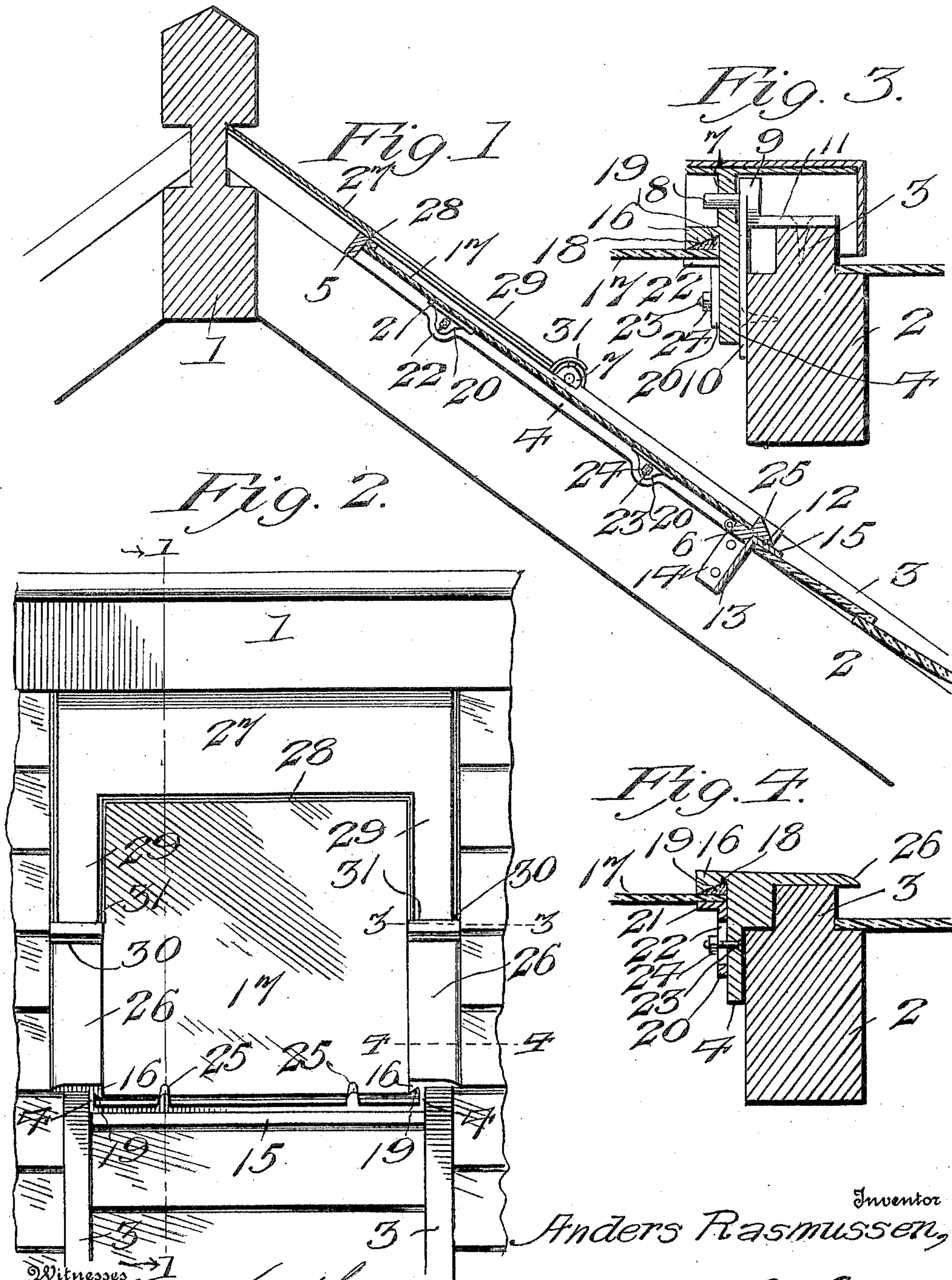


No. 817,002.

PATENTED APR. 3, 1906.

A. RASMUSSEN.  
VENTILATOR.

APPLICATION FILED APR. 3, 1905.



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# UNITED STATES PATENT OFFICE.

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## VENTILATOR.

No. 817,002.

Specification of Letters Patent.

Patented April 3, 1906.

Application filed April 3, 1905. Serial No. 253,505.

*To all whom it may concern:*

Be it known that I, ANDERS RASMUSSEN, a citizen of the United States, residing at 1108 Vincennes street, New Albany, in the county of Floyd and State of Indiana, have invented new and useful Improvements in Ventilators, of which the following is a specification.

This invention relates to certain new and useful improvements in ventilators for greenhouses, hothouses, and other horticultural buildings, the object of the invention being to provide an improved construction of ventilator-sash and parts coöperating therewith to insure the free shedding of water from the sash and adjacent portions of the house structure when the sash is closed and to form tight joints to prevent the inlet of water or cold air to the interior of the building, the construction of the sash further permitting of the use of glass of different thicknesses, the firm retention of the same within the glass-frame, and the ready adjustment of the fastening means therefor to allow the glass to be easily applied or removed when occasion requires.

With this and other objects in view the invention consists of the features of construction, combination, and arrangement of parts hereinafter fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional view through the upper portion of a greenhouse or similar structure embodying my invention, said section being taken on the plane indicated by the line 1 1 of Fig. 2. Fig. 2 is an exterior plan or face view of a portion of a greenhouse or similar structure equipped with the ventilator, the latter appearing in closed position. Fig. 3 is a detail sectional view on line 3 3 of Fig. 2. Fig. 4 is a similar view on line 4 4 of Fig. 2.

Referring now more particularly to the drawings, the numeral 1 designates the usual ridge-beam of the hothouse or other analogous horticultural structure, and 2 the rafters thereof, the rafters being arranged in parallelism and cut away on opposite sides to form receiving-spaces for the side edges of the rows or series of glass panes and an intermediate parting rib or bead 3, against which the said side edges of the panes abut.

The sash-frame of the ventilator consists of side pieces 4 and top and bottom end pieces 5 and 6, which parts may be made of wood or metal and integrally united or sepa-

rately formed and attached to provide a unitary structure. This frame is provided intermediate of its length on the outer faces of its side pieces with ears 7, receiving pintle-pins 8 on brackets 9, secured to the adjacent rafters, whereby the sash is mounted for swinging movement to open and close in the usual manner, the present arrangement showing the sash as having its upper and lower ends arranged, respectively, for inward and outward swinging movements in adjusting the sash to its opened position. Each bracket 9 preferably consists of a body portion carrying the pivot pin or pintle 8, said body portion being formed with flanges 10 and 11, respectively arranged to bear against the inner faces of the rafters 2 and the upper faces of the ribs or beads 3 thereof and secured thereto by screws or other suitable fastenings. The lower cross-piece 6 of the sash-frame is suitably recessed, as indicated at 12, to receive and fit against the joint-plate 13, extending between the rafters 2, said plate being provided at its ends with attaching-flanges 14, suitably fastened to said rafters and formed at its outer edge with a downwardly-extending right-angular flange 15, which projects or laps over the upper edge of the upper pane of the series of glass panes between the rafters below the ventilator, thus forming a closure at this point to prevent water, snow, and air from beating in at the joint. As shown, the recess 12 permits the lower edge of the sash to fit snugly against the body and flange of the joint-plate 13, thus allowing the lower edge of the sash to close with the major portion of the cross-piece 6 in line with the series of panes below, so as to effect a closure which will be air and moisture tight under all conditions of service.

Extending inwardly around the sides 4 and upper cross-piece 5 of the sash-frame at the upper or outer edges thereof is a stop flange or bead 16, which serves as a shoulder or support for the pane of glass 17, mounted in the sash, the inner face of said bead or flange being undercut to form a recess 18, which gradually inclines or deepens from the free edge of the bead, which recess 18 is designed to receive a filling 19 of putty or analogous material which will perform the dual function of sealing the joints and securing the edge of the panes to the bead. The pane is additionally fastened by means of clamping devices 20, of which two are herein shown applied to each side piece 4 of the sash, each of said clamps



consisting of a body portion formed with a clamping-flange 21, bearing against the inner face of the pane to press the same against the edge of the bead 16. The body portion of each clamp is formed with an elongated slot 22 for the passage of a screw, bolt, or analogous fastening 23; which also passes through an adjacent side piece 4 of the sash-frame, said bolt carrying a nut 24 to bridge across said slot and to enable the clamp to be adjusted toward and from the bead 16 to clamp the pane in position or release it for removal or readjustment. The bead 16 terminates at the lower ends of the side pieces 4—that is to say, it does not extend across the lower end piece 6 of the sash-frame, the latter being provided simply with a pair of lugs or projections 25, against which the lower edge of the pane bears, thus preventing the pane from having any outward and downward movement, while the clamps 20 secure it to the side piece 4. The lower edge of the pane overlaps the lower end piece 6, thus allowing any water flowing down the pane to pass readily off. By this construction of retaining means on the lower cross-piece 6 and the use of the adjustable clamps 20 panes of glass of different thicknesses may be employed in the ventilator-sash, and a broken pane may be removed and a new one substituted therefor in a minimum amount of time and with a comparatively small amount of labor.

Below their pivotal connections each side piece 4 of the sash-frame is provided with a laterally-projecting flange 26, which extends over the ribs or beads 3 of the adjoining rafters 2 when the sash is closed and form shields or water-sheds to prevent moisture or cold air from having access to the interior of the structure from without through the joints between the rafters and the sides of the ventilator-sash frames.

The space between the ridge-beam 1 and cross-piece 5 of the ventilator is covered by a shield 27, consisting of a strip of metal or any other suitable material which projects at its upper edge beneath the crown of the ridge-beam, so as to form a tight joint at that point, and is of sufficient width to extend over and slightly beyond the ribs or beads 3 at the upper ends of the rafters 2, thus preventing the access of moisture at the sides of the space above the ventilator. The lower edge of the shield-plate 27 terminates above the bead 16 of the upper cross-piece 5 of the sash-frame and is inwardly deflected, as indicated at 28, so as to form a shedding-surface which will permit water running from the upper part of the structure to pass over the upper end of the closed ventilator and down the outer surface of said ventilator without leaking in at the upper portion of the frame thereof. From the ends of the shield 27 project parallel extensions 29, which overlie the joints between the ribs 3 of the rafters 2 and

the side edges of the side pieces 4 of the sash-frame above the pivotal connection of the latter, so that the access of moisture at any point above the center of the sash-frame will be prevented by the shield and its said two extensions. Each extension terminates at its lower end in a substantially semicircular hood 30, which covers the outer portions of the bracket 9, the two hoods being cut away at their inner edges, as indicated at 31, to permit the sash to swing open to the desired extent. By the provision of these hoods the pivotal connections of the sash are protected and access of moisture prevented to a material degree at these points, and all the water flowing down the extensions 29 is laterally deflected, thus causing the streams to pass down upon the adjacent rows of panes on opposite sides of the ventilator.

Figs. 1 and 2 show the ventilator in closed position, from which it will be seen that when the rafter is fastened access of moisture will be effectually prevented, as well as the access of cold air. The sash may be swung to open and close through the medium of any suitable operating means, which I have not deemed it necessary to show.

From the foregoing description, taken in connection with the accompanying drawings, the construction and mode of operation of the invention will be understood without a further extended description.

Changes in the form, proportions, and minor details of construction may be made within the scope of the invention without departing from the spirit or sacrificing any of the advantages thereof.

Having thus described the invention, what is claimed as new is—

1. In a ventilator for horticultural structures, a sash-frame comprising side and end pieces, said side and one of the end pieces being provided with beads or flanges, a glass pane overlapped by and resting against the under faces of said beads or flanges, stop projections on the other cross-piece to retain the pane in place, and clamps on the side pieces adjustable to force the pane upward against the beads.

2. In a ventilator for horticultural structures, a swinging sash, a transverse joint-plate at the lower end of the sash-pane, said joint-plate having a flange projecting over the adjacent glass of the structure, the edge of the ventilator-sash frame being recessed to receive and fit over said plate and flange and having its upper face disposed below the level of the upper surface of the sash-pane and provided with spaced stop projections to engage the edge of the pane, substantially as described.

3. In a ventilator for horticultural structures, a sash-frame comprising side and end pieces, said side pieces having upwardly-extending ears and flanges covering the joints



below said ears, bracket-plates secured to the  
rafters of the structure and provided with  
upwardly-projecting portions carrying pin-  
tles engaging said ears, and a shield-plate ex-  
5 tending between the ridge-beam of the struc-  
ture and the upper edge of the sash-opening  
and having a depressed lower edge to lap over  
the upper end piece of the sash and provided  
with downwardly-extending parallel portions  
10 covering the joints above the pivotal connec-

tions of the sash, said portions being provided  
at their lower ends with semicircular hoods  
covering the brackets and partially cut away  
to permit the sash to swing.

In testimony whereof I affix my signature 15  
in presence of two witnesses.

ANDERS RASMUSSEN.

Witnesses:

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EDWARD M. McCULLOCH.