

(No Model.)

J. F. McELROY.
HOT WATER CIRCULATING APPARATUS.

No. 513,050.

Patented Jan. 16, 1894

Fig. 1.

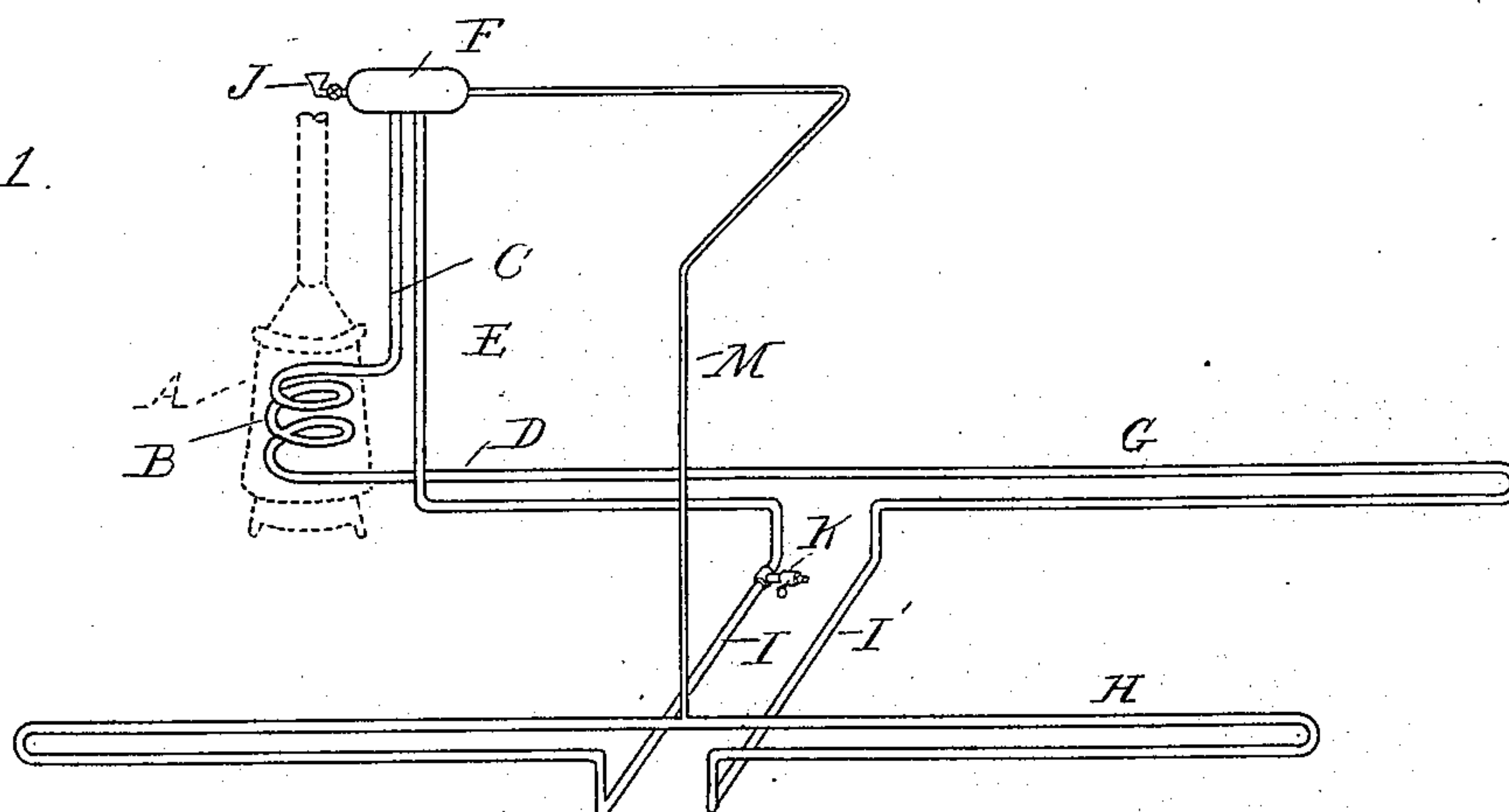
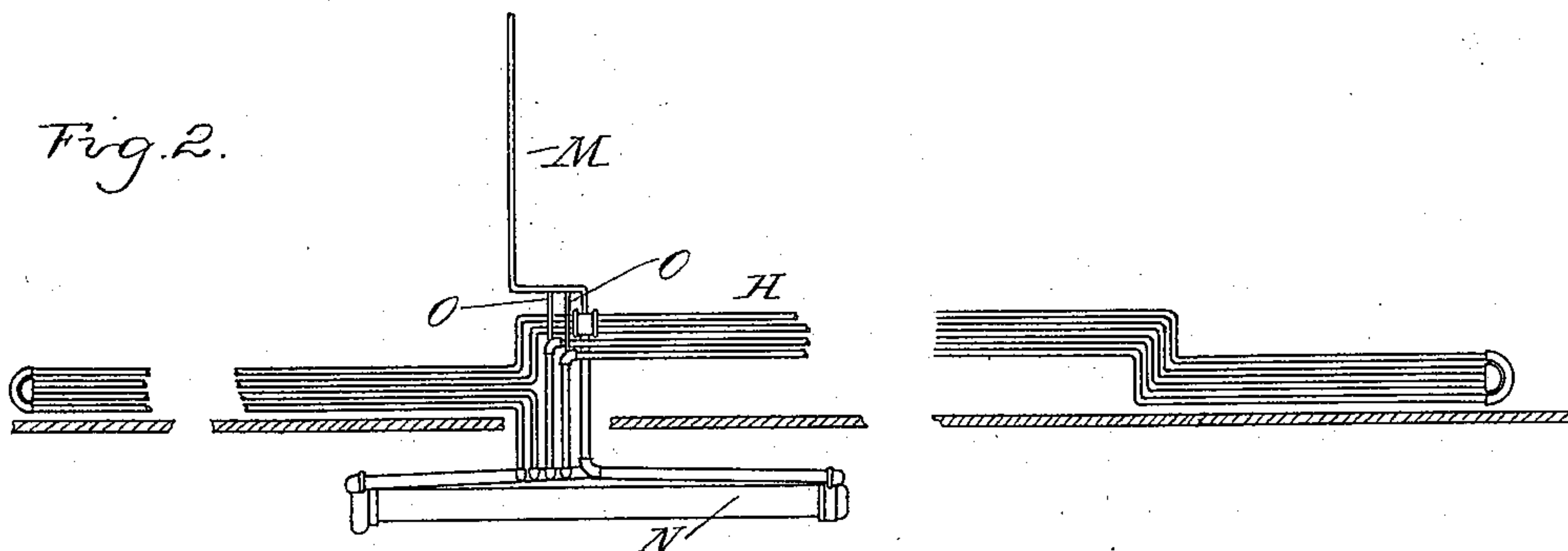


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

JAMES F. MCELROY, OF ALBANY, NEW YORK.

HOT-WATER-CIRCULATING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 513,050, dated January 16, 1894.

Application filed April 10, 1893. Serial No. 469,748. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. MCELROY, a citizen of the United States, residing at Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Hot-Water-Circulating Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention consists in the peculiar construction and arrangement of the piping of a hot water circulating apparatus, whereby in filling the tanks with water I prevent the trapping of air at points in the system, all as more fully hereinafter described.

15 In the drawings, Figure 1 is a perspective view of a hot water circulating apparatus, such as ordinarily applied to a railway car, showing my invention applied thereto. Fig. 20 2 is a side elevation of a modified form of apparatus.

A is the stove, such for instance as the well known so-called Baker heater having a water coil B therein, which at one end is connected to the up-take pipe C and at the other end to the return pipe D from the radiator.

25 E is a down-flow or out-flow pipe from the expansion drum F into which the pipe C connects.

30 G and H are radiators on the two sides of the car connected by means of the cross-over pipes I I'. This construction is so well known that further illustration or description of its construction or operation is unnecessary as many thousand cars in this country are now equipped with such an apparatus. This system is filled usually either through a filler cock J in the expansion drum and through the cock K at the end of one of the cross-overs. In filling the pipes from either of these points it nearly always happens that air will be trapped in the radiator H, upon the side of the car farthest from the expansion drum

and of course will remain at the highest point of the radiator it sometimes takes many hours 45 of hard work to fill a system of this kind because of such air traps. I provide in such a system a vent pipe M, which in this case extends from the highest point in the radiator H to the expansion drum F, making a perfectly free passage way between this point. 50 Now it is evident that if water is filled in through either of the usual channels that all the air in the radiator H, or which may be forced therein from other points of the system will rise to the top thereof and escape 55 into the expansion drum and thence out through the cock J, and I have found by actual experience that with a system thus equipped no more time is required to fill the 60 system than is necessary to actually pour in the water. In Fig. 2 I have shown a similar circulating system except that I have shown the steam heater N at the lowest point of the system and radiators at the sides of the car 65 making a multiple of pipes. In such construction I preferably connect all of the pipes at the highest point to the pipe M by means of branch pipes O.

What I claim as my invention is—

70 In a car heating apparatus, the combination with a heater, of a closed circulatory system, comprising circulating pipes, a closed expansion drum having a valved air escape opening therein, and uptake and down flow pipes 75 leading from the drum to the circulating pipes, and an air pipe leading from the highest point of the circulating pipes into the expansion drum, substantially as described.

In testimony whereof I affix my signature in 80 presence of two witnesses.

JAMES F. MCELROY.

Witnesses:

EDWIN A. SMITH,
WILLIAM P. EDDY.