



# United States Patent Office.

CHARLES J. NEGER, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 98,399, dated December 28, 1869.

## VENTILATOR.

The Schedule referred to in these Letters Patent and making part of the same

I, CHARLES J. NEGER, of Philadelphia, county of Philadelphia, State of Pennsylvania, have invented an Improvement in Ventilating and Heating Buildings, of which the following is a specification.

### *Nature and Object of the Invention.*

My invention consists in the combination, with a stove, of a curved pipe or flue, which may be connected with flues communicating with an apartment or apartments, so as to maintain a constant circulation of air within the same.

### *Description of the Accompanying Drawing.*

Figure 1 is a sectional view of a portion of a building, illustrating my improved method of heating and ventilating the same;

Figure 2, a sectional plan view, on the line 1-2, fig. 1; and

Figure 3, a view of a modification of my invention.

### *General Description.*

A represents one of the walls of a building;

B and B', two floors of the same; and

C and C', two rooms or apartments, the upper one of which it is proposed to heat and ventilate according to my invention.

In the lower room C', is a stove, D, of ordinary construction, at the back of which is arranged a heating-drum, F, divided into two compartments, *a* and *a'*, by a partition, *b*, forming a curved flue, which extends almost but not quite to the bottom of the drum.

A pipe, H, communicates with the top of the compartment *a*, which is the most remote from the stove, and projects upward into the room C, terminating within the latter at a point close to the floor, and a pipe, H', which communicates with the chamber *a'* of the heating-drum, is continued upward nearly to the top of the room C, terminating at its upper end in a deflector, *f*.

Instead of the exposed pipes H and H', flues might be employed built up in the wall A, and communicating with the interior of the room at points adjacent to the ceiling and floor, through suitable registers.

On lighting a fire in the stove D, the air within the compartment *a'* of the drum becomes quickly heated, and rises through the pipe H', from the upper

end of which it is discharged into the room C. This instantly produces a partial vacuum within the heating-drum, so that cold air from the bottom of the room passes downward through the pipe H into the said drum, to be in turn heated, and to rise through the pipe H', a constant circulation in the direction of the arrows, fig. 1, being thus maintained through the pipes and heating-drum, which has a tendency to rapidly heat the room C, and to maintain nearly an equal temperature throughout the same.

It is not necessary that the stove and heating-drum should be arranged in the apartment immediately beneath that which is to be heated and ventilated, as shown in the drawing, as they might be placed in the cellar, while the pipes H and H' could be continued upward through several stories to any of the upper apartments of the building.

It is not absolutely necessary that the drum F should be arranged at the back of the stove, although I prefer that the latter should be used; and in some cases, where it is desired to merely ventilate or to maintain an equal temperature of air throughout a room, without heating the same, the stove and drum can be dispensed with entirely, the pipes or flues H and H' being merely connected at their lower ends, as shown in fig. 3.

In this case, the cold air from the bottom of a room, by descending through the pipe or flue H, will force the more rarefied air from the upper portion of the pipe H' into the room, and thus maintain a continuous circulation sufficient to equalize the temperature of the room, although this circulation will not be as rapid as though the heating-drum were employed.

### *Claim.*

The combination with a stove or heater, of a curved flue, adapted for being connected to flues or pipes H and H', as herein set forth, for the purpose specified.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

CHARLES J. NEGER.

Witnesses:

LOUIS BOSWELL,  
HARRY SMITH.