I. WOOLF.

VENTILATOR.

APPLICATION FILED APR. 27, 1916.

1,219,893. Patented Mar. 20, 1917.

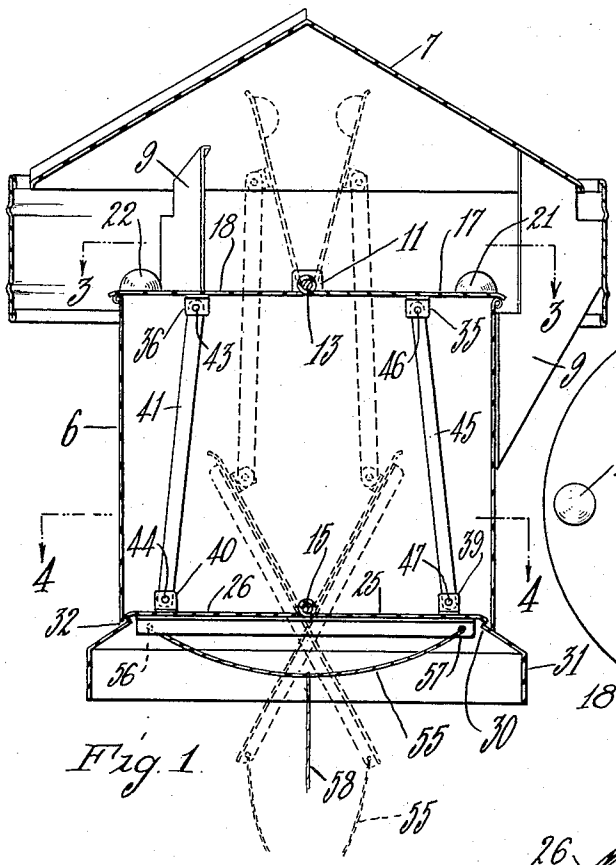


Fig. 1.

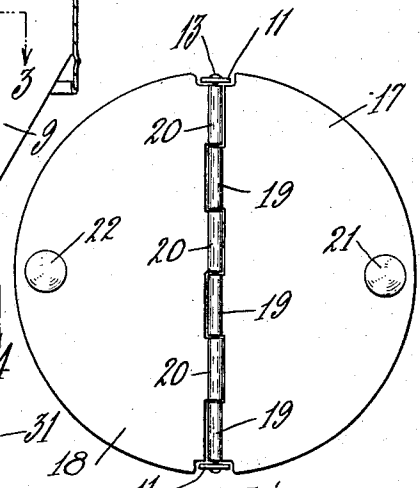


Fig. 3.

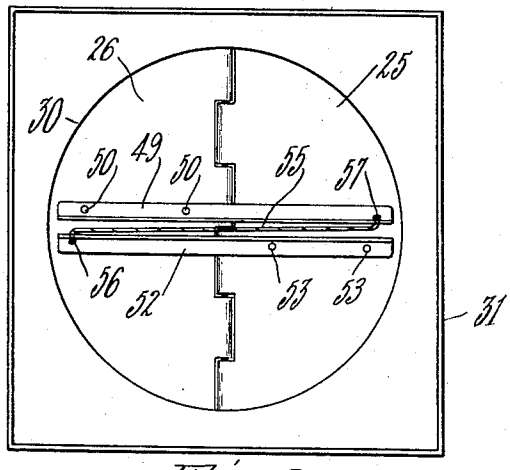


Fig. 2.

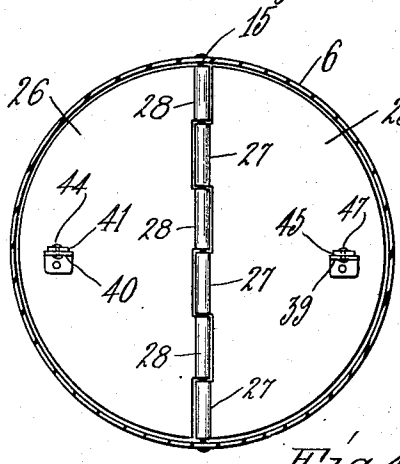


Fig. 4.

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VENTILATOR.

1,219,893. Specification of Letters Patent. Patented Mar. 20, 1917.

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To all whom it may concern:

Be it known that I, ISAAC WOOLF, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Ventilators, of which the following is a specification.

My invention relates to building ventilators, and has for its essential objects to control the passage of air from the building by ventilators; to operate a plurality of ventilators by single means; to prevent ingress of snow and rain; to minimize moisture and its condensation within the ventilator; to insure a tight closure of the ventilator against air currents when closed, and permit ample passage thereof when open; and to attain these ends in a simple and easily operable structure.

To the above ends essentially my invention consists in such parts and combinations of parts as fall within the scope of the appended claims.

In the accompanying drawings which form a part of this specification,

Figure 1 is a central vertical section of a ventilator embodying my invention,

Fig. 2, a bottom plan view of the same, and

Figs. 3 and 4, transverse sections of the same on lines 3—3 and 4—4 respectively of Fig. 1.

Like reference characters indicate like parts throughout the views.

My ventilator comprises the stack 6 covered by the usual hood 7 supported in spaced relation thereto by the radial arms 9 upon the upper exterior portion of the stack.

Mounted in diametrically opposite vertically extending portions 11 at the top of the stack wall is a rod 13. Below this rod and in the vertical plane thereof is a rod 15 fixed in the stack wall.

Pivotally mounted on the rod 13 are semicircular metal leaves 17 and 18 having hinge sleeves 19 and 20 respectively engaging the rod. Weights 21 and 22 on the respective upper margins of the leaves normally press the overlapping inclined edges of the latter upon the top edge of the stack. The downward incline of the margins of the leaves discharges any accumulated moisture exterior of the stack.

Leaves 25 and 26 similar in form to those already referred to have respectively hinge sleeves 27 and 28 engaging the rod 15. The downwardly inclined margins of the leaves rest on an upwardly inclined annular flange 30 upon the inner face of the stack near the base portion 31 of the latter. If desired the stack may have a perforation 32 adjacent this flange to permit the escape of any moisture that might possibly enter the stack through any accidental injury to the upper leaves and hood. Otherwise the perforation may well be omitted as the two sets of double leaves so protect the body of the stack that moisture condensation therein is entirely absent or a negligible quantity.

Fixed to the lower faces of the leaves 17 and 18 are attaching lugs 35 and 36 respectively in diametrical alinement with each other. Upon the upper faces of the leaves 25 and 26 are fixed attaching lugs 39 and 40 respectively. A rod 41 is connected at its ends by pivot members 43 and 44 to the lugs 36 and 40 respectively, and a rod 45 is connected by pivot members 46 and 47 to the lugs 35 and 39 respectively. While the lugs 39, 40 are in the vertical plane of the lugs 35, 36 they are more remote from their axial rod 15 than are the lugs 35 and 36 from the rod 13. The rods 41 and 45 insure a simultaneous movement of both sets of damper plates or leaves, and their inward inclination upwardly is in this instance employed to insure corresponding angles of inclination between the upper and lower leaves when the latter are elevated. This condition attains because in the construction shown the pivot points 44 and 47 are in nearly the horizontal plane of the rod 15, while the pivot points 43 and 46 are in a horizontal plane below the rod 13.

The means for tilting the damper members is as follows. An angle rod 49 is fixed by rivets 50 to the under face of the leaf 26 and extends across the rod 15, at right angles thereto, to a point near the peripheral margin of the leaf 25. Parallel with the rod 49 is a similar rod 52 fixed by rivets 53 to the leaf 25 and extending to the peripheral margin of the leaf 26. A flexible member 55, has its ends attached at points 56 and 57 to the free ends of rods 52 and 49 respectively. A flexible member 58 depends from the middle of the member 55. By manually pulling the member 58 or 55 downwardly the damper leaves and their operative connections will assume whatever angular relation is necessary to secure the degree of opening sought through the stack.

One such position is shown in broken lines in Fig. 1. When the tension is relaxed upon the member 55 the weights 21 and 22 assist to return all the damper leaves to their seats in closed position. If the material of the leaves is excessively heavy these weights may be dispensed with but at a sacrifice to ease of operation.

It will be observed that the double set of leaves insure not only a doubly tight closure when closed, but that the entire length of the stack has its interior closed against the ingress of moist air from above and warm air from below whereby condensation is induced. Furthermore that the arrangement of the damper leaves is such as to afford a maximum of open space when the dampers are open to their limits of travel.

I claim:—

1. In a ventilator, the combination of a stack, a pivot rod mounted in the stack transversely thereof, damper leaves mounted on the rod, rods rigidly fixed to the faces of the leaves and extending from said faces across the pivot rod, and a flexible member connecting the extending portions of the rods.

2. In a ventilator, the combination with the stack, of a pivot rod on the upper end of the stack, a second pivot rod in the lower portion of the stack, leaves upon the upper rod, leaves upon the lower rod, rods pivotally connecting the upper and lower leaves, and means for tilting one set of leaves.

3. In a ventilator, the combination with the stack, of an annular flange upon the lower portion of the stack, a pivot rod mounted in the top of the stack, leaves upon the rod adapted to engage the stack, a second pivot rod in the lower portion of the stack, leaves on the second rod adapted to rest upon the flange, rods pivotally connecting the opposite upper leaves with the lower leaves, and means for tilting the lower leaves.

4. In a ventilator, the combination with the stack, of a pivot rod in the stack, an annular shoulder on the stack, and leaves on the rod provided with downwardly inclined marginal portions adapted to rest upon the shoulder.

In testimony whereof I have affixed my signature.

ISAAC WOOLF.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."