No. 896,966. PATENTED AUG. 25, 1908.

J. H. BAILEY.

REGISTER OR VENTILATOR.

APPLICATION FILED NOV. 22, 1907.

Fig. 1.

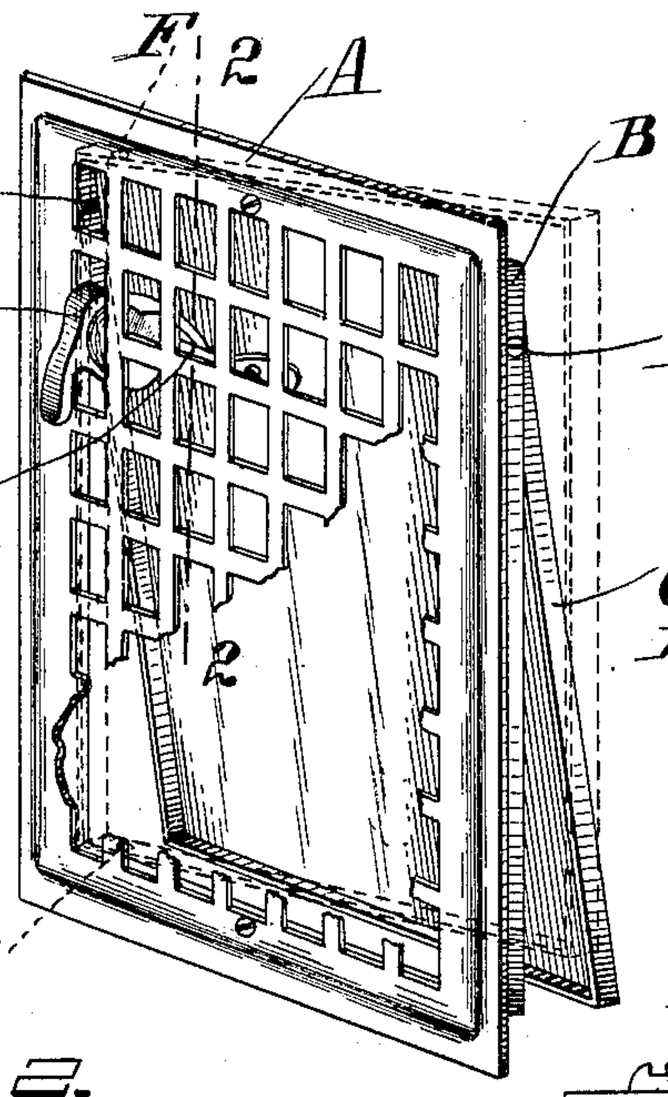


Fig. 2.

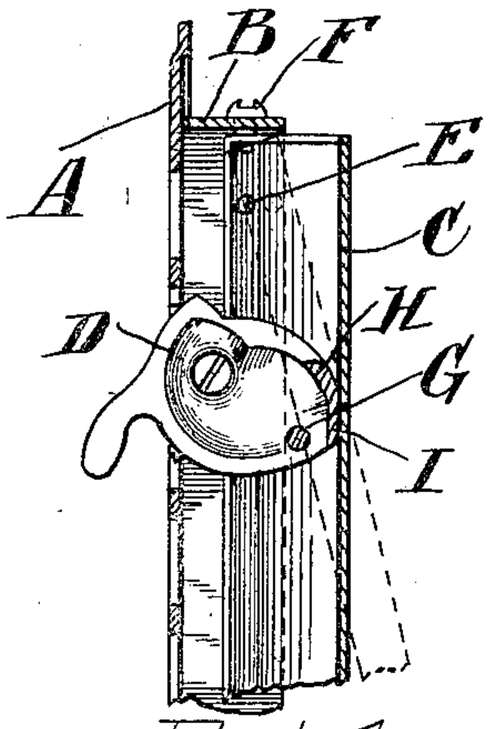


Fig. 4.

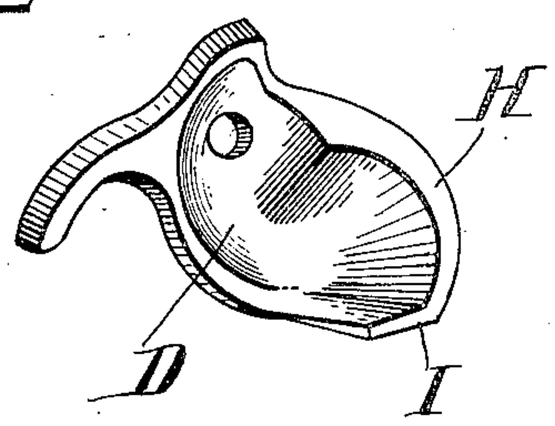


Fig. 5.

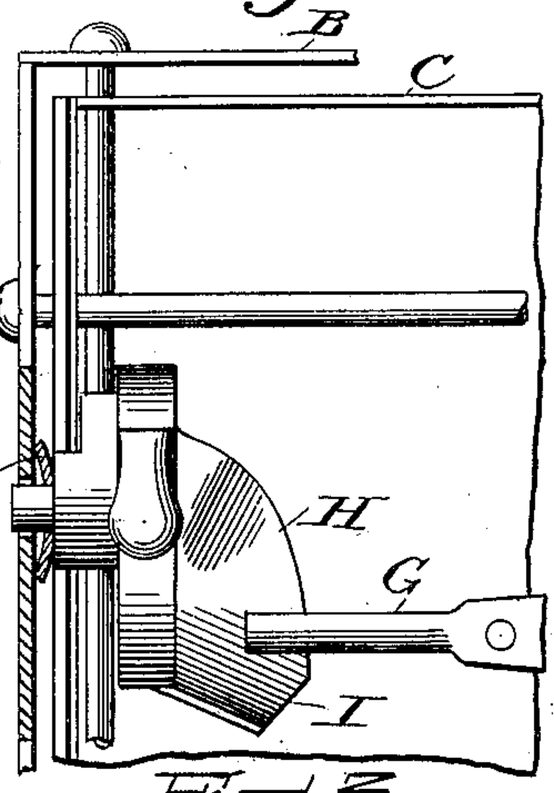
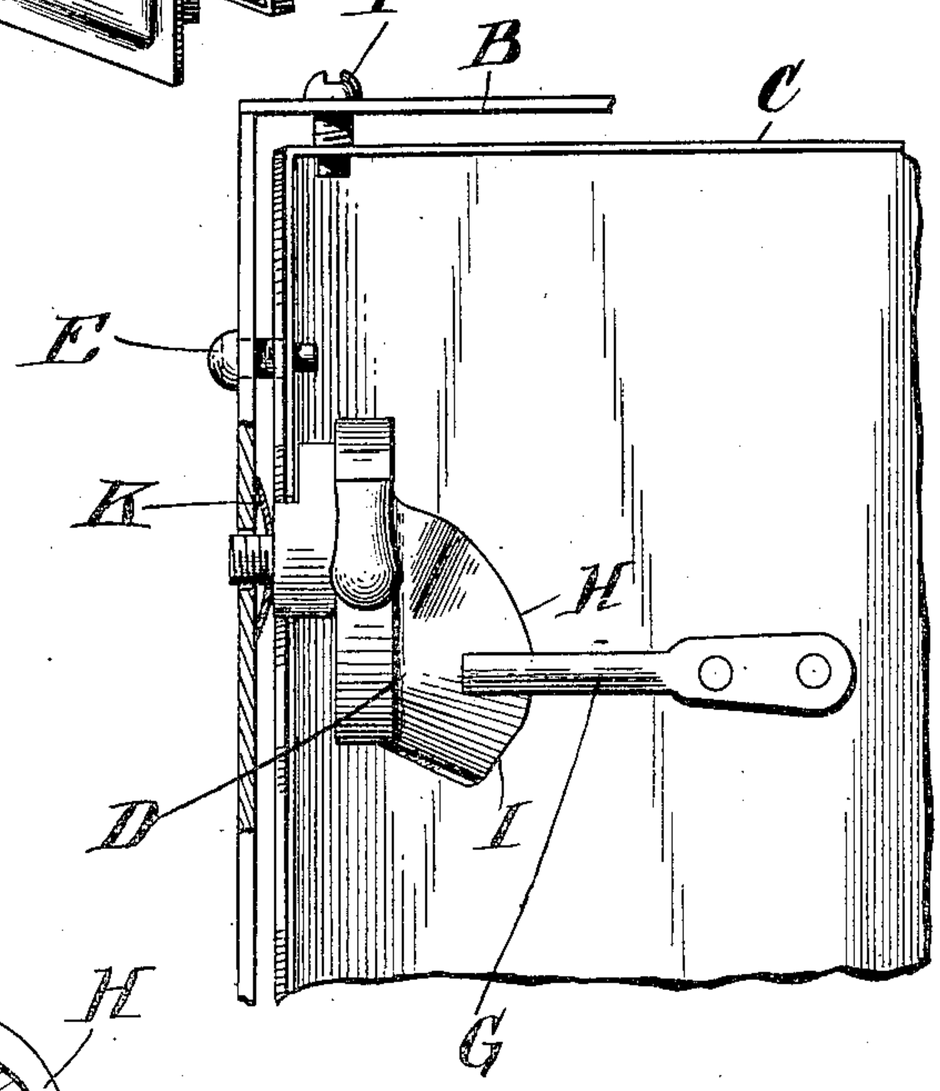


Fig. 3.



Attest:

E. O. Mitchell
Karl Fenning

by

Inventor:
James H. Bailey
Wm L. Pierce
his Atty

UNITED STATES PATENT OFFICE.

JAMES H. BAILEY, OF NEW YORK, N. Y., ASSIGNOR TO TUTTLE & BAILEY MANUFACTURING COMPANY, A CORPORATION OF NEW YORK.

REGISTER OR VENTILATOR.

No. 896,966. Specification of Letters Patent. Patented Aug. 25, 1908.

Application filed November 22, 1907. Serial No. 403,308.

To all whom it may concern:

Be it known that I, JAMES H. BAILEY, a citizen of the United States, residing in the borough of Brooklyn, city of New York, county of Kings, and State of New York, have invented or discovered certain new and useful Improvements in Registers or Ventilators, of which the following is a specification.

My invention relates to that class of registers or ventilators which are intended to be installed in an aperture in the wall of a room for the inlet or outlet of air.

The particular class to which my invention relates usually comprises a perforated face-plate mounted on a rectangular body portion which fits in the aperture in the wall, and one or more fans or valves by the operation of which the aperture may be closed or opened to admit a passage of air, together with some device for operating the fans or valves. The body portion of this register or ventilator is usually in the form of a rectangle, two of whose sides are longer than the other sides. It is desirable, if not necessary, to have the fan or valve so arranged that it swings on a horizontal axis, so as to catch the air passing through the flue into which the register or ventilator opens, and directs it through the register into the room. The apertures in the wall are some times made with the longer dimension vertical and some times with the longer dimension horizontal. This necessitates the making and carrying in stock of two types of registers or ventilators, namely—those known to the trade as "verticals" adapted to be applied to an aperture having its greater dimension vertical, and consequently carrying a fan on an axis parallel to the shorter sides of the body of the register or ventilator; and those known to the trade as "horizontals" adapted to be applied to an aperture having its greater dimension horizontal and consequently carrying a fan on an axis parallel to the longer sides of the body of the register or ventilator.

One object of my invention is to overcome the difficulty, inconvenience and expense involved in making and carrying in stock both "vertical" and "horizontal" registers or ventilators, and the consequent confusion and mistakes arising from a lack of apprehension of the meaning of the terms "vertical" and "horizontal" as applied to registers or ventilators, and the errors of packing and shipping "verticals" for "horizontals."

I have provided a register having a face-plate and body of the usual type and carrying a fan which, when it leaves the factory, is mounted on a plurality of detachable or removable axles or pivots, there being one set for swinging the fan on an axis parallel to the greater dimension of the register or ventilator, and another set for swinging the fan on an axis parallel to the shorter dimension of the register or ventilator. Inasmuch as these axles are removable, it will be obvious that, if all but one set be removed, the fan may be swung on the remaining set, provided there be present proper means for actuating the fan. For this purpose I have devised a cam which is pivoted to one side or end of the body of the register or ventilator and the operative portion of which rests between the face of the fan and an arm rigidly attached to the fan in such a way that when the cam is swung on its pivot in one direction, the fan is opened by pressure of the cam against the fan; while when it is swung in the other direction on its pivot, the fan is closed either by gravity or by pressure of the other side of the cam on the arm attached to the fan. I provide a friction device in the bearing of the cam sufficient to overcome the weight of the fan, so that it may be held in any position between full-open and full-closed. One portion of the cam is flat and this portion rests against the face of the fan when it is open, thereby, affording an additional means of holding the fan open.

In the accompanying drawings which illustrate one method of practicing my invention, Figure 1 is a perspective view of my improved register or ventilator with the fan swung open on its shorter axis, a portion of the face-plate being broken away to more clearly illustrate the device. I have added to this figure in dotted lines the position which would be assumed by the fan, were it swung on its longer axis. Fig. 2 is a partial section on the lines 2—2 illustrating the manner in which the flat portion of the cam locks the fan open. Fig. 3 is a front view of a portion of the device with the face-plate removed. Fig. 4 is a perspective of the cam. Fig. 5 is a view similar to Fig. 3 of an optional form of my device.

It will be seen that the device consists of a

face plate A mounted on a body portion B which carries a fan C and on which is mounted the cam D. In Fig. 1 I have shown two screws E E in the body portion B, and projecting into the edges of the fan C which is provided with holes for the engagement of the ends of the screws E which ends are stripped of threads and made smooth, so as to give a ready bearing for the fan. I have also shown in dotted lines another set of screws F F applied in the same way as the screws E E to form a bearing for the fan on its longer axis.

In Fig. 3, both sets of pivot screws are in position, and it is obvious that at this time the fan is incapable of any movement, it being attached to the body portion on each of its four sides. If the screws on either pair of opposite sides are removed, it is obvious that the fan will then be capable of motion on the other pair of screws as an axis; and it will be seen that by this construction it is possible to meet all the demands of the trade by manufacturing and carrying in stock but a single type of register or ventilator which is, in fact, both a "vertical" and a "horizontal", it being necessary merely to select which set of pivot screws is to be removed and discarded when the register or ventilator is installed to determine whether it will act as a "vertical" or a "horizontal."

Rigidly attached to the face of the fan is an arm G between which and the face of the fan the cam D extends. The curved portion H of the cam acts on the face of the fan or the arm G to open or close the fan as the thumb piece of the cam is depressed or raised, but when the fan has been fully opened and the curved portion of the cam completely traveled, the flat portion I rests against the face of the fan and holds it open against the force of gravity or any draft that may be in the flue, it being necessary in order to close the fan to pass over the sharp point between the portions H and I. In order to hold the cam in intermediate positions and keep it from working loose in its bearing, I provide a curved leaf spring K surrounding the pivot for the cam and bearing against the adjacent faces of the cam and the body portion of the register or ventilator on which it is mounted. It will be seen that by this construction, I obtain a mechanism for opening and closing the fan which has sufficient freedom of engagement to permit of a single operating cam opening the fan on either axis, and at the same time a mechanism which is positive and sure in its action.

I have described the pivots as consisting of pairs of screws, but it is obvious that a single rod extending across the fan might be substituted for a pair of screws as shown in Fig. 5 and other changes in details might be made without departing from my invention.

I claim as my invention:

1. In a register or ventilator, a fan arranged to swing on either of a plurality of axes.

2. In a register or ventilator, a fan arranged to swing on either of two axes at right angles to each other.

3. In a register or ventilator, a fan, a detachable horizontal axle therefor and a detachable vertical axle therefor, so arranged that when either axle is removed the fan is carried by the other axle.

4. In a register or ventilator, a fan, a detachable axle therefor parallel to its longer dimension and a detachable axle therefor parallel to its shorter dimension so arranged that when either axle is removed the fan is carried by the other axle.

5. In a register or ventilator, a fan arranged to swing on either of a plurality of axes and means for operating the fan on either axis.

6. In a register or ventilator, a fan arranged to swing on either of a plurality of axes and a single means for operating the fan on either axis.

7. In a register or ventilator, a fan arranged to swing on either of a plurality of axes, a fan actuating cam, and means for holding it against the impetus of the fan when in any position on any axis.

8. In a register or ventilator, a fan arranged to swing on either of a plurality of axes, an arm carried by the fan and a pivoted cam extending between the fan and the arm to open and close the fan on either axis.

Signed at New York, this 19th day of November, 1907.

JAMES H. BAILEY.

Witnesses:

CLIFFORD H. TUTTLE,

KARL FENNING.