(Model.)

S. TUTTLE, Jr.

HOT AIR REGISTER.

No. 346,875. Patented Aug. 3, 1886.

Fig. 1.

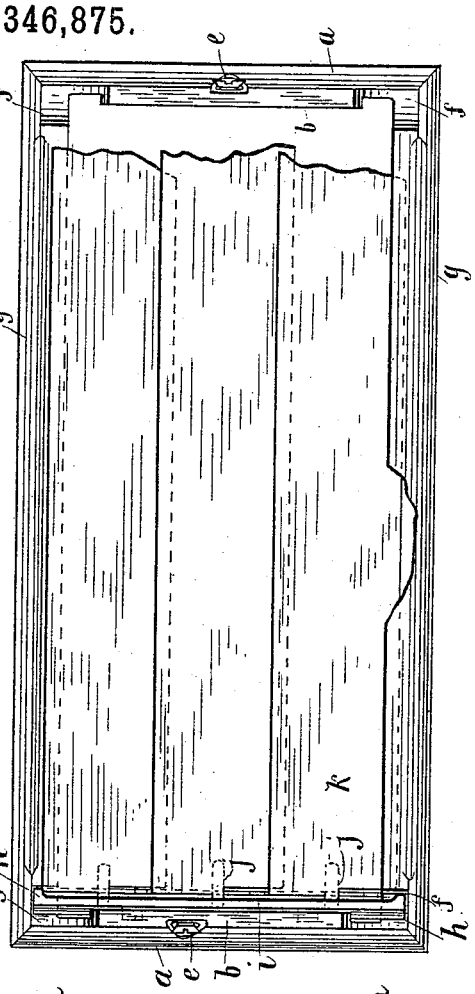


Fig. 2.

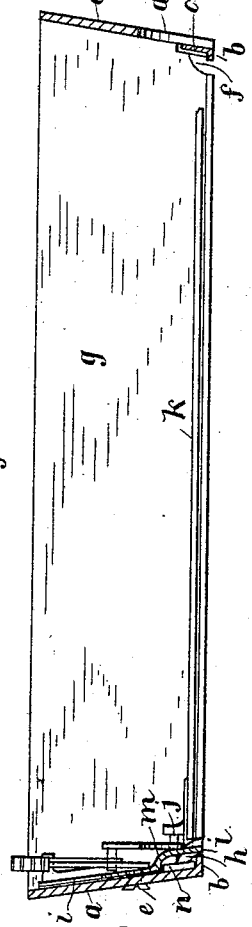


Fig. 4.

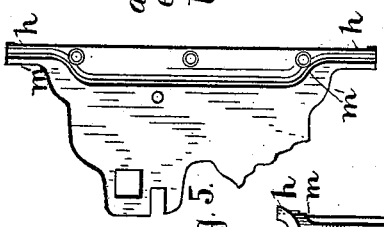


Fig. 5.

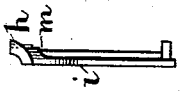


Fig. 6

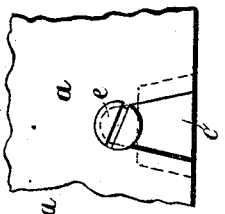


Fig. 7.

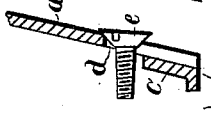
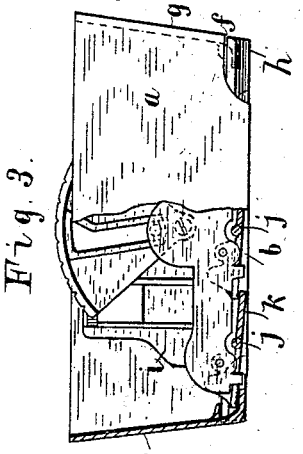


Fig. 3.



Witnesses.
Thos. J. Morgan.
Jos. S. Lockwood.

Inventor.
Silas Tuttle, Jr.
By A. P. Thayer Atty

UNITED STATES PATENT OFFICE.

SILAS TUTTLE, JR., OF BROOKLYN, ASSIGNOR TO THE TUTTLE BAILEY MANUFACTURING COMPANY, OF NEW YORK, N. Y.

HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 346,875, dated August 3, 1886.

Application filed November 16, 1885. Serial No. 182,915. (Model.)

To all whom it may concern:

Be it known that I, SILAS TUTTLE, Jr., a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Hot-Air Registers, of which the following is a specification.

The nature of my invention consists of an improved construction of the kind of registers that are made with detachable fan-holding plates, so that these registers can now be fastened in the wall with plaster sets without liability of having their working parts clogged with the plaster used to secure them in place, and also an improvement in the bearing-surfaces of the detachable end plates and the register-frame, making these parts more easy to cast and to fit together than formerly, as hereinafter fully described, reference being made to the accompanying drawings, in which—

Figure 1 is a plan view of the register inverted, with some parts broken out. Fig. 2 is a longitudinal sectional elevation of the register placed upright, the section being taken on the line *x x* of Fig. 1. Fig. 3 is partly an end elevation and partly a transverse section. Figs. 4 and 5 are, respectively, side and end views of one of the fan-holding plates; and Figs. 6 and 7 are details of the register-frame, showing the contrivance for the hole for the fastening-screw.

The improvement which I make in the construction of the frame consists of the end plates, *a*, of the frame made with the inwardly-projecting flange *b* along the lower edge, also of the web *c*, below or back of the hole *d* for the screw *e*, and connecting the two edges of the open notch, as heretofore constructed; and, also, of the curved bearing-seats *f* in the side plates, *g*, together with the correspondingly-shaped end bearings, *h*, of the plates *i*, in which are the bearings for the pivots *j* of the fans *k*, which plates are detachably fastened to the end plates, *a*, of the frame. The flange *b*, at the lower edge of end plates, *a*, serves to close a space heretofore left vacant between the plates *a* and *i* at the lower or back edges, according as the registers are placed in the floor or the wall, which is troublesome on account of getting filled with cement or plaster when the register is being set in the wall, which interferes with the action of the fan-pivots and works through the pivot-bearings in dust, which finds its way through the front openings of the register into the room.

The plates *i* are made, as heretofore, with an offset at *m*, to form a seat-ledge to rest upon the lugs or bosses *n*, formed on the inside of the end plates, *a*, to support the plates *i* upon the under side. The offset also causes the lower part of the plates *i* to project away from the frame-plates *a*, suitably for such practicable length of pivots *j* as will effectually prevent the fans from being forced out of their bearings. This offset makes the space heretofore left open and now closed by the flange which I provide, except near the ends of the plate, where the flange is omitted in consequence of the turn of the offset at *m'*, which makes a breadth of the metal forming the end bearings, *h*, of the plates *i*, that fills out the space close to the plate *a*, and makes the flange unnecessary thereat.

For avoiding the expense of drilling for the screws *e*, these register-frames have heretofore been cast with a deep notch in the lower or back edge of end plates, *a*, to make the hole *d* for the screw *e* to hold the plate *i*, because the plates could be cast with the notch in a two-part flask without a core; but it is desirable to avoid the notch, which weakens the plates, and as the notch would also have to open through the flange, and would therefore partially defeat the object of the flange, I now make the plates with the web *c* below or back of the holes, together with the continuous flange along the same. This web is offset inwardly, so that the hole for the screw which fastens plate *i* in position against plate *a* can still be cast as in register-frames heretofore made with the open notch. The plates *i* have the end bearings, *h*, to rest in the bearing-seats *f* of the side plates, *g*, between which seats and the ends of lugs *n* the plates *i* are held in position. Heretofore these bearing-seats *f* in the corners of the register-frame and the end extensions, *h*, of the plates *i*, resting therein, have been made angular at the junction of the side

and bottom, which is found to be objectionable, both because fillets are liable to form in the angles of the seats, so that they do not come out sharp and clear in the castings, which makes it necessary to chip out and otherwise fit the bearings, and the ends *h* do not enter and fit as fairly in the seats as is desirable; consequently I now make the seats *f* in the curved form, as shown best at the right hand of Figs. 1 and 2, and make the end bearings, *h*, of said plates in the corresponding form, (see left hand of Fig. 2, also Fig. 5,) which insures smoothness of the parts in casting them, and allows the wheel end plate to be inserted in its place with one simple rotary movement, instead of the forward and backward sliding movements as before.

What I claim, and desire to secure by Letters Patent, is—

1. In a register-frame, the end plates, *a*, having the inwardly-projecting flange *b* on the lower or back edge, in combination with the plates *i*, in which the fans are pivoted, having the offset ledge *m*, and with the fans and the side plates of the frame, substantially as described.

2. In a register-frame, the end plates, *a*, having the inwardly-projecting flange *b* on lower or back edge, and offset web *c*, connecting the edges of the notch for screw *e*, in combination with the plates *i*, in which fans are pivoted, and with the fans and the side plates of the frame, substantially as described.

3. A register-frame provided with seats *f*, and the fan-holding plates *i*, having projections *h* lodged in seats *f*, said seats *f* and the plate-bearings *h* constructed in the curved form described, enabling the plates to be lodged in position without slack of the said bearing projections in said seats and in simpler manner, substantially as described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

SILAS TUTTLE, JR.

Witnesses:
ARTHUR C. TUTTLE,
THOMAS S. HICKEY.