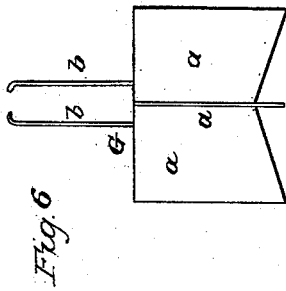


M. H. COLLINS.

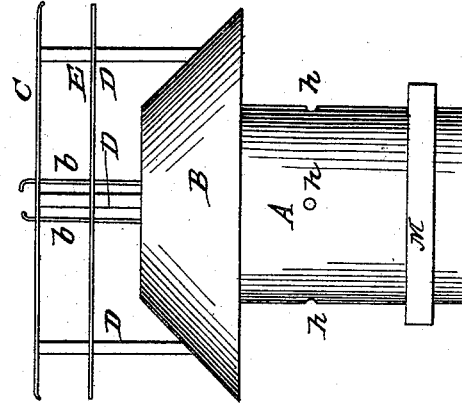
Ventilator.

No. 7,232.

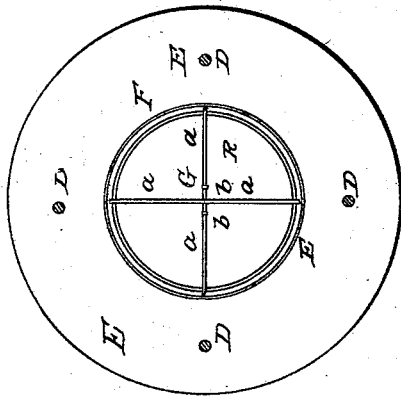
Patented April 2, 1850.



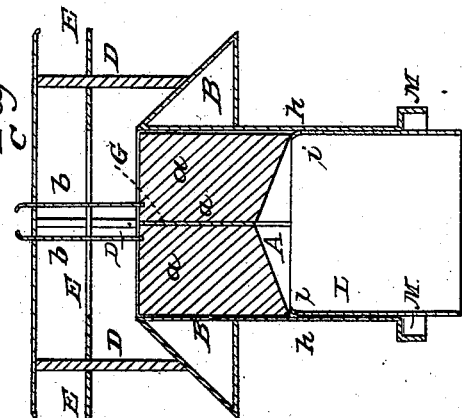
*Fig. 1*



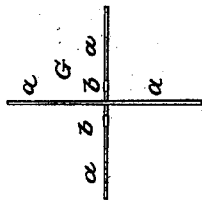
*Fig. 3*



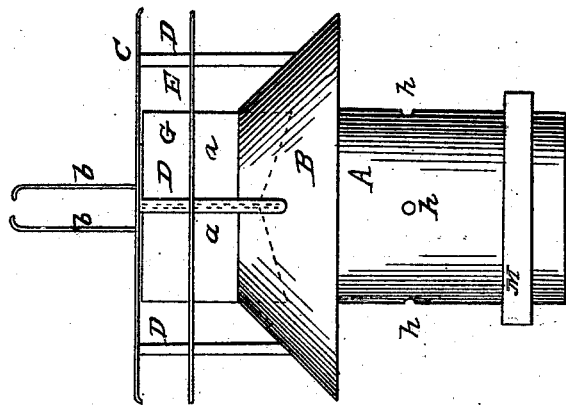
*Fig. 2*



*Fig. 5*



*Fig. 4*



# UNITED STATES PATENT OFFICE.

MICHAEL H. COLLINS, OF BOSTON, MASSACHUSETTS.

## CHIMNEY-CAP.

Specification of Letters Patent No. 7,232, dated April 2, 1850.

*To all whom it may concern:*

Be it known that I, MICHAEL H. COLLINS, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Ventilators by which the same are adapted either for the purpose of extracting smoke or foul air from flues or apartments or for that of injecting pure air into an apartment or place; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings, Figure 1, denotes a side elevation of my improved ventilator. Fig. 2, is a central and vertical section of it. Fig. 3, is a horizontal section, taken just below the top plate, and so as to exhibit the injector below; all the said figures representing the injector as depressed to its lowest position within the upright tube of the ventilator. Fig. 4, shows the ventilator, with the injector elevated up to the top plate.

In the said drawings, or in such of them as the same is seen, A, denotes the main conducting tube of the ventilator, which may be made of any suitable form in cross section. It is surmounted either by a pyramidal or a conic frustum B, whose sides incline downward, to about an angle of forty five degrees, to the side of the tube. Above this frustum a circular, or other proper shaped cap plate C, is disposed, and supported by any suitable number of upright rods D, D, D, as seen in the drawings, or by other suitable contrivances. Between the cap plate C, and the top of the frustum B, is a circular, or other proper shaped disk, or rain fender E, which as represented in the drawings is a circular plate, with a circular opening E, concentric with the perimeter of the plate, and having a diameter equal to, or a little greater than that of the exterior of the conducting tube A. The said rain fender is placed parallel to the plate C, and at about one half the distance from it to the top of the frustum.

The rain fender may be used when the cap plate is elevated more than half the diameter of the tube A, above the top of the frustum, and instead of one fender plate being used, two or more may be employed, should circumstances render the same nec-

essary. Generally speaking however, the rain fender may be dispensed with, when the cap plate is placed less than half the diameter of the tube A, above the upper end of the frustum.

Within the tube A, is what I term the injector G. It consists of four or any other suitable number of wings, or rectangular plates *a, a, a, a*, radiating from a common center, as seen in Fig. 3, and also in Figs. 5 and 6, the former of which is a top view of the injector, and the latter a side elevation of it. The said plates extend outward until they touch or nearly touch the interior surface of the tube A. They have two, or any other suitable number of wires *b, b*, extending up from them and through holes in the cap plate C. The same being for the purpose of enabling a person to elevate the injector up to the cap plate, or depress it entirely within the tube A, at pleasure. The injector may be made in any proper manner, or have any proper contrivance applied to it, or the tube, so as to hold it in position when either up or down.

My ventilator thus constructed may be fixed permanently on the top of either an air, or a smoke flue. When the injector is raised up to the cap plate C, the current or currents, of air or wind, which blow against the ventilator, will strike the injector, and be turned down the flue, and thus the ventilator will be converted into an injecting ventilator. But when the injector is depressed entirely below the top of the frustum, a current of wind blowing against the ventilator, will cause a current of air to pass up and out of the flue. The injector may be operated, or raised or lowered, by means of a rod fastened to its lower end, and extending down the flue, to a convenient place within reach of the hand of a person. Or it may be counterbalanced by one or more chains, weights, and pulleys, and have a chain extending down from it, by which a person may draw it down. Instead of being made movable, it may be firmly fixed in position when up against the cap plate, and this when the ventilator is to be used only for the injection of fresh air into an apartment, or the hold of a vessel.

When two of my improved ventilators are applied to an apartment, or the hold of a ship, one may be used to inject air, while the other is employed to eject it. Or when

but one is used, if made with a movable or sliding injector, it may be employed either to inject or eject air at pleasure.

In regard to the rain fender, I have found  
 5 in very stormy weather, and particularly when the rain and wind are violent, that more or less rain will beat into the tube A, when provided with the cap plate C, only, but with one or more of the fenders E,  
 10 this is effectually, and sufficiently prevented.

My improved ventilator is so constructed, that when applied to chimney or flue, no part of it has a rotary movement which would render it liable to make a noise, as is  
 15 the case with a common turning or revolving cowl. It operates by pneumatic agency, and by the external currents of air; and whatever may be the direction of the wind against it, it faithfully performs its func-  
 20 tions, whether it be used to inject pure air, or to eject foul air and noxious gases or smoke.

The main conducting tube A, of the ven-  
 25 tilator, may be placed on another tube L, made to extend upward from a cap plate M, resting on the top of the chimney or flue. In this case the tube L, should fit closely into the tube A, and have its upper edge somewhat inclined entirely around the  
 30 top of the tube, as seen at *i, i*. One or more small holes *h, h*, should be made through the tube A, just above the angle of the bend of the tube L, the object of the said hole or  
 35 holes, being to permit any water which may condense on, or otherwise get on, and run down the inner surface of the tube A, to escape after being caught by the trough made by the bend *i, i*. Instead of such a  
 40 mode of constructing the parts, a small gutter or spout may be carried in any proper manner around the surface of the tube A,

and at such a distance from its top as cir-  
 cumstances may require. From this spout one or more openings may be made through  
 45 the tube, for the exit or escape of the water. This is found to be necessary par-  
 ticularly in ventilators applied to the tops or roofs of passenger cars of railways, as  
 oftentimes a considerable condensation, or  
 50 accumulation of moisture takes place, on their internal surfaces, and which were it not for some such contrivance, would run  
 down into the interior of the carriage.

I do not confine my invention to the pre-  
 55 cise form or forms, proportion or propor-  
 tions of the parts above enumerated, de-  
 scribed, and represented, but mean to vary the same, in such manner and way, as cir-  
 cumstances may require, or fancy dictate, so  
 long as I do not materially change the prin-  
 60 ciple of novelty therein. Nor do I limit my invention to being made of sheet iron, as it may be constructed of any other proper ma-  
 terial, or materials.

What I claim as new is—

1. The injector G, in its combination with  
 the cap plate C, tube A, and frustrum B,  
 and made stationary against the cap plate,  
 all substantially as herein before specified.

2. And in combination with the cap plate  
 70 C, the frustrum B, and tube A, I claim one  
 or more flat plates or rain fenders E, as  
 applied and used substantially, in the man-  
 ner, as hereinbefore explained.

In testimony whereof I have hereto set  
 my signature this twenty-second day of De-  
 75 cember A. D. 1849.

MICHAEL HENRY COLLINS.

Witnesses:

R. H. EDDY,  
 F. GOULD.