

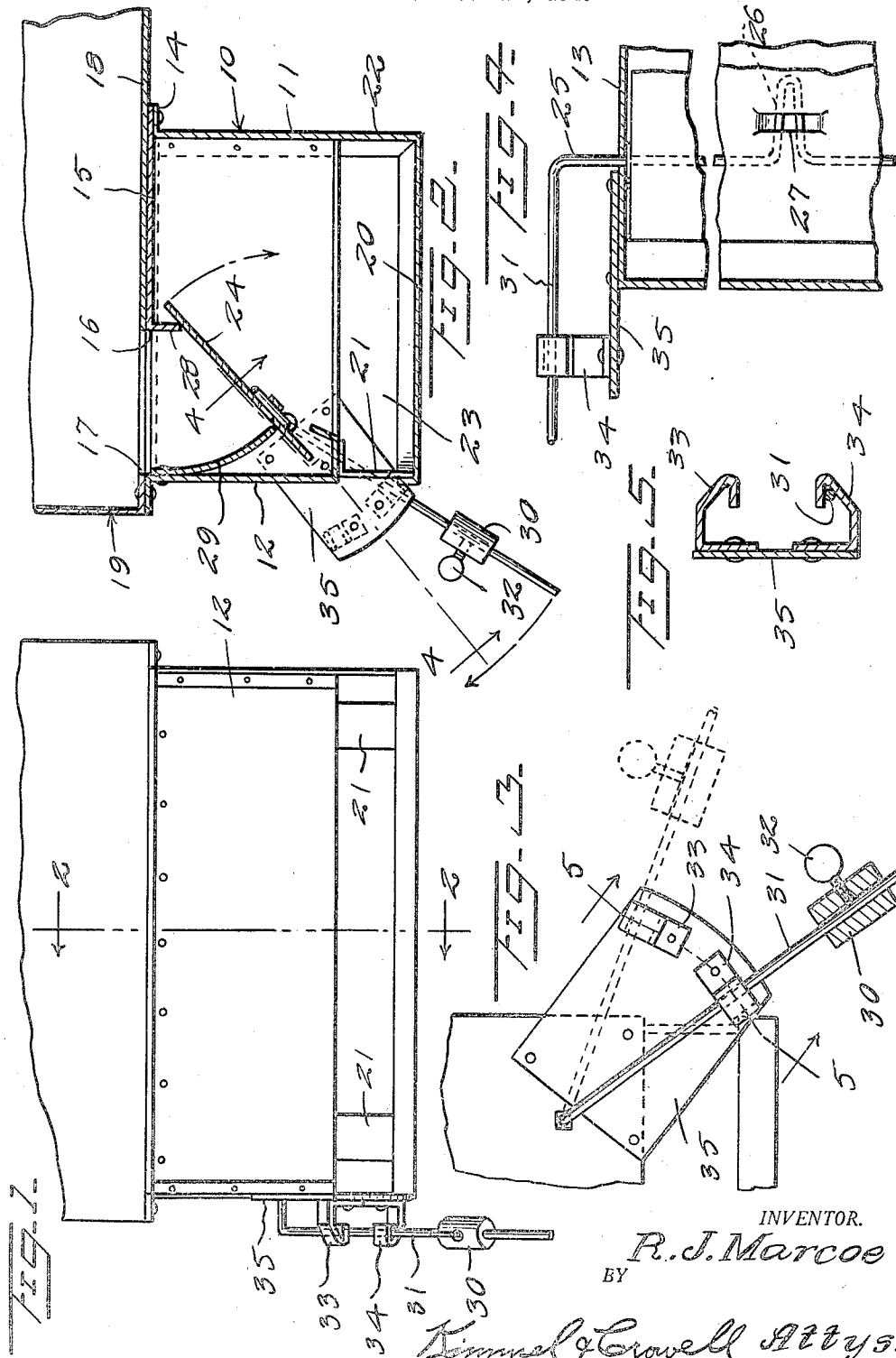
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INTAKE VENT

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INTAKE VENT

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3 Claims. (Cl. 98-119)

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This invention relates to ventilators.

An object of this invention is to provide a ventilator for barns or other buildings which is designed for mounting on an air intake duct for regulating the intake of air, and distributing the air evenly and horizontally so that no cold drafts will be produced.

Another object of this invention is to provide a ventilator which can be manually adjusted to either opened or closed position, or may be adjusted so as to automatically control the intake of air.

A further object of this invention is to provide in a ventilator of this kind, a pivoted damper or valve and means for balancing the damper or valve so that the latter may automatically move to open position under a predetermined draft of air, the housing for the ventilator including latching means engageable by the balancing means for locking the damper or valve in either opened or closed position.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawing and specifications, and then more particularly pointed out in the appended claims.

In the drawing,

Figure 1 is a detail front elevation of a ventilator constructed according to an embodiment of my invention, showing the ventilator mounted on an air duct,

Figure 2 is a sectional view taken on the line 2-2 of Figure 1,

Figure 3 is a fragmentary side elevation partly broken away and in section,

Figure 4 is a fragmentary sectional view taken on the line 4-4 of Figure 2,

Figure 5 is a sectional view taken on the line 5-5 of Figure 3.

Referring to the drawing, the numeral 10 designates generally a housing which is formed of opposite side walls 11 and 12, and opposite end walls 13. The side and end walls 11, 12 and 13 are formed at their upper edges with outwardly extending flanges 14, and a top wall 15 is secured to the flanges 14.

The top wall 15 is formed with an opening 16 which is adapted to register with an opening 17 formed in the bottom wall 18 of an air intake duct 19. The lower portion of the housing 10 is open and a horizontally disposed baffle or distributor plate 20 is positioned in downwardly spaced relation with respect to the housing 10, being supported therebelow by means of a pair of angle bracket members 21 and also by means

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of a side wall extension 22. The air entering the housing 10 is adapted to pass downwardly therethrough and then out through the opening 23 formed between the baffle or distributor 20 and the lower portion of the housing 10.

A valve or damper plate 24 is rockably disposed in the housing 10, being mounted on a transversely extending shaft 25 which is journaled through the end walls 13. The shaft 25 is secured to the valve plate 24 by providing a reverted or substantially V-shaped intermediate portion 26 in the shaft 25, and then threading this reverted securing portion 26 in the space formed between the lower side of the plate 24 and a downwardly offset strap 27 which is struck from the body of the plate 24.

A downwardly extending flange 28 is carried by the top wall 15 and is adapted to engage the valve plate 24 when the latter is rocked upwardly to closed position. A downwardly and inwardly curved baffle 29 is fixed to the inner side of the side wall 12 extending downwardly toward the valve plate 24 and terminating substantially in alignment with the shaft 25 so as to direct the air downwardly and inwardly of the housing 10. When the valve plate 24 is in closed position this plate will substantially contact the lower or inner edge of the arcuate baffle 29.

The valve plate 24 is adapted to be automatically rocked to closing position by means of a weight 30 which engages a right angular extension or arm 31 carried by one end of the shaft 25. The weight 30 is adapted to be adjusted lengthwise of the arm 31 by means of a set screw 32. If it is desired to lock the valve plate 24 in either open or closed position, this may be manually done by engaging the arm 31 with either one of a pair of keepers 33 and 34. The two keepers 33 and 34 are fixed to a supporting plate 35 which is fixed to one end wall 13 and extends downwardly and angularly therefrom, as shown in Figure 3.

The two keepers 33 and 34 are each at their free ends bent inwardly in the form of a hook, as shown in Figure 5, and are spaced apart a distance corresponding to the open and closed position of the valve plate 24. During the automatic operation of the device, the arm 31 is positioned in the space between the free ends of the keepers, so that the swinging movement of the arm 31 is thereby confined between the open and closed positions of the valve plate 24.

The arm 31 is fabricated of resilient rod material. Thus, if it is desired to lock the valve plate 24 in either a closed or open position, the arm 31 may be easily sprung inwardly so as to engage the

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hook-shaped free end of the corresponding keeper.

In the use and operation of this device, the housing 10 is secured beneath the duct 19 with the opening 16 registering with the outlet opening 17 in the duct 19. This ventilator is positioned in a building such as a barn or the like, having a ventilator fan forcing the air out of the building. In the event it is desired that the ventilator operate automatically by suction of air in the building which will draw the air downwardly through the housing 10, the arm 31 may be disengaged from both keepers 33 and 34. The weight 30 is adjusted along the length of the arm 31 so that when air is flowing downwardly through the housing 10, valve 24 will rock downwardly to open position, whereas when no draft is present or there is a reverse movement of air, valve plate 24 will swing upwardly to closed position. The incoming air passing downwardly through the housing 10 will strike the baffle plate 20 and will then be directed horizontally from the housing 10 so that the incoming air will be evenly distributed about the upper portion of the enclosure within which this device is positioned, and no cold drafts of air will be directed downwardly. In the event it is desired to lock the valve plate 24 in open position, arm 31 is raised to engage upper keeper 33. If it is desired to lock valve plate 24 in closed position, arm 31 is rocked downwardly and engaged with keeper 34.

I do not mean to confine myself to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What I claim is:

1. A ventilator for an air intake duct comprising a housing formed of opposite side and end walls, a top wall fixed to the upper ends of said side and end walls and having an air intake opening, a transversely curved baffle secured to a wall of said housing adjacent said opening and extending downwardly and inwardly from the latter, a shaft positioned adjacent the lower edge of said baffle and rockably carried by the end walls of said housing, a valve plate secured to said shaft and extending across said opening for controlling the passage of air through the latter, a horizontal baffle spaced from the bottom of said housing and carried by the latter, a right angularly disposed arm carried by one end of said shaft, a weight carried by said arm, and means carried by the end wall of said housing adjacent said arm for latching the latter in open and closed positions of said valve plate.

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2. A ventilator for an air intake duct comprising a housing formed of opposite side and end walls, a top wall fixed to the upper ends of said side and end walls and having an air intake opening, a transversely curved baffle secured to a wall of said housing adjacent said opening and extending downwardly and inwardly from the latter, a shaft positioned adjacent the lower edge of said baffle and rockably carried by the end walls of said housing, a valve plate secured to said shaft and extending across said opening for controlling the passage of air through the latter, a horizontal baffle spaced from the bottom of said housing and carried by the latter, a right angularly disposed arm carried by one end of said shaft, a weight carried by said arm, a plate secured to the end wall of said housing adjacent said arm, and a pair of spaced keepers secured to said plate, said arm being resilient and engageable with a selected one of said keepers for holding said valve plate in open and closed position.

3. A ventilator for an air intake duct comprising a housing formed of opposite side and end walls, a top wall fixed to the upper ends of said side and end walls and having an air intake opening, a transversely curved baffle secured to a wall of said housing adjacent said opening, and extending downwardly and inwardly from the latter, a valve plate pivotally carried by the end walls of said housing adjacent the lower edge of said baffle and extending across said opening for controlling the passage of air through the latter, a horizontal baffle spaced from the bottom of said housing and carried by the latter for diffusing air discharged from said housing, and counterbalancing means for normally holding said valve plate in a closed position.

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