

(No Model.)

4 Sheets—Sheet 1.

H. EISERT & R. B. TALCOTT.
RADIATOR VALVE.

No. 533,351.

Patented Jan. 29, 1895.

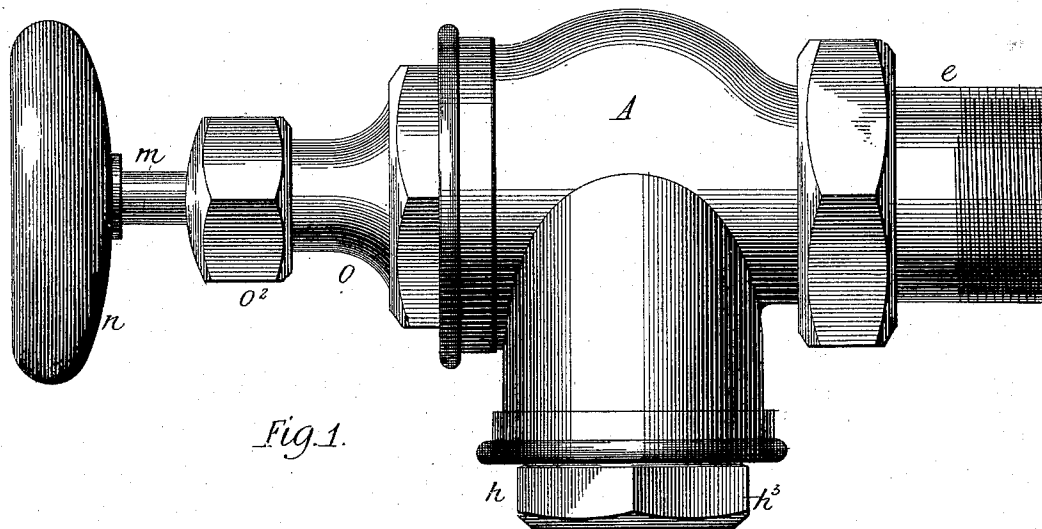


Fig. 1.

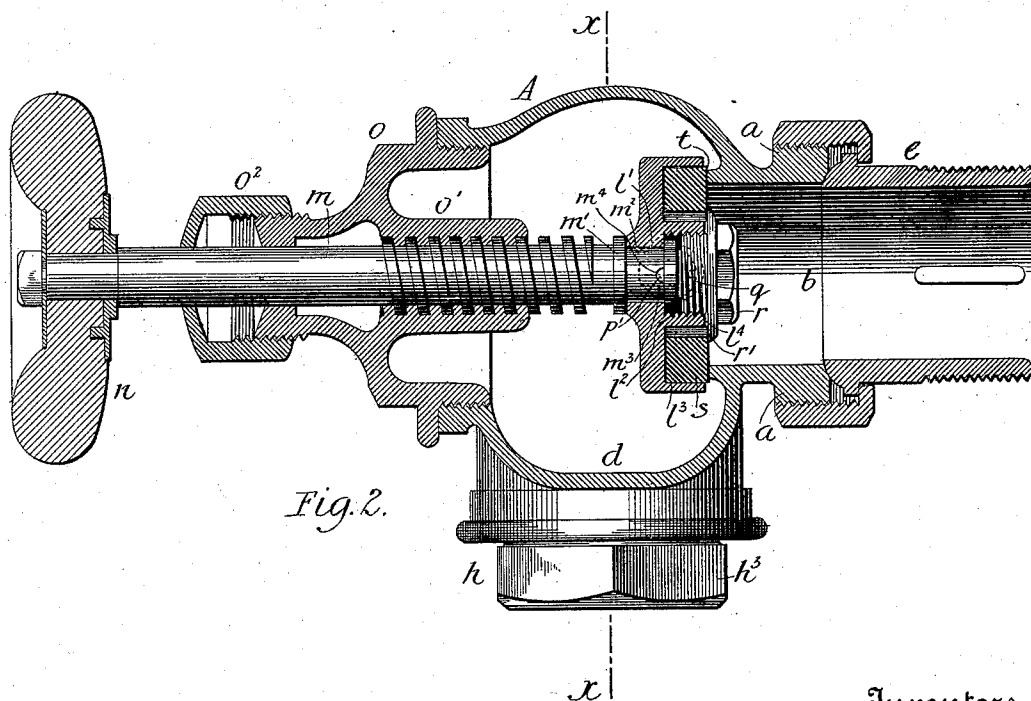


Fig. 2.

Witnesses

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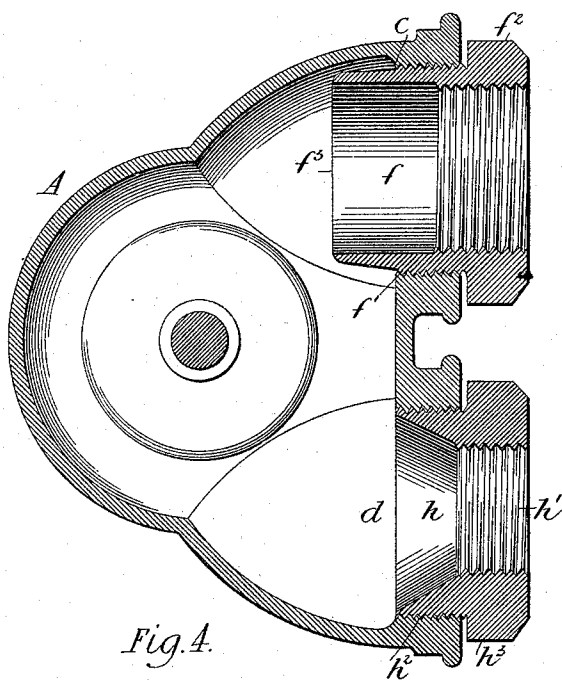
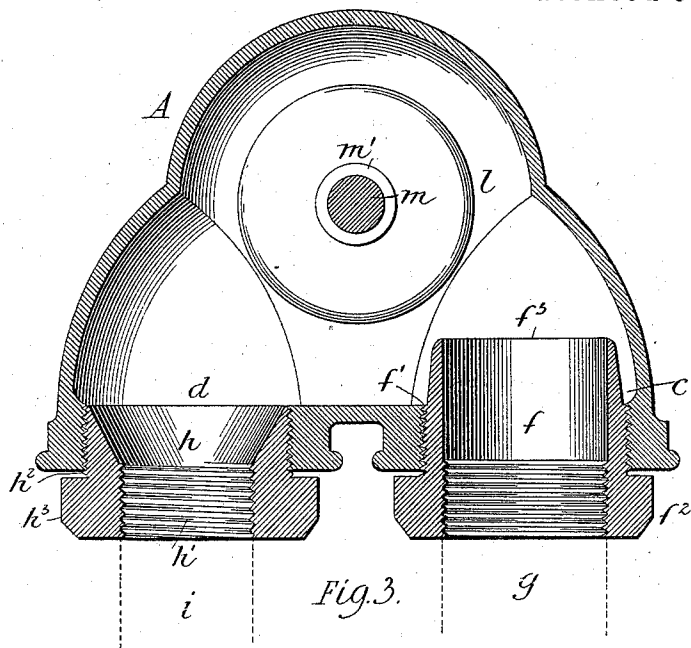
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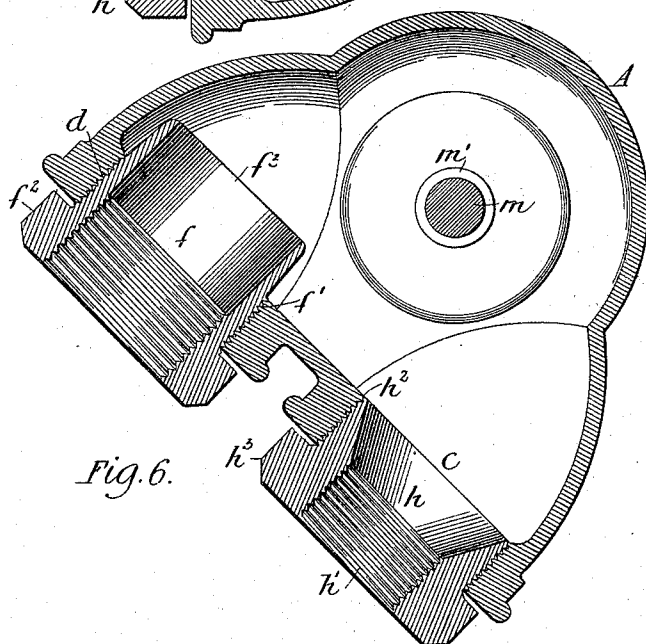
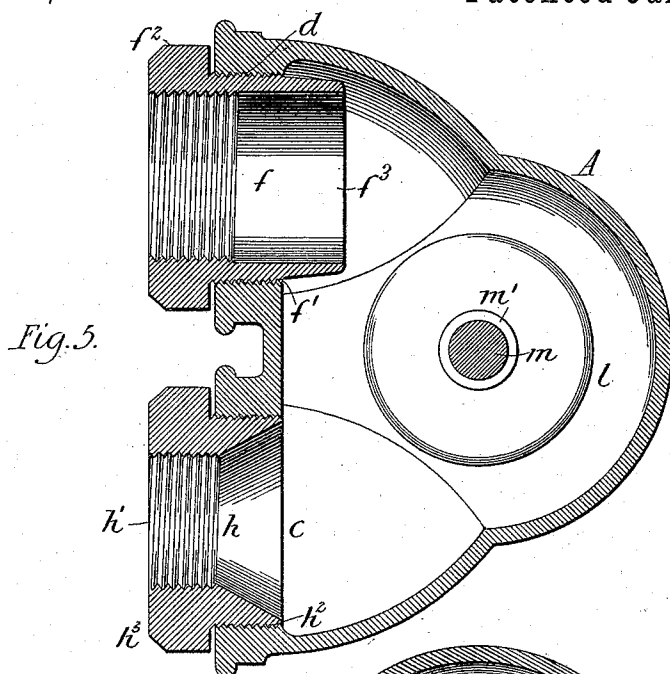
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Witnesses

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(No Model.)

4 Sheets—Sheet 4.

H. EISERT & R. B. TALCOTT.
RADIATOR VALVE.

No. 533,351.

Patented Jan. 29, 1895.

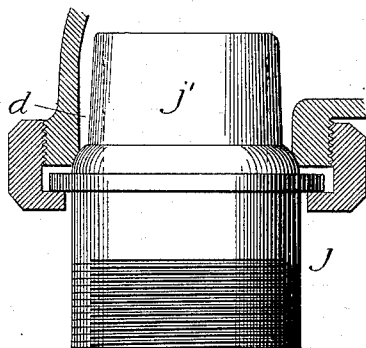


Fig. 7.

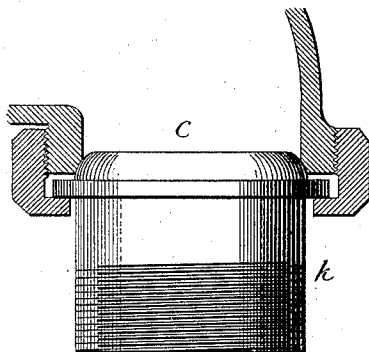


Fig. 8.

Witnesses

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UNITED STATES PATENT OFFICE.

HERMANN EISERT, OF BALTIMORE, AND ROBERT BARNARD TALCOTT, OF GARRETT PARK, MARYLAND.

RADIATOR-VALVE.

SPECIFICATION forming part of Letters Patent No. 533,351, dated January 29, 1895.

Application filed September 22, 1894. Serial No. 523,831. (No model.)

To all whom it may concern:

Be it known that we, HERMANN EISERT, residing at Baltimore, and ROBERT BARNARD TALCOTT, residing at Garrett Park, in the county of Montgomery and State of Maryland, citizens of the United States, have invented certain new and useful Improvements in Radiator-Valves; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention is directed to valves for steam radiators, and relates particularly to that class of radiator valves in which provision is made for controlling the circulation of steam in the radiator independent of the general circulation, whereby any radiator may be cut off without destroying the circulation in the pipes connecting that radiator with the main pipe system.

An object of our invention is to produce a valve of this character which is capable of performing all of the functions of the two valves usually attached to a radiator, which common arrangement results frequently in disorders in the circulation of steam, and also in annoying noises in the radiator, caused by one or the other of the two valves being accidentally or negligently left open or closed as the case may be.

By our invention but one valve is required to each radiator, and the circulation of steam therein is controlled by the manipulation of but one valve instead of the two valves usually employed; and thereby the disorders above stated are entirely overcome.

Another object of our invention is to produce a valve which is universal, in that its construction will permit of a connection with any arrangement of steam supply and return pipes at either end of a radiator, thus dispensing with the production of "right" and "left" valves, and the modifying of existing valves for connection with differing or unusual arrangements of steam pipes.

Another object of our invention is to provide in such a valve interchangeable joints,

one for the supply and the other for the return pipe, whereby the relative location of said pipes may be changed at will, the joint for the supply pipe extending within the valve body to prevent, when the valve is in a certain position, the entrance into said supply pipe of the water of condensation.

Another object of our invention is the production of an improved valve proper, by which all tendency to disorder and leakage is overcome.

The nature of our invention will appear from a reading of the subjoined description when taken in connection with the accompanying drawings which form a part of this specification, and in which—

Figure 1 is an elevation of our improved valve. Fig. 2, is a vertical central section. Fig. 3, is a horizontal section on line $x-x$ of Fig. 2 looking toward the radiator connection, showing a connection with vertical steam pipes; Fig. 4, a similar view showing a connection with horizontal steam pipes; Fig. 5, a similar view showing a connection with horizontal steam pipes arranged in a direction opposite to the pipes in Fig. 4; Fig. 6, a similar view showing a connection with inclined steam pipes; Fig. 7, a view partly in section of a union joint for the supply steam pipe; Fig. 8, a similar view of a union joint for the return pipe. Fig. 9 is a perspective view of a plate for connecting the valve proper and stem.

Like letters of reference denote like parts throughout the figures of the drawings.

Referring to the said drawings by letter, A denotes the body of the valve which is provided with three openings, one of which, b , leads to the radiator, another, c , to the steam supply pipe, and another, d , to the return pipe. At the opening b the body is provided with an integral, externally threaded flange a having a ground-joint for connection with a union e by which the valve is secured to the radiator, or if desired this opening may be internally threaded for attachment to the radiator by nipple connection. The openings c , and d , are screw-threaded to receive the reducer joints which we will now describe.

f is the reducer-joint, for the steam supply pipe, which consists of a section of tube in-

ternally threaded for a portion of the length for connection with the steam supply pipe g . The tube is threaded externally at f' for engagement with the threaded openings c or d , and at f^2 the tube is made polygonal to permit of the joint being turned by a wrench. Beyond the threads f' is an extension f^3 which, when the joint is in place, projects into the valve body a distance sufficient to form a barrier against the water of condensation which would otherwise have a tendency to flow into said steam pipe when the latter is arranged vertically as shown in Fig. 3.

h is the reducer joint, for the return pipe i , the interior of which is threaded at h' for a portion of its length for connection with said pipe, and its exterior is threaded at h^2 for connection with the threaded openings d or c . At h^3 the joint is made polygonal in shape also for a wrench hold. The openings c and d are of the same diameter and pitch of thread, as are also the threaded portions f' and h^2 of the reducer joints, thereby enabling said joints to be interchanged at will for a purpose which we will now explain.

In the setting up of steam heating apparatus, the steam supply and return pipes are led into a room in various ways, as for instance, vertically through the floor, or the steam from a ceiling and the return through the floor or wall, or through a wall horizontally, and in some cases at an incline; and said pipes are also frequently connected to the right as well as to the left end of a radiator, necessitating therefor the production of right and left valves, and a specially constructed valve for each modification of the arrangement of pipes.

As before stated, our improved valve may without altering its construction, be employed for any arrangement of pipes, and may also be connected to either end of a radiator. The connection between the valve and radiator is such that the valve may be turned to any angle with said connection as a pivot, the various positions of said valve being shown in Figs. 3 to 6 inclusive. In the arrangement in Fig. 3, the pipes are shown vertical and in this position of the valve the extension f^3 operates as before stated to prevent the entrance of condensed steam into the steam supply pipe.

In a horizontal arrangement of the pipes, the steam pipe is always located above the return pipe, and in Fig. 4 the reducer joint f is inserted in the upper opening. In the event of the pipes coming from the side opposite that shown in said figure, or connection being made at the opposite end of the radiator, the reducer joints are interchanged and the arrangement is then as shown in Fig. 5.

Fig. 6 shows an arrangement of inclined pipes which may be changed to any angle, the valve as before stated being capable of being turned and used in any position in the lower half of a circle.

Referring now to Figs. 7 and 8, j , k , denote

respectively union joints for the steam supply pipe and the return pipe, when such a connection is found desirable. These unions are of common type with the exception that they are interchangeable, and the union j is formed with an extension j' which performs the same function as the extension f^3 when connection is made between said joints and vertical pipes leading through the floor.

Referring now to the valve proper, l denotes said valve, and m is the stem which latter is passed through the top of the body and terminates in a hand-wheel n . In the top of the body is a threaded opening of comparatively large diameter, which is internally threaded to receive the cap o which is provided centrally with a sleeve o' which receives the stem. The upper end of this sleeve is externally threaded to receive a stuffing box o^2 which surrounds the stem as shown. The valve stem is provided near its lower end with an integral collar m' , and m^2 is a reduced end having a threaded aperture m^3 and a groove or any other suitable depression m^4 . The valve proper consists of a disk having a central aperture l' to receive the end m^2 of the stem, and p is a securing plate of larger diameter than the end m^2 to which latter it is secured by a screw q which is inserted in the aperture m^3 . The plate has a bead or other projection p' which engages the depression m^4 and prevents the turning of said plate on the stem. Below the aperture l' is an aperture l^2 of larger diameter and screw-threaded to receive a bolt-headed screw r having a flange r' . The disk is provided with an annular recess l^3 which receives a gasket or washer s which, when the valve is closed, rests against the valve seat t . At l^4 the disk is cut away to leave a space between the disk and the flange r' in order that said flange may bear directly against the gasket and insure a steam-tight joint. By reason of the peculiar connection between the stem and valve proper, the stem may be turned independently, and the plate, by reason of the arrangement of its projection with the depression in the stem, follows the movements of the latter and can only be disconnected by hand.

The universal nature of our improved valve renders its ready application to any arrangement of steam supply and return pipes, and by employing removable and interchangeable reducer or union joints, the same valve may be used with different sized pipes, inasmuch as joints of differing sized internal diameter may be employed. The valve is also of that type which permits of a circulation of steam independent of a radiator, and dispenses with the employment of two valves.

The valve is neat and attractive in appearance, is compact, and having few parts is not liable to disorder and leakage.

We claim as our invention—

1. A radiator valve having inlet and return openings of the same diameter, and joints for

the supply and return pipes of different diameters adapted to be interchangeably connected with said openings.

2. A radiator valve having inlet and return openings of the same diameter, and joints for the supply and return pipes adapted for interchangeable connection with said openings, one of said joints having an extension adapted to project into the valve body, for the purpose set forth.

3. A radiator valve having openings for inlet and return pipes, adapted to be turned to any angle with the valve connection to the radiator as a center, said openings being of the same diameter, and joints for the supply and return pipes having different diameters and adapted to be interchangeably connected with said openings.

4. In combination with the radiator valve herein described, a valve stem having a collar above the end of the stem, a disk having an aperture to receive freely the end of the stem, a plate non-revolubly but removably connected to said end, and a nut for closing said aperture.

5. In combination with the radiator valve herein described, a valve stem having near its lower end a collar, and at said end a transverse groove, a disk rotatable on the stem and having an aperture to receive said end, a plate removably secured to said end and having a head engaging the groove, and a nut for closing said aperture.

6. In combination with the radiator valve herein described, a valve stem having the collar, groove and threaded socket, a disk having an aperture to receive the end of the stem, said aperture having a threaded enlargement, a plate having a bead engaging the groove, a screw passed through the plate into the socket, a gasket in a recess in the disk and a securing nut screwed into said enlargement and holding the gasket in place.

In testimony whereof we affix our signatures in presence of two witnesses.

HERMANN EISERT.

ROBERT BARNARD TALCOTT.

Witnesses:

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C. M. AUTENRIETH.