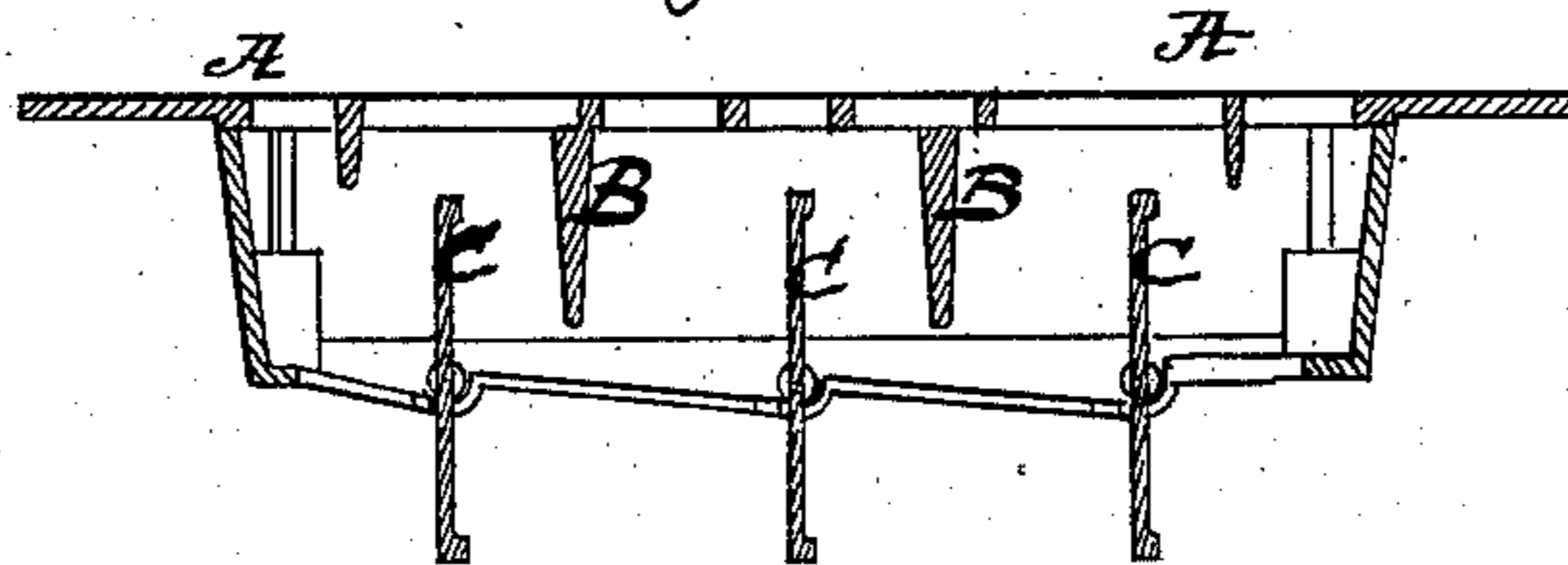


E. A. TUTTLE.  
Hot-Air Register.

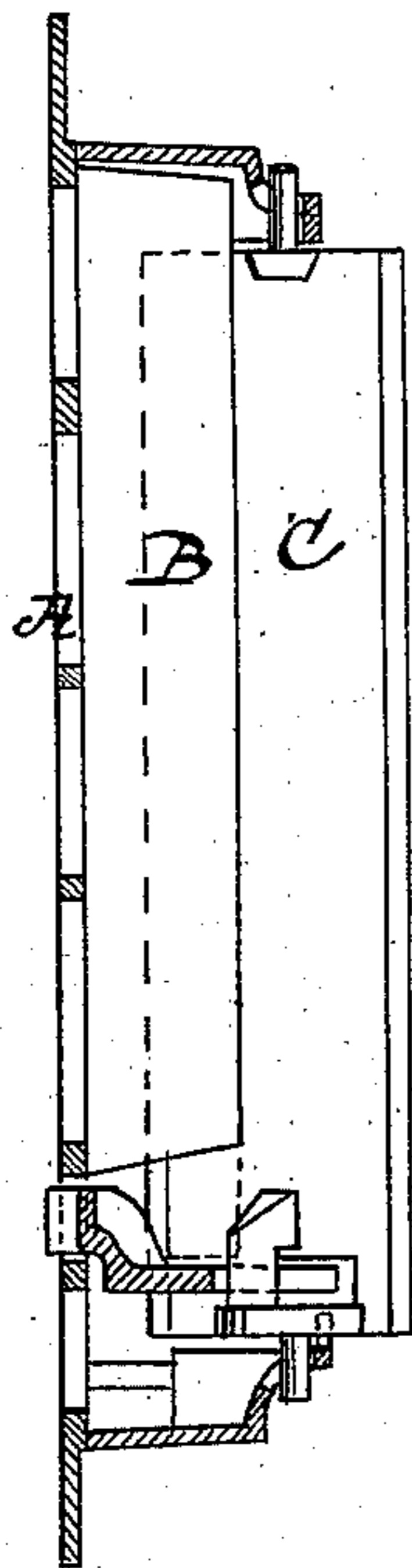
No. 225,083.

Patented Mar. 2, 1880.

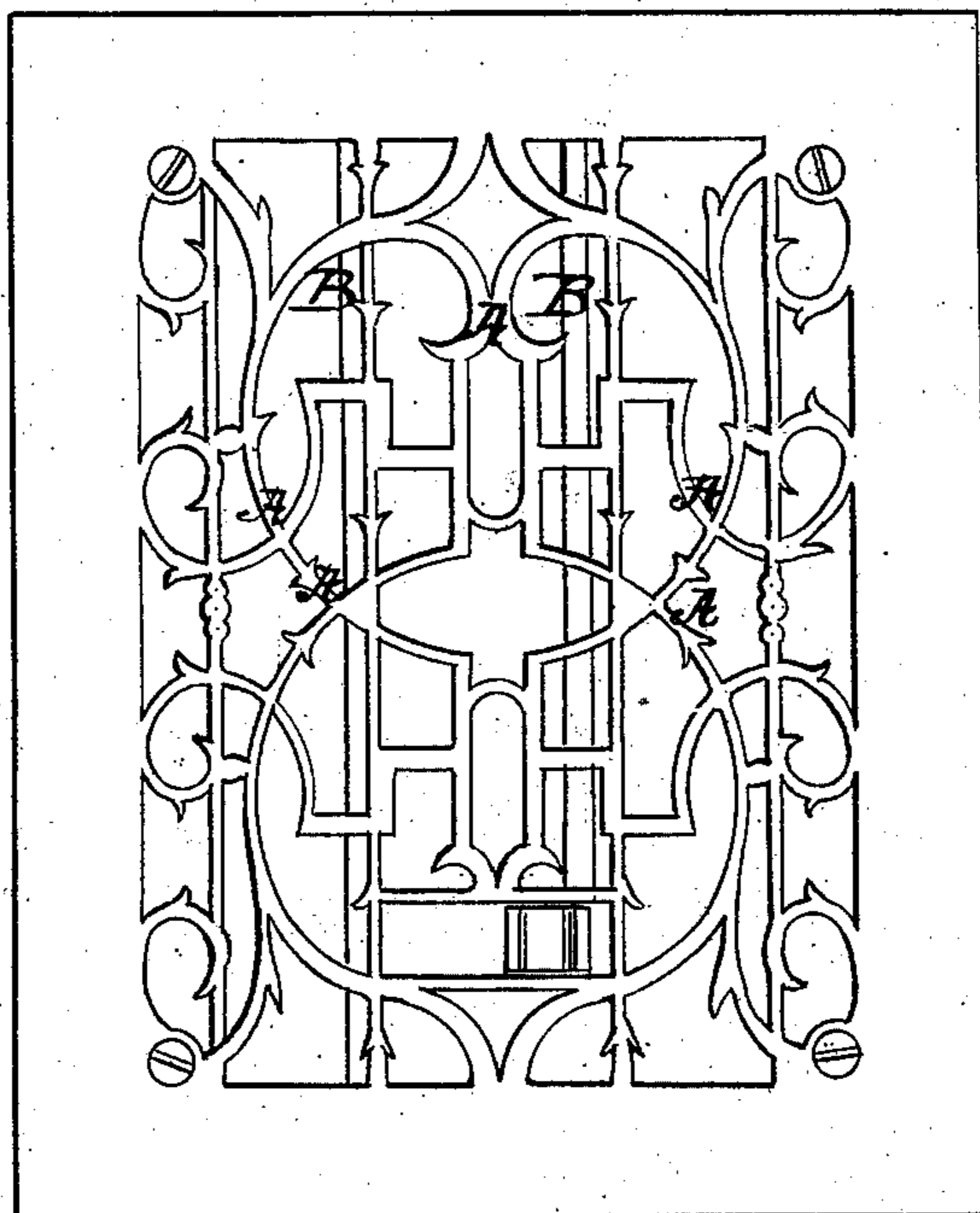
*Fig 3*



*Fig 2*



*Fig 1*



Witnesses  
O. T. Dunt  
O. J. Morgan

Edward A. Tuttle  
Inventor  
By A. P. Thayer  
att'y

# UNITED STATES PATENT OFFICE.

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

## HOT-AIR REGISTER.

SPECIFICATION forming part of Letters Patent No. 225,083, dated March 2, 1880.

Application filed September 25, 1879.

*To all whom it may concern:*

Be it known that I, EDWARD A. TUTTLE, of New York city, in the county and State of New York, have invented a new and useful  
5 Improvement in Hot-Air Registers, of which the following is a specification.

My invention consists of ribs for strengthening the top fret-work of the register, extending longitudinally with and into the spaces  
10 between the fans when open, and being so arranged as not to interfere with the opening and closing of the fans, although having such breadth as to extend into said spaces. The  
15 said ribs are made of a proportional size and thickness with the whole to form a support for the top plate when the register is placed in the floor, to enable said plate to support without being thickened the weight of persons  
20 stepping on it, thus affording sufficient strength for that location with the same light fret-work as is used in the wall, the same being more open, of less weight, and also more pleasing in effect than if made heavy enough for the required strength without the ribs.

25 Figure 1 is a front elevation of a register constructed according to my invention. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a transverse section.

A is the fret-work front or top plate of the register; B, the strengthening-ribs cast with  
30 and on the under side of said plate, and C the fans of the register. These ribs extend down nearly to the plane of the fans when closed—that is to say, nearly to the pivots of the  
35 fans—so as to project into the spaces between them when open, and in such relation thereto that the fans are permitted to turn freely to open and close. Thus the light and fine fret-work, which is cheaper, more open, and also  
40 more pleasing to the eye, may be preserved, and at the same time all the strength needed for safety when located in the floor may be had.

Having thus fully described my invention, what I claim, and desire to secure by Letters  
45 Patent, is—

The fret-work plate having ribs B extending longitudinally with and projecting into the spaces between the fans when open, as set forth.

EDWARD A. TUTTLE.

Witnesses:

F. A. THAYER,  
O. T. BURT.