(No Model.)

G. HAYES.

SKYLIGHT.

No. 299,387. Patented May 27, 1884.

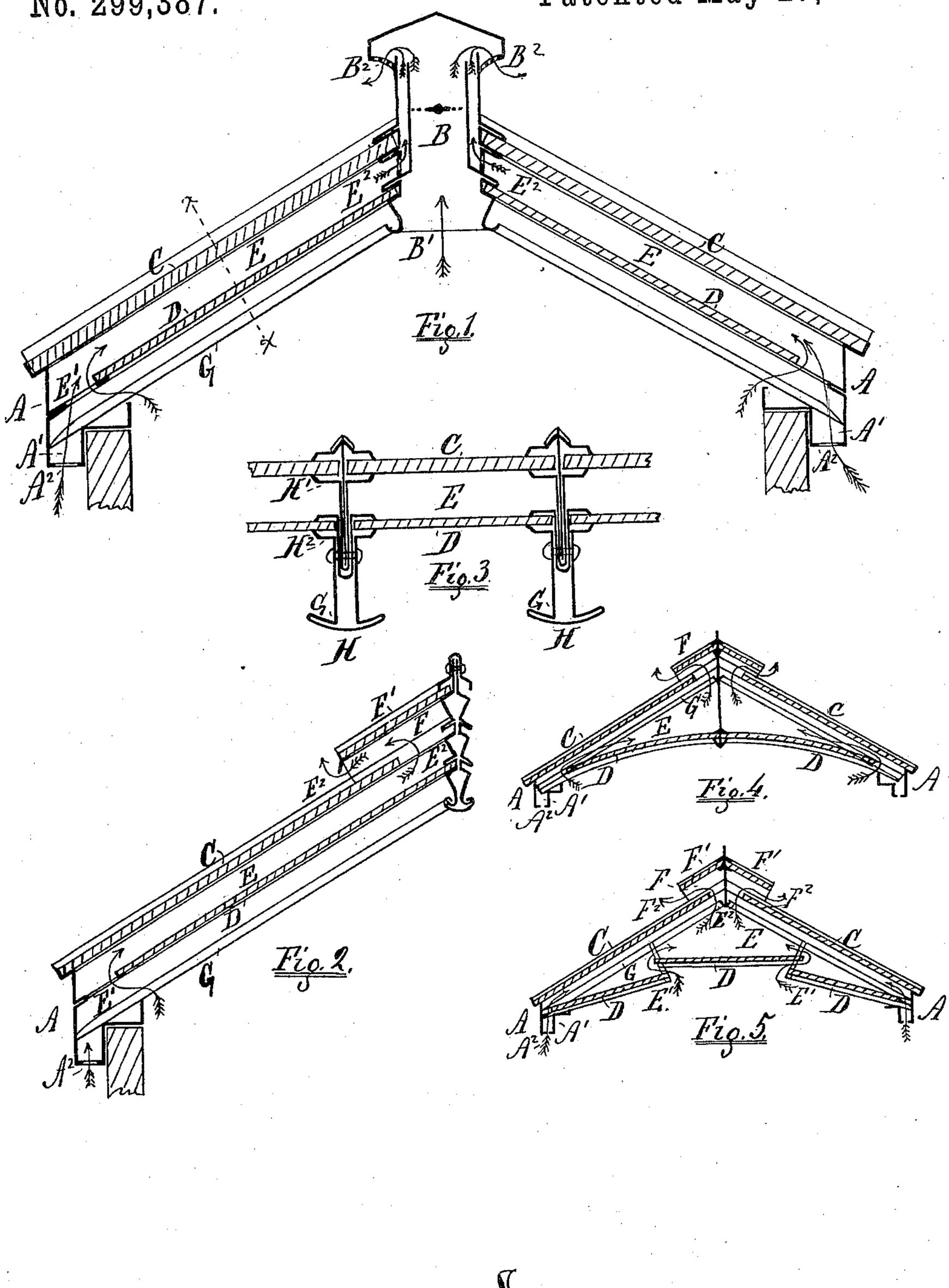

Fig. 1.

Fig. 3.

Fig. 2.

Fig. 4.

Fig. 5.

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SKYLIGHT.

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Application filed July 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HAYES, a resident of the city, county, and State of New York, have invented a new and useful Improvement in Skylights, of which the following is a specification.

The nature of my invention consists in constructing the skylights with double glazing. Bars of sheet metal are formed with double rabbets. Upon the upper rabbets thereof are placed the usual plain or uncolored glass panes, and upon the lower rabbets are placed colored glass panes, either stained, painted, or ground in patterns, a flue-space or duct being left or formed between the upper and lower sheets of glass.

The object of this construction is to obtain strength in the glazing, with ornamental appearance, and in an economical manner, and to retain all desirable provision for the escape of water of condensation or leakage.

Hitherto it has been the practice to construct an exterior skylight and an interior dome or ceiling light—the inner laid horizontally, which cuts off the means of ventilation and retards or obstructs the light—over halls or stairways wherever the effect of a dome or interior light was desired. The skylight and interior light were complete structures, each separate and independent of the other, the outer glazed with clear glass, which can be obtained in such thickness as desired for strength, while the lower or inner light was glazed with colored, ground, or ornamental glass, which is often very frail, and can only be obtained in comparative thinness, unless at great cost. Consequently the colored glass would not answer for exterior purposes, but required the other skylight above it for protection, and when the patterns or designs varied it would be impossible to use it in a single or outer glazed skylight, by reason of the necessity of using glass in small pieces to constitute a kaleidoscopic effect or varied pattern, with lead clips between the joints, as usual in decorative glazing, the lead clips not having sufficient rigidity or strength to withstand the violence of wind and weight of rain, hail, or snow, and the glass used in such work being much thinner than that used for skylight-glazing outside. The construction of two independent structures was expensive and objectionable, the inner interfering with both light and ventilation. My invention is intended to obviate this by combining in one skylight structure the two kinds of glazing, whereby the cost is materially lessened, the risk of breakage also, and the effect as to appearance improved.

It further consists in the construction or formation of a flue-space or duct or passage-chamber formed between the upper and under sheets of glass, confined into sections by the bars or not, according to the form of skylight and its intended location. The space so formed is provided with inlet and outlet apertures, as many as desirable, and said space or chamber is for ventilating purposes, whereby currents of air can pass up through the space or chamber as a flue, aided by exterior apertures in the base-frame of the skylight, and find exit at or near the ridge of the skylight. The currents may pass into the usual metallic ridge ventilator, and thereby increase the rapidity of the currents therein; or they may escape through an aperture left at the ridge in the upper glazing, and from beneath a glazed hood finally pass to the outside of the structure. This is especially beneficial in a skylight, as the solar heat generated at or near the skylight creates a current. When solar heat does not exist, the artificial heat of the building inevitably finds its way to the skylight, and a current will be created by the peculiar arrangement of flues or ducts, and thus contribute largely to ventilation.

In the accompanying drawings, Figure 1 is a vertical section of a skylight, showing base-frame with gutter, metallic ridge ventilator, and double glazing down the slope, a flue-space or duct formed between, having inlet and outlet apertures, arrows showing direction of air-currents. Fig. 2 is a vertical section of a skylight, (one-half only shown,) illustrating the same system of double glazing and flue-space, the outlet therefrom being under a hood at the ridge, the metallic ventilator dispensed with, and a glazed hood as an equivalent therefor as to outlet for flues, being entirely a transparent ventilator. Fig. 3 is a cross-section on the line *x x* of Fig. 1, giving two bars or rafters, double glazing, and flue-space or air-duct between. This shows bars with double rabbets. Other forms of bar may

be used; but double rabbets are necessary. Fig. 4 is a vertical section of a skylight wherein the inner glazing is arched or domed, the flue-space or passage-chamber being an equivalent to that shown in the other figures. In this form gas-jets may be used at night to give effect and light in halls or other places where desired. Fig. 5 is a vertical section of another manner of placing the lower sheets of glass, producing flues or passage-chamber essentially alike in results to those shown in the previous figures. Gas may herein be used also.

A represents the base-frame of skylight, provided with an inside gutter, A′, having outlets for water at A^2, which answer for inlet of an air-current to facilitate the ascent of air-currents underneath the upper glazing.

B represents a metallic ridge ventilator or boxing, having open bottom at B′, and outlets therefrom at B^2.

C represents the upper sheets of clear or plain glass, and D the under sheets of stained, colored, or ground glass.

E represents the flue-space, air-duct, or passage-chamber between the glasses, having inlet-aperture at E′ and outlet at E^2.

F represents a hood, glazed at F′, and having outlet at F^2. The air-currents may pass off by or through the metallic boxing of Fig. 1, B, or by or through glazed hood F of Fig. 2.

G represents gutters of the bars providing for escape of all water reaching them from leakage or condensation. They may be located above the lower glazing, as in Figs. 4 and 5, or below, as in Figs. 1, 2, and 3.

H represents the bars, a form of which I show in section, Fig. 3, with upper rabbets, H′, and lower rabbets, H^2. Other forms may be used which would be equivalents therefor, when provided with the double rabbets essentially in position shown. The gutters G may be otherwise located where desirable—as, for instance, between the glasses C and D, as in Figs. 4 and 5.

What I claim as new, and desire to secure by Letters Patent, is—

1. A double-glazed metallic skylight the skeleton of which consists of sheet-metal bars or rafters, sheet-metal ridge, and sheet-metal base-frame, the glazing consisting of exterior plates of plain or uncolored glass and interior plates or pieces of colored, stained, or ground glass, substantially as shown and described.

2. In a metallic skylight, the combination of outside plates of plain or uncolored glass, C, with inside plates or pieces of stained or ground glass, D, having between them air passage or chamber E, provided with inlet-aperture E′ and outlet-aperture E^2, substantially as shown and described.

3. In a double-glazed metallic skylight, a flue space or chamber, E, between the upper and under sheets of glass, having inlet-aperture E′ leading thereto, and protected outlet-aperture E^2 leading therefrom, for the purpose of ventilating apartments and halls in buildings, substantially as shown and described.

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