N. W. WHEELER.

VENTILATING SKYLIGHT.

No. 64,816. Patented May 14, 1867.

Fig. 1.

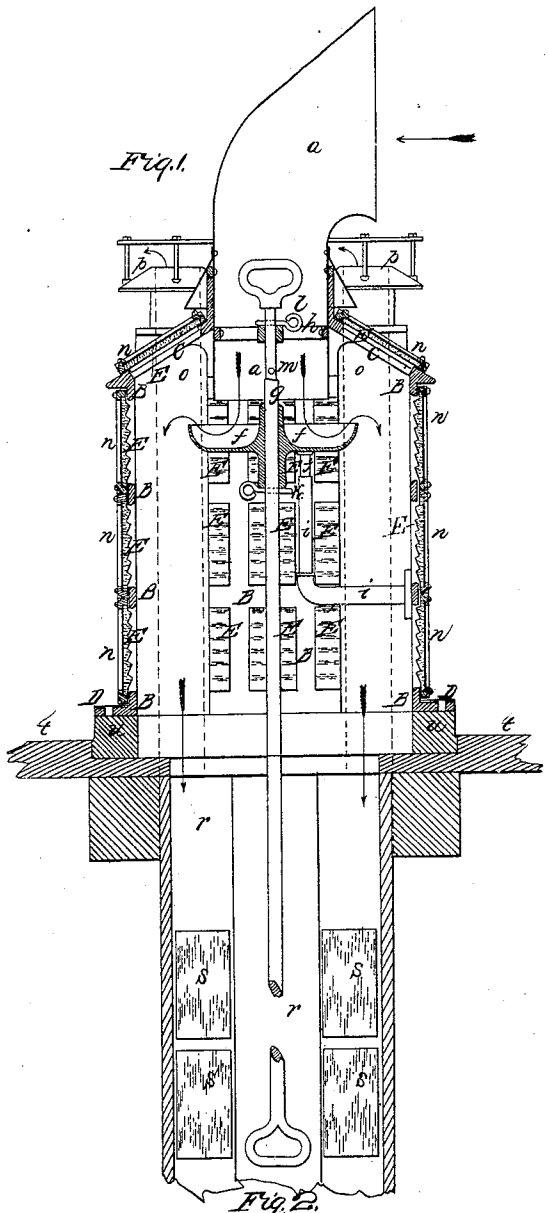
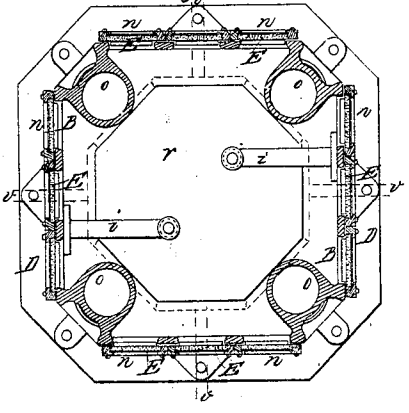


Fig. 2.



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Letters Patent No. 64,816, *dated May* 14, 1867.

IMPROVED VENTILATING SKY-LIGHT.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, NORMAN W. WHEELER, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and "Improved Ventilating Sky-Light" for lighting and ventilating the cabins of ships, and for other like purposes; and I do hereby declare that the following is a full and exact description of the construction and operation thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a vertical section and

Figure 2 a horizontal section of my invention—

Like letters of reference indicating the same parts in the two figures.

My invention is intended to supersede those devices heretofore used upon ships or buildings for the purpose of lighting the cabins or rooms from the deck or roof, which have usually been made of wood or metal and glass, and in which the ventilation has been accomplished, or attempted, by opening some part of the structure, as the sash. In the drawings—

a indicates a hood ventilator, of well-known construction; B B, a metal or wooden frame; C C, the roof thereof, and D D a flange by which to bolt or otherwise secure the structure to the deck *t t* or roof. This frame and its roof are made with numerous apertures, into which are set, with the frames *n n n*, &c., and made tight with rubber packing, or other well-known devices, as many glasses E E, &c., of corrugated or other form, as may be practicable or necessary. The top or roof of the frame is fitted to receive the ventilator *a*, to which is attached, by the cross *h*, the rod *g*, by which rod the hood *a* may be turned to any position desired by persons below; and upon the rod *g* is fitted a drip-pan, *f*, to which pan *f* is attached one or more pipes *j j*, which fit telescopically in the bent pipes *i i*, which pipes *i i* are secured to the frame B B, &c., as shown, in such a way that any moderate amount of water which may enter the hood *a* in the form of spray or rain will be caught by the pan *f* and run out upon the deck *t t* or roof through the pipes *i i* and *j j*. The pan *f* is fitted loosely upon the rod *g* and held up by the pin *k*, or rests upon the pipes *j j* or *i i*, but the pin *k* may be withdrawn from the position shown and placed in other holes in the rod *g* so that by carrying the pan *f* at different heights in relation to the bottom of the hood *a* the degree of ventilation may be regulated at will or suppressed by raising the pan *f* into contact with the hood *a*, the pipes *j j* being made to slide freely within the pipes *i i* to allow sufficient motion. The rod *g* may also be fitted so as to be adjustable in the cross *h*, and the operation of adjusting the height of the pan *f* be performed by a person standing upon the deck *t t* or roof and reaching in at the mouth of the hood *a*, shifting the pin *l* to different holes in the rod *g*; and any ventilating sky-light may be thus fitted for convenient manipulation from above or below, or both. A useful modification may be made in this invention by replacing the glasses E E, &c., with small pyramidal or conical glasses, usually called "bull's-eyes," set in place and made tight with cement, but I prefer plain plates of glass for the roof and plates at the sides having corrugations upon the inner sides, at least, for the purpose of refracting the light downwards as much as possible; and it may be well, in some cases, to construct the pan *f* with a conoidal reflector attached to its lower side for the purpose of reflecting the light downwards and diffusing it through the rooms or cabins. Thus far the lighting and ventilation of an apartment immediately below the deck or roof *t t* have been considered. It is frequently necessary to light and ventilate apartments one deck or story below the position of the ventilating sky-light, and at the same time, in some cases, light apartments immediately below the deck *t t* or roof. To accomplish this the trunk *r* is extended downwards to and through the deck or floor below, and for the purpose of lighting the intermediate apartments there are inserted in the walls of the trunk *r* the glasses *s s s s*. In many cases it is necessary to provide for the escape of air from apartments as well as for its entrance. For that purpose one or more pipes *o o o o* are provided, opening through the deck *t t* or roof, and each fitted with the well-known ventilating-cap *p p*, so that if the hood *a* be turned toward the wind and the trunk *r* omitted, the air will enter through the sky-light and escape through the pipes *o o o o*. If it be desired to light and ventilate the upper and lower between-decks or analogous rooms, the trunk *r* and glasses *s s s s* are retained, and an opening left in the intervening deck or floor for the passage of air, when the air will traverse the trunk *r* to the lower between-decks, rise through the opening, and escape through the pipes *o o o o*. In many cases ships may be wholly lighte and ventilated from the upper deck without the use of side lights, and yet the dif-

ferent cabins be kept separate by the use of my invention. For instance, suppose a ship with the first cabin in the upper between-decks, and the second cabin in the lower between-decks, and the first cabin fitted with a double row of state-rooms upon each side of the saloon, this being a difficult case for complete lighting and ventilation. In this case the saloon would be fitted with one or more ventilating sky-lights, as before described, but with the pipes *o o o o* omitted, which would deliver air into the saloon and through suitable openings into each state room. At the common corner of each group of four state rooms a trunk, *r*, surmounted with a ventilating sky-light, (figs. 1 and 2,) would be placed, extending from the upper to the second deck and having glasses *s s s s* to light each state-room, the state-room bulk-heads *v v v v* meeting the trunk, as shown in fig. 2, and the pipes *o o o o* each communicating with a state-room, thus securing the escape of air from each, and moreover, if there be two or more ventilating sky-lights communicating with the second cabin, a part of the hoods may be turned toward and apart from the wind, securing active ventilation and light at the same time for all inhabited parts of the ship.

By the use of this invention the necessity for closing the lighting and ventilating apertures in the cabins of ships in heavy weather will be obviated; and even in extremity, the frame being f adequate strength, it will only be necessary to withdraw the hood *a* and put a cap in its stead to close the aperture, or to place a canvas bonnet over the mouth of the hood *a*, thus relieving at least so much of suffering as results from the deprivation of light when hatches are battened down.

Having described my invention, I will now indicate that which I esteem new, and for which I desire to secure Letters Patent, viz, I claim—

1. The combination of the hood *a*, frame B B, and glasses E E E, or their equivalents, substantially as set forth.

2. The combination of the hood *a*, pan *f*, pipes *i i j j*, and frame B B, or their equivalents, substantially as set forth.

3. The combination of the trunk *r* and glasses S S S S with the above, substantially as set forth.

4. The combination of the pipes *o o o o* and lighted frame B B, or their equivalents, substantially as set forth.

NORMAN W. WHEELER.

Witnesses:

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