

No. 744,950.

PATENTED NOV. 24, 1903.

C. A. WITHERS.  
VENTILATOR FOR SHIPS.

APPLICATION FILED JULY 28, 1902. RENEWED APR. 27, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*

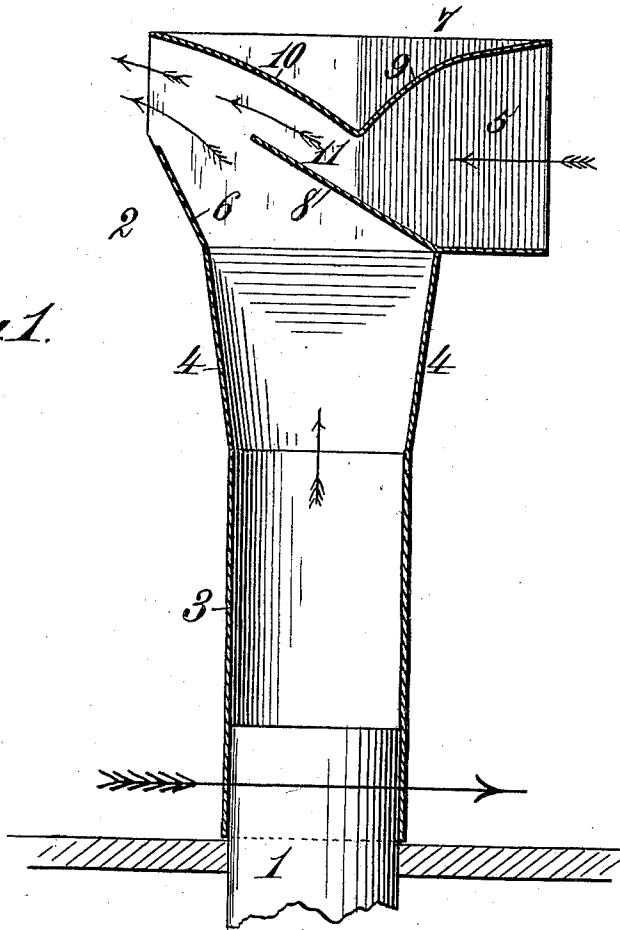
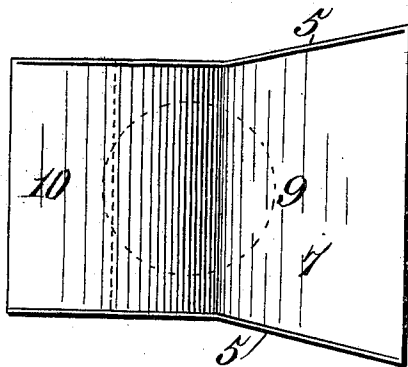


*Fig. 2.*



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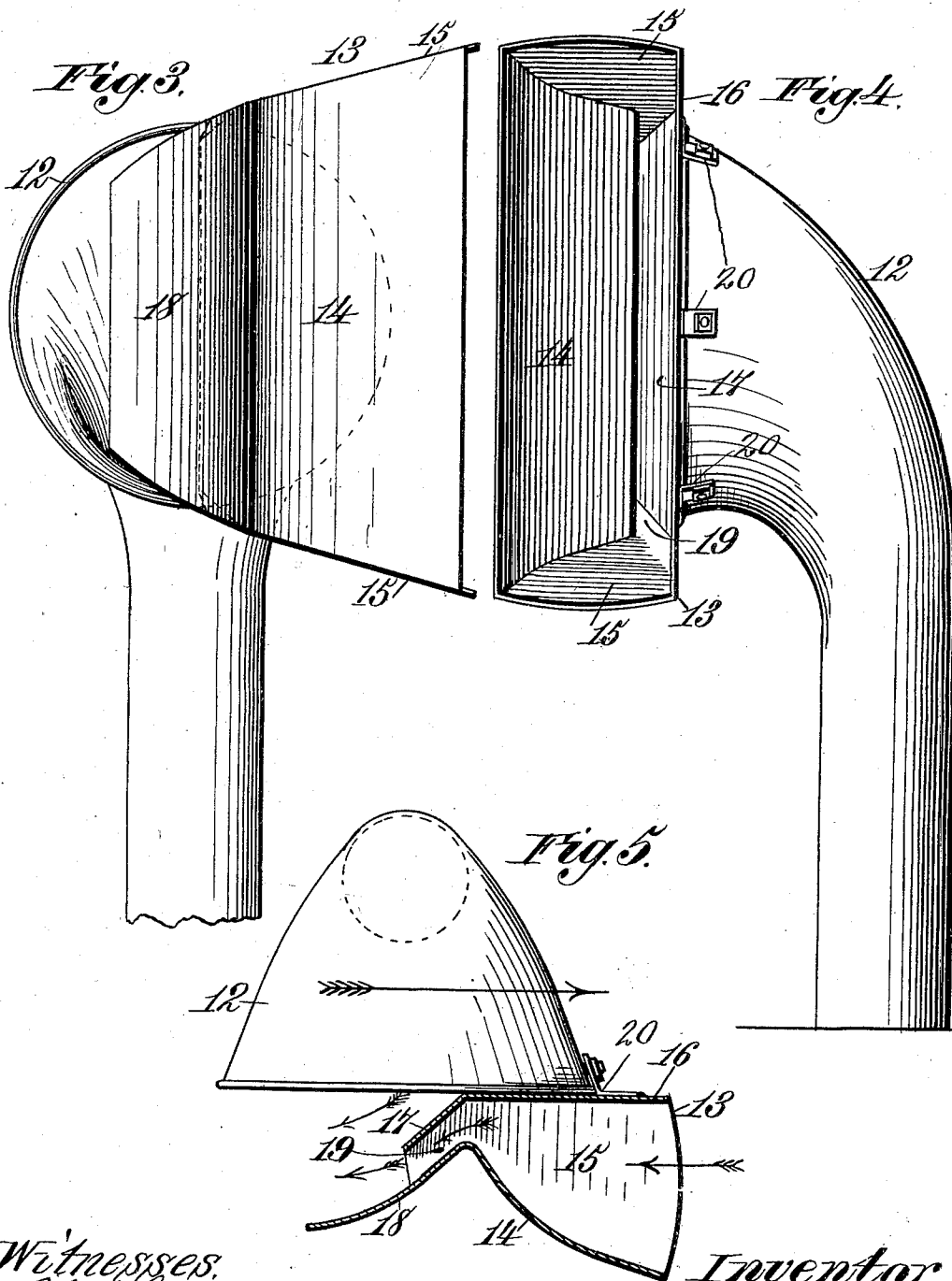
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# UNITED STATES PATENT OFFICE.

CHARLES A. WITHERS, OF AUGUSTA, GEORGIA.

## VENTILATOR FOR SHIPS.

SPECIFICATION forming part of Letters Patent No. 744,950, dated November 24, 1903.

Application filed July 28, 1902. Renewed April 27, 1903. Serial No. 154,576. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES A. WITHERS, a citizen of the United States, residing at Augusta, in the county of Richmond and State of Georgia, have invented new and useful Improvements in Ventilators for Ships, of which the following is a specification.

The usual method of ventilating ships is to provide a series of funnel-mouthed cowls projecting above the deck and communicating with passages or conduits which lead down into the various apartments within the vessel. The mouths of these cowls are directed toward the wind or toward the bow of the vessel, so that a draft or current of air is forced down into the vessel beneath the decks. An objection has arisen, however, to this method of ventilation in that while it provides for the introduction of fresh air it does not provide for the positive withdrawal of the foul or vitiated air.

My invention is designed to overcome the objection above noted; and it has for its object to provide means whereby an induced upward current of air may be created in the conduit or conduits leading from the various apartments in the vessel through which the foul, vitiated, and heated air within the vessel may be withdrawn.

Other objects of the invention will hereinafter appear, and the novel features thereof will be set forth in the claims.

In the drawings forming a part of this specification, Figure 1 is a vertical sectional view of a ship's ventilator in accordance with my invention. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation showing the application of a slightly-modified form of the invention to the ordinary ship's ventilating-cowl. Fig. 4 is a front elevation of the same, and Fig. 5 is a sectional plan view.

Like reference-numerals indicate like parts in the several views.

On the upper end of each of the pipes or conduits 1, which lead down to and communicate with the various apartments within the vessel, is located a cowl 2, having a cylindrical lower end 3 for attachment to the pipe or conduit 1 and having flaring walls 4 leading upwardly from the cylindrical portion 3. Secured to the upper ends of the flaring walls 4 is a casing made up of the converging sides

5, the rearwardly-extending inclined deflecting-wall 6, the top 7, and the deflecting-blade 8, leading rearwardly from the front flaring wall 4. The top 7 is made up of two sections 9 and 10, the outer ends of which are in substantially the same plane and the inner ends of which are curved downwardly, as shown. The section 10 of the top 7 lies substantially parallel to the deflecting-blade 8 and extends in the same general direction as the rearwardly-inclined wall 6, the deflecting-blade 8 being located between the wall 6 and the section 10 of the top and terminating a short distance from the rear end thereof. The section 9 of the top 7 converges toward the deflecting-blade 8, forming a tapering inlet-opening to the casing, which merges into the contracted passage 11 between the deflecting-blade 8 and the section 10 of the top. It will thus be seen that the front and rear ends of the cowl-casing are open to the passage of air therethrough and that the rear or discharge end of said casing communicates with the discharge end of the conduit 1 between the wall 6 and the deflecting-blade 8.

In the operation of the device the cowl is so set that the tapering inlet-opening of the casing thereof is directed toward the wind or toward the bow of the vessel. During the movement of the vessel, therefore, a current of air will be forced through the cowl-casing, passing first into the tapering inlet-opening thereof, thence through the contracted passage 11, and discharging through the rear end thereof. This action induces a current of air upwardly through the conduit 1 and that portion of the cowl-casing which is located between the wall 6 and the blade 8, with the result that an upward draft is produced through the conduit 1, which withdraws the foul, vitiated, or heated air from the apartment or apartments with which the conduit 1 communicates.

Instead of forming the cowl-casing integral with the cylindrical portion 3, which is attached directly to the upper end of the pipe or conduit 1, I may form said casing separately and use the same as an attachment for the ordinary funnel-mouthed ventilating-cowl now in general use on board ships. In such case the funnel or funnel-mouthed cowl 12 is so turned that it lies at right angles to the

wind or to the direction of movement of the vessel, and my attachment is connected thereto, as illustrated in Figs. 3, 4, and 5 of the drawings.

5 The cowl-casing 13, which corresponds to the cowl-casing in the preferred form of my invention, is of substantially the same construction as that heretofore described except that it is located with the rear or discharge  
10 end thereof vertically instead of horizontally disposed. Said casing has an inclined or curved side wall 14, which corresponds to the section 9 of the top 7, converging top and bottom walls 15, and a plane rear or side wall 16  
15 opposite the curved wall 14. Secured to or formed integral with the wall 16 is an outwardly-inclined deflecting-blade 17, which corresponds with the deflecting-blade 8, heretofore referred to, and secured to or formed  
20 integral with the wall 14 of the casing is a rearwardly and outwardly extending wing or extension 18, which projects beyond the deflector 17, as clearly shown. A tapering mouth or inlet-opening to the casing is thereby formed between the walls 14 and 16, which  
25 opening merges into and communicates with the contracted passage 19 between the deflecting-blade 17 and the wing or extension 18. The casing 13 may be secured to the  
30 funnel-mouthed ventilating-cowl 12 in any suitable manner. I have, however, shown the wall 16 thereof as provided with rearwardly-projecting clips 20, through which  
35 securing devices may be passed. When the cowl-casing 13 is secured to the ordinary cowl 12, it is so disposed that the tapering inlet-opening is directed toward the wind. The  
40 operation of the device is then similar in all respects to my preferred form—that is to say, a current of air is forced into the contracted inlet-opening and is then deflected outwardly  
45 by the blade 17 through the passage 19 between said blade and the wing or extension 18. The result is that an induced upward current is induced in the conduit 1, with which the cowl 12 communicates, and the foul or heated air from the apartments with which said conduit communicates is drawn off.

While my invention has been described as being attached to or communicating with a pipe or conduit leading to a point above the deck of a vessel, it is obvious that it may be attached to the ordinary air-ports of a vessel.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a ventilator for ships and the like, a casing having a passage therethrough, communicating with the space to be ventilated, the inlet-opening to said passage being directed toward the wind and having an inwardly-inclined wall, an outwardly-inclined wall or extension leading from the rear end of said inwardly-inclined wall, and a deflecting-blade lying substantially parallel to the latter wall or extension and located at the point of intersection of the passage through said casing with the passage leading to the space to be ventilated, the said blade forming a contracted portion in the passage through said casing into which said inlet-opening leads, and terminating at its rear end a short distance from the rear end of said outwardly-inclined wall or extension.

2. An attachment for ships' ventilators, comprising a casing having means thereon for connecting the same to the funnel-mouthed ventilating-cowl of a ship, the said casing having a plane-faced rear wall, a front wall converging toward said rear wall, converging upper and lower walls, an outwardly-inclined wing or extension leading from the rear end of said front wall, and a deflecting-blade leading from the rear end of said rear wall, extending substantially parallel to the adjacent portion of said wing or extension, terminating a short distance from the rear end of said wing or extension and forming with the latter a contracted passage, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

CHARLES A. WITHERS.

Witnesses:

N. H. BRICKER,  
EWELL A. DICK.