E. M. Deey,

Ventilator.

No. 110,905. Patented Jan. 10. 1871.

Fig. 1.

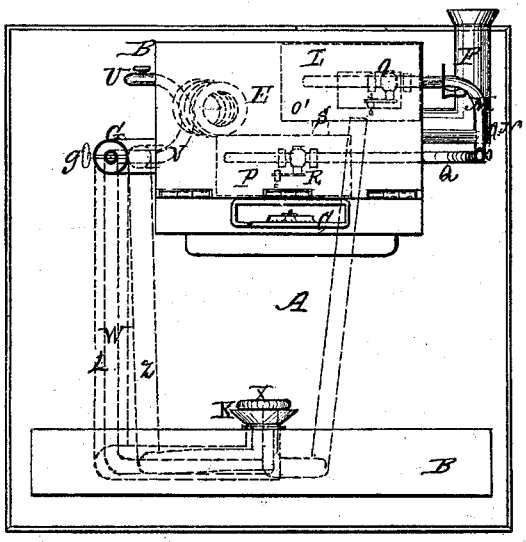


Fig. 2.

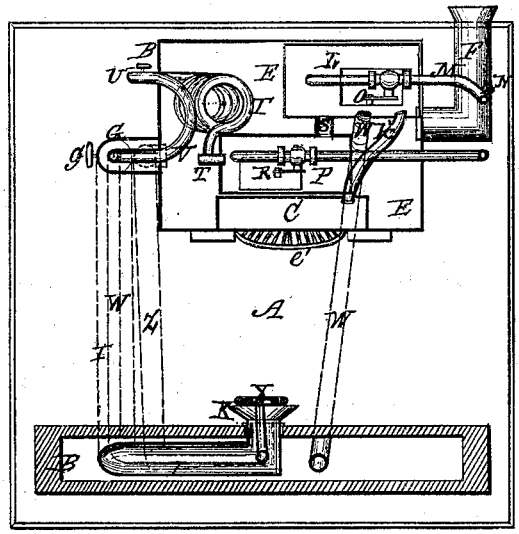


Fig. 3.

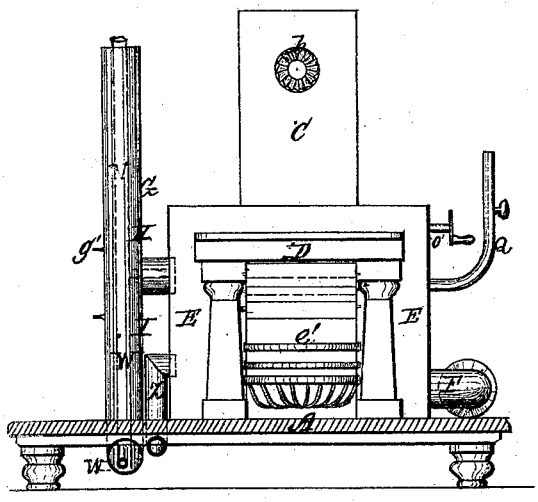
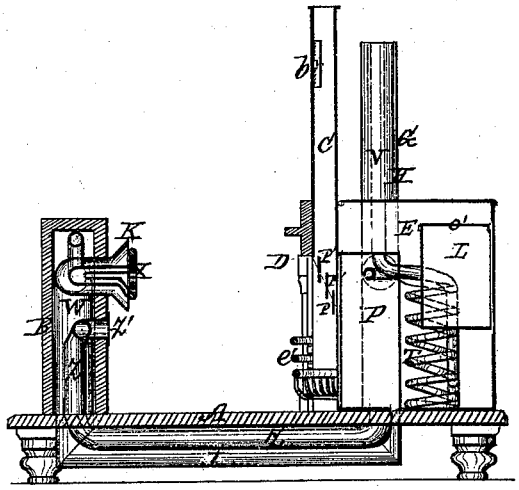


Fig. 4.



Witnesses:

Matthew O'Neill

Emile Holtz.

Inventor

Edward Mortimer Deey

United States Patent Office.

EDWARD MORTIMER DEEY, OF NEW YORK, N. Y.

Letters Patent No. 110,905, dated January 10, 1871.

IMPROVEMENT IN VENTILATORS.

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

I, EDWARD MORTIMER DEEY, of the city, county, and State of New York, have invented an Improved Apparatus for Heating and Ventilating Dwellings, Public Halls, &c., of which the following is a specification.

The nature of my invention consists in the employment of an air-chamber; also a steam-vessel and a reservoir placed at the back or over the fire-grate of a room or hall, which, with appropriate tubing or pipes for supplying cold air from the outside of the dwelling or from any part of the room to the air-chamber, and for conducting the air heated in said chamber, and charged with moisture evaporated from the reservoir in a pipe which encompasses a pipe charged with steam generated in the steam-vessel, and conveyed to any part of the room where the hot air is discharged, and the steam-pipe forming a coil for facilitating the discharge of the hot air from the circumscribing hot-air pipe is returned to the condenser or reservoir, I am enabled to heat a room with fresh, warm air, charged with a healthful and agreeable proportion of moisture, the heat utilized and evenly distributed, while the room is well ventilated, and using only the fire in the grate, stove, or furnace for such purpose, as I will further explain by reference to the accompanying drawing, of which—

Figure 1 is a plan of part of a room or apartment provided with the apparatus;

Figure 2, a horizontal section;

Figure 3, a transverse section, looking toward fire-grate; and

Figure 4, a longitudinal section of same.

In the said drawing—

A indicates the floor,

B, the walls,

C, the chimney, and

D, the fire-place of a hall or apartment of a dwelling-house.

E is the air-chamber, placed in rear of the grate *e'*.

F, the fresh-air pipe, which may lead from the outside of the dwelling or from a distant part of the room into the air-chamber.

G is the hot-air pipe, having its inlet opening in the hot-air chamber.

It extends in a branch, H, upward to a room above, and in a branch, I, downward below the floor of the room, and thence upward in the opposite wall B of the room, where it discharges the hot air into the room through its bell-shaped mouth K; and

g' is a damper in said hot-air pipe, for regulating the amount of hot air required.

L is the reservoir, placed within the air-chamber E, and provided with a water-supply pipe, M, having a cock, N, and an air or ball-cock, O, within the reservoir, for regulating the supply.

The water in this reservoir, on being heated, evaporates and mingles with the hot air in the chamber E, (the amount of evaporation being regulated by the sliding cover *o'* from the outside of the air-chamber,) and is carried with the hot air through the pipe G and discharged into the room at K, as warm, fresh air, charged with a healthful and agreeable proportion of moisture; and

k' is a discharge-pipe, for surplus vapor and steam, into the chimney C.

P is the steam-vessel, placed in rear of the fire-grate.

This vessel has a supply-pipe, Q, and an air-cock, R, within the vessel, for regulating the quantity of water required for steam; and said vessel may also be supplied with water from the reservoir through the pipe S.

The steam generated in this vessel P passes into the coil of pipe T, thence outside the air-chamber E, where it has a regulating and drain-cock, U; returns and passes into the hot-air pipe G, where it has a branch, V, extending upward in said hot-air pipe, and another branch, W, passing downward within said hot-air pipe, under the floor, up in the opposite end of the room, through the bell-mouth K, where it forms a coil, X; returns, passes down under the floor, and up into the reservoir or condenser, where it discharges its exhaust-steam; or may, if preferred, exhaust into the chimney C of the room through pipe *k'*.

The object of the steam-pipe within the hot-air pipe is to preserve the same degree of heat in the air as it leaves the air-chamber until discharged into the room, and thereby cause a current of air through the fresh-air pipe into the hot-air chamber, and thence through the hot-air pipe into the room.

Z is a secondary cold air pipe, to take cold air from the surface of the floor of the room through the register Z', and discharge into the hot-air chamber.

b is a register in the chimney C, for carrying off the foul air; and

e' is the fire-grate, having at its back the steam-vessel P, and provided with pivoted slats P' P', when open for permitting the volatile products of combustion to escape into the chimney, or when partially closed retaining the greater portion of the heat in the fire-place for generating steam, and heating the cold air in the air-chamber, or radiating an increased quantity of heat into the room, as may be desired.

What I claim as new is—

1. The steam-pipe T V W, and encompassing hot-

air pipe G H I, when used in combination with the hot-air chamber E, steam-vessel P, and reservoir or condenser L, substantially as and for the purposes described and set forth.

2. The pivoted slats P′ P′, &c., in combination with the hot-air chamber E, steam-pipe T V W, and encompassing hot-air pipe G H I, substantially as and for the purposes described and specified.

3. The coiled steam-pipe or bulb *k′* placed within the bell K of the hot-air pipe G H I, for the purposes substantially as set forth and described.

In testimony whereof I have hereunto set my signature this 21st day of November, 1870.

EDWARD MORTIMER DEEY.

Witnesses:

ARTHUR NEILL,

EMILE MOLTZ.