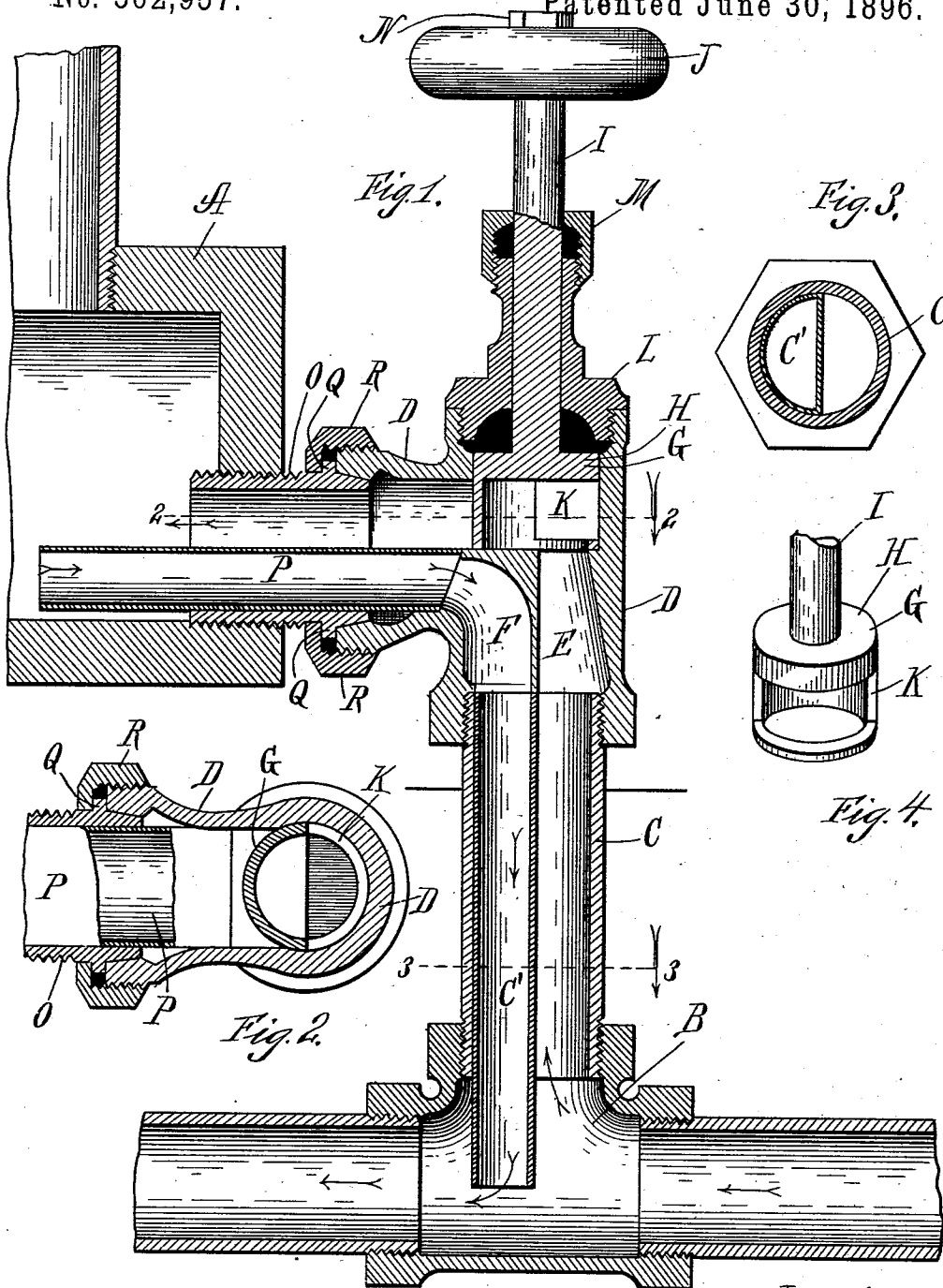


(No Model.)

F. C. GOFF.
RADIATOR VALVE.

No. 562,957.

Patented June 30, 1896.



Witnesses:

W. C. Corlies

Jno A. Christianson.

Inventor:

Frank C Goff

By *Coffman & Thacher*
Attys

UNITED STATES PATENT OFFICE.

FRANK C. GOFF, OF DENVER, COLORADO.

RADIATOR-VALVE.

SPECIFICATION forming part of Letters Patent No. 562,957, dated June 30, 1896.

Application filed April 10, 1894. Serial No. 507,002. (No model.)

To all whom it may concern:

Be it known that I, FRANK C. GOFF, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented a certain new and useful Improvement in Radiator-Valves, which is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical central sectional view of my valve, showing a portion of the radiator and main pipe. Fig. 2 is a sectional view taken at the line 2 2, Fig. 1, looking down. Fig. 3 is a transverse sectional view taken at the line 3 3, Fig. 1; and Fig. 4 is a perspective view of the valve with a portion of the valve-stem.

My invention relates to radiator-valves in which there is a single pipe connection to the radiator as a supply for steam or hot water and for the exhaust.

My invention is an improvement on the invention shown and described in my Patent No. 510,420, issued December 12, 1893, for hot-water valves; and it consists in the construction of the two-way passages in the short pipes connected to the valve-seat which has two passages through it, and the construction and application of the valve seated in one of the passages of the valve-seat, all as herein-after described and made the subject-matter of the claims.

In the accompanying drawings, A represents a portion of the radiator.

B represents a coupling in the main supply-pipe.

C is a short pipe screw-threaded at both ends and connected to the pipe-coupler B.

C' is a short pipe or tube, which is rigidly attached to the interior of the pipe C or to the valve-seat, one end of said pipe extending below the end of the pipe C into the coupler B, as clearly shown in Fig. 1.

D is a valve-seat having interior passages E and F. This valve-seat is secured to the upper end of the pipe C, as clearly shown.

G is a hollow cylindrical valve, open at one end and closed at the other end, as shown at H. I is a valve-stem, carrying at its upper end a hand-wheel J, by which said valve is rotated. The valve G has an opening on one side, as shown at K.

L is a screw-threaded cap, which is attached to the two-way valve-seat D to hold the valve G in place. M is also a screw-threaded packing-cap, which is attached to the upper end of the cap L.

N is a removable nut attached to the upper end of the valve-stem I to hold the hand-wheel J in place on the valve-stem. When it is desired to place the valve G in the valve-seat D, the hand-wheel J is removed from the valve-stem and the screw-threaded caps L and M are slipped onto the valve-stem, and the hand-wheel J is then attached to the valve-stem and secured thereto by the nut M. The valve is then secured in position by means of the screw-threaded cap L being screwed to the valve-seat, as shown in Fig. 1.

O is a short screw-threaded pipe in which there is an interior pipe P, the ends of which project beyond the ends of the short pipe Q, as clearly shown in Fig. 1. The pipe P is rigidly secured in position in the pipe O, preferably by soldering, or to the valve-seat. One end of the pipe P projects into the radiator farther than the pipe O, while the other end of said pipe P registers with the passage F in the valve-seat when the valve-seat and pipe O are connected together, as shown in Fig. 1. The pipe O has an annular rib Q, against which the end of one arm of the valve-seat strikes, and the coupling-cap R, which is screw-threaded to the valve-seat, holds the pipe O securely connected to the valve-seat in position so that the pipe P will register with the passage F in the valve-seat.

When the valve G is turned in the position shown in Fig. 1, it is closed, so that steam or hot water cannot pass into the radiator, but when it is turned partly around, so as to bring the opening K in the cylindrical valve opposite the opening leading into the pipe O, steam or hot water passes then through the valve into the radiator. The condensed steam or cold water passes through the pipe P, passage F in the valve-seat, and down through the interior pipe C' into the main pipe, as indicated by the arrows. In this construction of my valve-seat and valve, and by securing the interior pipes C' and P within the interior of the short pipes C and O, so that they each register with the passage F in the valve-seat, I am able to have my inlet into the radiator

from the main supply-pipe and my outlet from the radiator to the main supply-pipe through single pipe connection to the radiator and supply-pipe, and at the same time assemble parts in the most simple and efficient manner.

Having fully described the construction and operation of my invention, what I claim, and desire to secure by Letters Patent, is—

10 1. A pipe having a longitudinal diaphragm to form direct and return passages, and provided with a valve-seat formed in part by a portion of the diaphragm and in part by a portion of the wall of the pipe; a hollow cylindrical valve, open at one end and closed at the other, provided with an opening on one side and seated in one of the passages of the valve-seat, which passage is opened and closed by turning in the valve-seat, while the other passage remains open.

20 2. A radiator provided with a single opening; a stub connected with the opening in the radiator and having two passages through it; a coupling-pipe having two passages through it connected with said stub, the passages in the coupling-pipe registering with the passages in the radiator-stub; a short pipe con-

necting the coupling-pipe to the main supply-pipe, said short pipe having two passages through it which also register with the passages in the coupling-pipe; and a hollow cylindrical valve closed at one end and having an opening on one side placed in one of the passages of the coupling-pipe and made rotatable therein to open and close said passage, as specified. 30 35

3. The short pipe C, having an interior pipe C' secured therein, and projecting beyond one end of the short pipe into the coupling of the main supply-pipe, the opposite end of said interior pipe registering with the passage F in the coupling-pipe D; the coupling B of the main supply-pipe; the radiator stub-pipe O, having an interior pipe P, one end of which projects into the radiator beyond the end of the pipe O, while the other end registers with the opening F in the coupling-pipe D, all constituting an independent outlet of water from the radiator into the main supply-pipe, as specified. 40 45

FRANK C. GOFF.

Witnesses:

B. M. CARR,
N. Q. TANQUAY.