J. N. FARNHAM.
Heat-Radiator.

No. 210,453. Patented Dec. 3, 1878.

Fig. 1

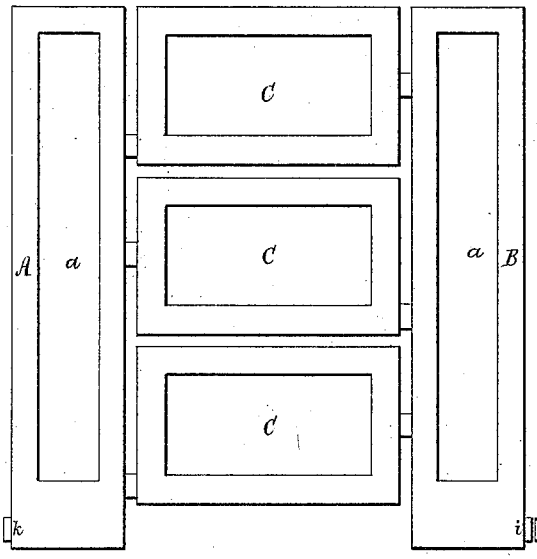


Fig. 2.

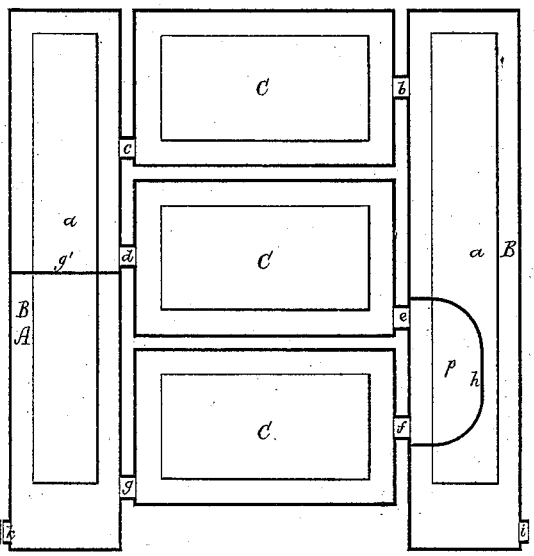


Fig. 3.

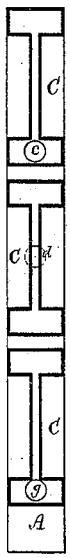
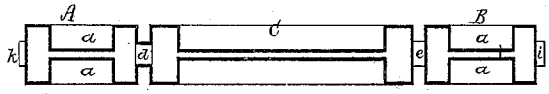


Fig. 4.



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UNITED STATES PATENT OFFICE.

JOHN N. FARNHAM, OF WALTHAM, MASSACHUSETTS.

IMPROVEMENT IN HEAT-RADIATORS.

Specification forming part of Letters Patent No. **210,453**, dated December 3, 1878; application filed October 21, 1878.

To all whom it may concern:

Be it known that I, JOHN N. FARNHAM, of Waltham, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Heat-Radiators for warming apartments by steam; and do hereby declare the same to be described in the following specification, and represented in the accompanying drawings, of which—

Figure 1 is a front elevation, Fig. 2 a vertical and longitudinal section, Fig. 3 a vertical and transverse section, and Fig. 4 a horizontal section, of a radiator containing my invention.

It is composed of two vertical paneled hollow columns, provided with partitions, arranged in them as set forth, and a series of intermediate paneled and hollow sections, arranged and combined with such columns, as specified and represented.

In the drawings, A and B are the two upright hollow columns, each of which is a long and shallow box, having each of its opposite sides paneled, as shown at *a a*, the panels nearly touching each other. Between these columns there is arranged a series of intermediate radiating sections or boxes, C C C, each being paneled on its opposite sides, as is each of the columns. From the opposite ends of each of the sections short pipes lead into the vertical columns, as shown at *b c d e f g*. Furthermore, there extends across the left column, at its middle or just below the pipe *d*, a partition, *g'*, and within the right column there is another partition, *h*, which forms in the column a passage, *p*, separate from the rest of the interior space of the column, and leading from the pipe *e* to the pipe *f*. In the lower part of the right column is an induct or inlet, *i*, for the passage of steam into the column, there being in the lower part of the left column an educt or outlet, *k*, for the escape of the steam.

The radiating boxes and columns are paneled, for the purpose of strengthening them and increasing their radiating-surfaces. The steam in passing into the lower part of the right column goes upward therein to its top or upper part, and from thence passes into and through the upper radiating-box and into the left column. From the latter the steam escapes into and through the middle box, and thence goes into and through the passage *p*, and thence into and through the lower box and into the lower part of the left column, and escapes therefrom by the educt thereof. In thus going through the parts of the radiator the steam will heat each of them, and heat will be radiated from their outer surfaces to great advantage.

I do not confine my invention to the employment of three only of the intermediate boxes with the columns, as the number may be increased and the columns be provided with partitions arranged to cause the steam received into one column to pass to the upper part before going into either of the intermediate boxes, and thence to circulate through the several boxes in succession until it may be discharged into the lower part of the other column.

What I claim as my invention is—

1. The radiator constructed substantially as described—viz., of the hollow columns and intermediate boxes, arranged, paneled, constructed, and provided with partitions and inducts and educts to the columns, essentially as set forth.

2. Each section as composed of a shallow box paneled on its opposite sides and provided with an induct and educt, as explained.

JOHN N. FARNHAM.

Witnesses:

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