Aug. 9, 1927. 1,638,738

N. A. LICHTY ET AL

VENTILATOR OUT TAKE FLUE

Filed Jan. 29, 1926 2 Sheets-Sheet 1

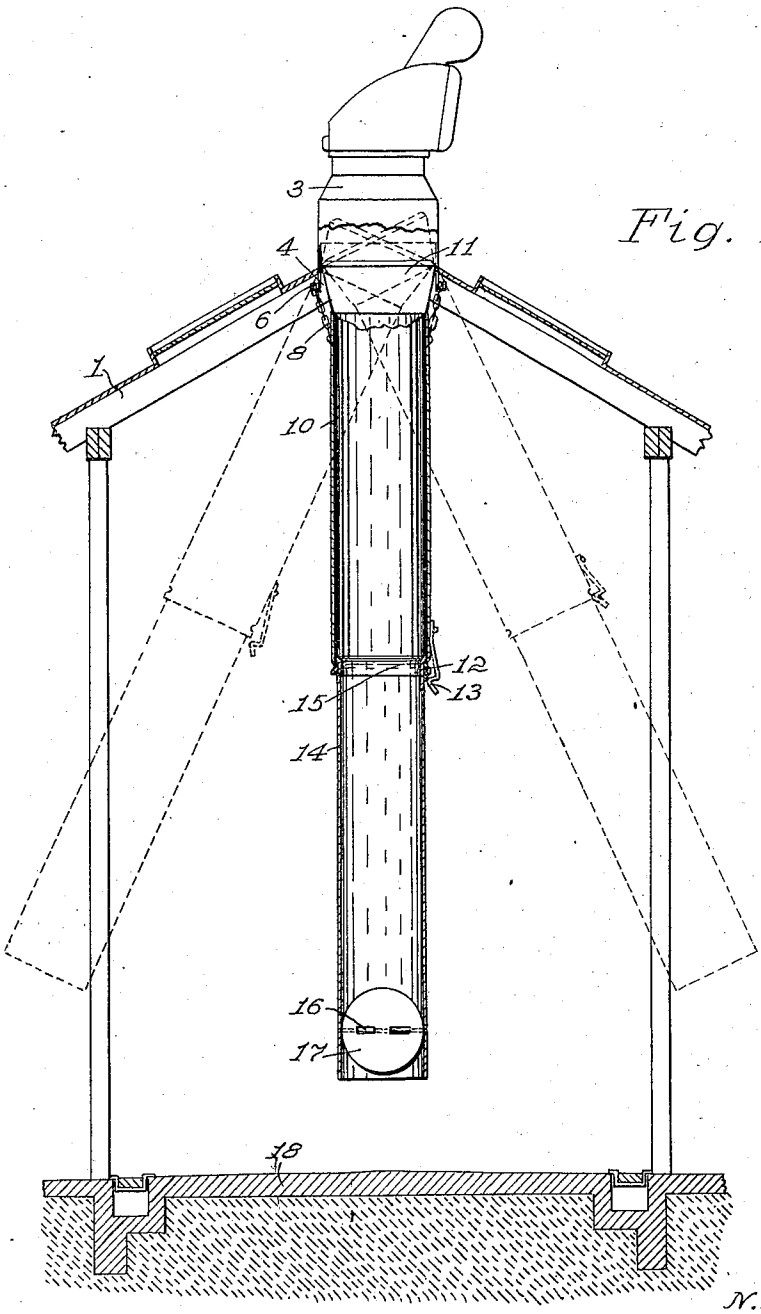


Fig. 1.

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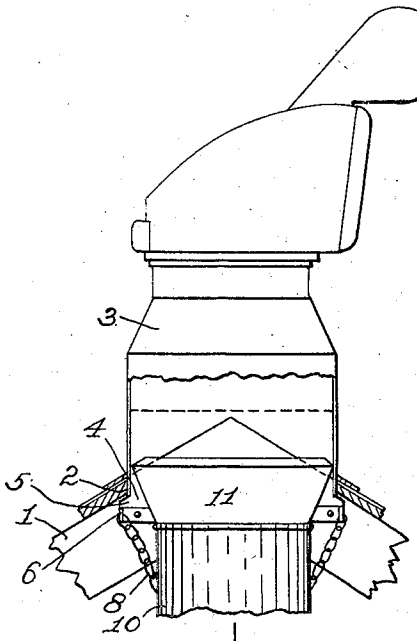


Fig. 2.

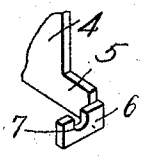


Fig. 4

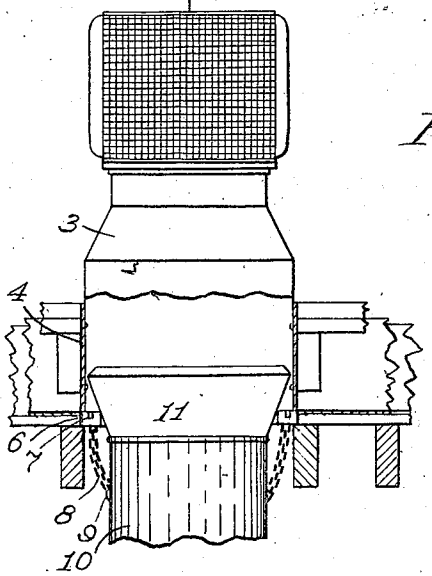


Fig. 3.

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UNITED STATES PATENT OFFICE.

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VENTILATOR OUTTAKE FLUE.

Application filed January 29, 1926. Serial No. 84,650.

Our invention relates to improvements in ventilator outtake flues, and the object of our improvement is to supply for use in housings for hogs or other animals, a device of this class which is efficient in the discharge of foul air, and which is collapsible to provide head room in a passage, beside being so detachably suspended as to render it possible to swing the depending flue away from the vertical.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

We have accomplished the objects of the said improvements by the means which are hereinafter fully described and claimed, and which are illustrated in the accompanying drawings, in which Fig. 1 is a transverse vertical section of the middle part of a housing for animals, particularly designed for hogs, but illustrative merely, as our ventilating outtake flue can be mounted in and usefully employed in any kind of building. Figs. 2 and 3 are elevations, taken on a larger scale and at an angle of ninety degrees from each other, of a cupola of a well-known type, showing the same mounted upon the roof of a building, and having associated operatively therewith our improved outtake flue, parts being shown broken away. Fig. 4 is a perspective detail of one of the notched projections on the shield-plate.

Referring to said Fig. 1, the numeral 1 denotes the oppositely sloped roof of a hog-house having a floor 18, that part of which is positioned below the peak of the roof being shown as a longitudinal passageway. The peak of the roof 1 has a rectangular aperture 2 between rafters to seat the hollow squared base of a rotatable cupola 3 which is provided with a cowl and vane as usual whereby it is governed in its position by action of wind currents passing it.

As shown in Figs. 2 and 3, a housing shield-plates 4 are mounted and secured to the rafters across the peak of the roof at opposite ends of said roof opening 2 within and covering or shielding the end openings of the base of the cupola. This plate in each case has small projecting lateral parts 5 at its lower end and terminal portions 6 of the projections 5 are bent outwardly at right angles and provided with a notch 7 in their top edges.

These lower parts of the plates 4 project downwardly into the building a short distance below the lower edge of the base of the cupola. The numerals 10—14 denote a sectional telescoping outtake flue suspended below said cupola with its lower open end approximately eighteen inches above the passageway floor 18. The upper section 10 is of somewhat larger diameter than the lower section 14 to receive the latter with a sliding telescoping fit thereinto, the upper end of the section 14 being slightly flanged outwardly to hang at 15 upon an inward bead 12 in the lower end of the section 10. The upper end of the upper section 10 is shaped with divergent sides rectangularly at 11 terminating with inwardly sloping flanges to loosely fit within the lower part of the cupola to close the opening of the latter. Four equidistantly spaced ears 9 are fixed in the outer upper wall of the section 10 spaced below its squared top part 11 to receive the lower ends of short chains 8 whose upper terminal links are hung in the notches 7 of the shield projections 5—6 as shown in Figs. 2 and 3.

A damper 17 to control the inlet end of the section 14 is rockably mounted upon a shaft 16 fixed across the lower end of this section, and has a frictional fit thereon so that when adjusted thereon it will retain its adjusted position without displacement unless sufficient force is applied thereto.

In case head room is needed for a person or vehicle to pass beneath the outtake tube, the lower section 14 may be lifted to telescope into the section 10, and releasably held by a spring clip 13. As indicated by the dotted lines in Fig. 1, the connected sections 10—14 are permitted considerable latitude in swinging in any direction on their flexible chain hangers 8, so as to swing out of the way when pushed against by animals or persons.

The wider top part 11 of the upper section 10, with inclined sides, may swing or rock within the lower part of the cupola loosely while keeping the opening thereof obstructed therebetween as indicated by the dotted lines, and when a pair of the chains 8 are detached from the ears 6—7 on one side, the tube sections will tilt swingingly over to the opposite side of the cupola to clear the medial passageway thereunder, because of the connections of the other pair of chains on said opposite side to the section 10 a distance below the enlarged head part 11. The chains may be disengaged from the notches 7 and the tube removed, to draw off hot or foul air in the upper part of the building when desired.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is:

1. A device of the class described, comprising in combination, a vertically disposed ventilator outtake flue, and a plurality of flexible means detachably connecting opposite parts of the upper end of the flue in communication with a roof opening for free swinging displacements of the flue when certain of said flexible means are disconnected.

2. A device of the class described, comprising in combination, a vertically disposed ventilator outtake flue composed of telescopically connected sections, one section having an inwardly projecting annular crimp and another section having an outwardly projecting bend above said crimp within the first-mentioned section to be supported upon said crimp in one position, means for releasably securing the lower of the sections when telescoped, and flexible members attached to the upper section of the flue and detachably connected to a roof thereabove to swingingly suspend the tube in communication with a roof opening thereabove.

3. A device of the class described, comprising in combination, a ventilating cupola mounted in a roof aperture, a vertically disposed ventilator outtake tube composed of telescopically connected sections detachably flexibly suspended for free swinging below and in communication with said cupola, one section having an inwardly projecting stop part, and another section slidable within said section having an outwardly projecting stop part to engage the stop on the first-mentioned section when the second-mentioned section is withdrawn to engage said parts, means for releasably securing the lowermost section in a telescoped condition, and a rockable imperforate damper in the lowermost section mounted frictionally therein.

4. A device of the class described, comprising in combination with a ventilating cupola having a rectangular base part mounted in a rectangular opening of the roof of a building, of an open end tube suspended from places spaced from the upper end thereof by pairs of oppositely located flexible members detachably hung from said roof, to normally hang vertically therefrom, the upper end part of the tube above the connections to said members being shaped with an enlarged rectangular head to fit loosely within the rectangular base part of the cupola, whereby when a pair of said flexible members are detached on one side, the tube will swing to the other side by the influence of gravity.

In testimony whereof we affix our signatures.

NORMAN A. LICHTY.
CHARLES L. OSTRANDER.