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VENTILATOR FOR ENCLOSED SPACES

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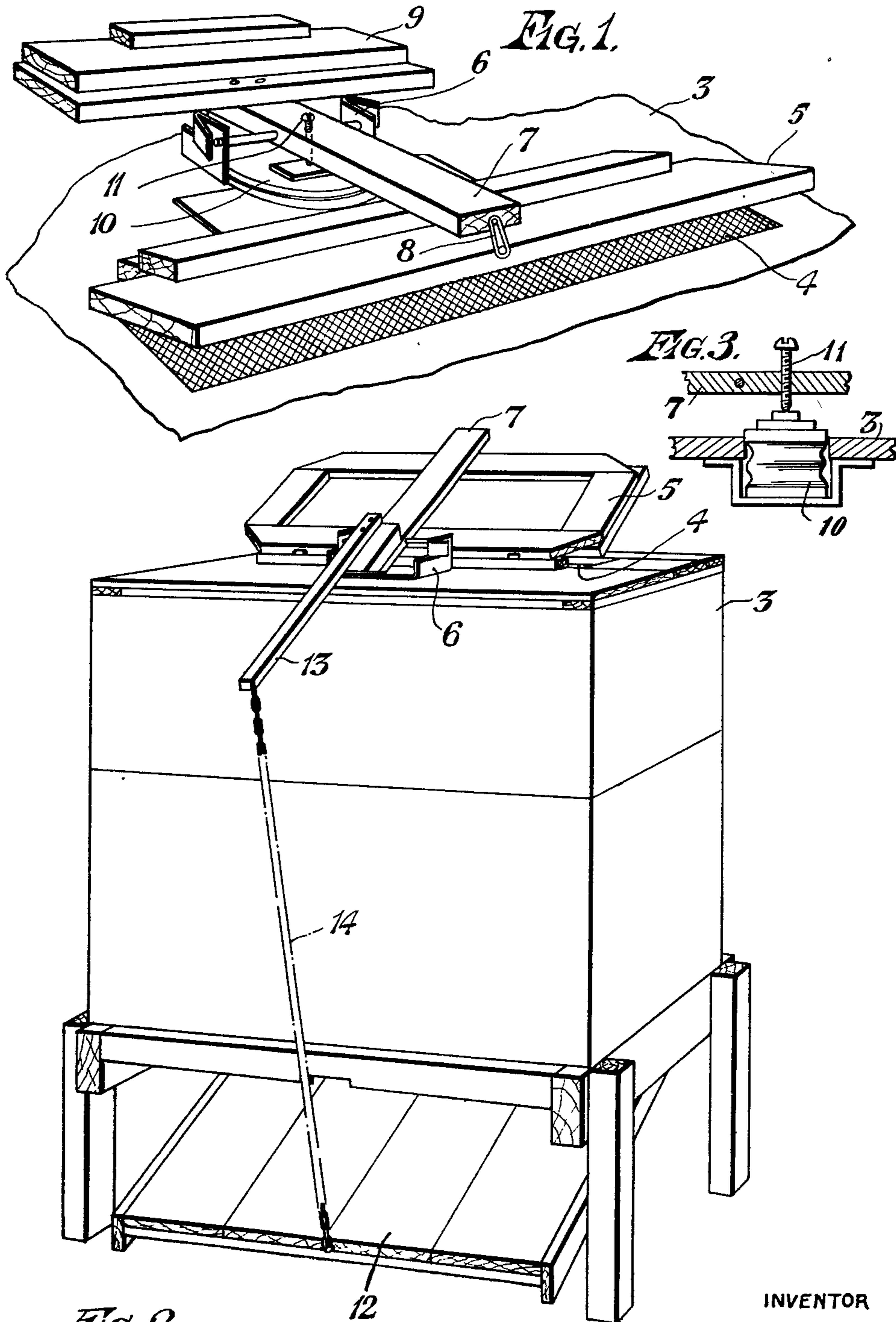


FIG. 2.

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VENTILATOR FOR ENCLOSED SPACES

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4 Claims. (Cl. 236—49)

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This invention relates to ventilators for enclosed spaces such as beehives, glasshouses, dwelling houses and other buildings and other enclosed spaces to which it may be desired to admit fresh air when the temperature in the space reaches a predetermined value and to structures embodying such ventilators and the present invention aims at providing a ventilator of simple construction which is reliable and effective in operation, opening to admit fresh air when the temperature attains a given value.

In accordance with the present invention a pivoted flap is adapted to control the admission of fresh air and is adapted to be opened and closed by the action of a temperature responsive element subjected to the temperature in the enclosed space.

A plurality of pivoted flaps can be operated by a single temperature responsive element and, for instance in the case of a beehive, one flap may comprise a floorboard or a section of the floorboard and the other a flap on the top of the hive and the several flaps may be provided with counterweights or one flap may act as the counterweight for the other.

The invention will be further described with reference to the accompanying drawings illustrating preferred embodiments of the invention in which:

Figure 1 is a perspective view of a ventilator, and

Figure 2 shows a form of the invention applied to a beehive having a pivoted floorboard section.

Figure 3 is a sectional view of part of the top wall of the hive and part of the flap operating pivoted bar for showing the thermostat and adjustable operative connection between the thermostat and bar.

The invention will be described in detail as applied to beehives in which the top of the hive 3 is provided with a ventilating aperture 4 adapted to be closed by a pivoted or hinged flap 5. Pivoted over said flap 5 in a suitable support indicated generally at 6, is a bar 7 connected to the flap 5 at one end by means of a flexible coupling 8 and supporting at the other end a counterweight 9 to balance part of the weight of the flap and thus reduce the force necessary for opening and closing the latter; to adjust the counterweight additional pieces may be added as required. Located within the beehive 3 is a temperature responsive element such as a hot air thermostat, a bi-metal strip device or the like. As shown the top cup 10 of an air thermostat comes outside the beehive 3 and is engaged by an adjusting screw 11 on bar 7.

The method of operation will be readily understood; when the temperature rises in the beehive the cup 10 rises and lifts the bar 7 to open the ventilator flap 5 and when the temperature

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falls said flap is allowed to close under its own weight. Adjustment of the temperature is obtainable by adjusting screw 11.

The aforesaid parts are formed of any suitable material such as wood, metal, glass or plastics or any combination of such materials and it will be appreciated that the invention is not limited in its application to beehives but can be applied to many types of enclosed space such as glasshouses, rooms or dwelling houses or the like.

Figure 2 represents a further refinement as applied to a beehive in which a pivoted floorboard is adapted to move with the flap 5 so that both are opened or closed simultaneously. In this case the counterweight 9 is replaced by a rearwardly projecting lever 13 connected to the floorboard 12 by means of a flexible connection 14 such as a chain or cable. In this way the need for a separate counterweight is avoided and a more effective control of the temperature in the enclosed space is obtained; the simultaneous control of two or more ventilating openings from a single temperature control is not limited in scope to beehives but can be applied to other purposes.

What I claim is:

1. A ventilator for an enclosed space comprising a horizontal wall as part of the enclosure for said space, said wall having an opening therein, a pivoted flap hinged at an edge thereof to said wall next an edge of said opening and adapted to be opened and closed to control the admission of fresh air to the said space, a temperature responsive element within and subjected to the temperature in the space, said element having a movable end in proximity to said horizontal wall, and a pivoted bar exterior of said space crosswise of said wall and extending across and in proximity to said movable end of said temperature responsive element and having operative engagement therewith, an end of said bar being connected to an edge of said flap remote from the hinged edge of said flap and adapted to open and close said flap in response to rise and fall respectively of said movable end of said temperature responsive element.

2. A ventilator for an enclosed space comprising a horizontal wall as part of the enclosure for said space, said wall having an opening therein, a pivoted flap hinged at an edge thereof to said wall next an edge of said opening and adapted to be opened and closed to control the admission of fresh air to the said space, a temperature responsive element within and subjected to the temperature in the space, said element having a movable end in proximity to said horizontal wall, a pivoted bar exterior of said space crosswise of said wall and extending across said movable end of said temperature responsive

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element, and an adjusting screw depending from said bar with the lower end of said screw having operative engagement with said movable end of the temperature responsive element, an end of said bar being connected to an edge of said flap remote from the hinged edge of said flap and adapted to open and close said flap in response to rise and fall respectively of said movable end of said temperature responsive element.

3. A ventilator for an enclosed space comprising an enclosure for said space, said enclosure having two openings therein, two pivoted flaps, one for each of said openings, each of said flaps being hinged at an edge thereof to said enclosure next an edge of an opening and adapted to be opened and closed to control the admission of fresh air to the said space, a temperature responsive element within and subjected to the temperature in the space, said element having a movable end in proximity to a horizontal wall of said enclosure, and a pivoted bar exterior of said space crosswise of said enclosure and extending across said movable end of said temperature responsive element and having operative engagement therewith, said bar being connected to said flaps remote from the pivoting of said bar and adapted to open and close said flaps in response to rise and fall of said movable end of said temperature responsive element, connection of said flaps with the bar being constructed and arranged to counterbalance one flap by the other.

4. A ventilator for an enclosed space comprising an enclosure having a top and a bottom each having an opening therethrough into said

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space, a pivoted flap for the opening in said top and a flap for the opening in said bottom, each said flap being hinged at an edge thereof to said enclosure next an edge of an opening and adapted to be opened and closed to control the admission of fresh air to the said space, a temperature responsive element within and subjected to the temperature in the space, said element having a movable end in proximity to said top of the enclosure, and a pivoted bar exterior of said space crosswise of said enclosure and extending across said movable end of said temperature responsive elements and having operative engagement therewith, said bar having connection to each of said flaps remote from the hinged edges of said flaps and adapted to open and close said flaps in response to rise and fall respectively of said movable end of said temperature responsive element.

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