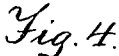
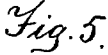


(No Model.)

A. OLSEN.
VENTILATOR AND DUST ARRESTER.

No. 458,538.

Patented Aug. 25, 1891.



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UNITED STATES PATENT OFFICE.

ADOLPH OLSEN, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE-THIRD TO
CHARLES J. McGEARY, OF SAME PLACE.

VENTILATOR AND DUST-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 458,538, dated August 25, 1891.

Application filed February 19, 1891. Serial No. 382,090. (No model.)

To all whom it may concern:

Be it known that I, ADOLPH OLSEN, a citizen of the United States, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Ventilators and Dust-Arresters, of which the following, taken in connection with the accompanying drawings, is a specification.

This invention relates to improvements in ventilators and dust-arresters, and is particularly well adapted for use on passenger-cars for the purpose of admitting air into the car and to exclude dust and cinders.

The invention, although especially designed for use on passenger-cars, may be equally well employed as a ventilator and dust-arrester in other places without departing from the essence of my invention.

The invention is carried out as follows, reference being had to the accompanying drawings, wherein—

Figure 1 represents a plan view showing a portion of the top as removed. Fig. 2 represents a longitudinal section on the line X X, shown in Fig. 1. Fig. 3 represents a bottom plan view, partly broken. Fig. 4 represents a cross-section on the line Y Y, shown in Fig. 1; and Fig. 5 represents a horizontal section on the line Z Z, shown in Fig. 2.

Similar letters refer to similar parts wherever they occur on the different parts of the drawings.

The device consists of a shell or case A, having open ends or mouths A' A' in its two opposite ends, as shown, through one of which the air is forced, according to the direction in which the car is being propelled. Within each of said mouths is arranged a series of inclined deflectors *a a a*, with intervening spaces *a' a'*, such deflectors having their upper edges preferably curved inward, as shown in Fig. 2. Each mouth A' communicates with an exit-port B in the bottom of the shell A, through which the dust and cinders are expelled after striking against the inclined deflectors *a a a*, as shown by arrows in Fig. 2. Inside of the deflectors *a a a* is in each end of the case A an air-chamber C, which is in communication with a longitudinal air-re-

ceiver D, having a perforated bottom *d*, as shown in the drawings. The longitudinal air-receiver D is placed into and out of communication with the receiving-mouths A' through the medium of opening and closing gates or wings I, arranged, respectively, at opposite ends of the air-receiving chamber D in such manner that when the gates or wings are closed they practically constitute continuations of the partitions E, and thereby prevent the passage of air into the air-receiving chamber D.

F is a water-trough in the lower part of the case A, the water in which serves partly to arrest such dust and cinders that may pass with the air through the perforated bottom *d* and to moisten the air before it is permitted to enter the car. Within the case A is at the side and top of the air-receiver D a chamber G, having at its top an exit-pipe *g*, leading to the car or apartment that is to be ventilated, and within said chamber G is located a preferably flattened tube H, made of wire gauze or netting and containing sponge or absorbent *h*, as shown. The said tube H extends from and between the vertical division-walls E E and has its lower portion submerged in the water in the trough F, as shown in Figs. 1, 3, and 5.

fff are transverse ribs in the water-trough F for the purpose of preventing the splashing and agitation of the water in said trough if the ventilating device is used on a moving object, such as passenger-cars or other vehicles.

At the ends of the air-receiver D are hinged in a suitable manner at *i i* the gates or wings I I, which are connected together in such a manner that when one is open the other one is closed. This is done preferably by means of a light spring rod or wire K, pivoted in its ends to the said gates or wings and guided in a suitable manner through a loop or eye *k*, fastened to one side of the air-receiver D, as shown in Fig. 5. The said gates or wings may, however, be connected in any other suitable manner without departing from the essence of my invention.

L in Fig. 2 represents the floor of a passenger-car or other vehicle into which the air is to be introduced after passing through my

improved ventilating and dust-arresting device.

The operation of my invention is as follows: If the car is moved in the direction of arrow shown in Fig. 2, the air will be forced in through the right-hand mouth A', and in so doing dust, cinders, &c., will be deflected by the inclines *aa* and caused to pass downward and out through the port B, as shown by arrows in said Fig. 2. The air will be forced in through the openings *a' a'* into the right-hand chamber C and from the latter into the chamber D, the force of the wind causing the forward wing or gate I to be swung open and the opposite one closed, as shown in Fig. 5. The air passes out through the perforated bottom *d* and through the perforated moisture-containing tube H into the chamber G and through the exit-pipe *g* into the car or other vehicle or room that is to be ventilated. From the pipe *g* may be led distributing-pipes to any desired part or parts of the car. A division-plate *m* in Fig. 4 connects the upper parts of the air-receiver D and tube H, so as to prevent the air coming out at the perforated bottom *d* from reaching the exit-pipe *g* without first passing through the saturated absorbent in the perforated tube H, by which the air is moistened and such particles of dust or cinders which may have passed through the perforated bottom *d* are arrested.

Having thus fully described the nature, construction, and operation of my invention, I wish to secure by Letters Patent and claim—

35 1. A dust-arresting ventilator consisting of the case A, having at its upper side an air-exit *g* and at each end an air-receiving mouth A', a longitudinal air-receiving chamber D,

having a perforated bottom *d*, a pair of connected automatic valves I, governing the flow of air from the air-receiving mouths to the air-receiving chamber, a water trough or chamber below the perforated bottom of the air-receiving chamber, and a moisture-tube H, arranged beside the air-receiving chamber, containing an absorbent material and dipping into the water trough or chamber for the flow of air therethrough in transit to the air-exit at the top of the case, substantially as described.

2. A dust-arresting ventilator consisting of a case A, having at its upper side an air-exit *g* and at each end an air-receiving mouth A', containing a gang of separated dust-deflecting plates *a* and provided at the lower end with a cinder-discharging port B, a longitudinal air-receiving chamber D, interposed between the receiving-mouths and having a perforated bottom *d*, a pair of connected automatic valves I, governing the flow of air from the air-receiving mouths to the air-receiving chamber, a water trough or chamber below the perforated bottom of the air-receiving chamber, and a longitudinal moisture-tube arranged beside and coextensive in length with the air-receiving chamber containing absorbent material and dipping into the water trough or chamber, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 11th day of February, A. D. 1891.

ADOLPH OLSEN.

Witnesses:

ALBAN ANDRÉN,
MARGARET G. MARSHALL.