

E. A. TUTTLE.
Hot-Air Register.

No. 167,481.

Patented Sept. 7, 1875.

Fig. 1

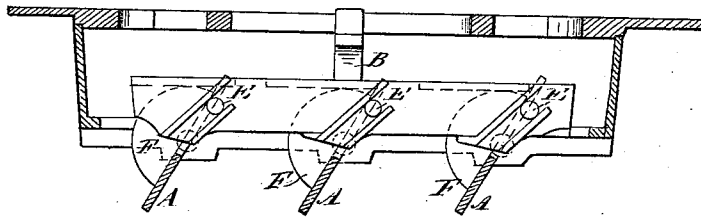


Fig. 2

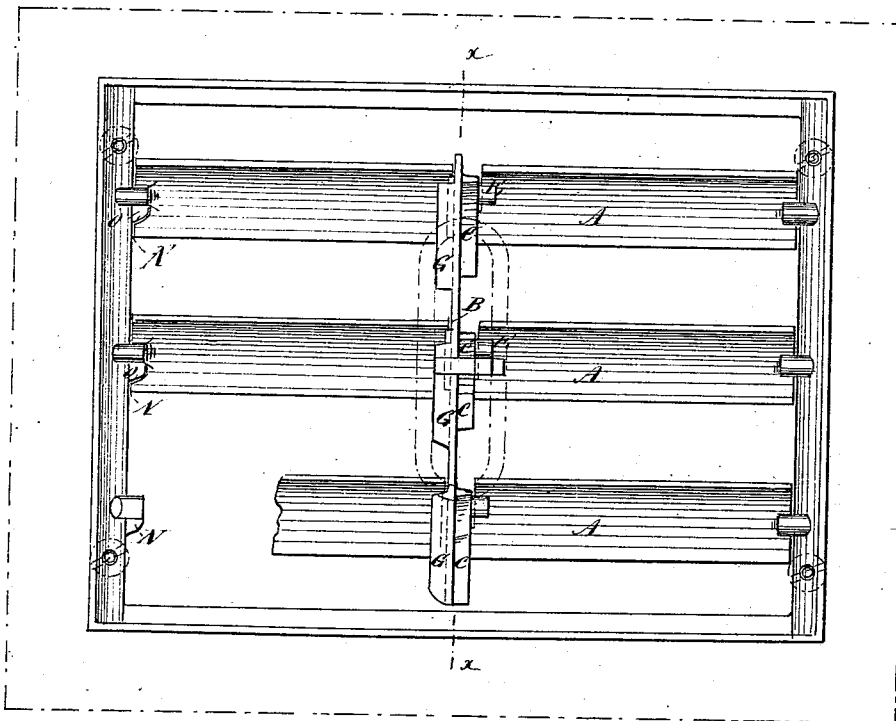
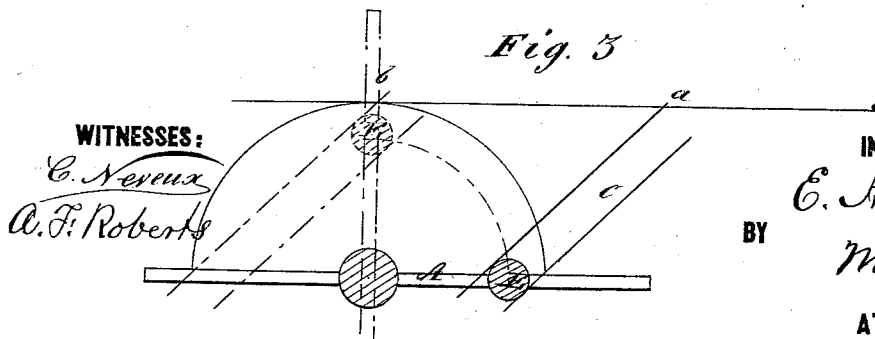


Fig. 3



WITNESSES:

C. Nervux
A. F. Roberts

INVENTOR:

E. A. Tuttle
BY
Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

EDWARD A. TUTTLE, OF NEW YORK, N. Y.

IMPROVEMENT IN HOT-AIR REGISTERS.

Specification forming part of Letters Patent No. **167,481**, dated September 7, 1875; application filed May 28, 1875.

To all whom it may concern:

Be it known that I, EDWARD A. TUTTLE, of the city, county, and State of New York, have invented a new and Improved Hot-Air Register, of which the following is a specification:

The invention will first be described in connection with drawing, and then pointed out in the claims.

Figure 1 is a transverse section of a register of my invention, the section being taken on the line *x x*. Fig. 2 is a top view with the cover removed. Fig. 3 is a diagram, showing the arrangements of the parts necessary to the successful practical application of the invention.

Similar letters of reference indicate corresponding parts.

A represents the fans; B, the slide for working them; C, the cam grooves or slots on the slide; E, the pins on the fans, and F the segmental rollers on the fans to carry the slide, which has flanges G to rest on them. In the practical application of this method of working the fans, the cam-slots, and pins, and at the same time carrying the slide on the segmental rollers, it is important that the cam slot and pin be arranged in such relation to the roller that the slide will roll and not slide on the roller to make a smooth and easy action. This arrangement is formed in a cam-slot inclined forty-five degrees to the line in which the slide moves, and the pin placed half the distance from the pivot H of the fan that the slide rolls on the roller—say from *a* to *b*—the cam-groove being preferably straight,

though it may be slightly concave at the lower part, as indicated by the lines *d*. This will be understood when it is considered that the cam-slot advances along the pin the measure of its extent in a direct line at each movement, consequently the pin has only to advance in a right line half the distance of the slide.

N represents the notch in the end of the fans, and O the projection of the frame, which are so arranged that by turning the fans a little beyond the vertical position to which they are brought to open the register the notches pass beyond the projections, and thus free the fans to slide endwise far enough toward the frame to withdraw the opposite pivot from its bearings for taking out the fan or entering it to put the fan in its place.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The segmental roller for carrying the slide and the slot and pin for working the fan, arranged on opposite sides of the slide, substantially as specified.

2. The pin for working the fan, arranged half the length of the throw of the slide from the pivot of the fan, in combination with a groove or slot of forty-five degrees of inclination to the slide, substantially as specified.

3. The notch N of the fan and the stop-projection O of the frame, combined and arranged as and for the purpose specified.

EDWARD A. TUTTLE.

Witnesses:

T. B. MOSHER,

ALEX. F. ROBERTS.