H. ZEITSCHNER.

SANITARY BUILDING.

APPLICATION FILED JAN. 16, 1909.

926,042.

Patented June 22, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

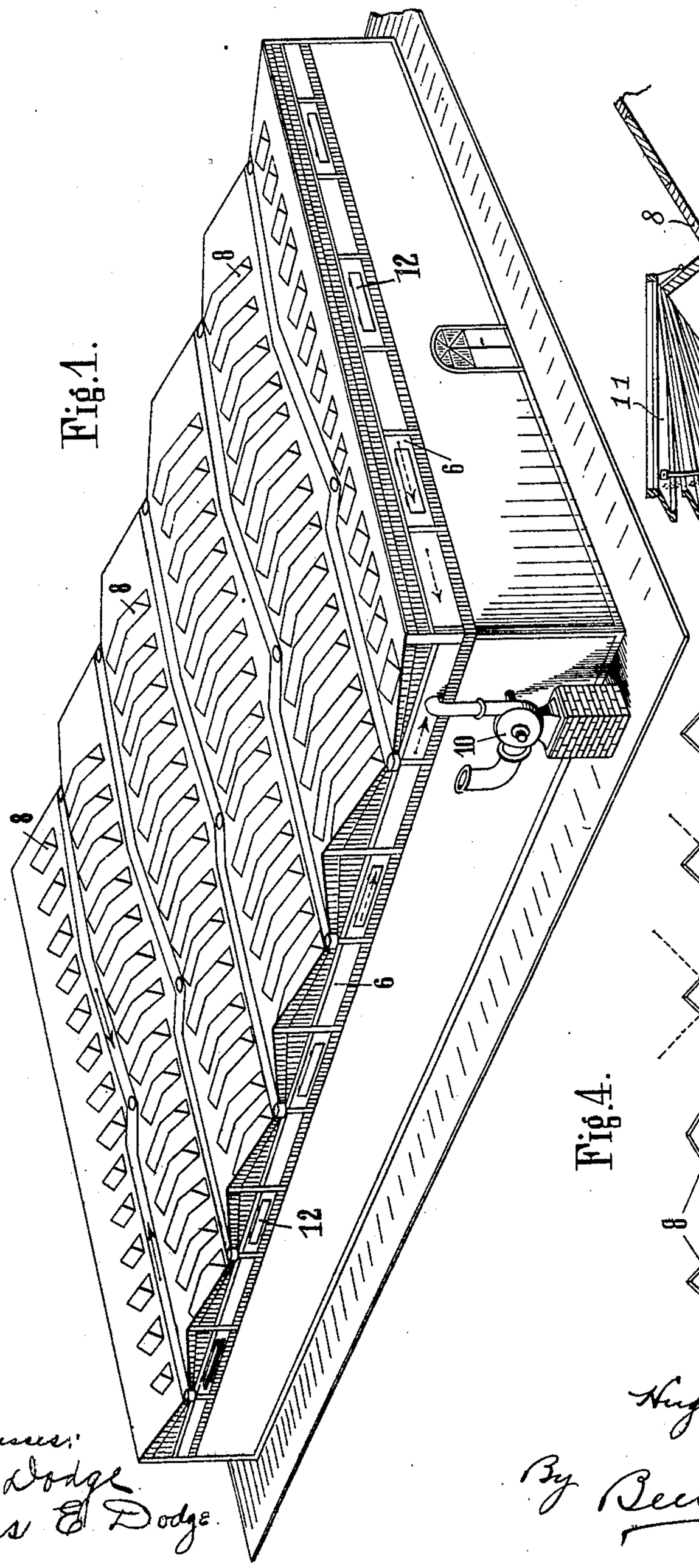


Fig. 5.

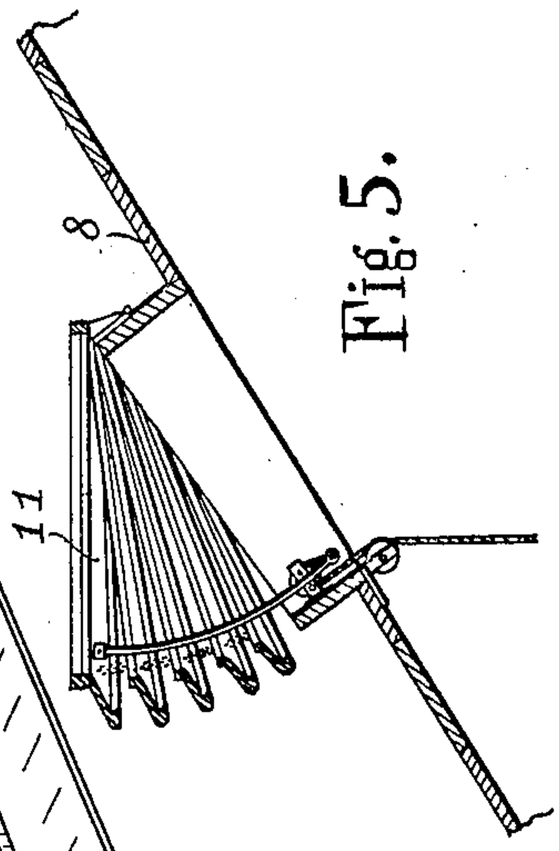
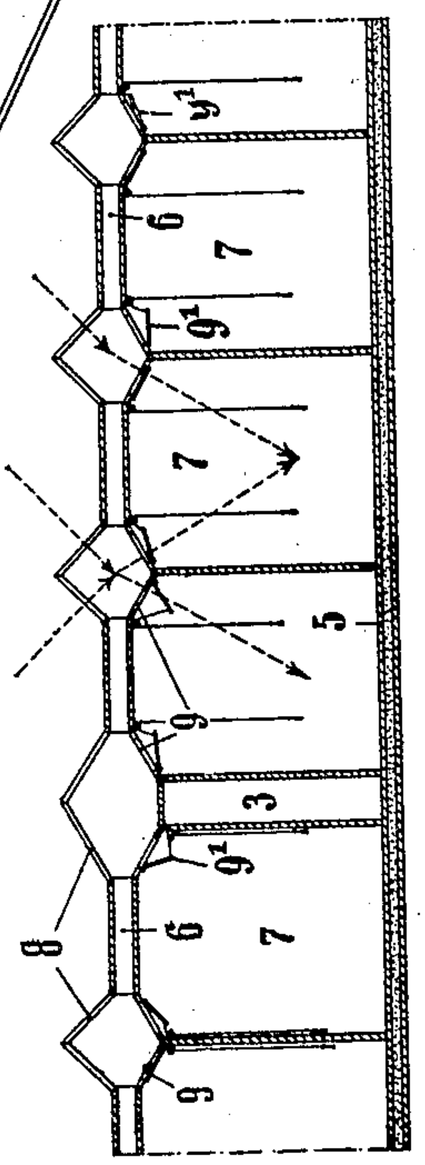


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 3.

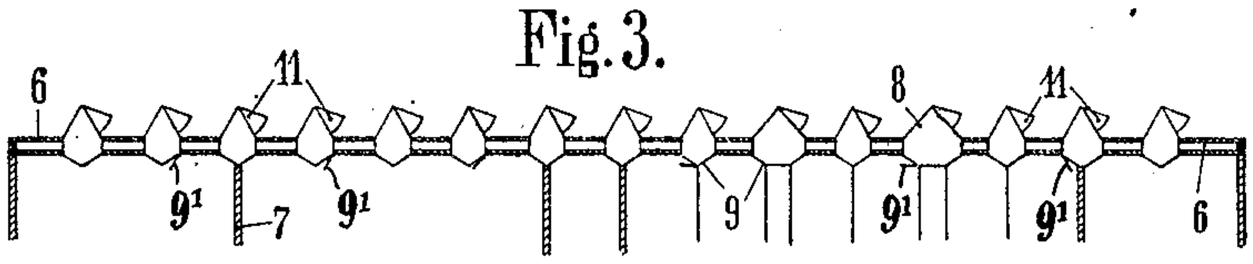
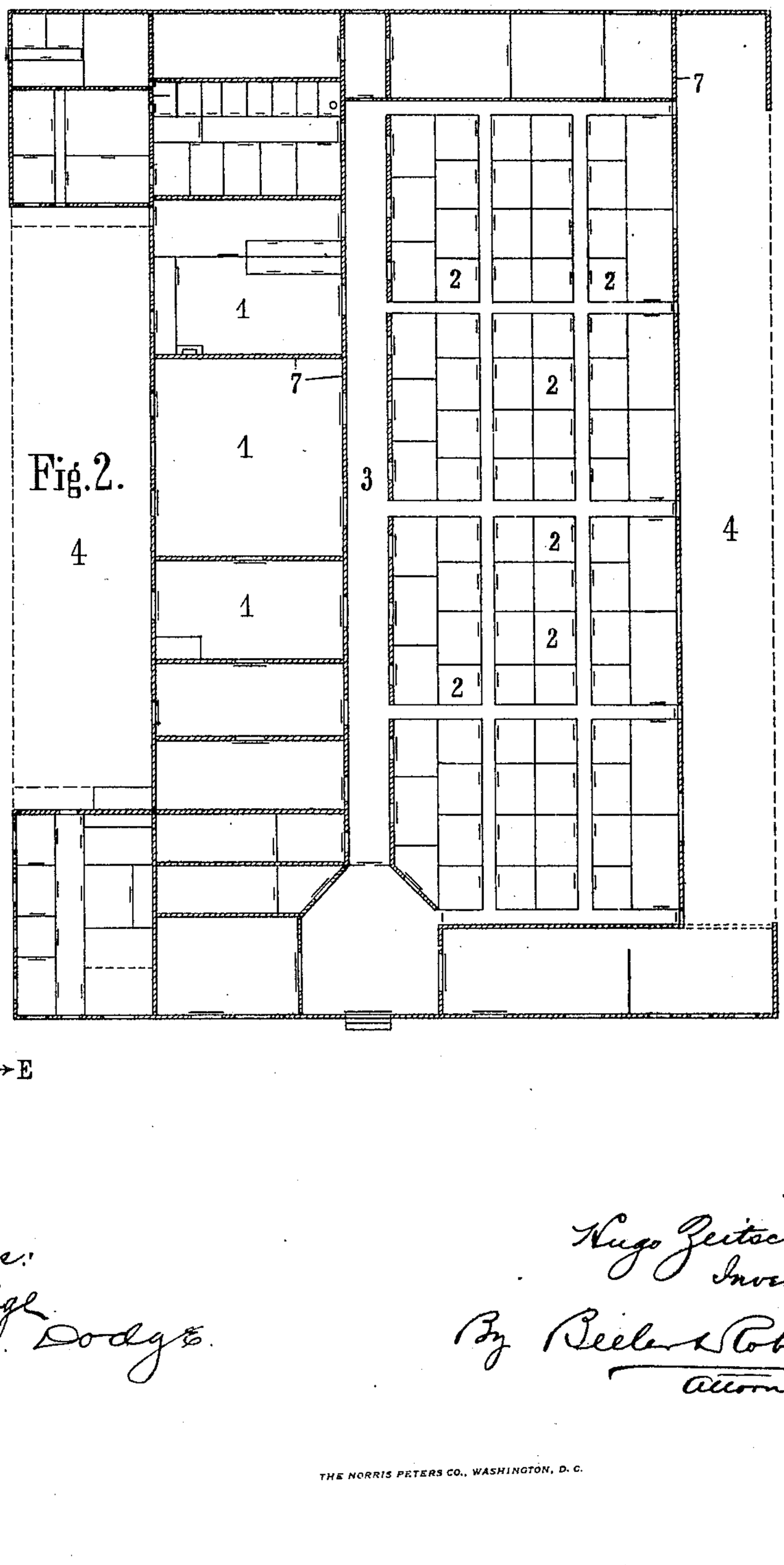


Fig. 2.



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UNITED STATES PATENT OFFICE.

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SANITARY BUILDING.

No. 926,042. Specification of Letters Patent. Patented June 22, 1909.

Application filed January 16, 1909. Serial No. 472,678.

To all whom it may concern:

Be it known that I, HUGO ZEITSCHNER, a subject of the German Emperor, residing at München-Gladbach, in the Kingdom of Prussia, Germany, have invented certain new and useful Improvements in Sanitary Buildings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a device for lighting cooling or heating and ventilating buildings for habitation and particularly for hospitals, places for open air treatment, schools, offices and the like.

The characteristic feature of my invention consists in the peculiar arrangement and construction of the ceiling whereby each room is closed by two ceilings one above the other separated by an empty space and broken by skylights in the form of double windows, each of which constitutes in itself a closed hollow space. The double windows are located above the partitions of the dwelling-rooms, the partitions running from north to south, so that each room receives full light from above and full light from the east and west, being, however, only partially lighted by the sun when in the south. The skylight double window is so constructed that the upper window forms, as usual, an angle with an upwardly directed apex, while the lower window forms a larger angle, the apex of which is directed downwardly, and is supported by the partition of the room. By this construction each room and each corner of the building, even those usually the worst lighted, is exposed all day long to the rays of the sun and direct daylight. Thus a difficult problem, from the hygienic standpoint, as, for instance, the hygiene of sleeping apartments appears to be solved. The hollow spaces, moreover, of the double windows, are adapted to allow of the maintenance of a continuous uninterrupted ventilation of the rooms by means of easily controllable dampers, arranged in the lower windows, and with the aid of "accordion" registers provided on the upper windows. The empty spaces between the ceilings are against the outside closed by dampers, which, by being open in the direction of the wind, carry across the ceiling a natural current of air, whereby the heating effect of the too direct rays of the sun is lessened.

The object of the device by which, with the aid of a ventilator, a warm or cold current of air is mechanically conducted through the spaces between the ceilings, is to supplement, if need be, the principle of the natural air current. It should, however, not carry heat and cold into the dwelling-rooms in the usual manner, but it should counteract the effect of too high or too low a temperature rushing in from the outside, before entering the dwelling-rooms. Here the principle of preserving the original temperature of the building, and the warmth emanating from the ground against outside influences is put into practical effect and to this end lighting, ventilation and equalization of temperature are for the first time combined in the same roof construction.

The invention is illustrated in the accompanying drawings as used, for example, in connection with places for open air treatment.

Figure 1 is a perspective diagrammatic view of the same, Fig. 2 is a plan view thereof, Fig. 3 is a diagrammatic transverse section of the roof and ceiling construction—and—Fig. 4 shows a part of the latter figure on an enlarged scale. Fig. 5 is a detail view of one of the accordion registers in its relation to the roof.

According to the drawings the entire building is only one story high, so that all the rooms are on the ground floor, and they have by preference a clay flooring 5, which may, of course, be covered with deal flooring, carpets and the like.

The ceiling, 6, is a hollow double ceiling, supported by the transverse partitions, 7, (Fig. 3) of the building and closed by glass windows having a north to south direction. These glass windows form double skylights, the upper windows 8, each of which is set, as usual, at an angle, having an upwardly directed apex. The lower window, 9, is set at a larger angle, with a downwardly directed apex, which rests on the partition of the smaller dwelling-rooms. By this arrangement the light from the east and west is directed completely into the centers of the rooms, whereas the two walls are only partially struck by the sun when in the south. In order to break and to subdue the rays of the sun, and to convey them into the room as diffused daylight, colored or absorbent, or partially transparent glass may be used for the lower windows. The empty spaces

between the ceiling, 6, which are partially closed and broken by the hollow spaces of the double windows, constitute a continuous hollow space, closed against the outside air by accessible dampers, 12. These dampers, 12, are opened according to the direction of the wind, in order to cause a natural current of air for the regulation of the heat from the sun's rays above the ceiling. The ventilator, 10, enhances this most natural equalization of the temperature of the dwelling-rooms by mechanically produced cold or warm air currents. This equalization can never exert a bad influence on the air of the rooms.

If it is desired to provide some heating device for specially intense cold any device of a known construction may be used.

The ventilation of the dwelling apartments is positively and directly effected by the hollow spaces of the double skylights, owing to the provision on the upper windows of the known "accordion" ventilators, 11, which are constantly held open, and by the dampers 9′ arranged in the lower windows, which can be easily regulated from the room. This arrangement, therefore, is equivalent to a natural ventilation and is uninterrupted and without the slightest draft.

From the illustration shown in Fig. 2 the particular novel features of this construction which result from this invention, and the sanitary advantage, may be easily recognized. In this illustration the rooms 1, serving for domestic arrangements, are separated from the bedrooms, 2, by a wide corridor, 3. The latter, which preferably serves as an air circulator, renders the inspection of the whole building particularly easy and enables a high degree of cleanliness to be maintained, as well as insuring great safety against fire and accidents. The front space, 4, of the building may be used for the construction of terraces or galleries, suitably decorated, and generally so arranged that the whole presents a pleasant aspect. It will be seen that the dwelling rooms, as well as the bedrooms, are well protected, separate and quiet, and that they are well lighted, ventilated and regulated as regards temperature, in a manner hitherto never attained.

I claim:—

1. The hereindescribed sanitary building comprising partitions having a north to south direction and forming dwelling-rooms, pairs of skylight double windows above said partitions having a continuous closed space for the circulation of air, the upper windows of which form an angle with an upwardly directed apex and the lower windows of which form an angle directed downwardly and supported by said portions.

2. The hereindescribed sanitary building comprising partitions having a north to south direction and forming dwelling-rooms, pairs of skylight double windows above said partitions having a continuous closed space for the circulation of air, the upper windows of which form an angle with an upwardly directed apex and the lower windows of which form an angle directed downwardly and supported by said partitions, "accordion" registers on the upper windows, and dampers on the lower windows, substantially as set forth.

3. The hereindescribed sanitary building comprising partitions having a north to south direction and forming dwelling-rooms, pairs of skylight double windows above said partitions having a continuous closed space for the circulation of air, the upper windows of which form an angle with an upwardly directed apex and the lower windows of which form an angle directed downwardly and supported by said partitions, "accordion" registers on the upper windows, dampers on the lower windows, and a series of dampers for controlling the circulation of air through said air space, substantially as and for the purpose set forth.

In testimony whereof I have affixed my signature in presence of two witnesses.

HUGO ZEITSCHNER.

Witnesses:
WM. VANDOR,
BESSIE F. DUNLAP.