

(No Model.)

C. F. WALTHER.
RADIATOR.

No. 537,372.

Patented Apr. 9, 1895.

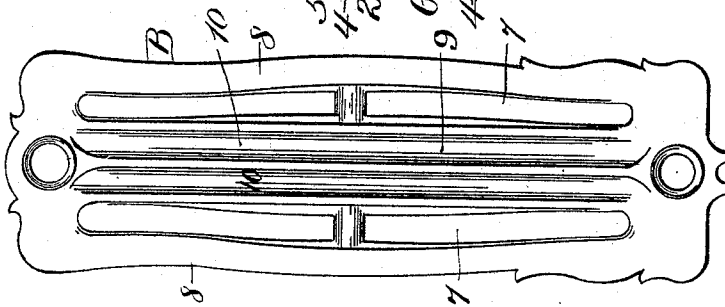
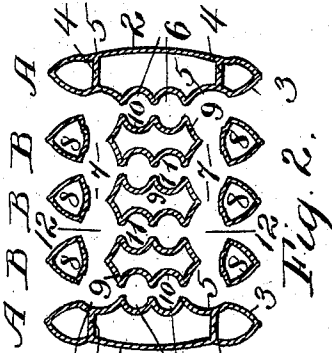


Fig. 4

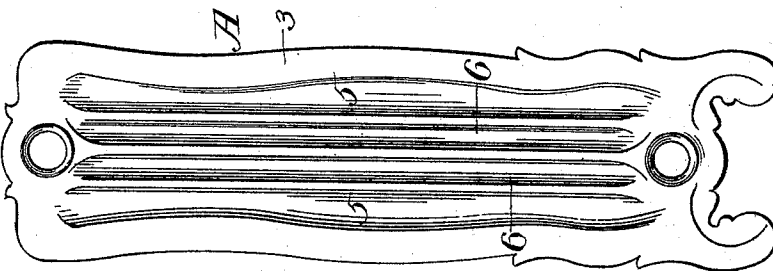


Fig. 3

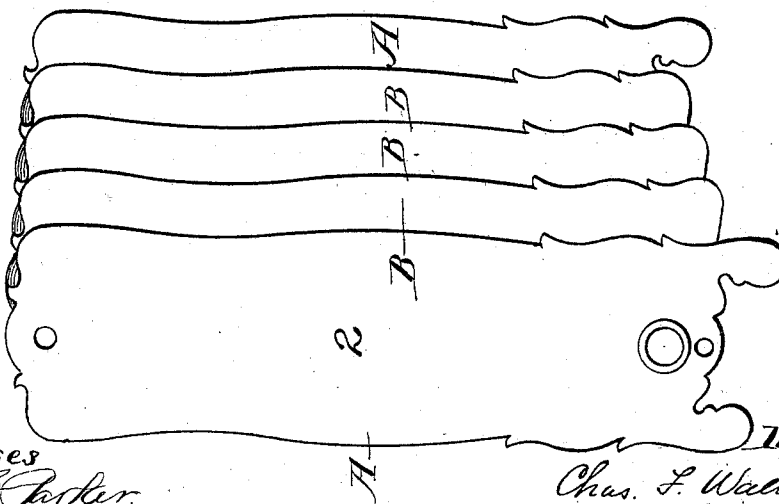


Fig. 1

Witnesses
Chas. C. Parker
Jos. A. Milano.

Inventor.
Chas. F. Walther
By *J. S. Barker atty.*

UNITED STATES PATENT OFFICE.

CHARLES F. WALTHER, OF BUFFALO, NEW YORK.

RADIATOR.

SPECIFICATION forming part of Letters Patent No. 537,372, dated April 9, 1895.

Application filed July 30, 1894. Serial No. 518,958. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. WALTHER, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Radiators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention has for its object to improve steam and hot water radiators of the "flue-type," that is, of that style or type in which the radiator is made up of sections secured together and set up in the apartment to be heated, the construction and arrangement of the sections being such that flues are formed through which the air passes and is heated.

The invention consists of a radiator the end sections or loops of which are "solid,"—that is to say, their outside walls are continuous from edge to edge,—while the intermediate sections are formed with separated columns; and it consists further in the particular constructions of the end and the intermediate loops.

A radiator constructed as I have indicated has continuous air flues between the columns of the intermediate sections and extending from top to bottom of the radiator and from end to end section, such flues, however, being closed at their ends by the "solid" end sections so that when the air once enters them it is compelled to rise between the sections and to the top of the radiator before it is discharged into the apartment.

I am aware that radiator sections with separated columns have been assembled to form radiators, but, so far as I am aware, such separated columned sections or loops have never been combined with "solid" end loops, and therefore the air flues between the said columns have been open-ended, so that there was no provision to insure that air once entering the said air flues would pass entirely through the radiator and out at its top.

In the drawings I have illustrated my invention as being applied to a radiator wherein the intermediate sections are of the three-column type; but it will be understood that the invention is equally applicable to the two-

column, four-column or five or more column sections or loops.

In the said drawings, Figure 1 is a perspective view of a radiator made according to my invention. Fig. 2 is a central horizontal section. Fig. 3 is an inside view or elevation of one of the end sections. Fig. 4 is an elevation of one of the intermediate sections.

In the said drawings A, represents the end sections and B, the intermediate sections. The end section is "solid," that is, its outside walls 2 and 3 are continuous from edge to edge of the section. The section is interiorly divided by the partitions 4 into a plurality of flues through which the heating medium circulates.

The outer wall 2 of the section A may have any desired shape, it usually being bowed outward slightly to give a graceful and pleasing appearance to the exposed end of the radiator. The inner wall 3, is however of peculiar and novel construction, being fluted in the direction of its length or height. The flutes or channels however are not all of the same size and shape, those, 5, which are arranged or come opposite to the spaces between the columns of the intermediate sections being larger than those, 6, which come opposite to the intermediate columns of the sections B, this construction being clearly indicated in Fig. 2.

The separate flues in the intermediate sections B, through which the heating medium circulates, are separated from each other by the spaces 7, 7, except at the top and bottom respectively of the sections, so that there are formed separated columns,—the outer or end columns being designated 8, and the intermediate columns 9, in the drawings accompanying this specification.

The end columns 8, are preferably substantially triangular in cross-section, while the side walls of the intermediate flue 9, are fluted longitudinally, the flutes or channels, 10, coming opposite to the smaller flutes or channels 6, on the inner face of the end sections.

When a number of sections are assembled to form a radiator, as indicated in Fig. 2, the opposing flutes or channels 10, formed on the faces of the columns of the intermediate sections, and the flutes or channels 6 on the inner faces of the end sections coming opposite to

each other form small channels or air flues 11 extending from the lower portion to the upper portion of the radiator and through which the air rises and is heated. There are also formed
 5 larger flues 12 extending from end section to end section between the columns of the intermediate sections. These air flues 12, are closed at their ends by the end sections A, which prevent currents of air blowing through
 10 the radiator in the direction of its length, and cause the air after once entering these flues to rise to the top of the radiator and become therein thoroughly heated.

The essential feature of my invention is the
 15 combination of the intermediate columned radiator sections, with the "solid" end sections. The particular shapes of the sections shown in the drawings and herein described, I have found to be very advantageous as they
 20 cause a most desirable arrangement of air flues; but they may be modified without departing from the essential principle of my invention.

My invention besides possessing a most desirable arrangement of air flues is very graceful and pleasing in appearance.

What I claim is—

1. A radiator formed of sections, the end sections being "solid," and the intermediate sections with separated columns, whereby 30 there are formed between the end sections, and between the columns of the intermediate sections air flues, closed at their ends and extending from end section to end section, but open at top and bottom, substantially as set 35 forth.

2. A radiator formed of sections, the end sections being "solid" and having their inner walls or faces fluted longitudinally, and the intermediate sections being formed with separated columns, the intermediate columns being fluted longitudinally, the flutes on the several sections coming opposite to each other and forming small air flues, and there being 40 larger air flues extending from end section to end section between the columns of the intermediate sections, substantially as set forth. 45

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

CHARLES F. WALTHER.

Witnesses:

FRANK C. PEREW,
 WM. J. HANRAHAN.