July 13, 1943. D. B. TOLLEY 2,324,043

VENTILATOR DEVICE FOR POULTRY HOUSES

Filed Nov. 21, 1941

FIG. 1

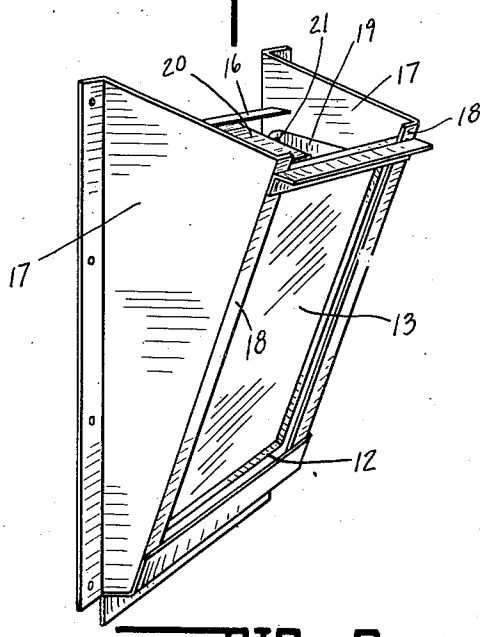


FIG. 2

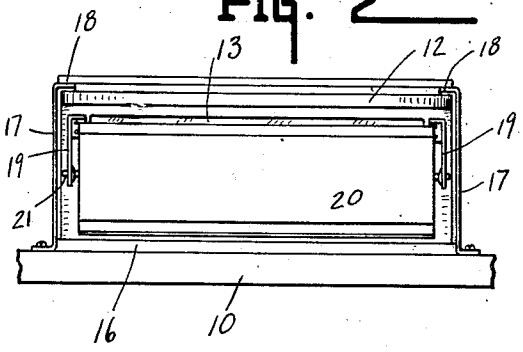
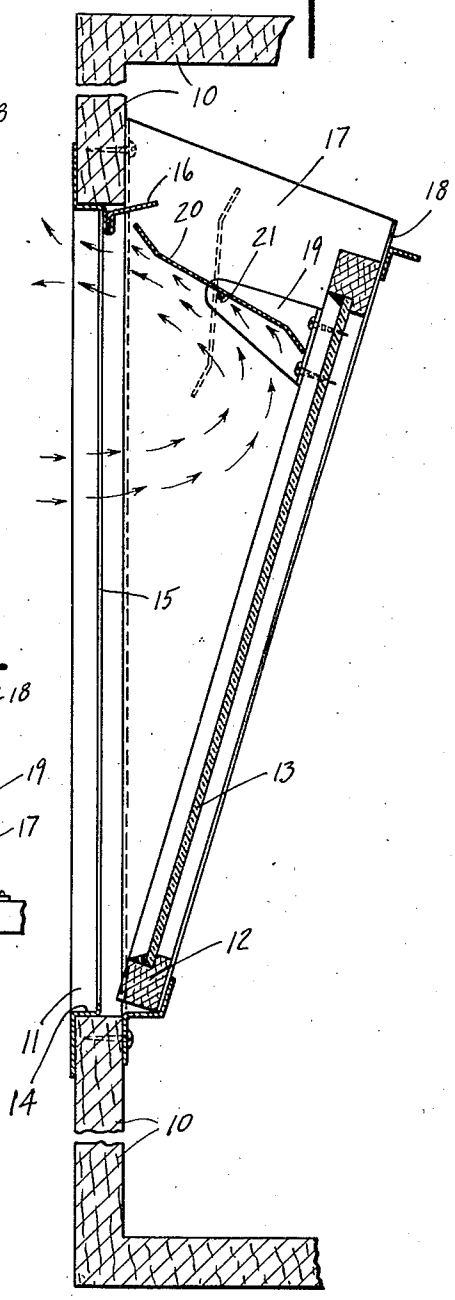


FIG. 3



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VENTILATOR DEVICE FOR POULTRY HOUSES

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3 Claims. (Cl. 98—88)

This invention relates to a window ventilator for poultry houses of the type adapted for inward positioning to direct the draft of incoming air upwardly and inwardly toward the ceiling.

In windows of the type used for poultry houses, it is essential to provide a structure of minimum resistance to air currents and so arranged as to prevent direct draft when opened upon the fowls. To that end a housing is provided in conjunction with the window frame such that the window sash may be either completely closed in respect to the frame or may be pivotally mounted to swing inwardly about a lower axis to provide a top opening such as will baffle the incoming air and direct it upwardly.

It is the purpose of this invention to provide the window sash with a pivotally mounted shutter thereon which will be so actuated by wind velocity as to automatically control the draft when the window sash is in open position and freely permit complete or partial closing of the sash. Wherein the sash is only manually adjusted to control the ventilation, variations in wind velocity cannot be taken into account, so that an adjustment which controls the ventilation at one period of time will be entirely inadequate and unsuitable at another period of time due to change in wind velocity. By means of this invention the shutter mounted on the sash will shift its position with the variations in wind velocity, and thereby tend to reduce or close the opening as the wind velocity increases while increasing or completely freeing the opening as the wind velocity decreases. Thus, a substantially constant ventilating draft is obtained thereby.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

Fig. 1 is a perspective view of the window closure taken from the interior of the building. Fig. 2 is a plan view looking down thereon. Fig. 3 is an enlarged central vertical section through the sash and frame with the shutter shown in closed position due to high wind velocity in full lines and in full open position due to low wind velocity in dotted lines.

In the drawing there is illustrated a window frame structure 10, such as is commonly employed in poultry houses having a sash opening indicated at 11 in which the window sash 12 is adapted to fit. The sash 12 embodies and embraces the window glass 13. The frame includes a flanged metal liner 14 to provide a seal for the window sash when closed, which liner includes the sealing rib 15 and an upper resilient inwardly extending sealing flange portion 16 that may serve as a window sash retainer.

Mounted inwardly along each side of the window frame in side embracing relation with the sash there is provided a sheet metal side guard 17 flanged inwardly at 18 along its inner edge which extends inwardly and upwardly at an angle from the bottom of the frame, said flanged edge 18 providing a seat for the window sash when in its open position.

Secured to each side of the window sash and near the top thereof there is a pair of shutter supporting brackets 19 upon and between which the shutter 20 is pivotally mounted through the medium of the pivot pin 21 extending therefrom. Said shutter is mounted to extend crosswise of the window sash and is so formed of sheet metal or the like as to swing about its pivotal mounting from full open position, indicated in dotted lines in Fig. 3, to its closed position shown in full lines. However, in its closed position it does not entirely close the air passage between the upper end of the sash and the frame, but leaves slight openings adjacent same through which air may continue to pass. Its opposite edges are so formed and the surface area on each side of the pivotal mounting is so related to the total area that it normally hangs in a vertical position, as shown by dotted lines, when there is insufficient pressure due to the absence of appreciable wind velocity to affect it. In this position it permits of maximum ventilating opening as required. However, due to the greater area of that portion of the shutter which is below the pivotal mounting in respect to that thereabove, pressure due to wind velocity being greater on the lower portion, will cause it to swing upwardly until the lower edge of the shutter strikes the sides of the sash, as shown in full lines. Note there then is an air relief channel between the shutter lower edge and the pane 13, and an opposite air relief channel between the shutter upper edge and the sealing flange 16.

By means of this arrangement, when ventilation is desired within the poultry house, the sash may be entirely opened by laying it back against the flanges 18 to baffle and direct the incoming air currents upwardly. Thereupon the shutter will control the extent of the opening and air passage therethrough at the top of the window, depending upon the wind velocity so as to maintain a substantially constant air intake and ventilating effect. It is important and to be noted that the window may be readily

closed since the shutter is so mounted thereon as to pass through the window opening and, therefore, not interfere with the closing movement of the sash. As a result of the above, no manual adjustment of the window sash is required to control the draft or extent of ventilation when there is a change or variation in wind velocity.

The invention claimed is:

1. In a window ventilator for poultry houses including a window frame having a window sash receiving opening therein, a window sash having its lower end supported in said opening and its upper end free to be swung to and from said opening, and guard plates secured to said frame on each side of said opening and provided with sash seating flanges adapted to support said sash in its open position when the upper portion thereof is swung to open position from the frame, the combination of a pair of brackets secured on each side of said sash near the top thereof, and extending toward said opening in the frame and passing therethrough when the sash is frame seated, and a gravity stabilized velocity adjustable draft controlled shutter extending crosswise of said sash and eccentrically pivoted upon said brackets, said shutter normally lying in a vertical position regardless of sash position and when not subject to appreciable wind velocity, said shutter and brackets both being passable through said opening without interference when said sash is moved to closed position, the shutter, when fully closed and with the sash in opened position, providing two ventilating passages defined by said shutter, sash, frame and plates.

2. A window ventilator as defined by claim 1 wherein means is provided at the top of the frame opening for yieldingly engaging the top of the sash for sealing and retaining same in closed position, and stop means in the opening limiting sash movement in closed position.

3. In a window ventilator for poultry houses including a window frame member having a window sash receiving opening therein, a window sash member having its lower end supported in said opening and its upper end free to be swung therefrom for ventilation purposes, and side guard plates at each side of the opening, and including inwardly directed sash member seating flanges adapted to support said sash member when in full open position relative to the frame member, the combination of a pair of brackets secured on each side of said sash member near the top thereof and extending toward the opening in the frame member and passing therethrough when the sash member is moved to frame opening seated position, and a shutter vane pivotally supported by the outermost ends of said brackets and extending crosswise of said sash member and adjustable in the discharge opening provided between the frame member, sash member and side guard plates, said shutter adjacent its free ends having angularly offset portions, the pivotal support being intermediate said angular portions, the free edge of one of the angular portions being adapted to engage an adjacent member when the vane is in fully closed position, the vane and supporting brackets being passable through the window frame member opening upon sash member seating therein.

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