

(No Model.)

W. J. JACKSON.
RADIATOR.

No. 488,764.

Patented Dec. 27, 1892.

Fig. 1. A

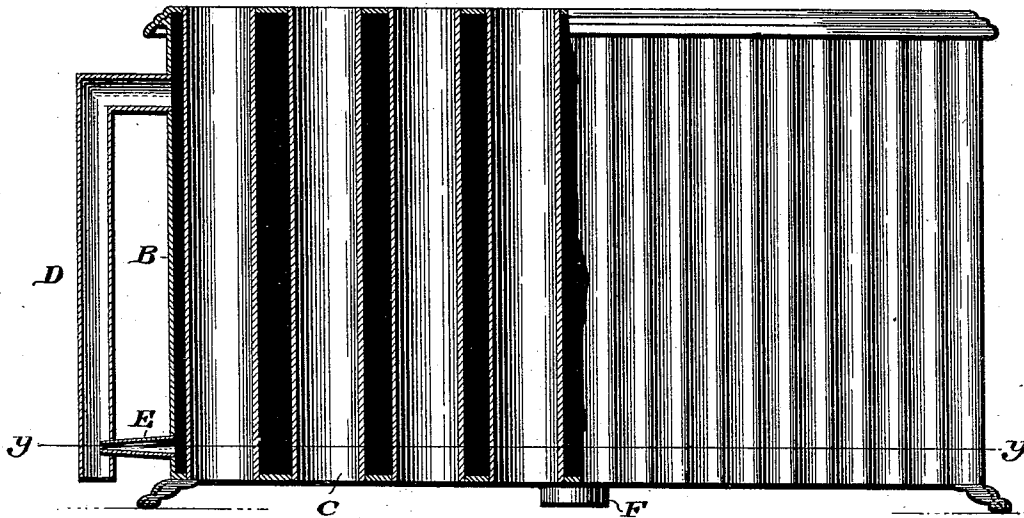


Fig. 2.

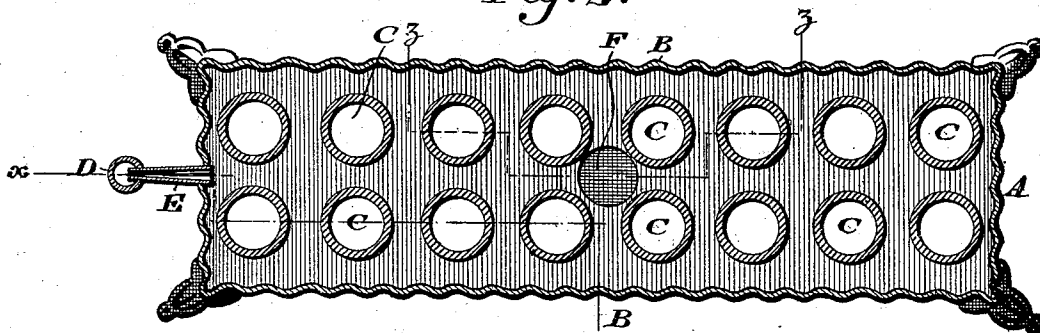
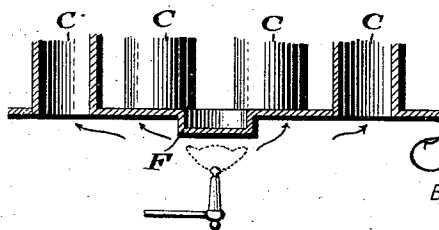


Fig. 3.



WITNESSES:

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RADIATOR.

SPECIFICATION forming part of Letters Patent No. 488,764, dated December 27, 1892.

Application filed November 19, 1891. Serial No. 412,413. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. JACKSON, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Radiators, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of a radiator having means substantially as hereinafter described for returning the waters of condensation to the steam supply of the radiator.

Figure 1 represents a partial side elevation and partial vertical section, on line *x, x*, Fig. 2, of a radiator embodying my invention. Fig. 2 represents a longitudinal section on line *y, y*, Fig. 1. Fig. 3 represents a vertical section of a portion on line *z, z*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates a radiator consisting of a steam-receiving body B, air flues C, steam-supply pipe D, and condensation or discharge nozzle E. The body is closed at top, bottom and sides, excepting at the places of junction of the pipe D and nozzle E, and the air flues extend vertically through the body B, their ends being tightly secured to the top and bottom walls of said body, it being noticed that the flues are open throughout, so that air may enter the same from below, and escape at the upper end thereof, it being also noticed that when steam is admitted into the body B, the latter becomes a heating device, and as the air traverses the flues C, it is heated by the same, said flues being subjected to the heating action of the steam within the body B, by which means there is a double heating action, the advantageous effect of which is evident.

The condensation pipe E, or pipe for the discharge of the water of condensation of the steam in the body B is of tapering or conical form, its narrow end entering the steam supply pipe D, and acting as an ejector, it being located near the bottom of the body, while the inlet end of the pipe D is near the top thereof, so that while live steam may be readily and constantly directed into the body by means of the pipe D, the water of condensa-

tion is conveyed from the body by means of the nozzle E, and ejected into the pipe D, whereby it may be returned as hot water into the boiler, to be again converted into steam.

The body B may be employed as a boiler when it is desired to use hot water as the heating medium. In this case the bottom sheet or plate is formed with a well F, against which a heating medium is directed, such as the flame of a gas jet, thus boiling the water in the well and body, while the heat of the flame is deflected by the bottom of the body to the flues C into which it enters, thus heating said flues and providing hot air. The waste pipe or discharge nozzle in this case may be on the side opposite to the pipe D, or otherwise located. The device may thus be employed as a portable heater and the supply of hot water be taken from the water-back of a range or other heating medium, and directed into the body through the pipe D, which it will be seen opens into said body near the top thereof, while the discharge nozzle or pipe E is at or near the bottom thereof. When steam is employed, the heat applied to the bottom of the body may superheat the same, when such superheated steam is required.

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

1. A radiator consisting of a closed steam-receiving body with vertical air flues open at both ends, a steam inlet pipe leading into said receiving body near the top thereof, and a conical discharge nozzle leading from the said body near the bottom thereof into the supply pipe, said parts being combined substantially as described.

2. A radiator consisting of a closed steam-receiving body provided with vertical air flues open at both ends, and having a well formed in the bottom thereof, an inlet pipe leading into said body, and a conical nozzle leading into said pipe from said body, said parts being combined substantially as described.

WILLIAM J. JACKSON.

Witnesses:

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