

(No Model.)

F. W. SCHNAUTZ.  
GRATE BAR.

No. 524,866.

Patented Aug. 21, 1894.

FIG. 1.

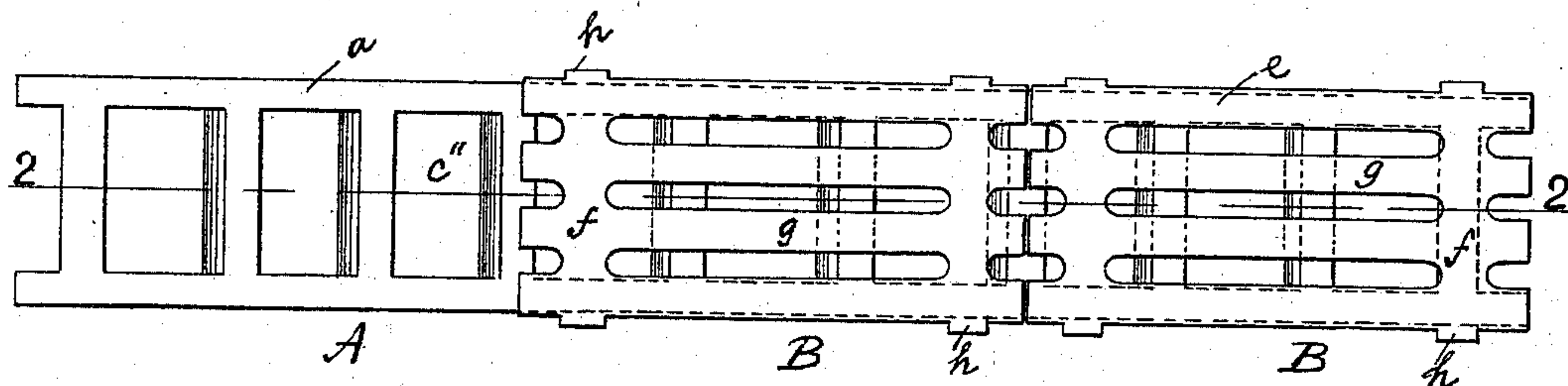


FIG. 2.

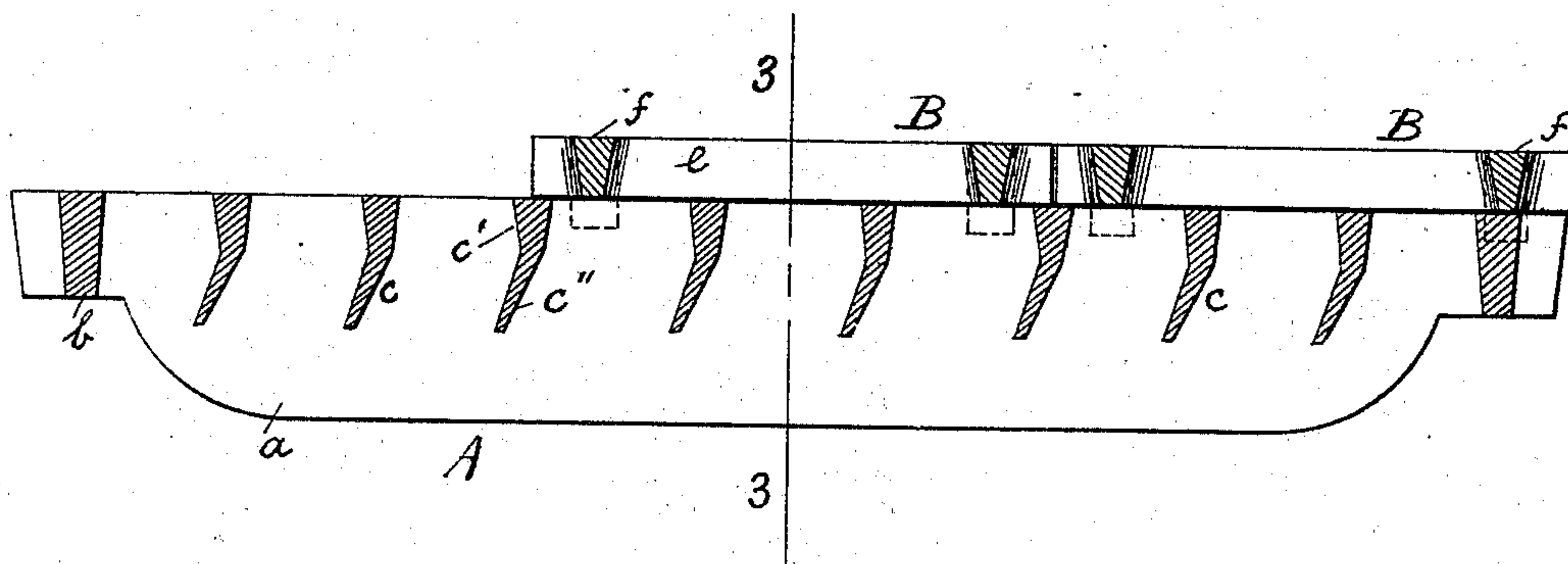
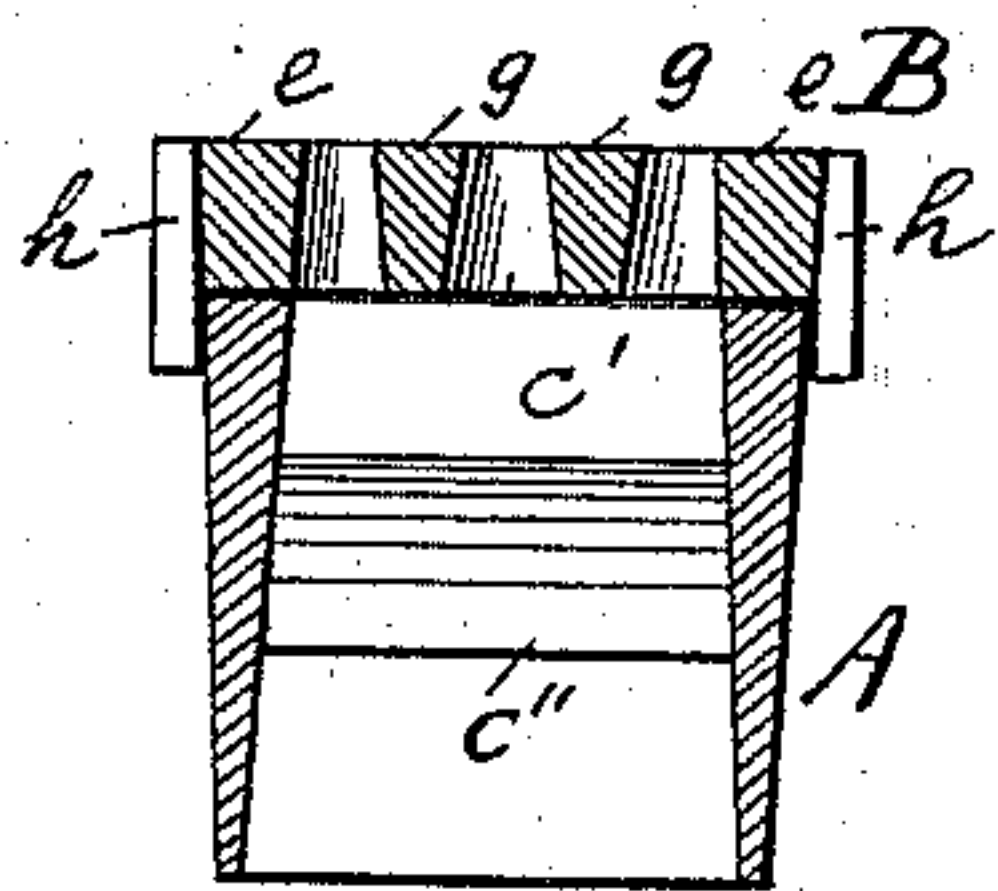


FIG. 3.



Witnesses:  
John Becker  
Theodore Becker.

Inventor:  
Frederick William Schnautz  
by his attorneys  
Roeder & Biesew

# UNITED STATES PATENT OFFICE.

FREDERICK WILLIAM SCHNAUTZ, OF NEW YORK, N. Y.

## GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 524,866, dated August 21, 1894.

Application filed March 24, 1894. Serial No. 504,901. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK WILLIAM SCHNAUTZ, of New York city, New York, have invented an Improved Grate-Bar, of which the following is a specification.

This invention relates to a grate bar which is of such configuration as to draw the air upward from the ash pit through the fire in an effective manner to increase the combustion, which is also so constructed as to permit of the inevitable unequal expansion and contraction of its parts without distortion arising therefrom, and the several parts of which can be readily arranged in position, and when in position will not be easily accidentally displaced therefrom.

In the accompanying drawings:—Figure 1 is a top plan view of my improved grate bar. Fig. 2 is a longitudinal section on the line 2, Fig. 1, and Fig. 3 is a cross section on the line 3, 3, Fig. 2.

My improved grate bar comprises a lower supporting section A, and upper removable grate sections B, B. The lower section consists of side plates *a* connected by the vertical bars *b* at the ends by which the supporting section A is hung in the furnace in the usual manner. Intermediate of these, the side plates *a* are connected by the ribs *c* which extend flush with the top of the side plates *a*, and have an upper vertical portion *c'* and a lower oblique portion *c''* inclining downwardly toward the fire door. Each rib *c*, including both portions, increases in thickness from the bottom upward, as is customary in the art.

The upper grate sections B B are of a suitable number according to the depth of the furnace, and consist of longitudinal side-bars

*e* which rest upon the top of the side plates *a*, and connecting transverse bars *f*, at the ends of the grate sections B. The space between the side bars *e* is divided into slots by bars *g* lying parallel with the bars *e*.

The upper grate sections B are provided with overhanging and downwardly extending lugs *h* which over-lap the side plates *a*, and retain the upper grate sections in position.

As the upper and lower grate sections are movable independently of each other, the unequal expansion, in different directions, of these sections is in no way opposed, and so no distortion results from the changes of temperature to which the grate-bar is subjected. Moreover the upper grate sections can be very easily removed for the purpose of cleaning, and are as readily replaced in their proper position, and, when so replaced, are not liable to be disarranged by accident.

What I claim is—

The combination of upper and lower grate sections, the lower consisting of side plates joined at suitable intervals by draft-inducing transverse ribs having their lower surface inclined forwardly, and the upper having ribs at right angles to the transverse ribs of the lower section, forming longitudinal slots, and having side lugs extending downward outside the lower section, whereby the upper section, while capable of sliding freely from end to end upon the lower, is restrained from lateral movement therefrom, substantially as described.

FREDERICK WILLIAM SCHNAUTZ.

Witnesses:

F. V. BRIESEN,  
WM. SCHULZ.