

(No Model.)

M. H. MOSKOVITS.

GRATE BAR.

No. 382,104.

Patented May 1, 1888.

Fig. 1.

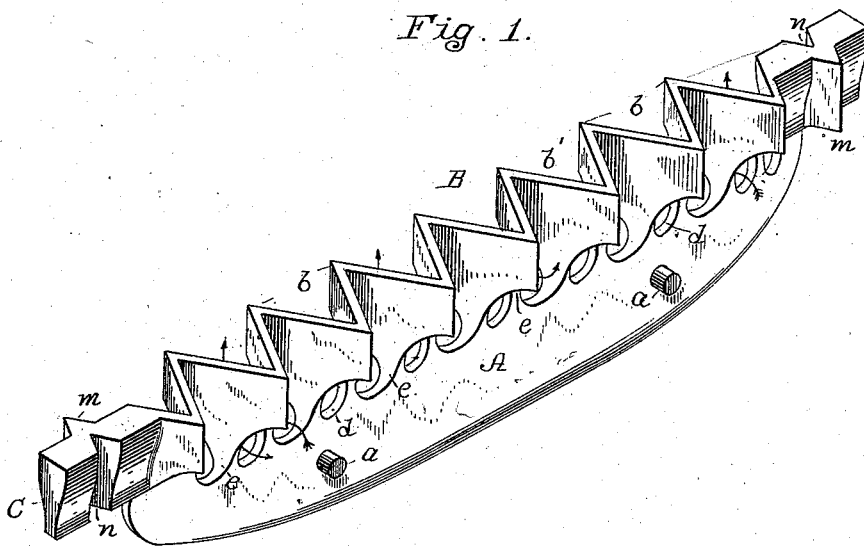


Fig. 2.

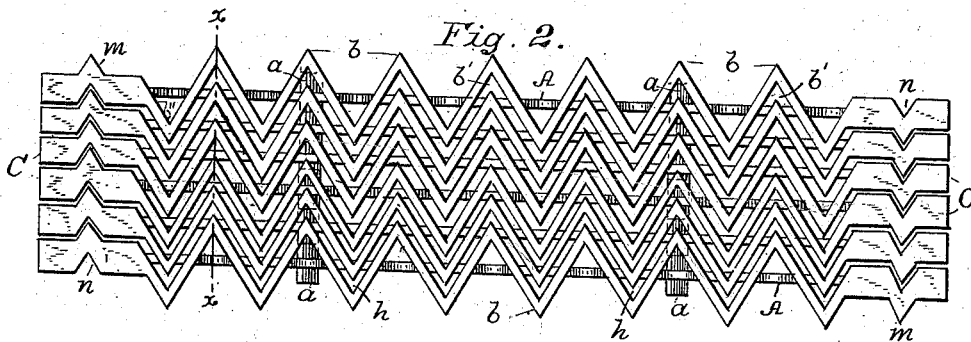
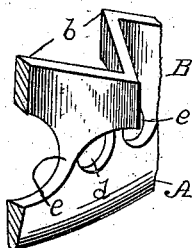


Fig. 3.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 382,104, dated May 1, 1888.

Application filed November 29, 1887. Serial No. 256,448. (No model.)

*To all whom it may concern:*

Be it known that I, MAXIMILIAN H. MOSKOVITS, of Kansas City, Jackson county, Missouri, have invented a certain new and useful  
5 Improvement in Grate-Bars, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to grate bars whereof  
10 a plurality are required to make up a grate; and it may be said to consist in the peculiar construction of the bar and the arrangement of bars, hereinafter set forth, and pointed out in the claims.

15 In the drawings, which illustrate the manner of carrying out my invention, Figure 1 is a perspective view of one of my improved grate-bars. Fig. 2 is a plan view of several bars properly arranged with relation to each  
20 other to form a grate; and Fig. 3 is a sectional detail view in perspective, the section being taken through one of the bars shown in Fig. 2 on line *x x*.

The bar consists of a lower longitudinal web,  
25 A, of sufficient strength to support the weight that may be imposed upon it, and an upper web, B, which extends from end to end of the bar in a corrugated or zigzag course, as shown. In this way lateral projections *b* and spaces or  
30 passages *b' b''* are formed in said upper web, the spaces or passages being of course located within the projections and upon opposite sides of the longitudinal supporting-web A.

The bar is provided with the usual supporting-lugs, C, at its ends, and one side of said  
35 lugs is provided with a lateral projection, *m*, while the opposite side is provided with a corresponding depression or recess, *n*, whereby several bars of a series required to make up a  
40 grate will be locked together and held securely in position during use.

It will be observed that the upper web, B, is somewhat V-shaped in cross-section, as shown more clearly in Fig. 3, and that it is  
45 attached to the upper edge of web A by a comparatively small amount of metal, the lower portions of projections *b* being cut away so as to form transverse holes *d*, thereby leaving the connecting portions *e* between the  
50 two webs quite thin and light and allowing the air to circulate freely through the upper

part of the grate by passing through the openings *d*. This feature is particularly valuable in preventing the grate from becoming burned out, besides rendering it much lighter.

55 It will thus be seen that the grate-surface is made up of a series of intermeshing zigzag webs, the lower web or rib acting only to support said grate-surface, and therefore said lower webs may be located comparatively far  
60 apart, remaining always cool. The air passes below and on both sides of both webs, keeping them always quite cool, and prevents their burning or warping. The openings *b'* for the passage of air between the bars are so ar-  
65 ranged that, although each one is small, upon the whole a larger percentage of the grate-surface is free for the passage of air than is found in a grate of ordinary construction, and the air so passing through said bars is divided  
70 into thin sheets and results in a very thorough combustion of the fuel.

The two webs taken together make a strong support for the fuel, so that even in bars of  
extra length the details can be kept compara-  
75 tively light and the cost small.

It will be seen that owing to the small amount of metal used in connecting the upper rib, B, to the lower rib, A, although said parts are cast integral, said upper web can expand  
80 and contract without materially affecting the lower web.

Transverse lugs *a* are formed upon the sides of lower web, A, for the purpose of holding  
said web in relative position. It will thus be  
85 seen that the bar is provided with an upper zigzag web, B, mounted upon or formed integral with a lower supporting-web, A, transverse holes *d* being formed in the bar at the point of union.

90 The zigzag web B is mounted upon the supporting-web A in such a manner that the latter extends transversely through the central portion of the sides of the triangles formed by the transverse serrations *b* in the web B. By  
95 this construction upward-draft passages *b' b''* are formed through the web B and upon opposite sides of the supporting-web A, whereby the circulation is also materially increased, transverse projections *b* being formed upon  
100 said upper web, and vertical air-passage *b'* being located between said projections, the

projections on one bar of the series making up a grate intermeshing with those of the one next adjoining it.

Having thus described my invention, what I claim is—

1. In a grate-bar, a longitudinal supporting-web, A, provided with a transverse zigzag web, B, provided with openings *b' b''* upon opposite sides of the supporting-web, for the purpose set forth.

2. In a grate-bar, a zigzag web mounted upon a straight supporting-web extending transversely across the serrations of the zigzag web, the latter being provided with openings *b' b''* upon opposite sides of the supporting-web, substantially as described.

3. The combination, in a grate-bar, of a straight longitudinal supporting-web, A, at

its under side, a zigzag upper web, B, supported upon said straight web by means of necks *e*, and lugs C, provided with projections M, all arranged and adapted to operate as described.

4. A grate bar having a straight longitudinal supporting-web at its under side, in combination with a zigzag upper web supported upon said straight web by means of necks *e*, whereby air-spaces *d* are formed, in the manner and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

MAXIMILIAN H. MOSKOVITS.

Witnesses:

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