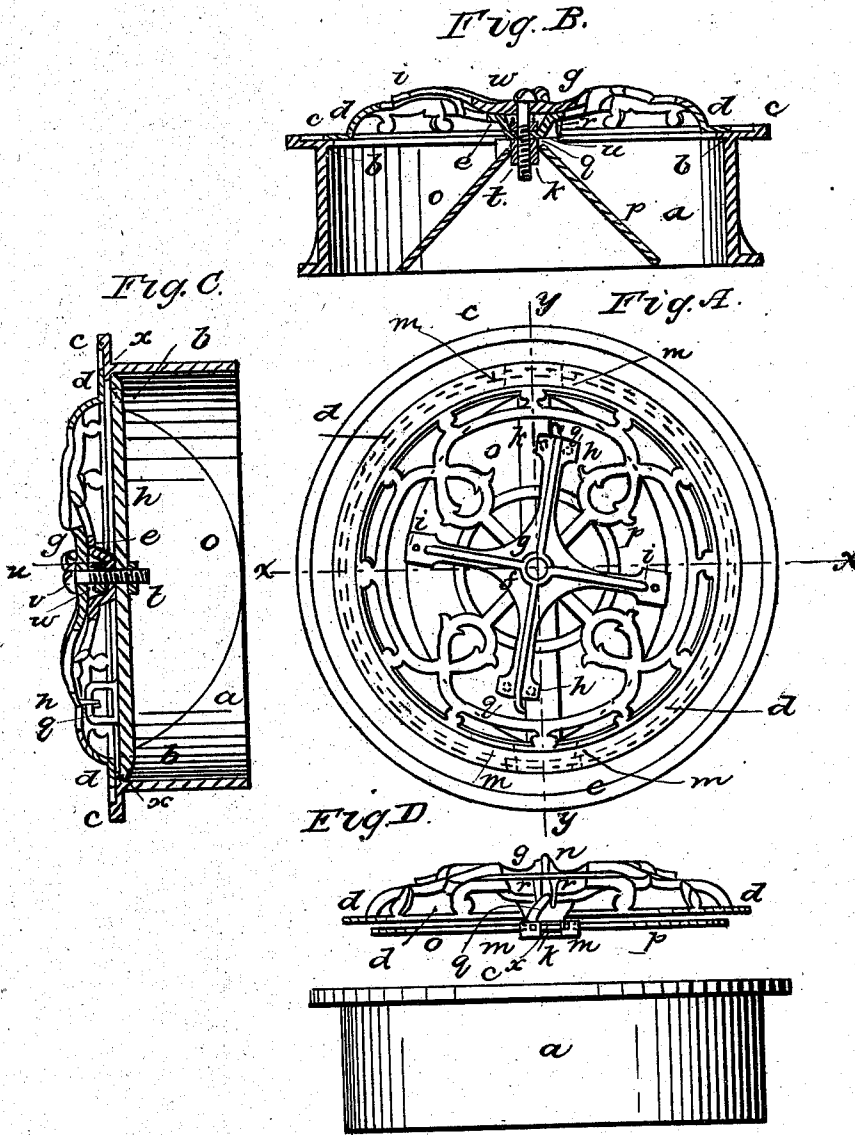


H. M. PHINNEY.  
Hot-Air Register.

No. 102,967.

Patented May 10, 1870.



Witnesses  
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# United States Patent Office.

HUGH M. PHINNEY, OF CAMBRIDGE, MASSACHUSETTS.

Letters Patent No. 102,967, dated May 10, 1870.

## VENTILATOR-REGISTER.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HUGH M. PHINNEY, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented an Improvement in Ventilator-Registers; and I do hereby declare that the following, taken in connection with the drawings which accompany and form part of this specification, is a description of my invention sufficient to enable those skilled in the art to practice it.

My invention relates to the construction of ventilator-registers, with particular reference to the manner of applying the ventilator-blades or valves to a ring, which ring is removably attached to a thimble, to be set in the wall of the room, so that the ventilator, while having provision for being adjustably opened to whatever extent is desirable, may be wholly removed from the thimble and as one piece, thus enabling the same thimble to be used for reception of a stove-funnel, a close stopper, or the ventilator-valves or blades and their operating mechanism.

My invention consists primarily in a ventilator-register, which has provision for attachment to and removal from a flue-thimble to be set in the wall of a room, when the register is so constructed that the thimble forms the frame in which the ventilator-blades or valves swing, the valves being pivoted to the ornamental ring or open-work plate which carries the valve-operating levers.

The drawings represent a ventilator-register embodying my invention.

A shows a front view of the register.

B, a cross-section on the line *x x*.

C, a cross-section on the line *y y*.

D, a view of the thimble and the register-valve mechanism detached.

*a* denotes a round or cylindrical metal thimble, which, setting into the wall of a room, forms the mouth of the ventilating-flue, the front of the thimble being made with an inwardly-projecting flange, *b*, and an outwardly-projecting flange, *c*.

*d* denotes a metal rim or ring crossed and filled in by an open-work of bars and rings, which stand out from the front face of the ring, as seen at D, a box or bearing, *e*, being formed at the center of the register for supporting a pin, *f*, upon the outer end of which is fixed a center-piece or hub, *g*, having projecting from it radial arms or levers *h h* and *i i*.

The pin *f* extends through the open register, and upon its inner end is supported a cross-bar, *k*, extending diametrically across the back of the ring *d*, the ends of the bar being widened or extended laterally upon both sides, the inner face of each extension *m* sitting against the ring, and having a socket, which forms the bearing for one of the pivots *n* of the ventilator-blades or valves *o p*.

Each valve *o p* is semicircular, or nearly so, in shape, and has, at the opposite ends of its straight edge, the pivots *n*, upon which it swings, to carry it from closed position against the ring to a more or less open position, as seen at A B C.

From the front face of one of the valves *o*, at one end thereof, and from the front face of the valves *p*, at the opposite end thereof, extends an arm, *q*, and each arm *q* is straddled by a fork, *r*, extending from the adjacent end of the radial arm or lever *h*.

Cords being attached to eyes *s* at the outer ends of the two arms *i i*, the arms *h h* are turned by pulling upon one or the other of such cords, and as they turn they operate upon the arms *q* and turn the valves upon their pivots, so as to open or close the valves, as occasion may require.

To fasten the hub *g* firmly to the register-ring, and so as to admit at the same time of its freely moving rotatively, I form the pin *f* as a screw, and place upon it two nuts, *t u*, one, *t*, on the inner side of the bar *k*, and the other, *u*, at the bottom of the box *e*, so that, by screwing up the nut *t*, the screw is clamped tightly in position, while the hub *g*, confined between the head *v* of the screw-pin and the nut *u*, can turn freely upon the pin.

To keep the valves from swinging too freely, however, I place between the hub and the nut *u* a coiled spring, *w*, and, by turning up the nut *u*, the friction of the hub between the end of the spring and the head of the screw may be increased more or less, to whatever extent it is desirable, to bind the hub *g*.

It will be seen that the valve-operating mechanism has no connection with the thimble *a*, the valves being pivoted wholly upon the ring *d*, and that there is no ring or cylinder projecting inwardly from the ring *d*, and forming a frame, in which the valves move, and, by extending across which, the valves shut off or close the mouth of the ventilator-flue, the ring *d* forming the opening register to the flue and the valves shutting against the inner surface of the ring to close the ventilator.

The register and valves are attached to the thimble as follows:

At the opposite ends of the cross-bar *k* are lips *x*, between each of which and the face of the ring a groove is formed, (by the lip and ring.) Each lip *x* extends back of the flange *b* of the thimble, causing the flange to be embraced between the lip and the ring, as seen at C, the ring being removed by pressing it slightly upward, which allows the lower lip to slip over the flange, and being attached to the thimble in the same manner, or by pressing the lower lip in over the flange instead of drawing it out.

I claim—

A ventilator-register, having valves pivoted to and shutting against the fiat inner surface of the circular register-ring *d*, to close the ventilator, substantially as described.

Also, the register-ring and its valves and valve-operating mechanism combined with the thimble *a*, substantially as shown and described.

Also, the combination of the pin *f*, the nuts *t u*, the spring *w*, and the hub *g* of the levers *h i*, when relatively arranged, substantially as shown and described.

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Witnesses:

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