M. B. MOYER.

FRESH AIR VALVE FOR BUILDINGS.

APPLICATION FILED JUNE 14, 1920.

1,397,739.

Patented Nov. 22, 1921.

2 SHEETS—SHEET 1.

FIG. 1.

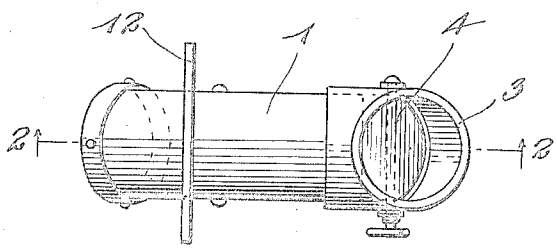


FIG. 3.

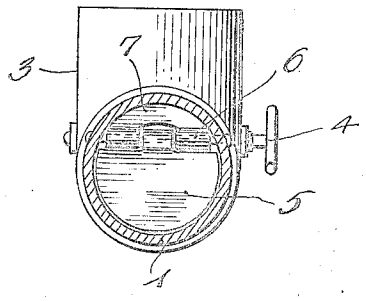


FIG. 2.

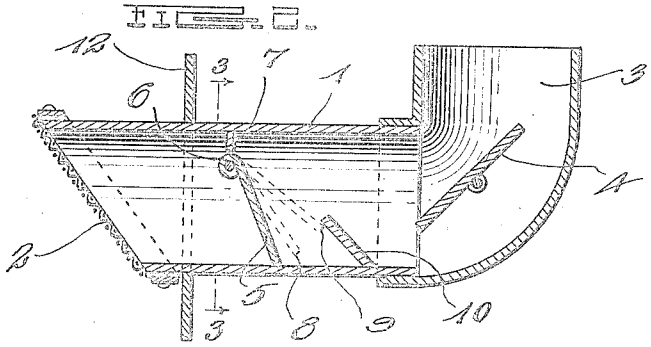


FIG. 4.

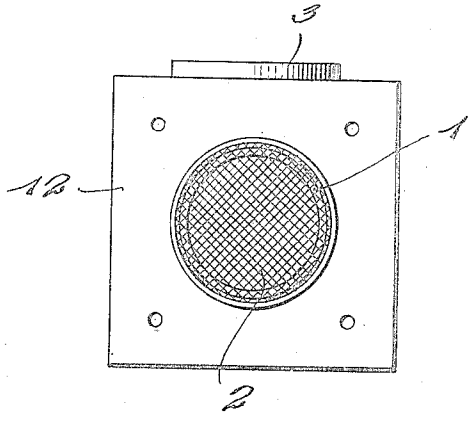
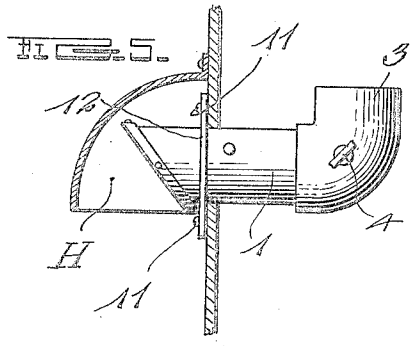


FIG. 5.



Witness

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2 SHEETS—SHEET 2.

FIG. 5.

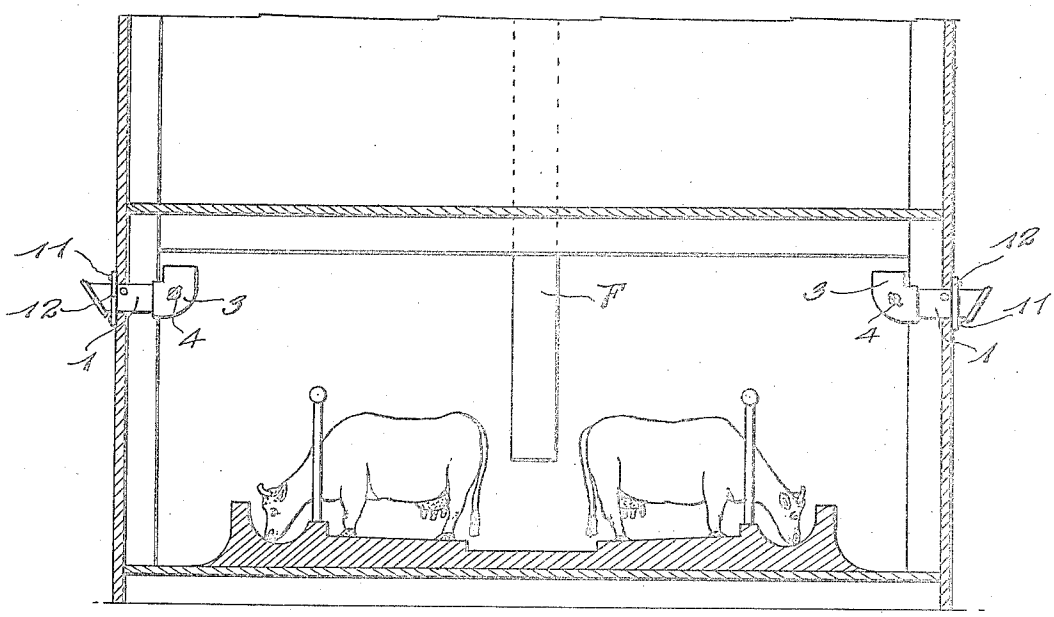
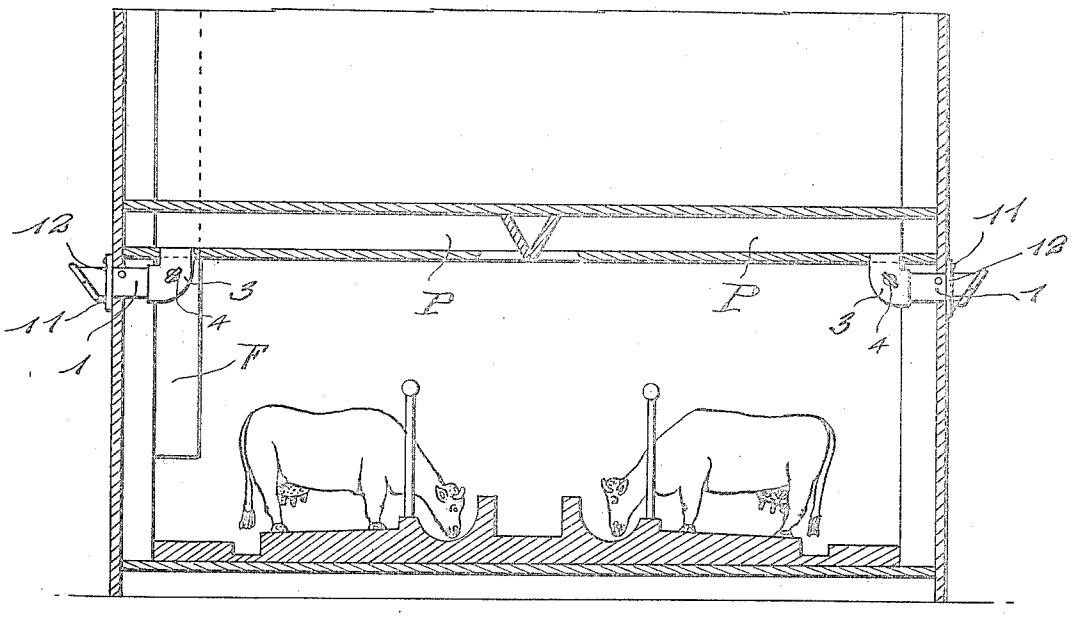


FIG. 7.



Witness

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FRESH-AIR VALVE FOR BUILDINGS.

1,397,739. Specification of Letters Patent. Patented Nov. 22, 1921.

Application filed June 14, 1920. Serial No. 388,964.

To all whom it may concern:

Be it known that I, MALCOLM B. MOYER, a citizen of the United States, residing at Montevideo, in the county of Chippewa and State of Minnesota, have invented certain new and useful Improvements in Fresh-Air Valves for Buildings; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to the ventilation of buildings and the present device is intended principally for use in connection with stables and the like although not restricted to such use. In ventilating farm buildings, it is common practice to place fresh air inlet valves at opposite sides of the building and to provide a suitable passage for carrying off the foul air, but with the exception of manually controlled valves, there is no provision made to prevent a strong wind blowing in the building through the valves at one side and discharging through the valves at the other side, instead of taking the proper course. This causes a draft on the stock which is often very injurious. If the attendant of the building is on hand, he can manually close the valves, but in regions where strong winds spring up during the night, this cannot be conveniently done.

My invention has for its object to provide a fresh air inlet valve which will function as such during comparatively gentle winds, but will close under the action of an unusually strong wind, and will be self-closing to prevent the egress of air through the inlets instead of through the foul air escape passage. By this means, the disadvantages of the ordinary inlet valve are effectively overcome, and ventilation will be more effectively accomplished.

With the foregoing in view, the invention resides in the novel construction and arrangement of parts hereinafter described and claimed, the descriptive matter being supplemented by the accompanying drawings.

Figure 1 is a top plan view of a fresh air inlet valve constructed in accordance with my invention.

Fig. 2 is a vertical longitudinal section on the plane of line 2—2 of Fig. 1.

Fig. 3 is a vertical transverse section on the plane of line 3—3 of Fig. 2.

Fig. 4 is an end elevation.

Fig. 5 is a detail side elevation showing a protecting hood which may be used over the outer end of each air inlet passage.

Figs. 6 and 7 are vertical sections of different forms of stables, showing the application of my invention thereto.

In the drawings above briefly described, the numeral 1 designates a horizontal passage preferably in the form of a round or square section of pipe whose outer end preferably inclines downwardly and inwardly and is provided with a screen 2 to prevent the entrance of birds and trash. The inner end of the passage 1 is shown provided with an upwardly directed elbow 3 which may contain a manually operable cut-off valve 4, but the use of these parts is optional.

Extending across the passage 1 is a substantially vertical damper plate 5 which is pivotally mounted at its upper edge as shown at 6, said damper plate being here shown as hingedly connected with the lower edge of a transverse strip 7 which is fixedly secured to the upper portion of the passage, although it will be obvious that said plate may be mounted in any desired way. The plate 5 inclines downwardly and inwardly from its pivot 6 so as to be normally closed by gravity, but under the action of comparatively gentle incoming air currents, said damper moves inwardly, for instance to the position designated by the dotted lines 8, while an unusually strong wind will force said plate inwardly to the position designated by the dotted lines 9, in which position it strikes a preferably inclined partition 10 which extends transversely across the lower part of the passage 1. The two parts 5 and 10 thus prevent the entrance of unusually strong wind, but when the strength of the gust subsides, the damper plate again moves to an open position to permit entrance of fresh air. Any internal air currents seeking egress through the passage 1 will outwardly close the damper plate 5 so that such currents are forced to travel through the foul air outlet provided for this purpose.

The invention is usuable in connection with numerous forms of buildings but in Figs. 6 and 7 I have shown it installed upon two different well known forms of barns. The valves are installed at opposite sides of the building by passing the pipes or the

like 1 therethrough and suitably securing them, for instance by passing appropriate fasteners 11 through flanges 12 with which said pipes may be equipped. The inner ends of the pipes 1 or the elbows 3, if the latter be provided, may open either directly into the barn as shown in Fig. 6 or may discharge into overhead passages P as seen in Fig. 7. In either case, the valves will permit the entrance of fresh air under normal conditions, will prevent the entrance of exceptionally strong winds, and will not in any case act as air outlets, thus insuring that the foul air shall discharge through the passage F intended for that purpose.

Preferably used in connection with the invention, is a suitable hood to prevent the entrance of rain, snow and the like. One form of hood which may be used is designated at H in Fig. 5, but it is obvious that any suitable construction could be employed and that in some instances this hood may be omitted if conditions warrant such omission.

By constructing the fresh air valve in the manner shown and described, proper ventilation is insured and no matter how many valves are employed, it is not necessary that they receive any manual attention whatever, even in the strongest winds. The device is therefore greatly advantageous over the common forms of air valves now in general use.

Since good results are obtainable from the details disclosed, they may be followed if desired, but within the scope of the invention as claimed, it may be embodied in numerous forms.

I claim:

1. The combination with a building having a foul air outlet and provided with fresh air inlet passages in its sides; of a self-closing damper in each of said inlet passages movable inwardly to open position under the action of incoming air currents, said damper being movable farther inwardly temporarily under stronger currents, and a wall in the passage coacting with said damper in its temporary position for preventing the entrance of air, said damper being self-closable outwardly when the air is calm and also outwardly closable under the action of air currents seeking egress, whereby to compel such currents to travel through said foul air outlet.

2. A fresh air inlet comprising a horizontal passage, a substantially vertical outwardly closable damper pivoted at its upper end in said passage but declining inwardly from its pivot to be closed by gravity, said damper being movable inwardly under the action of incoming air currents, and a transverse partition extending across the lower side of said passage in the extreme inward path of said damper, whereby to coact with the latter in cutting off the inward passage of air currents when the latter are of unusual strength.

In testimony whereof I have hereunto set my hand.

MALCOLM B. MOYER.