Sept. 16, 1952 G. S. HORNE 2,610,569

COMB VENTILATOR FOR TOBACCO BARNS

Filed April 25, 1949 2 SHEETS—SHEET 1

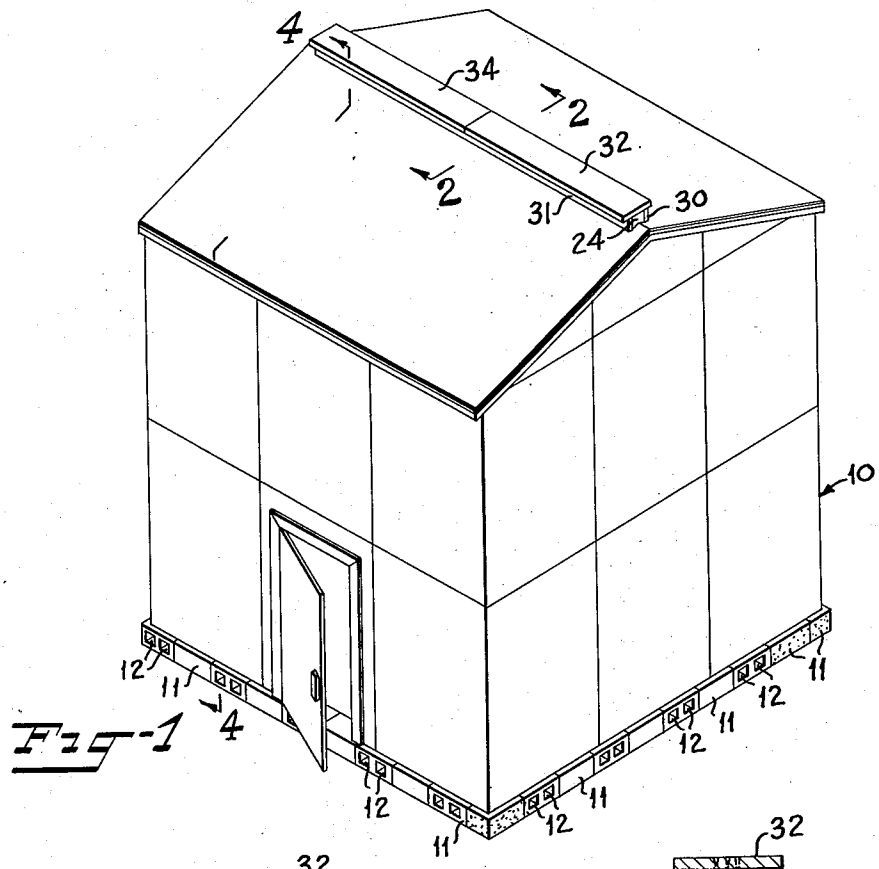


Fig-1

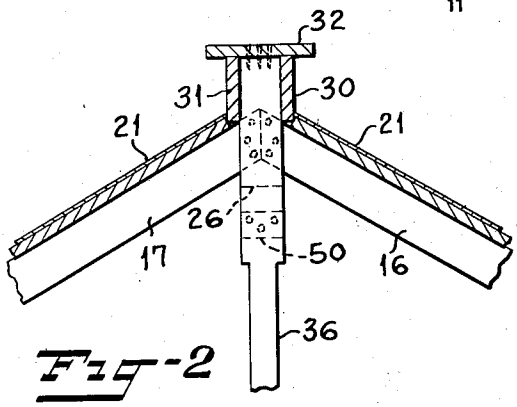


Fig-2

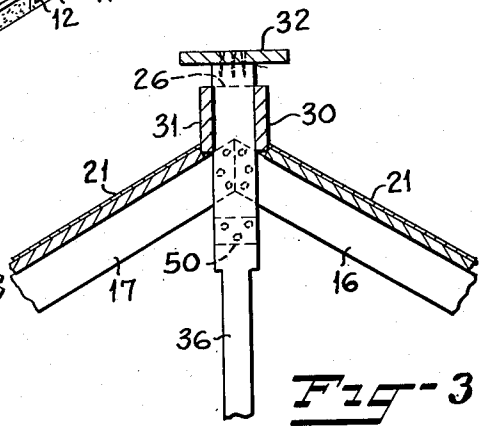


Fig-3

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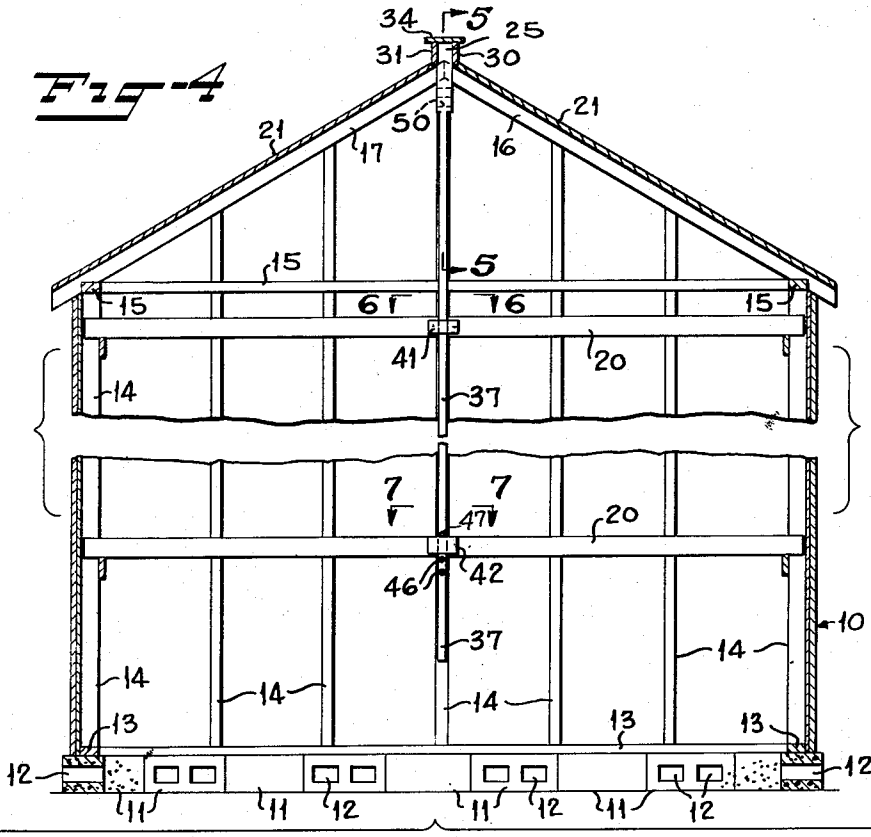
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COMB VENTILATOR FOR TOBACCO BARNS

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Fig-4



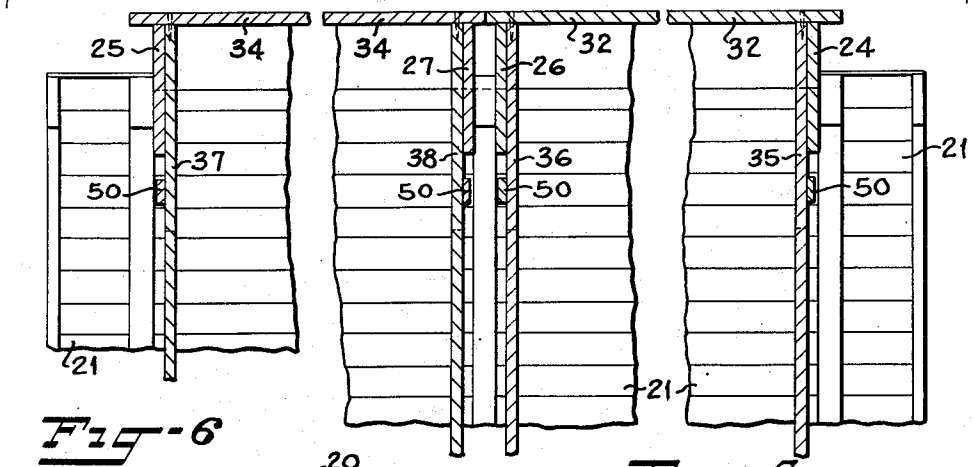


Fig-6

Fig-5

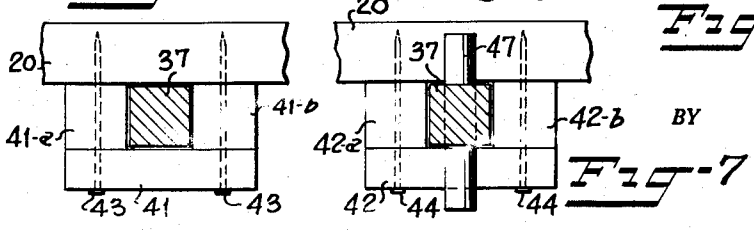


Fig-7

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UNITED STATES PATENT OFFICE

2,610,569

COMB VENTILATOR FOR TOBACCO BARNS

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Application April 25, 1949, Serial No. 89,440

2 Claims. (Cl. 98—52)

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This invention relates to improvements in tobacco barns employed in the curing of tobacco and more especially to ventilating apparatus adapted to be mounted at the ridge of gable or A-type roofs of tobacco barns and which has means depending therefrom for adjusting the same, whereby the amount of air passing upwardly through the tobacco being dried may be regulated.

In the curing of tobacco, the tobacco is placed on tobacco sticks which are arranged in tiers in the interior of a barn and in order to insure uniform curing of the tobacco within a particular barn, it is necessary that air be admitted at the lower part of the barn and to further provide ventilating means at the top of the barn from which the air may escape.

There are many tobacco barns now in use which are not provided with a suitable ventilating means to permit the air to escape from the barn, and it is, therefore, an object of this invention to provide a simple and easily constructed ventilating apparatus which may be applied to existing tobacco barns with a minimum of additional labor and materials.

It is another object of this invention to provide a longitudinally extending opening at the ridge of a gable-roofed tobacco barn, the opening extending substantially the entire length of the barn, and to further provide a plurality of frame members of substantially the same width as the opening, each of which is adapted to be secured to two adjacent rafters at their junction point, these frame members extending a substantial distance above the opening. Wall members are secured to opposed edges of these frame members to thus form an elongated open-topped housing extending substantially the entire length of the ridge of the roof. These side walls are adapted to normally support one or more cover members which extend the entire length of the housing and the width of these cover members being substantially greater than the width of the housing. Depending from these cover members and adjacent opposite ends of each of the cover members, are control bars which extend downwardly and terminate closely adjacent the floor of the barn where they are within easy reach of an operator so that they may be raised, thus opening the cover members for permitting egress of air from within the barn, there being suitable means associated with these depending bars for locking them in any desired elevated position.

Some of the objects of the invention having been stated, other objects will appear as the description proceeds, when taken in connection with the accompanying drawings, in which—

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Figure 1 is an isometric view of a tobacco barn provided with a gable or A-type roof and showing the invention applied thereto;

Figure 2 is an enlarged vertical sectional view taken substantially along the line 2—2 in Figure 1 and showing the ventilating means in closed position;

Figure 3 is a view similar to Figure 2 but showing the ventilating means in open position;

Figure 4 is an enlarged vertical sectional view through a tobacco barn with parts omitted and is taken substantially along the line 4—4 in Figure 1;

Figure 5 is an enlarged vertical sectional view with parts broken away and is taken substantially along the line 5—5 in Figure 4;

Figure 6 is an enlarged fragmentary sectional plan view taken substantially along the line 6—6 in Figure 4;

Figure 7 is a view similar to Figure 6 and is taken along the line 7—7 in Figure 4.

Referring more specifically to the drawings, the numeral 10 broadly designates a tobacco barn, the foundation of which comprises a plurality of concrete blocks 11, alternate ones of which are turned on their sides to expose their air spaces 12 and to allow air to pass therethrough. Sills 13 are disposed on top of the blocks 11 and support a plurality of spaced uprising studs or frame members 14, on the top ends of which the usual plate members 15 are secured.

The lower end of gable rafters 16 and 17 are secured on opposed plate members 15 and corresponding rafters 16 and 17 are joined together at their upper ends, the usual ridge board being omitted from tobacco barns of this type.

The barn is provided with a plurality of tier poles 20, only two of which are shown in Figure 4, and on which tobacco sticks with tobacco thereon are adapted to be placed for a curing operation. These tier poles 20 are usually suitably secured at their ends to the uprising studs 14.

The rafters 16 and 17 are covered with a suitable roofing material 21, which, in barns of this type, usually covers the entire area defined by the rafters 16 and 17. However, in this instance, the covering is cut away at the comb portion of the barn in the event that the present ventilating apparatus is to be applied to an existing barn, and in the event of a new barn, obviously the roofing material would terminate a substantial

distance from the junction point of the rafters 16 and 17 at each side thereof, to thus provide an opening which extends substantially the entire length of the comb portion of the roof 21.

Obviously, the rafters 16 and 17 span the longitudinally extending opening at the comb portion of the roof 21. The proximate sides of the outermost of these rafters 16 and 17 have suitable frame or spacer members 24 and 25 secured thereto and extending a substantial distance above the opening. There is also provided a pair of frame members 26 and 27 which are identical to the frame members 24 and 25 and which are secured to opposite sides of the centermost of the rafters 16 and 17 as shown in Figure 5.

It is to be understood that a barn of substantially greater length than the barn shown in the drawings, would, necessarily, have additional frame members, such as the frame members 24 to 27, inclusive, secured to others of the rafters, not shown. However, the distance from one of the frame members 25 to the frame member 27, for example, may be approximately eight feet.

Secured to opposite sides of the frame members 24 to 27, inclusive, are vertical side wall members 30 and 31, the lower edges of which engage opposite edges of the opening formed at the comb portion of the roof. Normally resting on the upper ends of the frame members 24 and 26 is a planar cover member 32 which also rests on the side wall members 30 and 31 and the side edges of the cover member 32 extend a substantial distance beyond the side wall members 30 and 31.

A similar planar cover member 34 normally rests on the upper ends of the frame members 25 and 27 and on the upper edges of the vertical side wall members 30 and 31 and also extends a substantial distance beyond the side wall members 30 and 31.

Control staffs 35 and 36 and 37 and 38 depend from the cover members 32 and 34, respectively. All of these control staffs 35 to 38, inclusive, are identical, only the control staff 37 being shown in its entire length in Figure 4. It will be noted that this staff 37 is preferably of substantially greater width at its upper end than at its lower portion and this widened portion is adapted to slide against the proximate surfaces of the side walls 30 and 31 to prevent the cover at the upper end thereof from tilting as it is adjusted, say from the position shown in Figure 2 to the position shown in Figure 3.

It will be noted in Figure 5 that the remote surfaces of the upper portion of the control staffs 35 and 36 slidably engage the proximate surfaces of the frame members 24 and 26 while the remote surfaces of the control staffs 37 and 38 slidably engage the proximate surfaces of the frame members 25 and 27. It is thus seen that the control staffs 35 and 36 and 37 and 38 prevent longitudinal movement of the cover members 32 and 34 respectively, as they are raised and lowered for adjusting the size of the opening at the upper ends of the side walls 30 and 31.

All of the control staffs 35 to 38 being identical, by referring to Figure 4 there is shown the control staff 37 and it is seen that these control staffs 35 to 38, inclusive, are mounted for vertical sliding movement in suitable guide blocks 41 and 42 being shown in detail in Figures 6 and 7, respectively. It will be noted in Figure 6 that the guide block 41 bears against spacer blocks 41*a* and 41*b* and the guide block 41 with its spacer blocks 41*a* and 41*b* is secured as by nails 43

to the uppermost of the tier poles 20 shown in Figure 4. The guide block 42 is identical to the guide block 41, there being spacers 42*a* and 42*b* against which the block 42 is adapted to be secured by suitable nails 44 which also secure the guide block 42 and its spacer blocks 42*a* and 42*b* to the lowermost of the tier poles 20 in Figure 4.

Referring to Figure 4 it may be observed that the lower portion of the control staff 37 is provided with a plurality of bores 46 which are adapted to be slidably penetrated by a locking pin 47 (Figures 4 and 7), this pin 47 being adapted to engage the upper surfaces of the block 42 and the lowermost of the tier poles 20 in Figure 4 to thus hold the cover members 32 and 34 in a desired elevated position. It is to be understood that all of the control staffs 35 to 38, inclusive are mounted in a manner identical to the control staff 37 in Figure 4.

Referring to Figures 2, 3 and 5, it may be observed that each of the control staffs 35 to 38 is provided with a block or stop member 50 which is suitably secured thereto and which is adapted to engage the lower edge of the corresponding frame members 24 to 27, inclusive, to thus prevent an operator from elevating the cover members 32 and 34 above a predetermined position.

The side walls 30 and 31 and the closing frame members 24 and 25 thus provide an effect similar to that of a stack or chimney while the cover members 32 and 34 not only serve as a roof for the opening at the comb of the roof but serve to control the size of the opening. Since the cover members are flat and of relatively thin material, they will not interfere with the normal currents of air passing over and under them while in open position. The side walls 30 and 31 and the flat cover members are conducive to prevent turbulence of air in the case of winds of relatively high velocity and also to prevent down drafts through the comb opening.

In the drawings and specification there has been set forth a preferred embodiment of the invention, and although specific terms are employed, they are used in a generic and descriptive sense only, and not for purposes of limitation, the scope of the invention being defined in the claims.

I claim:

1. In a tobacco barn having a gable roof comprising two sloping roof sections joined together at their upper ends, the sloping roof sections having an elongated rectangular opening at their junction point, an uprising vertical side wall member disposed on each side of the opening and extending for the length of the opening, a spacer member positioned at each end of said opening and closing the ends thereof and supporting said side walls, a planar cover member normally resting on the upper edges of the side wall members with its edges overhanging the side walls for closing the opening, a plurality of control staffs secured to the lower surface of said longitudinally extending planar cover member and extending downwardly between the side walls and through said opening, the lower end of the control staffs terminating adjacent the floor of the barn, stop blocks on said control staffs adapted to engage said spacer members to limit upward movement of said shafts and locking means for holding the control staffs and the planar cover member in elevated position to allow air to flow in a horizontal path between said side wall members and said planar cover member, the control staffs at their upper ends being wide enough to slidably

engage the inner surfaces of the vertical side wall members.

2. In a tobacco barn having a gable roof comprising two sloping roof sections joined together at their upper ends, the sloping roof sections having an elongated rectangular opening at their junction point, an uprising vertical side wall member disposed on each side of the opening and extending for the length of the opening, a spacer member positioned at each end of said opening and closing the ends thereof and supporting said side walls, a planar cover member normally resting on the upper edges of the side wall members with its edges overhanging the side walls for closing the opening, at least one control staff secured to the lower surface of said longitudinally extending planar cover member and extending downwardly between the side walls and through said opening, the lower ends of the control staff terminating adjacent the floor of the barn, stop blocks on said control staffs adapted to engage said spacer members to limit upward movement of said shafts and locking means for holding the control staff and the planar cover member in elevated position to allow air to flow in a horizontal path between said

side wall members and said planar cover member, said control staff spanning the distance between and slidably engaging proximate surfaces of the side walls of said opening to thereby serve as guiding means for the cover member, a plurality of guide members secured to the lower surface of the cover member and extending downwardly in a sliding fit between the side wall members.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
82,746	Peckham	Oct. 6, 1868
410,660	Turner	Sept. 10, 1889
952,230	Callaway	Mar. 15, 1910
2,228,935	Von Roeder	Jan. 14, 1941

FOREIGN PATENTS

Number	Country	Date
15,832	Great Britain	1905