

C. B. Sawyer,
House Ventilator,

N^o 17,750.

Patented July 7, 1857.

Fig. 1.

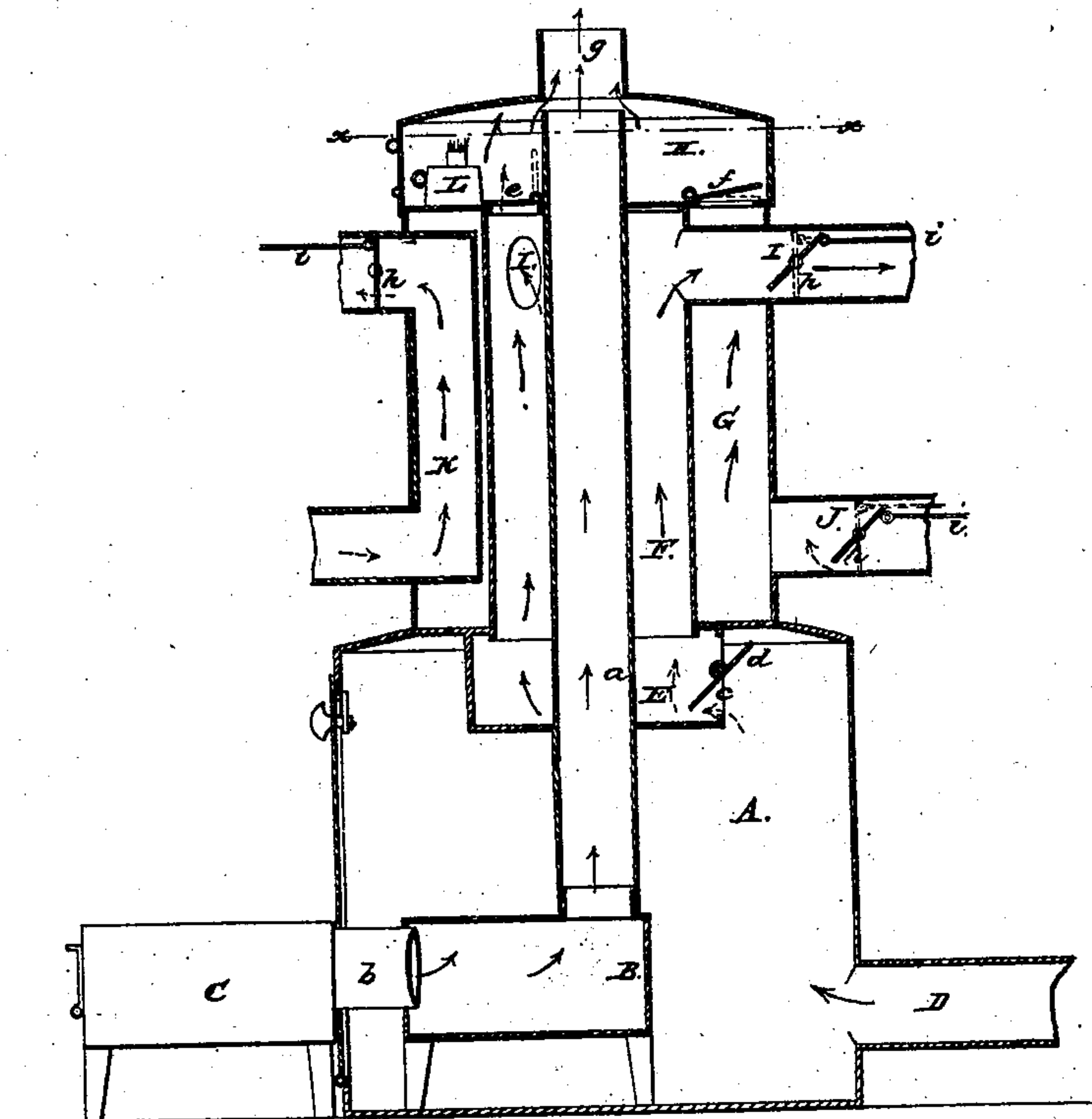
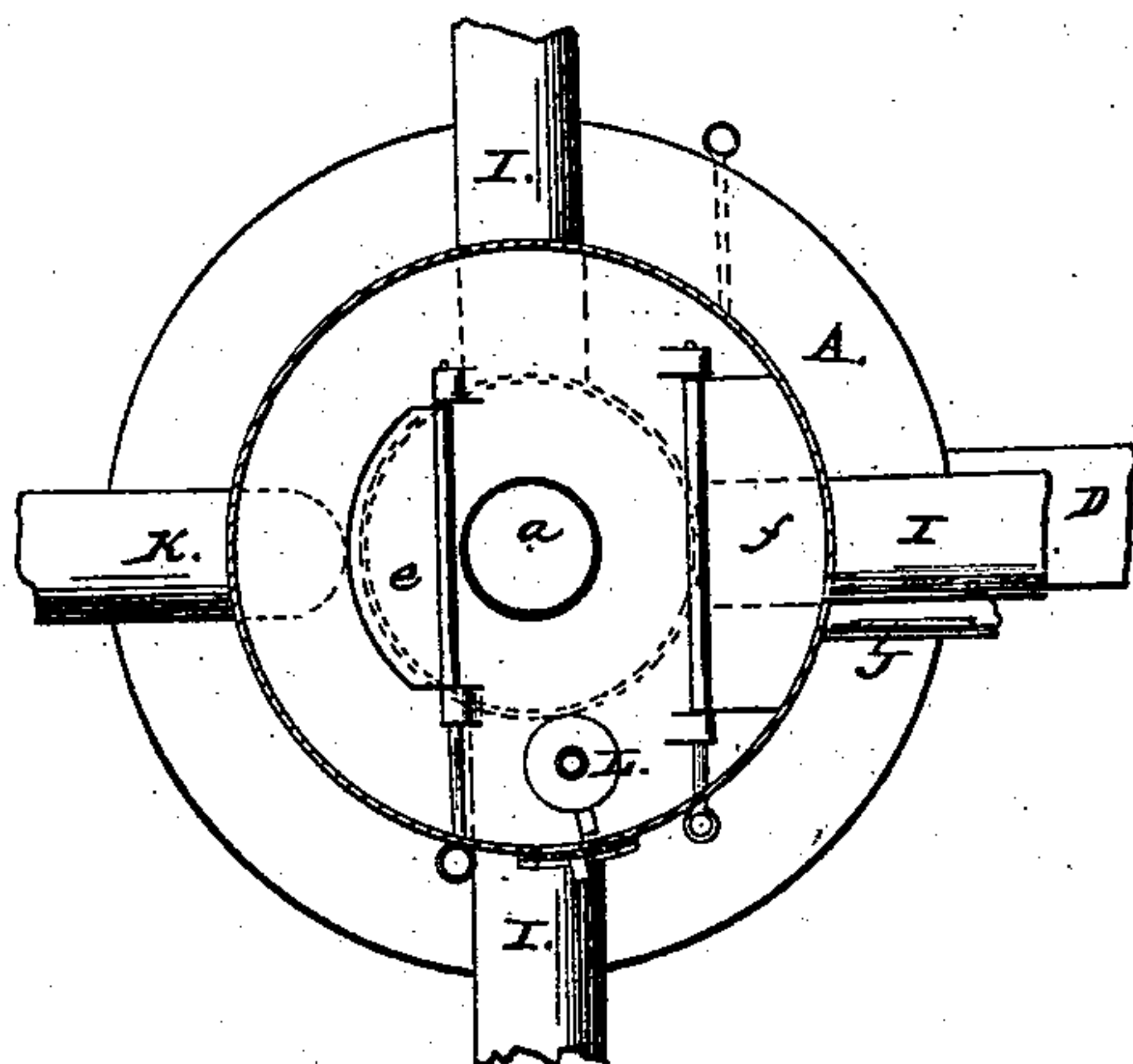


Fig. 2.



UNITED STATES PATENT OFFICE.

CHARLES B. SAWYER, OF FITCHBURG, MASSACHUSETTS.

AIR-HEATING STOVE.

Specification of Letters Patent No. 17,750, dated July 7, 1857.

To all whom it may concern:

Be it known that I, CHARLES B. SAWYER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a new and useful Improvement in Air-Heating Devices for Buildings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a vertical and central section of my improvement. Fig. 2 is a horizontal section of ditto; (x), (x), Fig. 1, indicating the plane of section.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates solely to an improvement in an air-heating device formerly patented by John Sawyer, in which a ventilating chamber, hot-air flue, smoke flue, and air-heating chamber are arranged and combined in a peculiar way for effecting the desired purpose.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A, represents an air-heating chamber which may be of cylindrical or other proper form; and B, represents a stove placed within the chamber A, said stove being provided with a smoke pipe (a), which passes up vertically through the chamber A.

C, represents a cooking stove which may be placed outside the chamber A; the pipe (b) of said stove passing into or communicating with the stove B, or its pipe. The stove B is merely an auxiliary, and when not needed, as in summer, may be removed. The cook stove being always in use, remains stationary; its pipe (b), when the stove B is removed, being connected directly with the pipe (a).

D, represents a pipe which communicates with the lower part of the chamber A. This pipe communicates with the external air or atmosphere.

In the upper part of the chamber A a small chamber E is placed, and this chamber E communicates with the chamber A by an opening (c) which is provided with a damper (d). On the upper part of the chamber A a hot-air flue F is placed, and the flue F is encompassed by a ventilating chamber G. The smoke pipe (a) passes through the center of the hot-air flue F, and terminates in a small chamber H, placed over the hot-air

flue F and ventilating chamber G. The hot-air flue F may be made to communicate with or be shut off from the chamber H by means of a damper (e), and the ventilating chamber G may be made to communicate with or be cut off from the chamber H by a damper (f).

A pipe (g) is connected with the chamber H; but this pipe is not a smoke pipe only, as it communicates when necessary with the ventilating chamber and hot-air flue, as will be presently shown.

I, represents hot-air pipes which lead from the hot-air flue F to the rooms to be heated.

J, represents a ventilating pipe. There is a pipe J leading from each room into which hot air is conveyed by a pipe I. These pipes communicate with the lower part of the ventilating chamber G.

K is a pipe which passes through the ventilating chamber G. The lower end of this pipe communicates with the atmosphere, and the upper end passes into one of the rooms to be heated. There is also a pipe K leading into every room to be heated. Within the chamber H a lamp L is placed. Each of the pipes I, J, K, is provided with a damper (h), and each damper has a chain (i), the chain being placed within the pipes and leading into the rooms with which the pipes communicate.

The air-heating chamber A is placed in the lower story of a building, and the pipes I communicate with the several rooms to be heated as also the pipes J, K. The cold air passes into the chamber through the pipe D and becomes heated in passing up through said chamber into the hot air flue F, and the heated air passes into the several rooms through the pipes I. The air within the chamber G is rarefied by the heat from the hot air flue F, and the cold and vitiated air from the lower part of the rooms will pass through the pipes J into the chamber G and up through the chamber H into the pipe (g), the damper f being open. It will be seen therefore that a circulation of air is kept up in each room, warm air entering through the pipe I, and the impure and cold air at the bottom of the room passing through the pipe J.

In case the temperature of either room becomes too high, it may suddenly be lowered by opening the damper of the pipe K, which will admit a volume of pure cold air, the draft being produced by the heat of ventilating chamber G, and the temperature of each

room may be regulated by adjusting the dampers of the pipes I and also those of the pipes J, K. These dampers may all be adjusted by the occupants of the several rooms as the chains (v) lead into the several rooms through the pipes as before stated.

In case at any time there is no fire in either of the stoves B, C, the lamp L may be lighted, which will sufficiently rarefy the air in chamber H to produce sufficient draft for ventilation; and the heat of the flue F, as well as that of the chamber G, may be regulated by adjusting the dampers (e) (f), for the heat of both chambers may, by opening dampers (e), (f), be made to pass up into chamber H into pipe (g).

In the patent granted to John Sawyer the pipes K are not used nor are the dampers (h) employed; there is no means devised for the regulation of the temperature of the several rooms by the occupants. The hot air flue F extends upward the whole height of the building, and there is no communication between the smoke pipe, or rather the pipe (g), and the hot air flue F and ventilating flue G, whereby either or both may be used, or the temperature of either regulated as desired without affecting the temperature of the other. Thus it will be seen that my improvement possesses many advantages over the one patented by John Sawyer. It is

cheaper to construct; may be arranged with facility; and the temperature of all or either of the rooms in a building regulated as desired.

I do not claim the hot air pipes I, hot-air flue F, ventilating flue G, and air-heating chamber A, provided with cold air pipe D, for these, arranged as shown, have been previously used and patented by John Sawyer, nor do I claim either of the parts herein described separately; but,

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

1. The pipes K for the admission of cold air direct into rooms, when said pipes are made to pass through the ventilating chamber G for the purpose of creating the necessary draft as described, and arranged and used in connection with the hot air pipes I, and ventilating pipes J as shown.

2. I also claim the chamber H placed over the hot-air flue F and ventilating chamber G, when arranged relatively with the flue F, chamber G, and pipes (a), (g), as shown, for the purpose specified.

CHARLES B. SAWYER.

Witnesses:

W. BUSCH,
S. F. COHEN.