(No Model.)

C. E. GRANNISS.

VENTILATOR.

No. 313,492. Patented Mar. 10, 1885.

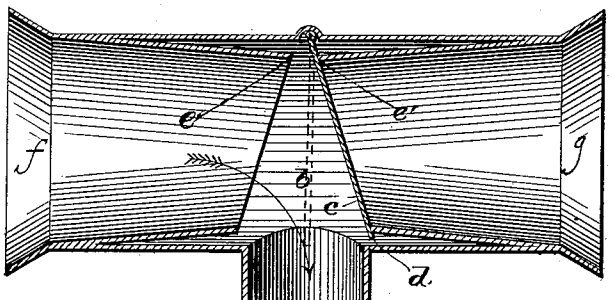


Fig. 1.

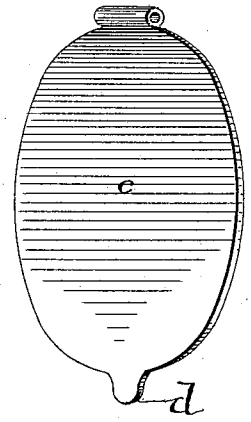
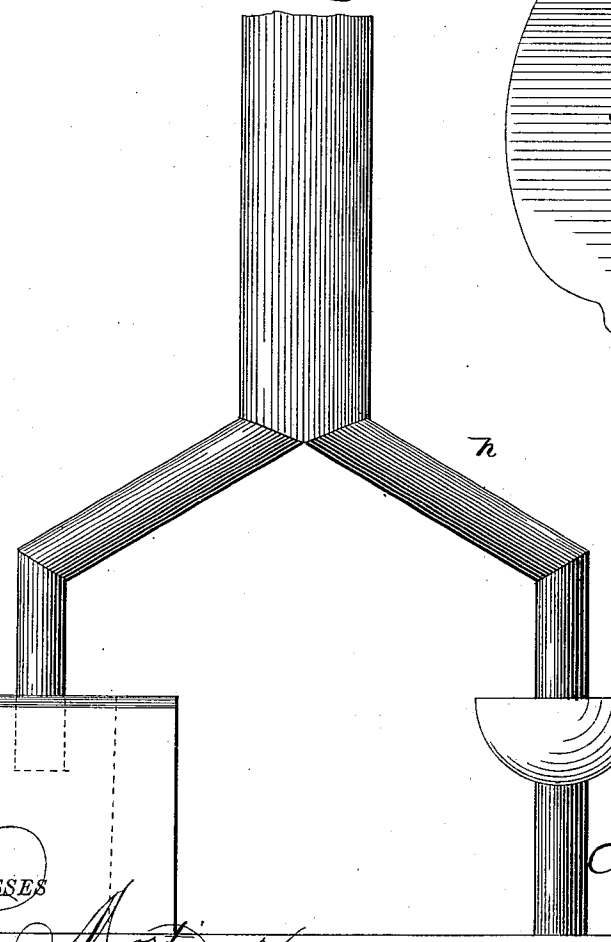


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

CHARLES E. GRANNISS, OF NEW HAVEN, CONNECTICUT.

VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 313,492, dated March 10, 1885.

Application filed April 29, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. GRANNISS, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Ventilator, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to ventilators, and especially to that class of the same which employ a pipe or a series of pipes to convey the currents of fresh air to the closets and urinals of railway-cars and steamboats; and it consists in the construction and novel arrangement of parts, as hereinafter set forth and claimed.

In the accompanying drawings, Figure 1 is a vertical longitudinal section of a ventilator embodying my improvements. Fig. 2 is a detail view of the swinging valve.

Referring by letter to the accompanying drawings, *a* designates the flue-pipe leading from above the car-roof down through the closet-seat to the basin. This flue-pipe *a* is provided at its upper end, above the roof, with a double funnel, *b*, composed of two branches, *f g*, which are open at the outer ends and communicate with each other and with the flue-pipe *a* at the inner ends. Each branch *f g* is provided with an inner pipe, *e e'*, which decreases in diameter toward the inner ends, where they are cut off diagonally or in an inclined line, as shown. These inner pipes, *e e'*, may be either formed with the branches *f g*, as represented in the drawings, or secured within the same by rivets or bolts, and in either case the same result is attained. At the middle of the funnel *b*, between the two branches, is formed an enlargement, in which is pivoted or hinged a swinging valve, *c*, the lower edge of which is formed with a downward projection, *d*, for the purpose presently described.

It will be observed that by the construction of the inner pipes, *e e'*, the inner or outlet ends of the same are smaller than the outlet or inlet ends for the air, and since the inner pipes terminate on each side of the valve *c*, the force of the air will be centered or directed against the main portion thereof, and not be distributed over its whole surface, so as to cause the ready working of the valve.

It is well known that when the force of air is centered or directed to a particular point it is greater than when directed or distributed over the whole surface, and this is one of the advantages which I claim for the inner pipes, since they cause the air to be directed against the valve in such a manner as to swing it backward readily and with ease. Normally the valve is intermediately between the inner ends of the pipes *e e'*, and assumes a vertical position as seen in dotted lines, Fig. 1. When the car or boat is in motion, air is forced through one of the branches of the funnel *b* and through its inner pipe against the valve. The pressure or force of the air as it strikes the latter causes the swinging of the same into the position shown in full lines, Fig. 1. The branches *f g* extend in the direction of the length of the car or boat, so that when moving in one direction air will be forced through the pipe *f*, and vice versa. As the inner ends of the pipes *e e'* are cut off obliquely or in an inclined line, the valve *c* will be thrown against the inclined inner ends of either of the pipes, and thus it assumes an inclined position, closing either pipe, according to the direction in which the car is moving. A branch pipe, *h*, connects with the flue-pipe *a* and leads to the urinal, so that the latter will also be ventilated. The projection *d* on the valve *c* prevents the same from being forced too far in either direction. It will also be seen that the continual forcing of the air through either of the branch pipes keeps the valve in its seat against the inclined inner ends of the pipes *e e'*, the air rushing down through the flue-pipe *a* to the closet and urinal, respectively, to ventilate the same, in the manner well known. By this improvement all the foul air is carried down and out of the closet and urinal. It also prevents dust, smoke, flying snow, cinders, and the like from rushing up into the closet and car. It also avoids the discomforts and annoyance of cold drafts and flying closet-papers against the person or up into the car, as the draft produced by the momentum of the car or steamboat carries the draft, all flying objects, and all foul air down and out, the draft being downward instead of upward, as at present is the case. When the car or other vehicle is at a standstill, the swinging valve hangs perpendicular, and then acts as a ventilator, since the foul air can pass up the flue or flues and out at both sides of the valve. Of course, when

the car is motionless, there is no longer the upward draft to overcome.

I am aware that it is not broadly new to ventilate the closets and urinals of steamboats and cars by means of pipes or a series of pipes through which the air is forced by the motion of the vehicle. I am also aware that a swinging valve for the same is not new; and I would therefore have it understood that I do not claim either of these constructions, but limit myself to the combination as expressed.

Having described my invention, I claim—

The combination, with a car or steamboat, of a flue-pipe, *a*, passing through the roof of the same, a double funnel, *b*, at the top of the flue-pipe formed with the branches *f g*, said branches having inner smaller pipes, *e e'*, arranged within the same, which taper or decrease in diameter inward, the inner or smaller ends of the pipes being cut off obliquely, and the swinging valve *c*, hinged or pivoted in the funnel between the inner pipes and adapted to close over the inclined inner ends of the same, as and for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

CHARLES E. GRANNISS.

Witnesses:

JOHN C. GALLAGHER,

L. W. CLEAVELAND.