

G. S. RANSOM.

RADIATOR.

APPLICATION FILED NOV. 9, 1912.

1,057,453.

Patented Apr. 1, 1913.

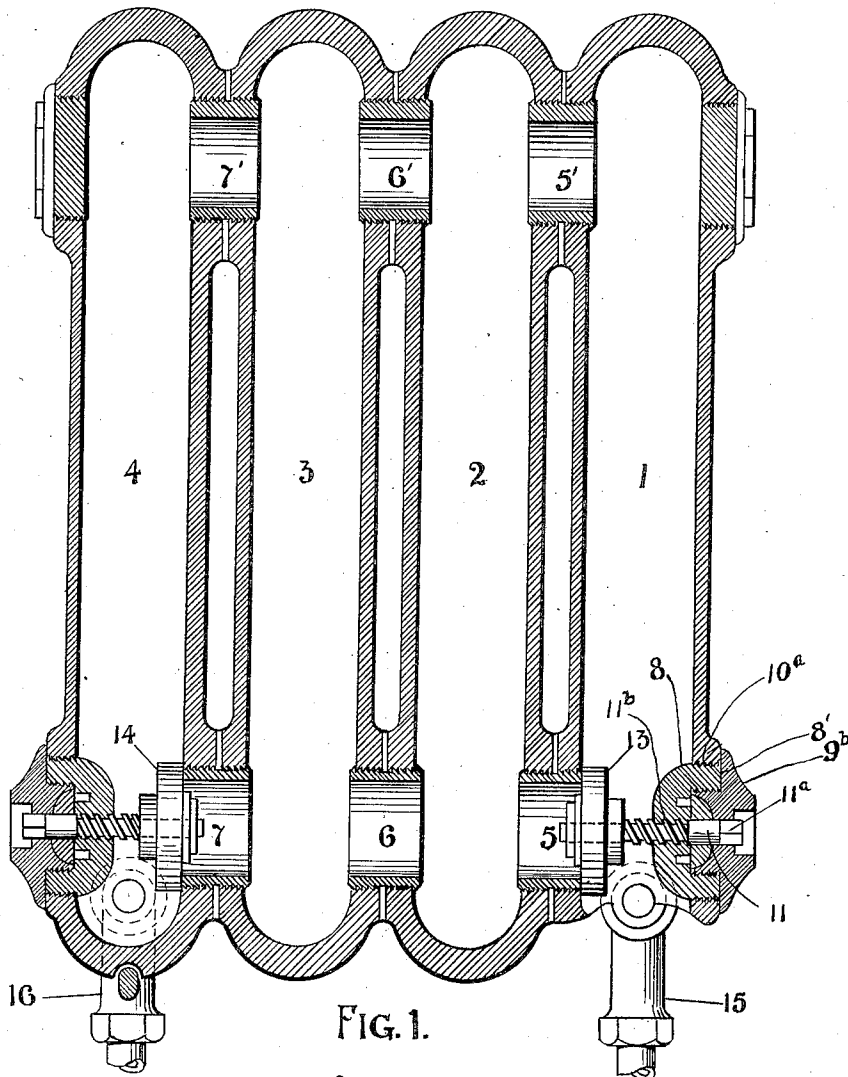


FIG. 1.

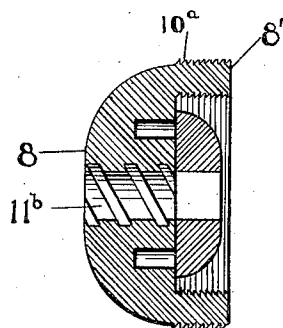


FIG. 2.

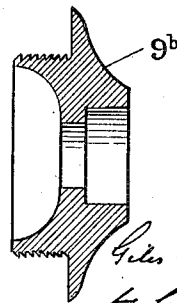


FIG. 3.

WITNESSES.

Edward Bernstein
O. Edgar French

INVENTOR.

Giles S. Ransom
by Charles W. Ransom
attorney.

UNITED STATES PATENT OFFICE.

GILES S. RANSOM, OF TORONTO, ONTARIO, CANADA.

RADIATOR.

1,057,453.

Specification of Letters Patent.

Patented Apr. 1, 1913.

Application filed November 9, 1912. Serial No. 730,436.

To all whom it may concern:

Be it known that I, GILES S. RANSOM, of the city of Toronto, in the county of York and Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Radiators; and I hereby declare that the following is a full, clear, and exact description of the same.

The object of my invention is to so control the circulation, of the heating agent, through a radiator that either the entire radiation surface, or a portion thereof, may be selectively brought into use, and the invention consists essentially of placing valves within the end radiator loops, which will, in their open position, permit of the circulation of the heating agent through all the radiator loops, thereby bringing into use the entire radiation surface, and which will, in their closed position, permit of the circulation of the heating agent through one end radiator loop and prevent the circulation of the heating agent through the remainder of the radiator loops, thereby bringing into use a portion of the radiation surface, for the purpose hereinafter described.

For an understanding of the invention, reference is to be had to the following description and to the accompanying drawings, in which:

Figure 1, is a vertical section of a radiator, consisting of four vertical radiator loops, showing the two end loops provided with valves and fitted with flow and return pipes; Fig. 2, is a detail sectional view of the stuffing box for the valve stem; and Fig. 3, is a detail sectional view of the plug.

Like numerals of reference refer to like parts throughout the specification and drawings.

I have shown in Fig. 1, a hot water radiator consisting of four radiator loops 1, 2, 3, and 4, connected together in the usual way at the bottom by hollow nipples 5, 6 and 7, and at the top by hollow nipples 5', 6' and 7', these nipples forming the passages between the radiator loops for the circulation of the heating agent through the radiator. In Fig. 1, I have shown the end radiator loops 1 and 4 to be provided with valves 13 and 14 respectively, opposed to the outer side faces of the nipples 5 and 7, which are ground smooth for valve seating purposes, and I have also shown the radiator loop 1 to be fitted with a flow

pipe 15, and the radiator loop 4 to be fitted with a return pipe 16 by which the heating agent can circulate from the boiler to the radiator and return again to the boiler. For example, when the valves 13 and 14 are in their open position, the heating agent can flow through the pipe 15 into the radiator loop 1, and circulate by means of the passages provided by the nipples 5, 5', 6, 6', 7 and 7' through the radiator loops 2, 3 and 4, and then return from the radiator loop 4 through the pipe 16. Should the valves 13 and 14 be moved to their closed position, as shown in full lines in Fig. 1, these valves will close the passages through the nipples 5 and 7 at the bottom of the radiator loops, and prevent the circulation of the heating agent through the bottom of the radiator loops, the heating agent then circulating from the flow pipe 15 into the radiator loop 1, and from the radiator loop 1 through the nipples 5', 6' and 7' at the top of the radiator to the radiator loop 4 in which it descends to the return pipe 16, heating only the two end radiator loops and the top of the interjacent radiator loops, and nullifying that part of the radiation surface where there is no circulation of the heating agent.

I know from an extensive experience in heat engineering, that it is a frequent occurrence for the heating agent in the radiator to freeze when the valves have been closed and neglected, and to prevent such occurrences, I have arranged the valve or valves controlling the circulation of the heating agent, so that one or more of the radiator loops will be heated regardless of its circulation through the remainder of the radiator. This enables me to keep the atmosphere in the vicinity of the radiator warmed to a sufficient extent to prevent the possibility of the heating agent of the radiator freezing.

I have shown and described the end radiator loops 1 and 4 as each being provided with a valve 13 and 14 respectively. Each of these valves is provided with a screw-threaded valve stem 11 having a squared end 11^a projecting beyond the outer surface of the plug 9^b, and surrounding each valve stem 11 within the radiator loop, is a stuffing box 8 having a screw-threaded bore 11^b through which the valve stem 11 operates. Each of the stuffing boxes 8 is provided with an annular flange 8' having on its

exterior face, screw-threads 10^a, to engage with the usual screw-threaded bore 11^b with which the radiator loops are provided, the inner face of the annular flanges 8' being also screw-threaded to receive the screw-threaded plug 9^b, which with the stuffing box 8, completely closes the bore 11^b.

Having thus fully described the nature of my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A radiator comprising a plural number of radiator loops connected together at the top and bottom by passages, valves within two of the radiator loops opposed to their respective passages at one end thereof, said valves in their open position permitting of the circulation of the heating agent through all the radiator loops, and in their closed position permitting of the circulation of the heating agent through a portion of the radiator loops.

2. A radiator comprising a plural number of radiator loops connected together at the top and bottom by passages, a valve within each of the end radiator loops opposed to their respective passages at the bottom thereof, said valves in their open position permitting of the circulation of the heating agent through all the radiator loops, and in their closed position permitting of the circulation of the heating agent through the end radiator loops and the tops of the interjacent radiator loops and preventing the circulation of the heating agent through the lower parts of the interjacent radiator loops.

Toronto, October 29, 1912.

GILES S. RANSOM.

Signed in the presence of—

C. H. RICHES,

EDWARD BERNSTEIN.

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