(No Model.) 4 Sheets—Sheet 1.

T. HYATT.

COMBINATION DAYLIGHT REFLECTOR.

No. 285,625. Patented Sept. 25, 1883.

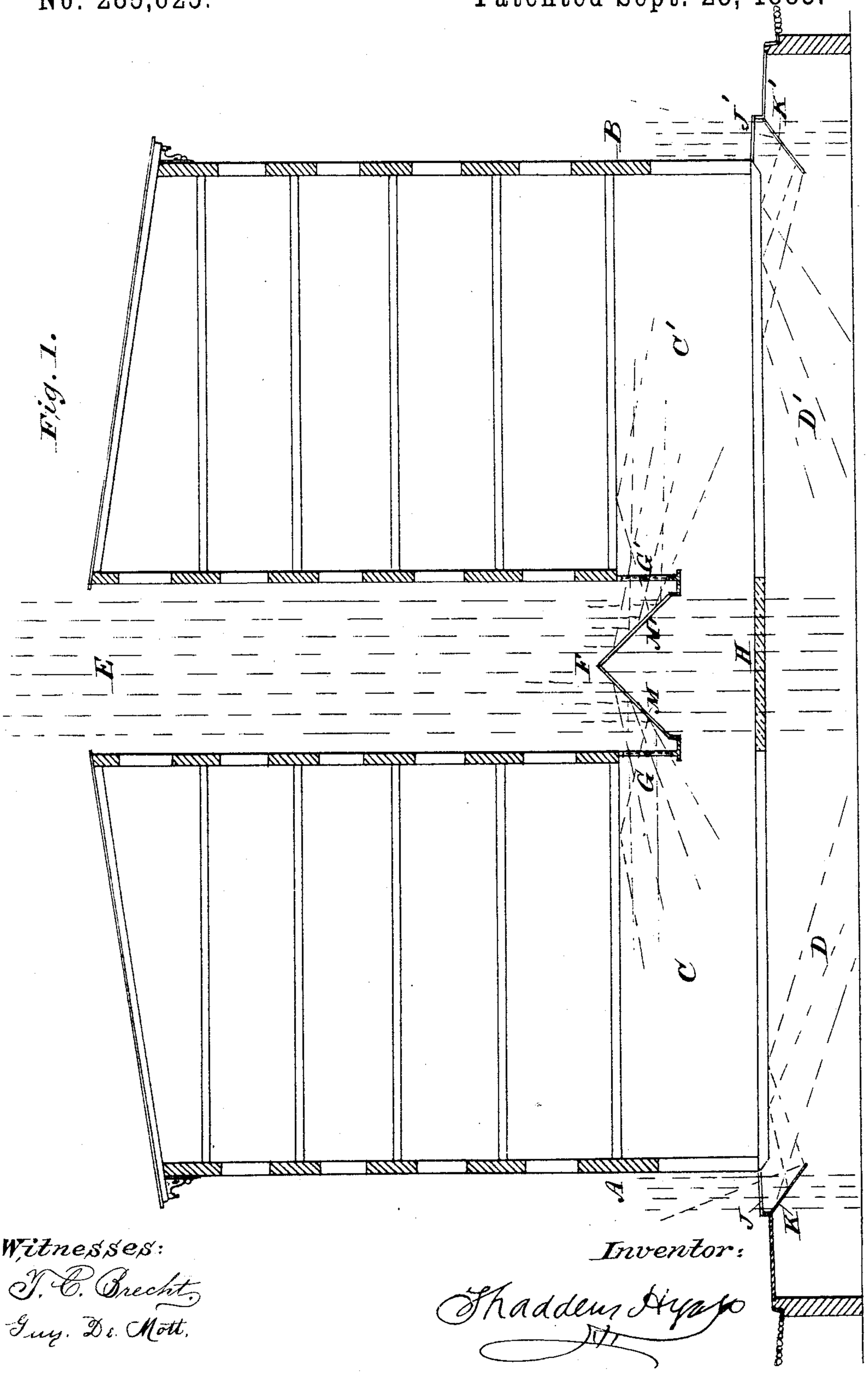

Fig. 1.

Witnesses:
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Guy. De. Mott.

Inventor:
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N. PETERS. Photo-Lithographer, Washington, D. C.

(No Model.) 4 Sheets—Sheet 2.

T. HYATT.

COMBINATION DAYLIGHT REFLECTOR.

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Fig. 2.

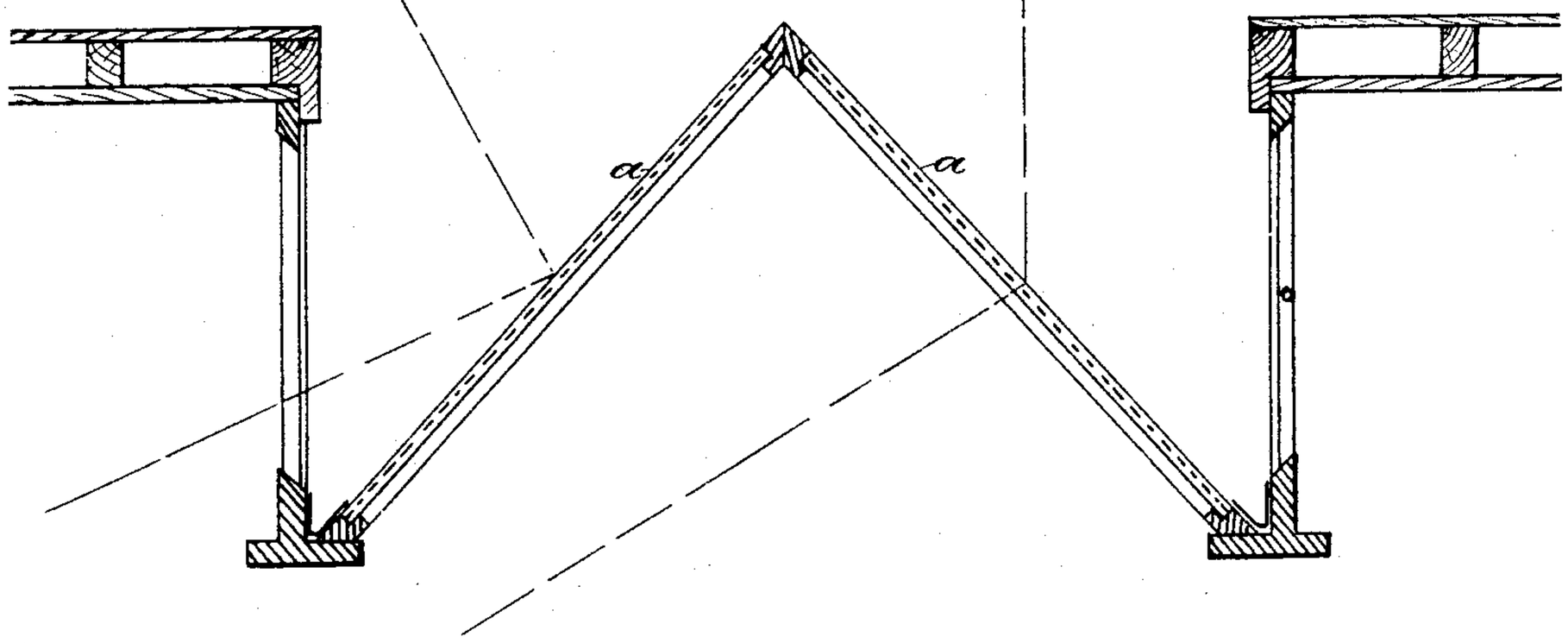

Fig. 2'

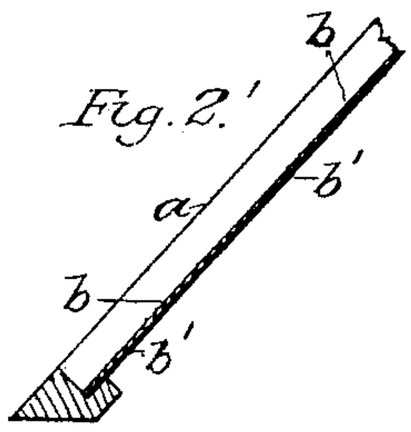

Fig. 3.

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(No Model.) 4 Sheets—Sheet 3.

T. HYATT.

COMBINATION DAYLIGHT REFLECTOR.

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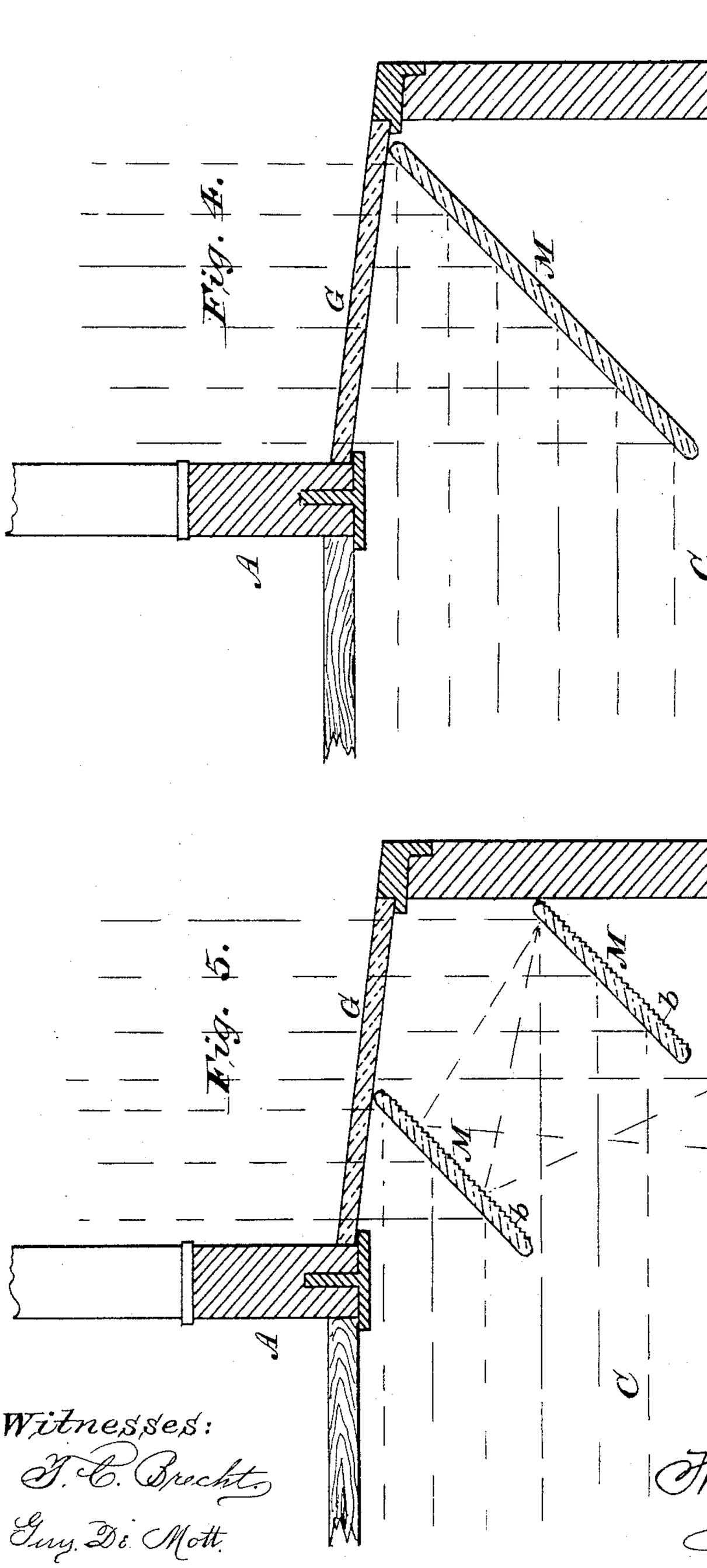

Fig. 4.

Fig. 5.

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(No Model.) 4 Sheets—Sheet 4.

T. HYATT.

COMBINATION DAYLIGHT REFLECTOR.

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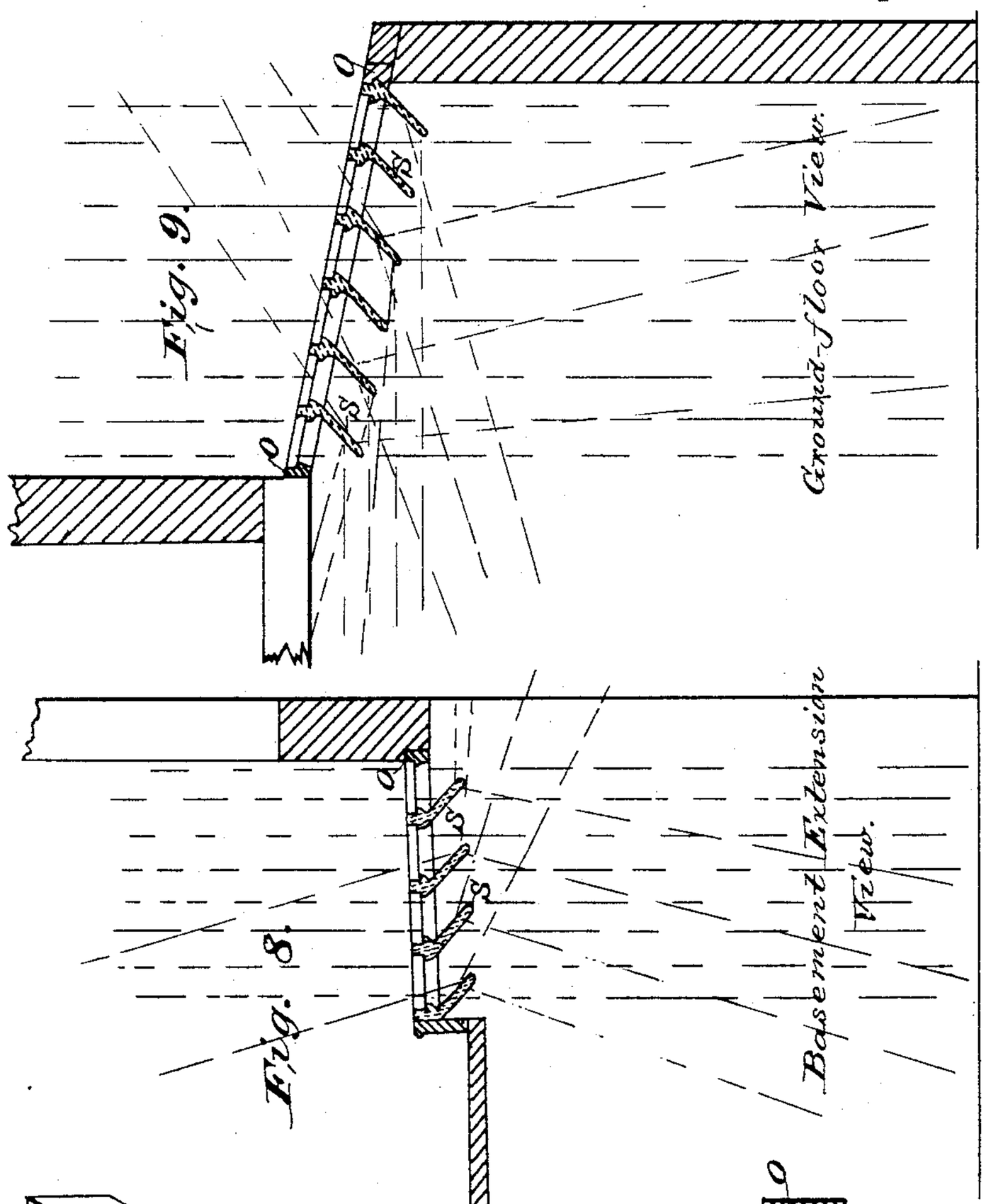

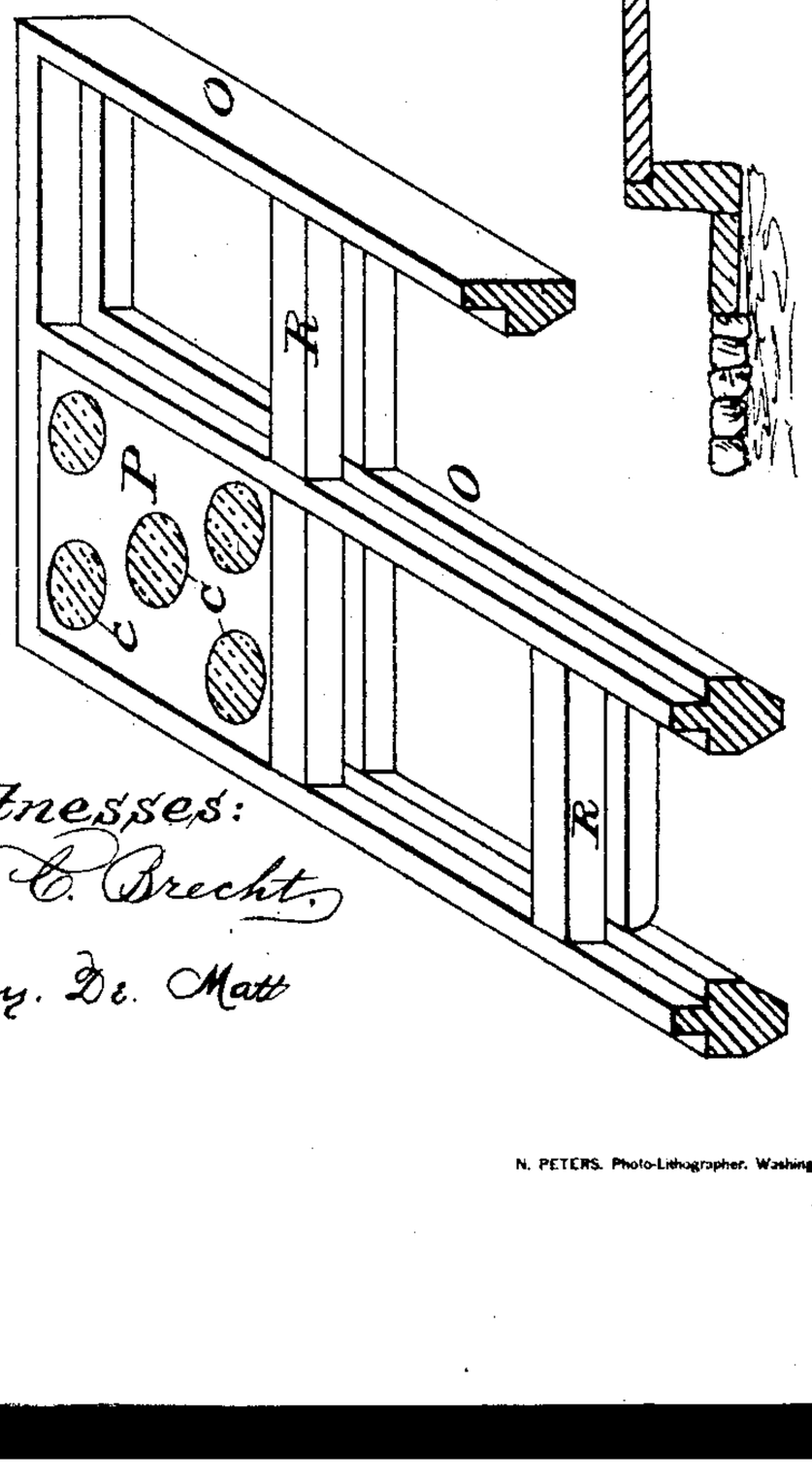

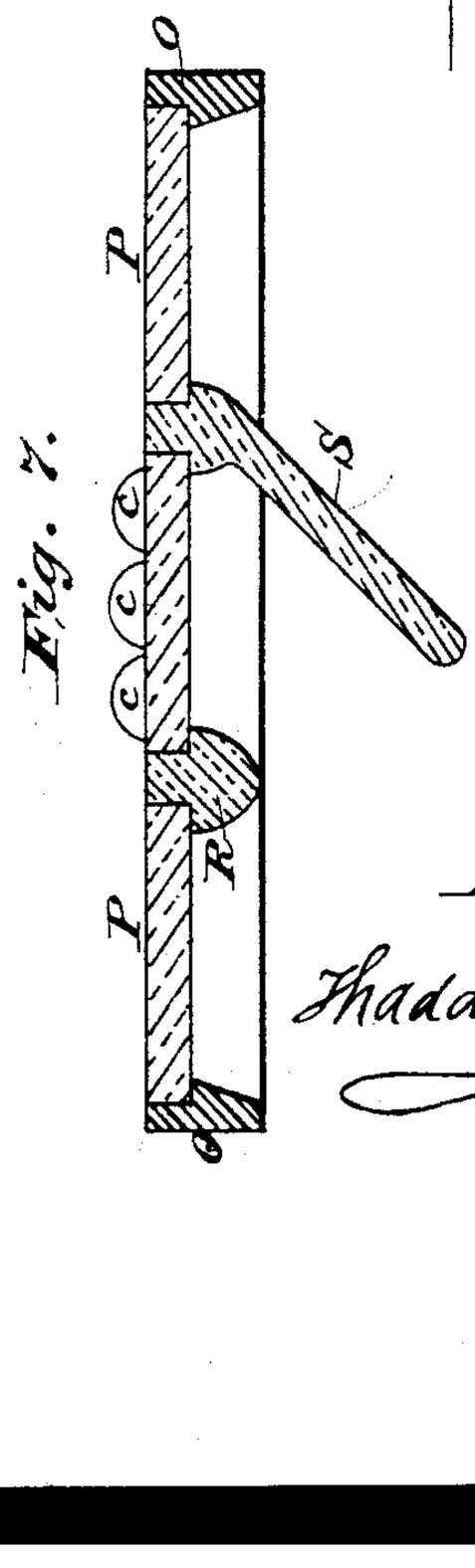

Witnesses:
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Guy. De. Matt

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UNITED STATES PATENT OFFICE.

THADDEUS HYATT, OF NEW YORK, N. Y.

COMBINATION DAYLIGHT-REFLECTOR.

SPECIFICATION forming part of Letters Patent No. 285,625, dated September 25, 1883.

Application filed August 20, 1883. (No model.) Patented in England November 23, 1875, No. 4,063, and January 23, 1877, No. 289.

To all whom it may concern:

Be it known that I, THADDEUS HYATT, of the city, county, and State of New York, have invented certain new and useful Improvements in Vault or Combination Daylight-Reflector Roofs and Roof-Pavements, of which the following is a description, reference being had to the accompanying drawings, making part of this specification.

The daylight-reflectors hitherto employed by me for making reflector-roof and roof-pavements have been made of opaque material, with the consequent defect of a shadow cast by it upon the space beneath.

The object of my improvement is to prevent this shadow, and I accomplish my purpose by using translucent glass as the reflector, my invention being based upon the following curious facts, viz: First, polish, not color, is the chief requisite for reflection of light, a black surface of equal polish reflecting the light rays as perfectly as a polished white one; second, opaque materials, polished however highly, have only one reflecting-face; third, but glass, because of its transparent body, possesses two distinct reflecting-faces, the light which falls upon, but does not penetrate, its substance being reflected from one—the external face of its front surface—and the light which falls upon and does enter its substance being reflected from the other—to wit, from the internal face of its back surface; but although translucent daylight-reflectors answer an admirable purpose, my experiments do not warrant the assertion that the volume and brightness of the light reflected by them are equal to that from glass with a silvered back. The improvement which I claim to make by the invention herein set forth being in the nature of a compromise with respect to equally distributing the light over the whole apartment, but being translucent, these reflectors admit of being made of any size or shape desired, as they cast no shadow, and may be employed in the form of louvers, plates, or sheets at pleasure, or in any ornamental manner calculated to improve the appearance of the apartment where employed.

The drawings illustrating my invention contain nine figures, Figures 2, 6, and 7 being reproduced from the drawings attached to my English patent, the other figures being to more completely illustrate the invention. Fig. 1, for example, gives a view of the building to which Fig. 2 belongs, this latter being an enlarged view of a skylight made in the ordinary manner of making a "double-pitch" skylight, but sunk or suspended within the apartment lighted by it, instead of being placed, as is commonly done, above it, the object of this (the reflection of light from the top surface of the glass) being readily understood by looking at Fig. 1, but not so easily comprehended by merely inspecting the skylight by itself, as shown in Fig. 2. Figs. 1, 2, 3 illustrate the use of translucent plates and sheets as they may be employed when the reflector is required to perform the additional service of a roof. Figs. 4 and 5 illustrate the employment of the same glass to merely reflect light, the roof in this case forming an independent part of the structure. Figs. 6, 7, 8, 9 represent pressed or molded glass made for producing special forms of reflector-roofs.

Like letters refer to like parts in all the figures, light rays being represented by broken lines.

Fig. 1 represents two buildings above and one at and below the ground floor or principal story. A B are the buildings above principal story; C C′, ground floor or principal story; D D′, basement; E, light-space between buildings; F, skylight; G, window above skylight, looking toward A; G′, window above skylight, looking toward B; H, glass floor under skylight; J, area-light platform of building A; J′, area-light platform of building B; K, daylight-reflector under area-light J; K′, daylight-reflector under area-light J′; M, glass plate forming one slope of skylight F; M′, glass plate forming the other slope of skylight F.

Fig. 2. *a a*, reflecting-face of the external or top surface of glass plates M M′; *b b*, internal reflecting-face of the bottom surface, *b′ b′*, of glass plates M M′.

Fig. 3. This figure is an enlarged view of that part of building A which contains the C portion of ground floor C C′, with the M-half of skylight F and window G, the added rear

wall, N, dividing the lower portions of the building, so that the structure now forms two distinct buildings from top to bottom, (the A portion only being here shown,) the purpose of the figure being to represent an ordinary long store, built on a lot eighty to one hundred feet deep, where the stories above the ground floor are set back in order to obtain light for the principal story, this being the style in which such stores are commonly built.

Fig. 4 repeats Fig. 3 with modifications, for G, formerly a window or translucent screen in the side wall of A for shutting out the weather, is now a skylight or window in the roof, this change destroying the function of M as a roof with respect to the weather, but leaving it unimpaired as a daylight-reflector with reference to illuminating the interior of the building.

Fig. 5 repeats Fig. 4, except that the glass plate M, in place of being a large single sheet, is here divided into two plates, the improvement of an indented back, *b'*, upon the glass being added to produce a luster upon the internal reflecting-face, *b*, of the plate, giving it the appearance of a corrugated silvered daylight-reflector.

Figs. 6, 7, 8, 9 illustrate illuminating-roof and roof-pavement constructions, made of iron gratings, set with squares of glass formed with a cluster of lenses upon its weather-face, the iron gratings being cast with parallel bars in one direction only, there being no cross-bars of iron. Instead thereof cross-bars of glass are made use of, some of which are cast with a projection below in the form of a bent glass plate, to serve the purpose of a translucent reflector. Fig. 6 shows the construction of the glasses and grating. Fig. 7 illustrates the cross-bar reflector; Fig. 8, application of the invention to basement-extension work; Fig. 9, application of the invention to rear-extension roofs of principal story or ground floors of buildings. O is the iron grating; P, cluster lens-glass square; *c c*, lenses on face of the square; R, glass cross-bars; S, reflector formed upon cross-bar.

When I make constructions of pressed glass, the translucent reflectors are most conveniently made of plates about eight by twelve inches, the thickness being from a quarter to half an inch. Plates of this size may then be readily cast with a lustered internal reflecting-face, produced by proper crimps or indents made upon the back of the plate in the process of molding, as represented at *b'*, Fig. 5; but I do not confine my invention to making such reflecting glass plates always with the cross-bar portion R attached, for they may be quite as conveniently made without the cross-bar attachment, and even more so; neither do I limit myself to any size, shape, or kind of translucent glass reflector, nor to any mode of using them that will accomplish the purpose of their functions when combined with light-transmitting roofs, for I have shown several ways of doing the work, and the invention admits of many modifications in construction.

In employing rolled glass I find ordinary rough plate to answer a good purpose when cut into strips or louvers of six inches width and lengths of about thirty inches. These louvers I arrange in frames, either of wood or iron, and place under the skylight or illuminating-roof, as represented in Fig. 5; but I prefer for cheapness to employ these reflectors in sheets or plates of largest practicable size, no shadow being cast by them; the object of using the glass in the form of louvers being merely for the sake of appearance, in order to give a better finish to the rear portion of the room or store requiring the construction.

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

1. A translucent daylight-reflector, made of glass in slat or louver, or in sheet or in plate form, the same being practically flat on both sides, the only reflecting-surfaces being an external face on the outside face of the glass and the internal reflecting-face of the opposite side of the glass, substantially as and for the purposes herein set forth and illustrated.

2. Translucent daylight-reflectors, made with a crimped, corrugated, or indented back, substantially as and for the purposes herein set forth and illustrated.

3. Daylight-reflector roofs and roof-pavements, made by combining translucent daylight-reflectors with skylights, illuminating-grating roofs or roof-pavements, substantially as and for the purposes herein set forth and illustrated.

4. Daylight-reflector roofs and roof-pavements, made by combining translucent plates, slats, or louvers with skylights, illuminating-grating roofs or roof-pavements, substantially as and for the purposes herein set forth and illustrated.

5. Daylight-reflector roofs and roof-pavements, made by combining translucent reflector cross-bars with glass plates and metal-grating glass-holders, substantially as and for the purposes herein set forth and illustrated.

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Witnesses:
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GUY DE MOTT.