

(No Model.)

W. S. LAYCOCK.
VENTILATOR.

No. 468,933.

Patented Feb. 16, 1892.

Fig. 1

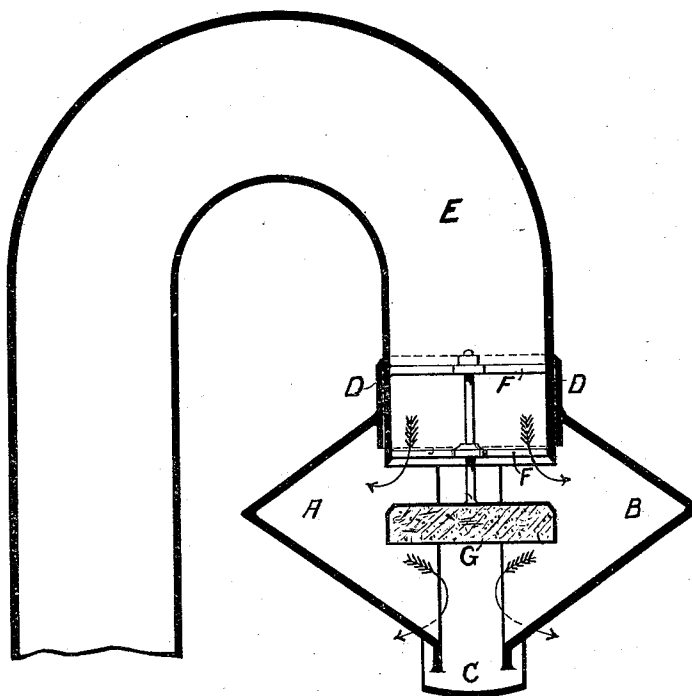


Fig 2

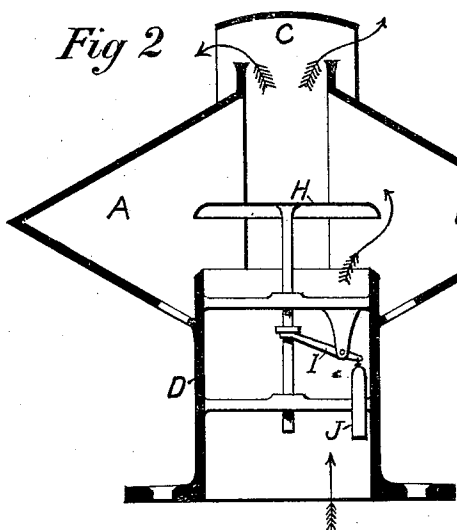
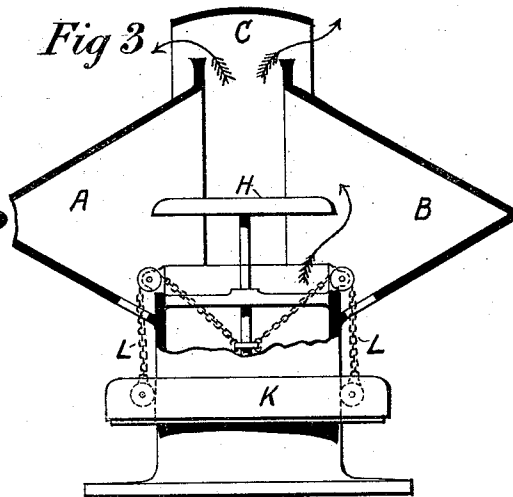


Fig 3



WITNESSES

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WILLIAM S. LAYCOCK, OF SHEFFIELD, ENGLAND.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 468,933, dated February 16, 1892.

Application filed August 18, 1891. Serial No. 403,008. (No model.) Patented in England May 28, 1891, No. 9,041.

To all whom it may concern:

Be it known that I, WILLIAM SAMUEL LAYCOCK, a subject of the Queen of Great Britain, and a resident of Sheffield, in the county of York, England, have invented certain new and useful Improvements in Ventilators, (patented to me in Great Britain by Letters Patent No. 9,041, dated May 28, 1891;) and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention refers more particularly to double-coned ventilators or air-extractors for ships' use; and the object of the invention is to prevent the ingress of water into and down the ventilating-pipes communicating with the cabins or other rooms or compartments, which might occur in shipping seas through ventilators not having such protective means. I attain this object by the introduction of a valve to close the mouth of the ventilating-pipe in the manner illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of a double-coned ventilator, showing the float-valve open. Fig. 2 is a vertical section of a double-coned ventilator with the mouth of pipe opening upward and balanced valve. Fig. 3 is a vertical part section of same ventilator, in which the valve is operated by an outside float.

Similar letters of reference refer to similar parts in any of the figures in which they occur.

The ventilator or air-extractor consists of two hollow cones A B, the base of one cone being supported opposite to but at a short distance from the base of the other cone, leaving an air-passage between them which is protected by an outside ring C. The cones and the ring are attached to each other and also to a short length of pipe D, which in Fig. 1 acts as a socket and in Figs. 2 and 3 as a support or base. In whichever direction the wind strikes the ventilator it will be deflected from a large area of surface, causing a partial vacuum in the air-passage between the cones and drawing the air with great power from the ventilator-pipe D and from any other pipes connected therewith.

To prevent any inrush of water into the pipes of the ventilator and possibly into the

ventilated cabins or other ventilated places, such as might be caused by the rolling of the vessel or otherwise shipping a sea, according to one arrangement I bend the outlet ventilating-pipe E to which the ventilator is attached until its mouth is underneath, as shown in Fig. 1, and by means of cross-stays F or other like supports inside the pipe I carry a valve G, that when raised sufficiently high will close the mouth of the pipe and prevent the entrance of water. I prefer to make the outer part or covering of the valve and its rod of aluminium on account of its lightness, and the interior of cork, so that the whole valve will be buoyant and will float.

I do not bind myself to the particular form or construction of float-valve, as it is evident such may be varied. Thus, for example, a hollow rubber ball supported centrally by a chain may be used as a substitute for the cork valve before described. If, therefore, the ventilator was submerged by a sudden rush of water, the valve would at once rise and close the mouth of the pipe and would drop again when the water had receded.

In the ventilator shown in Fig. 2, in which the mouth of the ventilating-pipe opens upward, a valve or cover H is supported above the mouth of the pipe in cross-stays or by equivalent means and at such a distance as not to interfere with the exhaust. It is balanced in this position by a lever or arm I and a weight J, so that any rush of water upon the valve or cover H will carry it down and close the mouth of the pipe D.

In Fig. 3 I show another method of operating the valve or cover H, which is carried in a similar manner to that last described. In this method I use an outside annular float K, which by its gravity draws the valve up to its highest position by means of chains L, connected with the valve-spindle. When a flow of water rises round the ventilator, the float is carried up by its buoyancy and the valve drops over the mouth of the pipe, returning to the position shown as the water retires.

Instead of the valve being supported by a balance-weight, as shown in Fig. 2, I may use a light coiled spring made of some non-corrodible metal, or steel protected by a deposition of non-corrodible metal.

Having thus described my invention and

the manner in which it may be carried into practice, I declare that what I wish to secure by Letters Patent is—

1. A double-coned ventilator or air-extractor having two fixed cones with an encircling ring and an outlet-pipe and fitted internally with a valve constructed to close the mouth of said outlet-pipe when moved by an inrush of water, substantially as hereinbefore described.

2. A double-coned ventilator or air-extractor consisting of two fixed cones A and B, an encircling ring C, and an outlet-pipe D,

and fitted internally with a balanced valve or cover H, normally supported away from the mouth of said outlet-pipe and closed by an inrush of water, substantially as hereinbefore specified.

In testimony that I claim the foregoing as my own I have affixed hereto my signature, in presence of two witnesses, this 1st day of August, 1891.

WILLIAM S. LAYCOCK.

Witnesses:

ROBT. F. DRURY,
B. E. DRURY.