July 18, 1933. M. SCHIRMER 1,918,568

VENTILATING MEANS ON SHIPS OR AIRCRAFT

Filed Dec. 22, 1930

Fig. 1.

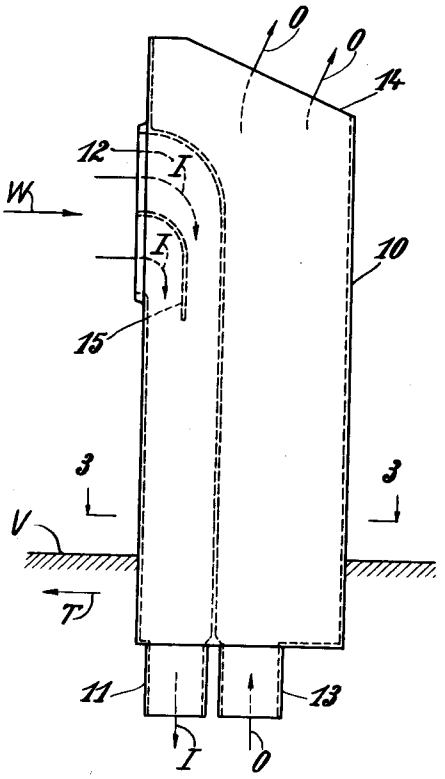
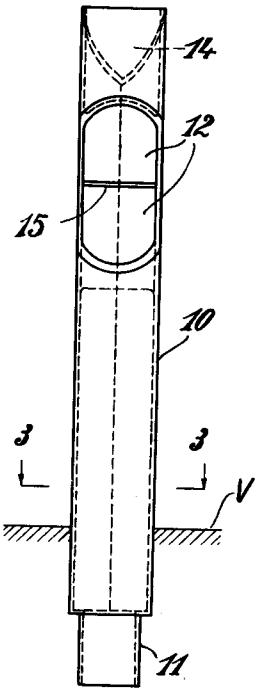



Fig. 2.



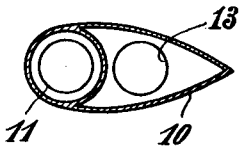




Fig. 3.

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# UNITED STATES PATENT OFFICE

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## VENTILATING MEANS ON SHIPS OR AIRCRAFT

Application filed December 22, 1930, Serial No. 503,984, and in Germany December 23, 1929.

My invention relates to ventilating means on ships or aircraft, especially on fast vessels of this kind.

The main object of my invention is to reduce the air-resistance of the projecting portions of such ventilating means without reducing their efficiency or even with possibly increasing it at the same time.

For this purpose I combine a ventilator for sucking foul air from rooms inside of the vessel with a ventilator for pressing fresh air into the rooms of the vessels, so as to form only one projecting element having a minimum of air resistance with regard to its function. This projecting element in its outer contour is a tube of substantially stream-line-shaped cross section which at its end is cut off at an inclined plane so as to cause suction in the tube, somewhat resembling a modern smokestack, and this tube encloses a duct or the like of smaller cross section having its opening in the side-wall of the first tube in the direction opposing the direction of travel of the vessel so that fresh air is pressed into this opening.

Having given a general description of the invention I now want to point it out more in detail referring to the drawing which represents an example embodying my invention.

Fig. 1 is a diagrammatic side view on a ventilator head, Fig. 2 is another side-view seen in the direction at right angles to the first aspect, Fig. 3 is a cross-section taken on line 3—3 of Figs. 1 and 2.

The vessel V is assumed to travel in the direction indicated by arrow T so that the wind approaches the ventilator head in the direction of arrow W.

There is an outer tube 10, stream-line shaped in cross-section, the upper end of which is cut off at an inclined plane 14 so that air will be sucked off this tube because of the vacuum created behind the bevelled top end. This main tube is in connection with tube 13 through which the foul air is exhausted from the vessel in the direction of arrows O. Inside of this tube a second tube 11 is situated which leads just below the upper end of tube 10 and opens at 12 into the open air. Through this opening fresh air is pressed into the vessel in the direction of arrow I. Member 15 made of sheet metal or the like serves for guiding the incoming fresh air and leading it in downward direction, thus increasing the efficiency of the opening 12 by reducing the turbulence in the air current.

I do not want to be limited to the details described or shown in the drawing as many variations will occur to those skilled in the art.

What I claim is:

Ventilating means for ships, airships, and the like, comprising a tube of substantially streamline shaped cross-section, the outer end of the tube being open and in line with the remaining portion of the tube, said opening being formed by having the tube cut off at an inclined angle, a second tube inside of the first tube, the outer opening of the second tube penetrating through the sidewall of the first tube substantially at right angles thereto, the forward rounded portions of the sidewalls of the first and second tubes being integral with each other.

MAX SCHIRMER.