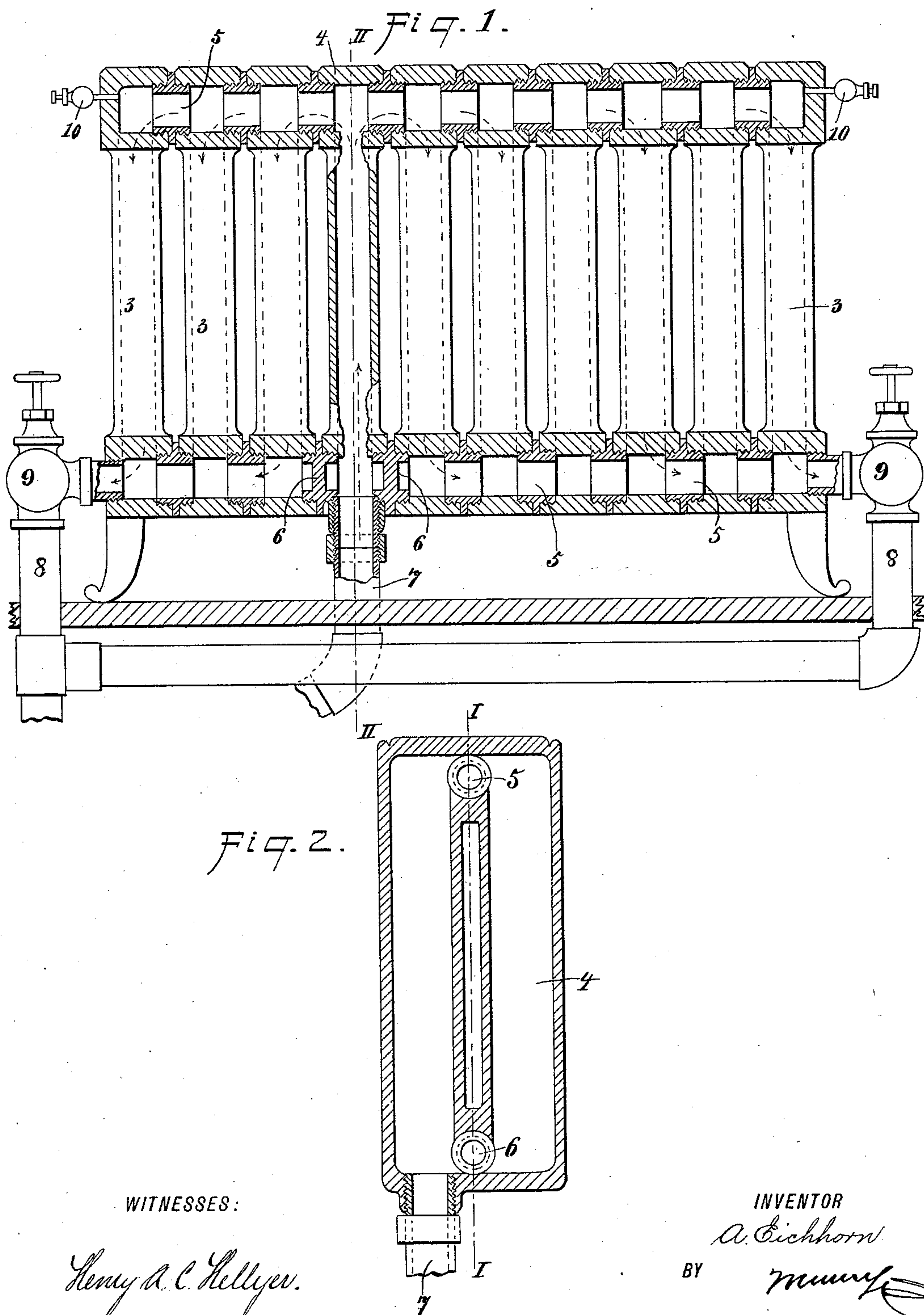


(No Model.)

A. EICHHORN.
RADIATOR.

No. 584,993.

Patented June 22, 1897.



WITNESSES:

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AUGUSTUS EICHHORN, OF ORANGE, NEW JERSEY.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 584,993, dated June 22, 1897.

Application filed April 24, 1896. Serial No. 588,911. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS EICHHORN, of Orange, in the county of Essex and State of New Jersey, have invented a new and Improved Radiator, of which the following is a full, clear, and exact description.

This invention relates to that class of radiators adapted to receive hot water.

The object of the invention is to provide a superior radiator of this class and one having the capability of easy adjustment to vary the degree of heat thrown off. I attain this end by means of a series of radiating-loops, all having communication with each other at each end, excepting one loop which has its lower end shut off from communication with the contiguous loops and which has its upper end in communication with said contiguous loops. This loop has communicating with its lower portion a water feed-pipe, and each end loop has its lower portion in communication with a return-pipe, the return-pipes being valve-controlled, and each end loop also has an air-vent. By such arrangement the loops on each side of the loop with which the water-feed directly communicates may be thrown in and out of action upon the opening or closing of the valves commanding the return-pipes.

The invention will be fully described hereinafter and finally embodied in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional view of my invention on the line I I of Fig. 2, and Fig. 2 is a sectional view on the line II II of Fig. 1.

The radiator is constructed of a series of loops 3, the construction of which may be of any well-known form. Each loop, excepting the loop 4, is in communication with its neighbor by means of open thimbles 5, while the loop 4 has its upper end in communication with the loops 3 by open thimbles 5, as in the case of the other loops; but its lower end is sealed from such communication by means of the solid thimbles 6.

Communicating with the lower end of the loop 4 is the water feed-pipe 7, while each end loop 3 is in communication with a discharge-pipe 8, the discharge-pipes being each controlled by valves 9 and being in communica-

tion with each other, as Fig. 1 shows. The upper portion of each end loop 3 is provided with an air-vent controlled by a valve 10, which valves may be of any construction, but are preferably of an automatic type.

It is not necessary to provide the feed-pipe 7 with a valve, since the valves 9 are capable of stopping the passage of the water through the radiator and also of stopping the heat of the radiator, since the water when confined in the radiator will become cold and no longer possessed of the capability of heating.

In the operation as the water passes through the pipe 7 and up the radiator-loop 4 the water will fall downward at each side of the loop, as the arrows in Fig. 1 indicate, filling the loops 3 on each side of the loop 4. Supposing now each of the valves 9 is open, it will be seen that the water will circulate through all of the loops of the radiator and the amount of radiation effected will be of the greatest degree. Should one of the valves 9 be closed, the section of the radiator commanded by said valve will be cut out of service, and the water confined therein will become cold and will no longer furnish heat, while the remaining section will continue to be active. If both valves 9 are closed, the entire radiator will be rendered inactive. It will thus be seen that I provide a hot-water radiator divided into two sections, each of which has a different radiating capacity and which is capable of use either independently or jointly.

The loops 3 operate in the usual manner, and the loop 4 is not only a radiating-loop, but a loop leading the water to the radiating-loops strictly. In this connection also it will be observed that since the closure of a valve 9 results in confining a body of water in the section of the radiator to which the valve relates such water will operate as a cushion to receive the shock of the water incoming to the remaining section and will by these means prevent the "hammering" of the water, both well known and objectionable in radiators. The same advantageous operation takes place when both valves 9 are closed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

A hot-water radiator having a series of sec-

tions all having intercommunication at their upper ends and all but a single intermediate section having intercommunication at their lower ends, said intermediate section being
5 closed from communication with the lower ends of the sections adjacent to the said intermediate section and having at its lower portion an inlet-orifice receiving the hot water and the said intermediate section leading
10 the hot water upward throughout the interior of the intermediate section and discharging the hot water laterally on each side and into

the upper ends of the sections contiguous to the said intermediate section, the lower portion of each end section having an outlet-orifice, independently-operated valves respectively controlling the outlet-orifices, the upper ends of each end section having an air-vent, and valves respectively controlling the air-vents, substantially as described. 15

AUGUSTUS EICHHORN.

Witnesses:

ISAAC B. WENZ,
JNO. M. RITTER.