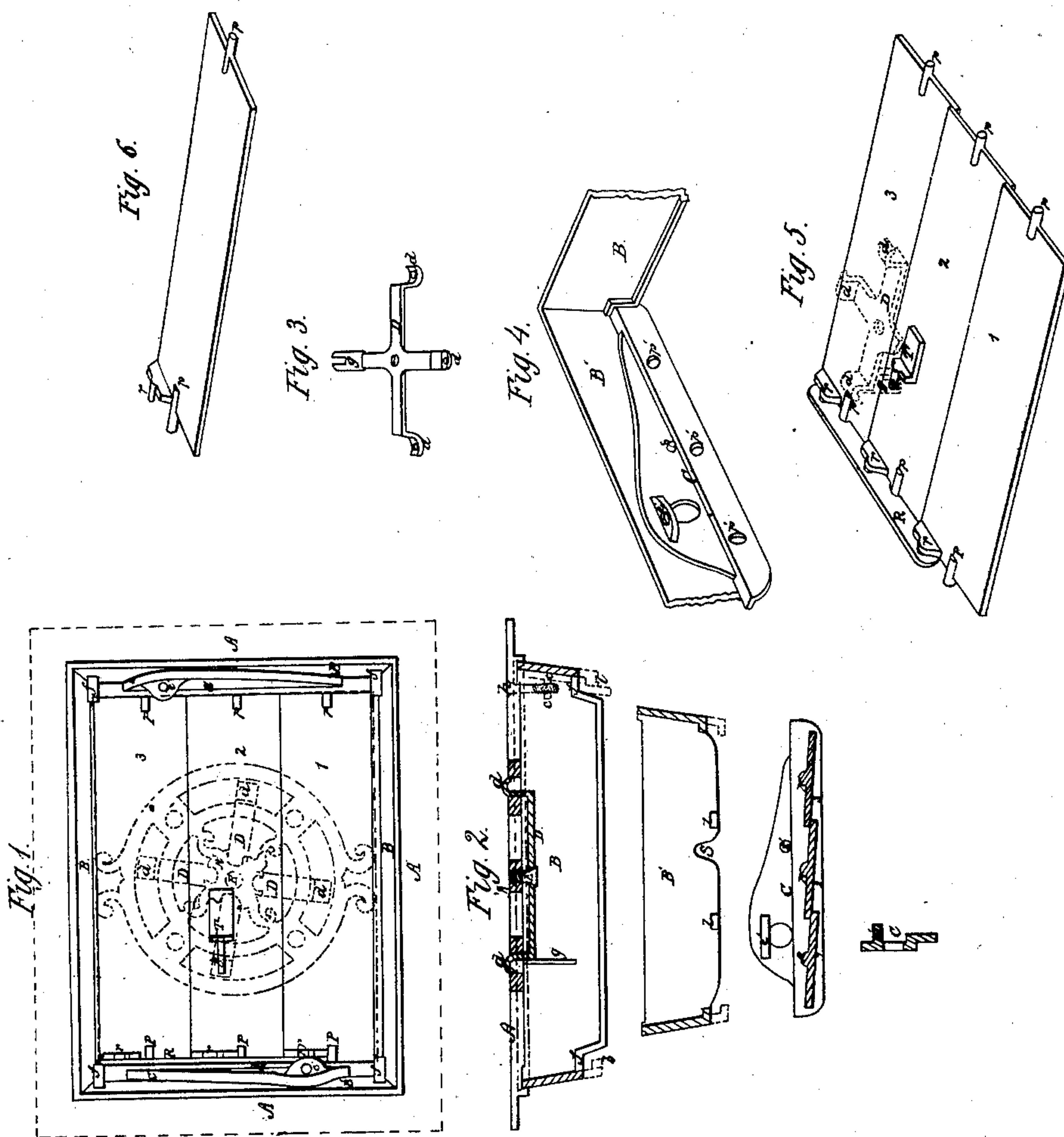


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E. A. TUTTLE.
WARM AIR REGISTER AND VENTILATOR.



Witnesses
H. Amittou Elven
J. J. Morgan

Inventor.
Edmund A. Tuttle

UNITED STATES PATENT OFFICE.

EDWARD A. TUTTLE, OF BROOKLYN, NEW YORK.

WARM-AIR REGISTER AND VENTILATOR.

Specification of Letters Patent No. 20,106, dated April 27, 1858.

To all whom it may concern:

Be it known that I, EDWARD A. TUTTLE, of Brooklyn, county of Kings, and State of New York, have invented a new and useful
5 Improvement in the construction of Warm-Air Registers and Ventilators; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings and
10 to the marks or letters of reference thereon.

This invention consists in an improved article of manufacture, viz. a warm air register made as hereinafter described.

To enable others skilled in the art to make
15 and use my invention I will proceed to describe its construction and operation.

A frame or case B, is formed, at the bottom part of which the leaves or valves 1, 2, 3, are suspended by their pins or axes P, one
20 pin at the central part of the ends of each leaf, and upon which they are balanced and allowed to vibrate about one quarter of a circle, or from the horizontal where they are closed, to the perpendicular where they are
25 wide open. A front or top plate of open or fret work A, is secured upon the top edge of the frame which hides in a measure the valve part of the register when placed in the wall, and presents a finished ornamental ap-
30 pearance. It also serves to protect the leaves when the register is placed in the floor.

A perforated rod R, suspended upon the overhanging crank pins *r*, one for each leaf,
35 connects the leaves all together in such manner, that by turning one they are all made to turn in a corresponding direction.

Leaves, thus connected and made to operate, I denominate the blind valves, and
40 are especially adapted to registers and ventilators requiring a great number of leaves as in those for fireplaces with narrow flues, or in the larger sizes of registers, such valves being more cheaply connected and fitted to-
45 gether tightly, and also better for controlling or directing the currents of air passing through them. The connecting rod R, is suspended along the ends of the leaves, where it is most hid from view, and where
50 also the crank pins *r*, to which it is attached are more readily molded, and cast upon the leaves in working order.

In furnishing a device at the front or top part of the register, by which to operate the
55 blind valves at the back, and which shall combine in itself the requirements both of

a register and ventilator in the various positions in which they are used, a horizontal vibrating center piece D, as shown, possesses advantages over all others, inasmuch as it
60 is readily operated by the hand or foot, when placed in or near the floor, and is also suitable for attaching cords, by which to operate it when placed above reach in the side walls of dwellings, and that without
65 any additional pieces or parts being requisite in the latter case.

In order to combine in the same register, the advantages, both of such vibrating center and the blind valves, with greater sim-
70 plicity and economy, the said center piece D, is made to operate the blind valves, by imparting its vibrations directly and first to one central leaf 2, by means of a finger or
75 prong *g*, connected with the crank pin, *t*, upon the upper surface of said leaf. This leaf 2, then imparts its motion to the connecting rod R, which in turn is made there-
80 by to operate all the other leaves in a corresponding manner to the leaf 2. Therefore, by turning the vibrating center D in one direction, the leaves are all thrown open in a similar direction, in a uniform manner. By turning it in the reverse direction the
85 leaves are all similarly closed. The leaves standing and moving parallel with each other at all times. By attaching cords to either of the two opposite sides of the center D, at *d*, *d*, the ventilator can be opened and
90 closed when placed above reach in the side walls of dwellings.

I am aware that registers have been made with a horizontal vibrating center; and also that the blind valves have been used. I
95 therefore do not claim either device. But I am not aware that such vibrating center and a set of blind valves have been combined together in the same register, in the particular manner shown, that is, where
100 such vibrating center is connected with, so as to impart motion first to one central leaf, when such leaf is made the medium through which to communicate a similar motion to
105 all the other leaves, by being attached to a rod connecting the leaves together for that purpose, by which the peculiar advantages of the vibrating center and also of the blind valves are obtained and combined in the same register and ventilator with increased
110 utility and economy in the construction and use of the same.

The different parts of the register are se-

cured together by means of peculiar shaped side or end pieces C C, fastened in the register frame in a peculiar manner. These end pieces are formed with openings P' P' P' 5 along their bottom part, to receive the pins or axes P, P, of the leaves, and also with a projection *c'* at the top, which is drilled and tapped for a screw *h*, by which to fasten the top plate A, to the top of the frame. It 10 is also formed with a ledge or step along the back part. The register frame B, is made with small lugs *l*, *l*, at the bottom and also with notches or recesses *f* *f*, at the corners. The end pieces—which are slightly longer 15 than the distance between the two notches *f*, *f*, at either end—are inserted into their places from the inside, by sliding them sideways upon or over the small lugs or projections *l*, *l*, and under the notches *f* *f*. They 20 are then secured against such sideways or lateral movement, by a screw or rivet *s'* in the slot *s* in the frame. They are thus prevented from falling downward, rising upward, or slipping sideways out of place in 25 the frame, and are held securely to it. The pins or axes P, are previously inserted through their openings P', before sliding the

second end piece into its seat. The leaves are thus securely held in their places in the frame independently of the top plate A, 30 which latter, by being screwed to the end piece at *c'* is also held firmly upon the frame, or can be unfastened and removed from the frame without displacing or disturbing the valves of the register. 35

I do not claim any feature seen in the device of W. G. Cook, 1848, S. P. Munson, 1853, or the patent of George Pollock, 1847, but

Having thus described my invention, I 40 claim and desire to secure by Letters Patent, as an improved article of manufacture—

A warm air register, made as herein set forth, viz., the frame B B, having lugs *l*, *l*, and recesses *f*, *f*, and the end pieces C, pro- 45 vided with lugs *c'*, for the reception of screws *h*, the ledge or step and openings *p'*, *p'*, *p'*, for the leaves, all substantially as shown, when combined with a mechanism for operating the leaves.

EDWARD A. TUTTLE.

Witnesses:

JAS. G. MORGAN,
CHAS. F. TUTTLE.