

No. 686,190.

Patented Nov. 5, 1901.

G. M. AYLSWORTH.

RADIATOR.

(Application filed Dec. 26, 1900.)

(No Model.)

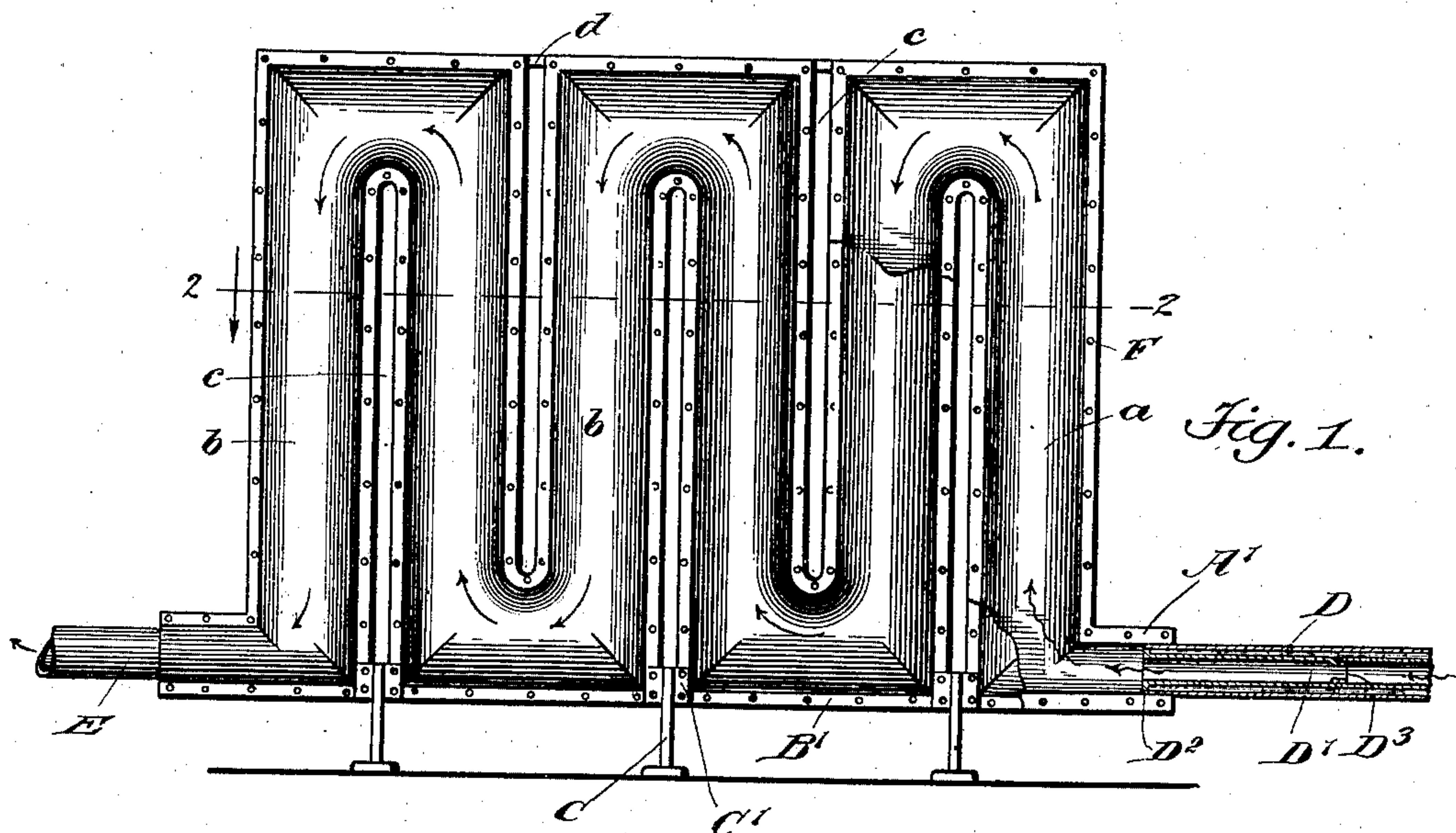
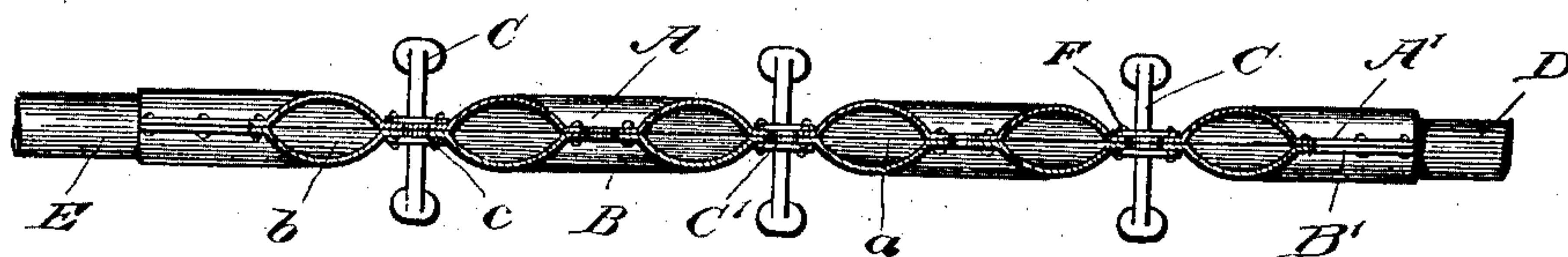


Fig. 2.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE MILLER AYLSWORTH, OF COLLINGWOOD, CANADA.

## RADIATOR.

SPECIFICATION forming part of Letters Patent No. 686,190, dated November 5, 1901.

Application filed December 26, 1900. Serial No. 41,060. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE MILLER AYLSWORTH, a subject of the Queen of Great Britain, residing at Collingwood, in the Province of Ontario and Dominion of Canada, have invented new and useful Improvements in Radiators, of which the following is a full, clear, and exact description.

My invention relates to radiators, and has for its object to provide a construction which will be particularly adapted for the heating of rooms by the radiation from hot air instead of steam or hot water, as generally practiced. The improved radiator has been devised with a view to simplicity and economy in construction, as well as efficiency in operation, and for use with hot air exclusively.

The invention will be fully described hereinafter, and the features of novelty pointed out in the appended claims.

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 all the views.

Figure 1 is an elevation, with parts in section, of a radiator constructed according to my invention; and Fig. 2 is a sectional plan of the same on the line 2 2 of Fig. 1.

In carrying out my invention I prefer to construct the radiator of two plates of thin metal, in which I cut slots alternately from near opposite ends, and then I bend the portions between the adjacent slots, as well as the portions between the first and last slot and the end edges of the sheets, so as to produce grooved portions A and B, with flanges A' and B' along the edges of said grooved portions. These flanges, which extend in parallel planes, I connect by rivets F, thereby forming a radiator-body having ascending members *a* and descending members *b*. Between the adjacent members *a* and *b* a passage *c* is left, which allows the surrounding atmosphere to pass freely between the adjacent members of the radiator. The structure is supported in any suitable manner—for instance, by means of legs C, having plates C', riveted to the lower ends of the flanges A' and B'. At one end of the radiator I provide a hot-air-inlet pipe D, which I prefer to construct in two nested sections, the outer pipe D containing an inner pipe D', spaced there-

from so as to form an air-jacket, and the pipe is preferably constructed in sections, formed and connected like sections of an ordinary stovepipe, except that each section has an outer flange D<sup>2</sup> to space it from the outer pipe D and a contracted end D<sup>3</sup> for connection with the adjacent end of the next pipe-section. The pipes D D' extend to a hot-air furnace, it being understood that the heated air from said furnace is admitted to the inner pipe D' only. The air-jacket prevents in a large measure a cooling of the heated air on its way from the furnace to the radiator, so that the heat is fully utilized at the radiator. The surface of the latter which is exposed to the air of a room is very large, owing to the curved portions *a b* and to the provision of transverse channels *c*. The heated air after its passage through the radiator is allowed to escape through the pipe E back to the furnace, and air thus returned to the furnace is all that is admitted to the furnace for heating purposes. Braces *d* may be used at the upper ends of the slots or passages *e*.

While I have shown the radiator in such a position that the tubes *a b* are vertically disposed, I do not wish to restrict myself to such an arrangement.

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

1. A radiator consisting of two opposing plates having a series of parallel bent or curved portions arranged to register so that their concave sides will form together tubes for the passage of the heating medium, while the outer surfaces of said curved portions are convex to better radiate the heat, plane abutting portions between said tubes, the aggregate thickness of two abutting portions being less than the diameter or thickness of the tubes, the latter being connected alternately at opposite ends so as to form a channel of relatively considerable length, and fastening devices extending through the abutting portions of the plates.

2. A radiator consisting of two opposing plates having registering concave portions forming together tubes for the passage of the heating medium, said tubes being connected alternately at opposite ends so as to form a channel of relatively considerable length, and

being spaced from each other so as to leave  
between them openings through which the  
surrounding air may pass, and converging legs  
located at opposite sides of the radiator and  
5 having at their upper ends plates bridging  
the space between adjacent tubes and secured  
to said tubes.

In testimony whereof I sign my name to  
this specification in the presence of two sub-  
scribing witnesses.

GEORGE MILLER AYLSWORTH.

Witnesses:

CHARLOTTE SANDERSON,  
JOHN BIRNIE, Jr.