

P. MIHAN.

VENTILATING PRISONS AND OTHER BUILDINGS.

No. 171,033.

Patented Dec. 14, 1875.

Fig. 1.

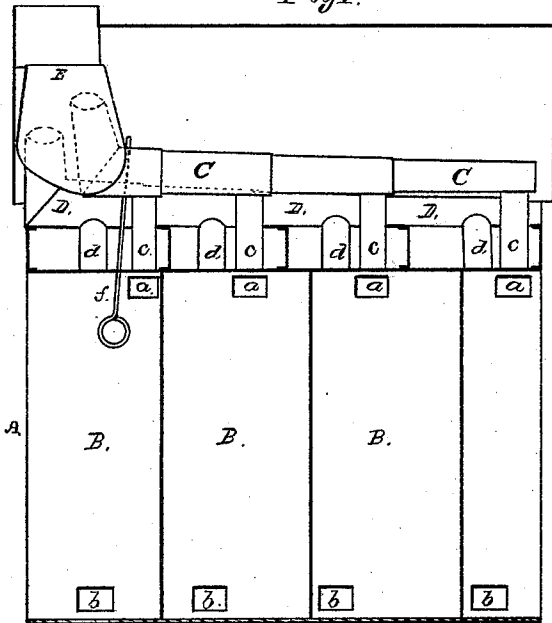


Fig. 2.

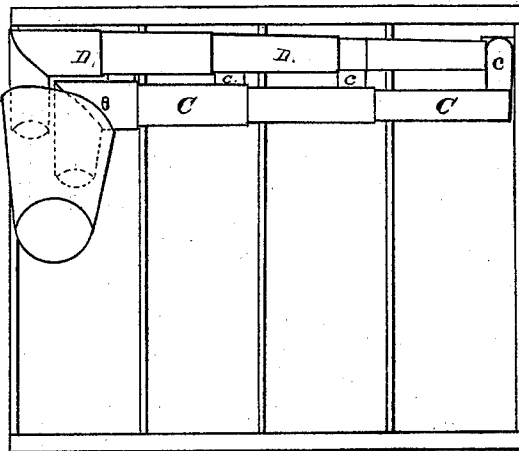


Fig. 3.

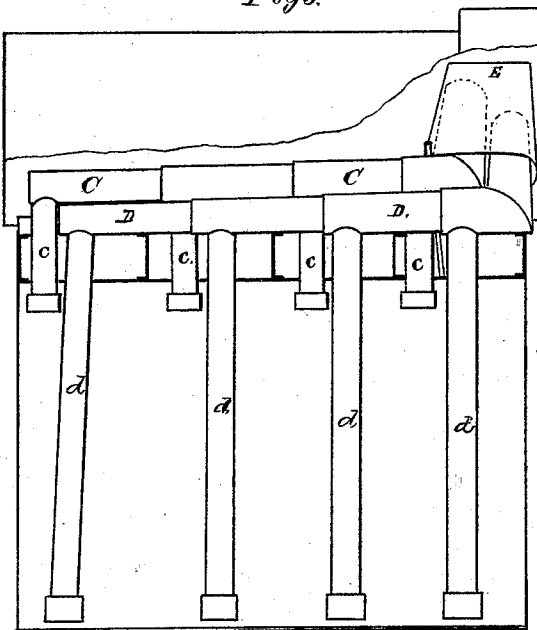
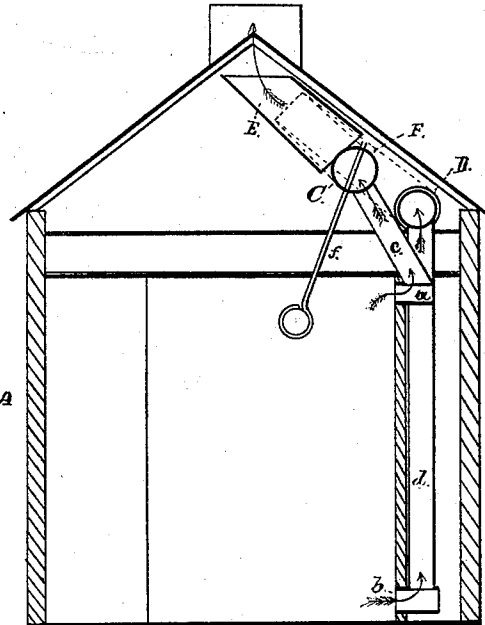


Fig. 4.



Witnesses.

Geo. Gray
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UNITED STATES PATENT OFFICE.

PATRICK MIHAN, OF CAMBRIDGEPORT, MASSACHUSETTS.

IMPROVEMENT IN VENTILATING PRISONS AND OTHER BUILDINGS.

Specification forming part of Letters Patent No. **171,033**, dated December 14, 1875; application filed November 9, 1875.

To all whom it may concern:

Be it known that I, PATRICK MIHAN, of Cambridgeport, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in the System of Ventilating Prisons and other Buildings; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

In the said drawing, Figure 1 is a central vertical and longitudinal section of a prison or building provided with a series of cells, and having ventilating apparatus embodying my invention applied thereto. Fig. 2 is a top view of the same with the roof removed, showing the arrangement of that part of the apparatus located within the attic or upper part of the building. Fig. 3 is a rear elevation, with the outside wall of the building removed, a portion of the roof also being broken away in order to show the two independent mains or hot and cold air receiving pipes or chambers. Fig. 4 is a transverse section taken so as to exhibit the damper which controls the entire series of upper register-openings of the several apartments.

My invention relates to that system of ventilation in which two exhausts are employed, (of which the invention shown in Letters Patent granted to me on June 16, 1874, is the type,) one of such exhausts being disposed near the top of the room, to remove the surplus heated air, and the other near the floor, to convey away the denser or foul air.

In my present invention I employ a separate pipe leading from each upper exhaust or register opening, and connect the same with a main or receiving pipe or chamber located in the attic or upper part of the building to be ventilated. I also employ a separate pipe leading from each lower register-opening, and connect such pipe with a common receiving pipe or main, also located in the upper part of the building, the eduction ends of said two independent mains or exhaust-pipes entering a duct leading to the atmosphere, or to a com-

mon place of discharge; and my invention consists in the peculiar construction and arrangement of the parts, as hereinafter fully described and claimed.

In the said drawing, A denotes a building of one story, provided with a hall or room divided into a series of cells, B B, &c., each of such cells having a ventilating-opening, *a*, near its top, and another, *b*, near its lower part. Connected with each upper register-opening is a pipe, *c*, which extends up and enters a common main or receiving-pipe, C, extending horizontally of the building, and located in the attic or above the room to be ventilated. The main or pipe C is made of an increasingly-greater diameter from its outer to its inner or eduction end, such diameter increasing at the junction of each successive entering pipe, each increment thereof corresponding with the diametric area of the entering pipe. Connected with each lower register-opening *b* is a pipe, *d*, which extends upward in rear of the wall of the room, and is connected with a common horizontal receiving main or pipe D, which, like the pipe C, is made of a progressively greater diameter in accordance with the number of entering pipes. Both the mains or pipes C and D, at their inner or eduction ends, open into a pipe or receiver, E, having a diametric area equal to or greater than that of the combined pipes C and D, such pipe E connecting with any suitable outlet opening into the atmosphere. Within the hot-air main C, and between the point at which the last pipe *c* opens into the same, and in the eduction end of the main, I arrange a damper, F, having an operating-rod, *f*, or other suitable device, extending down to any convenient part of the building, so as to enable the damper to be readily operated by a janitor or other person. This damper is so disposed as to regulate or control the exhaust of the hot air of all the cells at the same time, and by a single movement thereof.

From the above it will be seen that my present invention, like that of the said patented one, embraces the same general principle of ventilation, viz., a duplex system of exhaust, arranged to operate at both the upper and lower portions of the apartment or apartments to be ventilated; but in my present invention

the cold or foul air pipe is not located within the hot-air pipe, but is arranged outside and independent thereof, and each of the upper register-openings has a separate pipe leading to a common receiving main, C, and that such main is not only of peculiar construction, but provided with a damper, so arranged therein as to control the whole series of register-openings and ducts connected with such main.

Having described my invention, what I claim is—

1. A system of ventilation, embracing a duplex (or upper and lower) exhaust, in which each exhaust is provided with separate independent pipes or ducts leading from the apartment to be ventilated, and connected with separate and independent mains or chambers located above the apartments to be ventilated.

2. In a system of ventilation combining the principle of a duplex exhaust, as described,

the combination of the mains C and D, constructed and arranged as set forth, and respectively provided with ducts or pipes *c* and *d*, communicating with register-openings located at or near the top and bottom of each cell or apartment, substantially as shown.

3. In a system of ventilation in which the ventilation is effected by a duplex exhaust, as stated, the arrangement of a damper within the hot-air main C, substantially as shown, whereby the same serves to control the whole series of upper exhaust-openings, as set forth.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

PATRICK MIHAN.

Witnesses:

F. P. HALE,
F. C. HALE.