the form shown in the drawings, the wall, F, forms the upper part of a half spherical or rose-form member, G, which is screw-threaded into the neck, E, and has an annular shoulder, H, adapted to bear against the edge of said neck. And said rose-form member is provided with any desired number of perforations or openings, I, through which water coming from the port, *f*, may escape.

A partition, J, similar to the partition in a globe valve, separates the upper neck, D, and the intake arm, C, from the other arm, C, and the lower neck, E, said partition having a part parallel to the wall, F, in which is a port, *j*, axially in line with said port, *f*, and larger than the diameter of the valve stem, L.

Into the upper neck, D, is threaded a valve stem casing, K, the upper portion of which is interiorly screw-threaded to receive the screw-threaded portion, *l*, of the valve stem, L. The upper end of said casing is exteriorly screw-threaded to receive a stuffing casing, M.

N is a handle applied to the upper end of the valve stem for turning the latter. Between the wall, F, and the partition, J, is an annular valve member, O, which is adapted to bear against the lower face of said partition around the port, J, when the valve stem is moved upward. A similar valve member, P, surrounds the valve stem below the member, O, and in proper position to bear against the upper face of the wall, F, around the port, *f*, when the valve stem is driven downward far enough to move the valve member, O, away from the port, *j*.

The valve stem has a shoulder, *o*, against which the valve member, O, rests. Below the member, O, the valve stem receives the tubular member, Q, which bears against the valve member, O, and the lower end of which forms an abutment for the lower valve member, P. A screw, R, extends through the member, P, into the lower end of the valve stem, L, and binds the member, P, against said stem and the member, Q. For the removal and renewal of the members, O and P, the screw, R, and the tubular member, Q, are removed after the rose-form member, G, has been removed. It will be observed that said member, G, may be screwed up and down to bring the seat around the port, *f*, nearer to or farther from the valve member, P; but such adjustment is not essential, for when the valve is to be set for the passing of water through the pipe of which the sections, A, A, form parts, the precise height of the port, *f*, is immaterial because the valve stem may be driven downward more or less until the valve is seated upon said seat and draining ceases. The valve may also be used for normally closing the drain port of another pipe besides the left hand pipe, A. The drawings show a pipe, S,

coming from any apparatus, as, for example, a heating system, or any trapped water pipes, through the rose-form member, G, and thence upward into the port, *f*, to the level of the seat around said port, so that when the valve member, P, rests upon said seat it will also rest upon the end of said pipe, the diameter of the portion of said pipe which rests within said port being a little less than the diameter of said port, so that there is room around said pipe for the escape of water downward through said port.

In the form shown in Fig. 3, the valve member, O, is located above the partition, J, so that for closing the port, *j*, said member, O, must be moved downward by the downward movement of the valve stem. And in the same figure, the valve member, P, is located below the lower wall of the casing, B, and the drain port, T, in said wall corresponding to the drain port, *f*, in Figs. 1 and 2. Thus the drain port is closed by raising the member, P, and the valve stem, L. A hollow rose-form housing, U, having perforations, *u*, is shown screw-threaded to a short neck, V, extending downward from the casing, B, around the port, T.

In Fig. 4, the valve members, O and P, are located as in Figs. 1 and 2; but the drain port, T, is formed as in Fig. 3. This necessitates the passing of the valve downward through the partition, J. Provision is made for this by threading a tubular section, W, into said partition, the diameter of said tubular section being a little larger than the diameter of the valve. On said tubular section is an outward directed flange, *w*; and between said flange and the partition, J, is a packing ring, *p*. It will be observed that the valve will operate when placed otherwise than in the upright position.

I claim as my invention:

1. In a structure of the nature described, a casing having a drain port and a partition having a port axially in line with said drain port, a pipe terminating in and adapted to discharge through said drain port, and a

valve stem bearing a valve adapted to seat alternately upon said partition port and upon said drain port and pipe, substantially as described.

2. In a structure of the nature described, a casing having two openings for the attachment of line pipes and two necks located opposite each other and a partition separating one of said openings and one of said necks from the other of said openings and the other of said necks and having a port in line with said necks, a rose-form member comprising a wall extending across one of said necks and having a port in line with the port of said partition, a valve stem secured in the other of said necks for longitudinal movement therein and extending through the port of said partition, and a valve located upon said stem between said partition and said wall, substantially as described.

3. In a structure of the nature described, a casing having two openings for the attachment of line pipes and two necks located opposite each other and a partition separating one of said openings and one of said necks from the other of said openings and the other of said necks and having a port in line with said necks, a rose-form member comprising a wall extending across one of said necks and having a port in line with the port of said partition, a pipe extending through said rose-form member and into the port of said member, a valve stem secured in the other of said necks for longitudinal movement therein and extending through the port of said partition, and a valve located upon said stem between said partition and said wall, substantially as described.

In testimony whereof I have signed my name, in presence of two witnesses, this first day of July, in the year one thousand nine hundred and nine.

CHARLES WALKER.

Witnesses:

CYRUS KEHR,
J. ALBERT ROBBINS.