T. WINANS.

VENTILATING AND WARMING BUILDINGS.

No. 187,792. Patented Feb. 27, 1877.

Fig. 1.

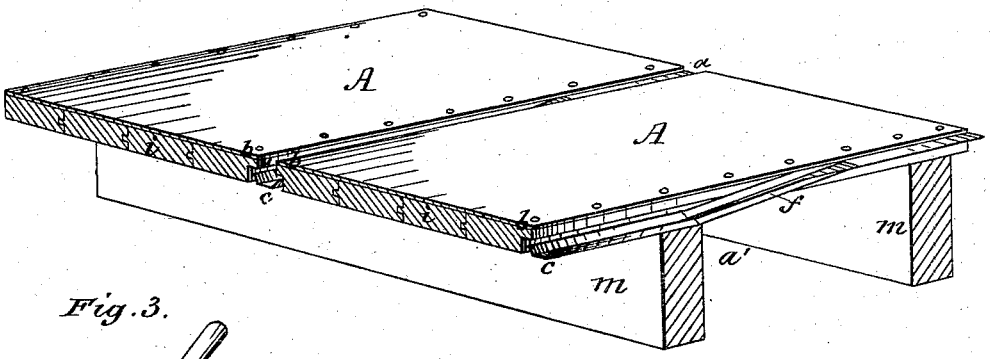


Fig. 3.

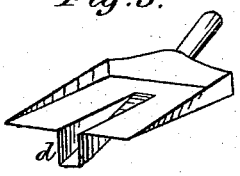


Fig. 2.

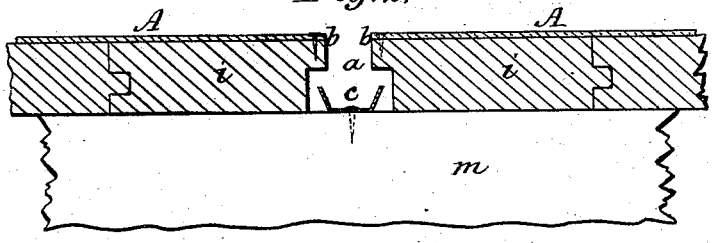
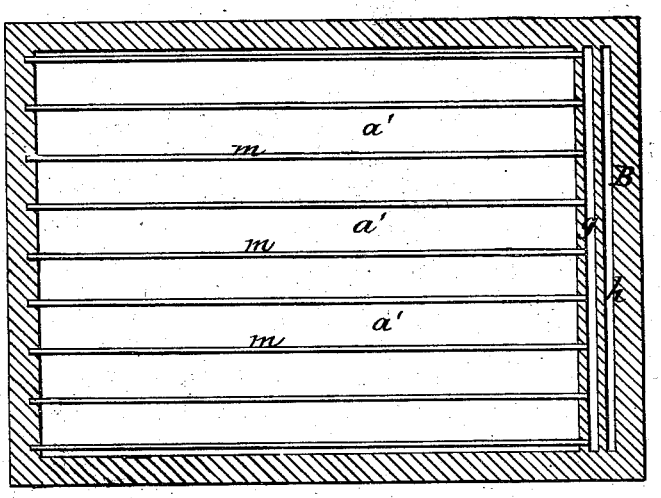


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

THOMAS WINANS, OF BALTIMORE, MARYLAND.

IMPROVEMENT IN VENTILATING AND WARMING BUILDINGS.

Specification forming part of Letters Patent No. **187,792**, dated February 27, 1877; application filed January 29, 1877.

To all whom it may concern:

Be it known that I, THOMAS WINANS, of Baltimore, Maryland, have invented certain new and useful Improvements in Ventilating and Warming Buildings, of which the following is a specification:

In heating buildings by means of warm air, it is desirable and important that the air should be equally diffused through the apartments into which it is introduced, and that its introduction into the apartment should take place as near the level of the floor as practicable—an end that may be attained by introducing the air through numerous small perforations formed in and scattered throughout the area of the floor of the apartment. This plan I have tested with excellent results. It is, however, open to objection, for the reason that dust, dirt, and small articles falling are apt to sift or pass through the perforations in the floor, and to gather below, where they cannot be got at and removed; and for the further reason that the floor cannot be well carpeted without interfering with or stopping altogether the entrance of the air.

In order to attain the end first above named without encountering the objections just noted, I have devised the following plan, which answers admirably the purpose for which it is intended.

Supposing the floor to consist of planking or boards, as usual, I form at certain intervals in the floor slits or narrow air-passages, extending from end to end of the room. These slits may be formed at the time the floor is laid by leaving spaces or intervals between the planks or boards at certain distances apart—say two-thirds of a yard, or the width of ordinary carpeting. The floor will thus be provided with narrow air channels or passages, formed at regular intervals apart. In these channels or passages can be placed small troughs to catch the dust and dirt, over which trough will extend the overhanging upper edges of the adjoining planks or boards. The air passes up around the troughs, and thence out from the floor, and into the apartment. The dust and refuse matter that may gather in the troughs can readily be removed, as will presently be described.

The floor, when thus made, can be carpeted without difficulty. The parts or divisions of the floor between the air slits or passages are solid, and can be covered with carpet without interfering with the free egress of the air. If these divisions, as above suggested, be each the width of ordinary carpeting, then the carpet can be laid with the utmost ease. The several widths will not be required to be sewed together, but each width may be fitted and tacked to its division of the floor without regard to the others.

The manner in which my improvements are or may be carried into effect will be understood by reference to the accompanying drawing, in which—

Figure 1 is a perspective view of a part of a floor made in accordance with my invention. Fig. 2 is a transverse vertical section of the same on an enlarged scale.

The floor is composed of planks laid in the usual way, save that at certain intervals two adjoining planks or boards are separated by a narrow space, *a*, which forms the air passage or channel above referred to. The edges of the planks or boards that bound each channel are formed with overhanging upper parts *b*, which extend over a narrow trough, *c*, placed in the channel below the level of the floor, and secured to the joists which support the flooring. The air passes up around the troughs, and then out through the slits or channels in the floor. The overhanging edges *b* cause all dust or refuse falling into the channels to be caught by troughs. The several divisions of the floor may be covered by carpeting A, as shown.

Dust and dirt collecting in the troughs may be removed in various ways. For instance, a dust-pan, such as shown in Fig. 3, may be employed. This pan is provided with a central portion, *d*, narrow enough to enter the channel *a*, and deep enough at its front to reach the bottom of the trough. From the front the bottom of the nose *d* inclines upward, until at the rear it reaches the level of the pan. The use of this implement is obvious. It is inserted in the channels, with the front end of its nose *d* in contact with the bottom of the trough, and the refuse matter in the trough is then by a suitable brush (introduced into the channel) swept into the pan. Another

arrangement for the purpose, which, perhaps, is preferable on some accounts to the one just described, is shown in Fig. 1. In this plan the bottom of each trough, at one or both ends, terminates in an incline, *f*, which reaches the level of the floor. The refuse matter in the trough can thus be swept up the incline to the floor, where it can be got at and removed.

The heated air which is discharged at the channels is conveyed from the heaters through narrow flues formed, preferably, in the rear wall of the building, and extending the width of the same—one for each floor of the building. Such an arrangement is shown in Fig. 4, which is a diagram representing a building in horizontal section. In this case it is supposed that only two stories of the building require to be heated, and for this purpose the wall B has formed in it two narrow vertical flues *g h*, which extend the width of the room, as shown.

The flue *g* is shown in communication with spaces *a'* between the joists *m* of floor *i*. The flue discharges its air into the space below the floor, whence it passes up through the channels into the apartments.

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

1. The method of heating or ventilating buildings, by forming in the floor of the apartment to be heated or ventilated long narrow air channels or slits, which communicate with a source of air-supply beneath the floor, and divide the floor into strips corresponding in width to the width of the several strips of carpeting to be applied thereto, as set forth.

2. The combination, substantially as set forth, with the floor, provided at proper intervals apart with long and narrow air channels or passages, of dust-troughs located in said channel below the level of the floor.

3. A floor divided into strips by means of slits or passages which are formed therein, so as to extend from end to end, or side to side, of the apartment, or thereabout, and are in communication with a suitable source of air-supply.

4. The combination of the floor-channels or air-passages, formed with overhanging sides, and the dust-troughs located in said channels, under the arrangement and for operation substantially as set forth.

5. The dust-troughs, located in the air channels or passages, and provided with bottoms which at one or both ends terminate in an incline, substantially as and for the purposes set forth.

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

THOMAS WINANS.

Witnesses:
ROSS R. WINANS,
JAS. HENDERSON.