

(No Model.)

A. McFADYEN.

HEATING AND VENTILATING APPARATUS FOR BUILDINGS.

No. 527,804.

Patented Oct. 23, 1894.

Fig. 1.
ON 1-1

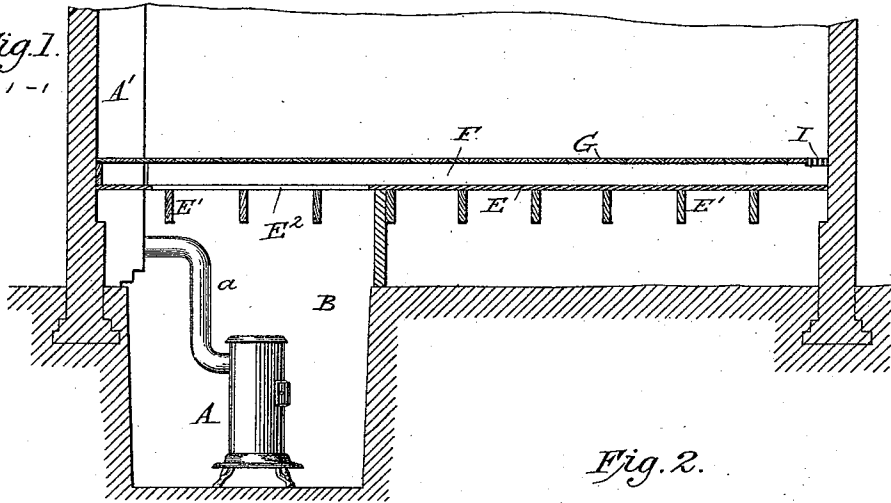


Fig. 2.

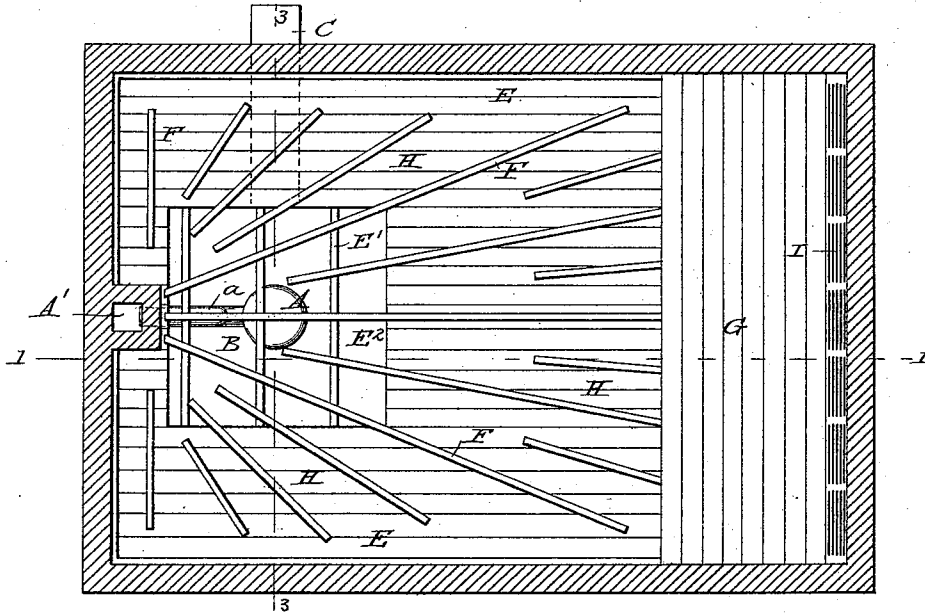
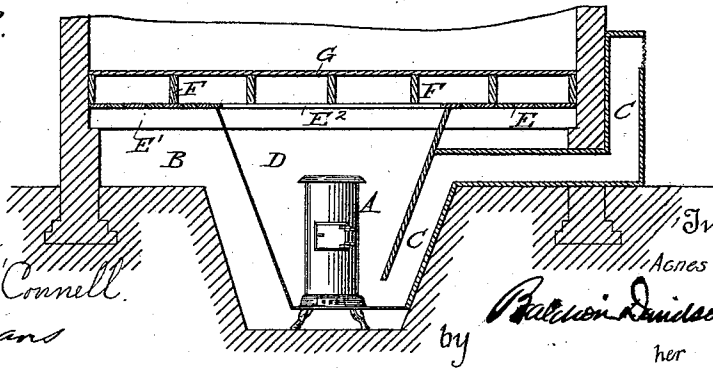


Fig. 3.
ON 3-3



Witnesses
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UNITED STATES PATENT OFFICE.

AGNES MCFADYEN, OF LINCOLN, NEBRASKA.

HEATING AND VENTILATING APPARATUS FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 527,804, dated October 23, 1894.

Application filed April 13, 1894. Serial No. 507,440. (No model.)

To all whom it may concern:

Be it known that I, AGNES MCFADYEN, of Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Heating and Ventilating Apparatus for Buildings, of which the following is a specification.

The object of my invention is to provide improved means for heating and ventilating buildings, particularly such as contain large rooms or halls, such as school houses or churches. It is always difficult in such buildings to keep the floors warm, as cold air circulating below the floors cools them, and, as usually there are no heating flues in the floors, it is difficult to keep this part of the building at the proper temperature.

According to my invention, I provide a double flooring, and, between the upper and lower floors, arrange hot air flues, channels or passages, of an improved form and radiating from an opening in the sub-floor under which the heater is arranged. The arrangement of the hot air channels is such as to cause the heated air to pass in all directions from the heater, and thus the upper floor, in all parts of the room, is kept at a comfortable temperature. After passing through the several passages, the heated air emerges through a grating or register at one end of the room, into which the heated air passes.

In the accompanying drawings—Figure 1 is a sectional view illustrating the manner of applying my invention. The section is taken on the line 1—1 of Fig. 2. Fig. 2 is a section, on the line 2—2 of Fig. 1. Fig. 3 is a section on the line 3—3 of Fig. 2.

The heater A, which may be an ordinary stove or furnace, is located in a cellar or basement B. The smoke-pipe *a*, connects with an ordinary chimney A'. Cold air is admitted through a pipe C, leading from the outside of the building to a casing D, surrounding the stove.

The floor E, may be of usual construction, arranged on joists E', but over the floor I arrange transversely to the joists E', another set of joists F, on which the main floor G is laid. These joists, however, are not parallel

as are the joists E', but are arranged as shown in Fig. 2, that is to say, they radiate from an opening E², in the floor E, over the stove or heater. It will be observed that the arrangement is such that the heated air passing up through the opening E², will pass into and through the channels H, formed between the joists F.

The opening E² is of sufficient size to cause the heated air to rise and enter between the joists F, on all sides of the heater, so that it will not only pass directly toward the registers I, but will also pass diagonally and laterally toward the walls of the building and thus act upon all parts of the floor.

The joists or partitions F, while radiating from the opening E² toward the walls of the building or the vertical walls of the chamber between the upper and lower flooring, terminate before reaching these walls, thus leaving passages for the circulation of heated air along the chamber, adjacent to the side walls thereof, and past the outer ends of the partitions.

Of course the flooring, the partitions and other parts of the structure should be suitably lined with fire-proof material to prevent danger. I do not, however, contemplate leading the air through a single pipe or a small number of pipes to the register, as this would defeat the object of my invention, which is to cause the heated air to spread under all parts of the flooring so as to keep all parts of it warm.

My improvements may be readily applied to any building, already constructed, as the upper floor may be readily constructed upon the ordinary floor and an opening made in the sub-floor to allow the heated air to rise into the radial passages.

My improvements may economically be applied to buildings containing but a single room, such as a country school house or a church, the heater being arranged in a well or cellar, and the heating flues being arranged as before described to uniformly and completely heat the floor, and then enter the room at one end.

I claim as my invention—

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The combination of the upper and lower
flooring, radial partitions arranged in the
chamber between the floors and extending
from an opening in the sub-floor toward, but
5 not to the side walls of the chamber, a heater
arranged directly below the opening in the
sub-floor, and registers or outlets at the outer
ends of the partitions.

In testimony whereof I have hereunto sub-
scribed my name.

AGNES MCFADYEN.

Witnesses:

STEPHEN L. GEISTHARDT,
IRA H. HATFIELD.