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ROOF FOR BUILDINGS

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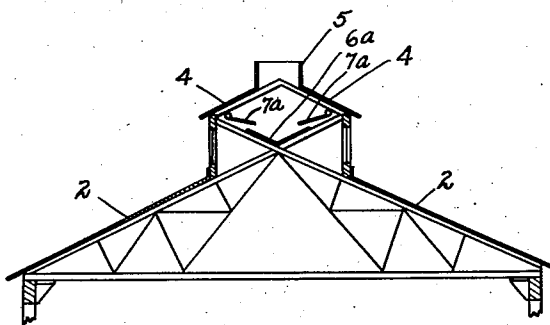
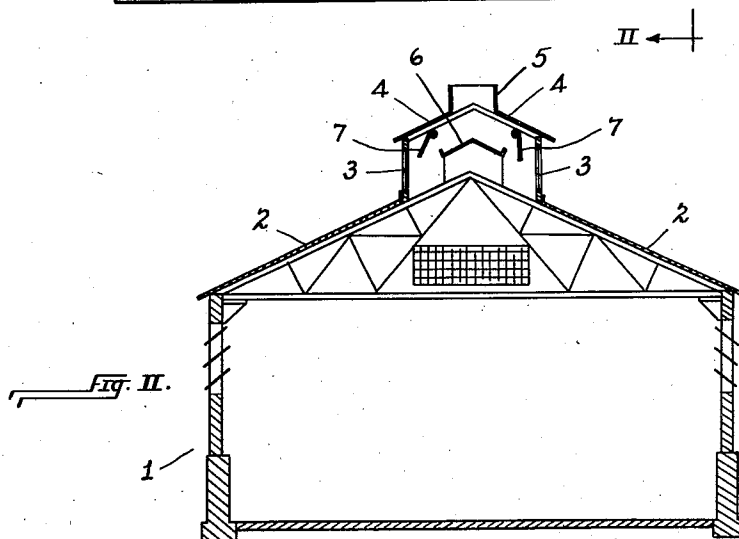
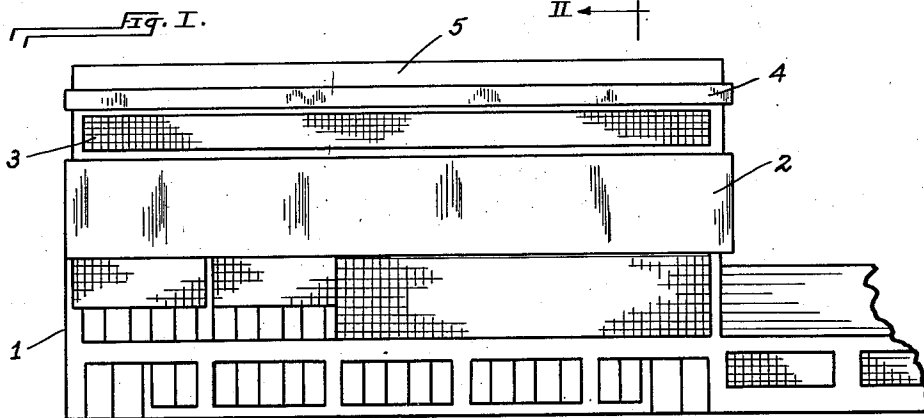


Fig. III.

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ROOF FOR BUILDINGS

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3 Claims. (Cl. 98—42)

This invention relates to the structure of buildings and has practical application in the structure of factories, machine shops, and buildings for industrial uses generally. The object in view is the provision in largest measure for light and ventilation in a structure that is simple, durable, and a structure whose movable parts are easy of operation.

In the accompanying drawing Fig. I is a view in side elevation, and Fig. II a view in vertical and transverse section of a building in whose structure the invention is embodied. The plane of section of Fig. II is indicated in Fig. I by the line, II—II. Fig. III is a fragmentary view, corresponding to Fig. II, and showing a modification in detail of structure.

In industrial buildings it is common to elaborate a ridged and doubly sloping roof by introducing a clearstory, and it is with such a clearstory roof that my invention has to do. Referring to the drawing, the double slopes 2, 2 of the roof of the building 1 are interrupted toward the ridge by a structure that includes vertical walls 3, 3 surmounted by a ridged and doubly sloping roof 4, 4. The ridge of this clearstory structure extends in the same vertical plane as the line of meeting of the planes of the roof slopes 2, 2. It is as though a section of a simple roof, consisting of two slopes 2, 2 extended to a common ridge, had been cut free and elevated, and the vertical clearstory walls 3, 3 had been interposed. This is known and familiar structure. And in such roofs it is usual (indeed, it is for this that the elaboration is made) to form windows in the clearstory walls 3; to reduce the clearstory walls structurally to supporting beams; and to use the beams as frames for windows that, but for the space occupied by the beams, fill all the extent of the clearstory area. These clearstory windows are commonly hinged, so that, in addition to affording light, the window spaces may afford ventilation too. It is upon such a structure that I have made improvement.

I provide windows in the vertical clearstory walls 3, and rely upon these windows to afford light; but I do not rely upon them, primarily, to afford ventilation. I open through the ridge of the clearstory roof a chimney 5 or chimneys; I provide beneath the chimney, but in a position not appreciably or seriously to reduce illumination, a trough to receive and carry away rain-water; and I preferably arrange between the trough and the adjacent roof surfaces vanes that may be swung to adjust the conditions of ventilation. As shown in the drawing, a chim-

ney 5, rising from the ridge of the clearstory roof, extends continuously, throughout the length of the roof. Obviously, in place of a continuous chimney, a single chimney of small extent in the direction of the length of the ridge, or a succession of separate chimneys, may rise at a suitable point or at a suitable succession of points throughout the length of the ridge. The trough for rain-water that underlies the chimney opening may be of such particular shape and may be so particularly arranged as is desired. I have found the shape and arrangement shown to be suitable. The trough 6 itself is double, sloping from a central ridge that extends in the vertical mid-plane of the building downward and outward to marginal channels of sufficient size to receive and carry the rain-water. The overall width of the trough exceeds the width of the chimney; it is arranged in its entirety in the vertical extent of the clearstory walls, and its oppositely sloping sides extend beneath and parallel with the sloping roof parts 4, 4. The trough obviously will be inclined longitudinally, at a sufficient angle to carry off the accumulating rain-water. The vanes 7 for adjusting ventilation may conveniently be hinged to the under faces of the roof parts 4, 4, and they may be swung on their hinges to control the twin passages formed by and between the doubly sloping trough and the two sloping roof parts 4, 4. The opening and closing of these vanes may be severally or conjointly varied, and accommodation made to the direction and intensity of wind, to temperature, and to other atmospheric conditions within the building and outside.

In Fig. III I show, at 6a, a permissible modification in the form of the trough, and in the organization of the vanes, 7a, that cooperate with the trough in the control of the twin passages formed by and between the trough and the two sloping roof parts 4, 4.

I claim as my invention:

1. A building with ridged and doubly sloping roof that includes a clearstory, a chimney opening in the ridge of the roof, a drainage trough arranged beneath the ridge and underlying the chimney opening and forming with the opposite slopes of the roof a passageway to the chimney opening, and a vane movably arranged in such passageway, controlling flow therethrough of a ventilating stream of air.

2. A building with ridged and doubly sloping roof that includes a clearstory, a chimney opening in the ridge of the roof, a drainage trough of medially ridged, laterally sloped, and marginally

channeled cross-section arranged beneath the ridge and underlying the chimney opening, the lateral slopes of the trough forming with the slopes of the roof twin passageways to the chimney opening, and two vanes severally arranged in the two passageways and movably mounted therein with consequent variation in the effective areas of the passageways.

3. A building with a ridged and doubly sloping roof, and a clearstory having a ridged and doubly sloping roof arranged above the ridge of the first roof, said clearstory including spaced-apart light-admitting side walls that extend between

said roofs, a chimney opening in the clearstory roof, a drainage trough arranged in the horizontal interval between said side walls and in the vertical interval between said roofs and underlying said chimney opening, said trough forming with said side walls and clearstory roof a passageway to the chimney opening, and means for regulating flow through said passageway, such structure providing in effective measure for illumination and ventilation of the interior of said building.

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