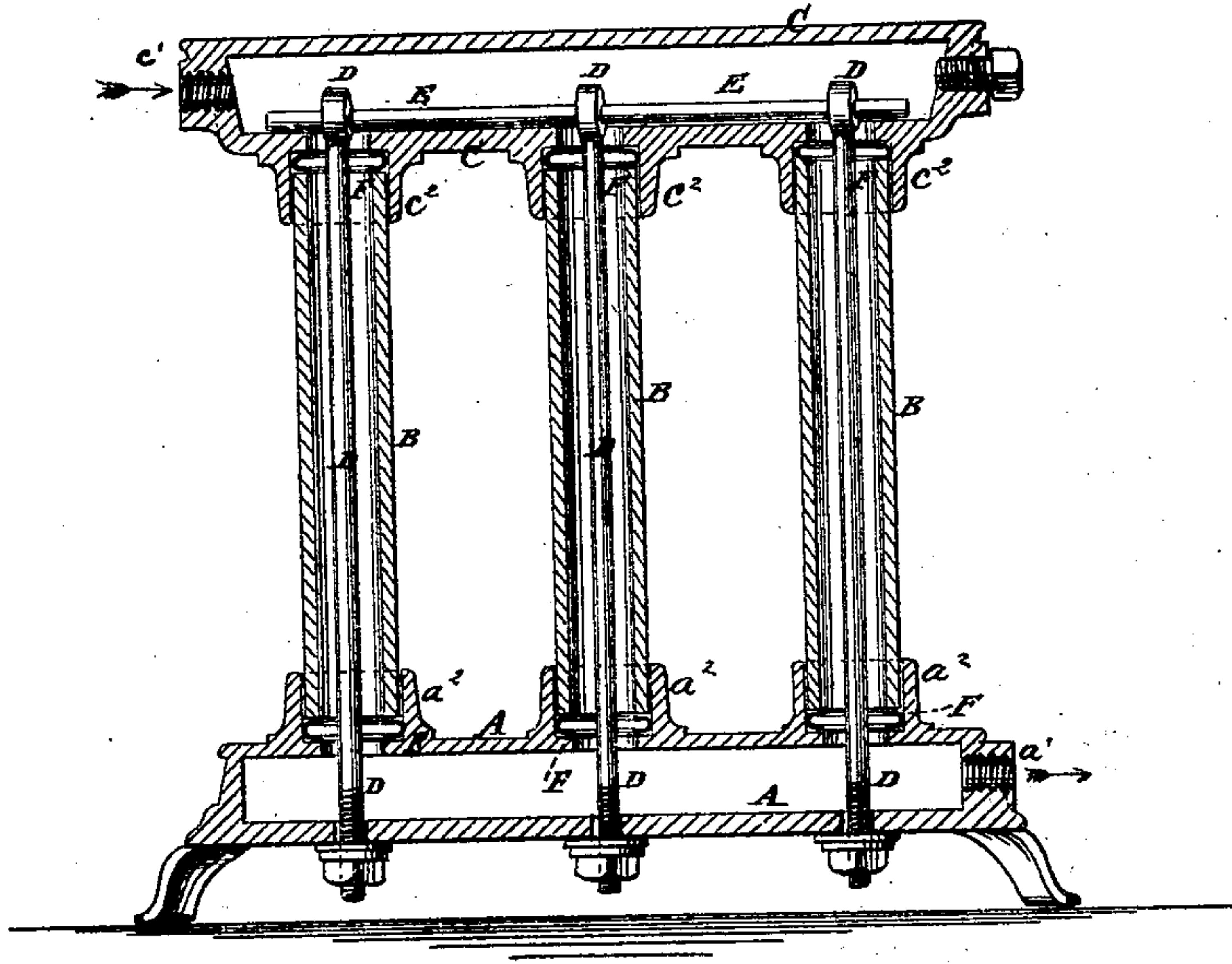


J. McCARTHY.
Steam-Radiators.

No. 152,394.

Patented June 23, 1874.



WITNESSES:

A. W. Almqvist
Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

JAMES McCARTHY, OF NEW YORK, N. Y.

IMPROVEMENT IN STEAM-RADIATORS.

Specification forming part of Letters Patent No. **152,391**, dated June 23, 1874; application filed April 25, 1874.

To all whom it may concern :

Be it known that I, JAMES McCARTHY, of the city, county, and State of New York, have invented a new and useful Improvement in Steam-Radiator, of which the following is a specification:

The figure is a vertical section of my improved radiator.

The invention will first be fully described, and then pointed out in the claims.

A is the base of the radiator, which is made hollow and with an opening, a^1 , at one end for the exit of steam and the water of condensation. In the upper side of the base A are formed a number of openings, which are surrounded with collars a^2 to form sockets to receive the ends of the tubes B. C is the top or head of the radiator, which is also cast hollow, and with an opening, c^1 , in one end to receive the steam. In the lower side of the head C are formed openings, corresponding in number and position with the openings in the top of the base A, which openings are surrounded with collars c^2 to form sockets to receive the upper ends of the tubes B. D are rods, which pass through the tubes B, and the upper ends of which enter the cavity of the head C, and have eyes formed in them to receive rods E, which are passed through them through holes in the edge of the head C, which holes are then closed with screw-plugs. By this arrangement the rods D and their supporting-rods E will not impede the passage of steam through the tubes B. The lower ends of the rods D pass down through the base A, and are se-

cured with nuts and washers, as shown in the figure. In the sockets a^2 c^2 , either or both, are placed elastic washers F for the ends of the tubes B to rest against. The washers F are made in the form of hollow rings open upon their inner or concave side, and are spun up out of ring-plates of suitable sheet metal. The washers thus constructed will yield sufficiently to pack the ends of the tubes steam-tight. The washers F may be placed at both ends of the tubes B, or one end of said tubes may be screwed into its socket, as may be desired.

With this construction the steam will circulate quickly and uniformly through all parts of the radiator, so that the radiator will heat up evenly in all its parts, while its peculiar construction enables it to be readily set up.

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

1. The combination of the rods D, having eyes formed in their upper ends, and the supporting-rods E with the hollow head C, the tubes B, and the hollow base A, substantially as herein shown and described.

2. The hollow ring-washers F, in combination with the tubes B and the sockets a^2 c^2 formed upon the hollow base A and the hollow head C, either or both, substantially as herein shown and described.

JAMES McCARTHY.

Witnesses:

JAMES T. GRAHAM,
T. B. MOSHER.