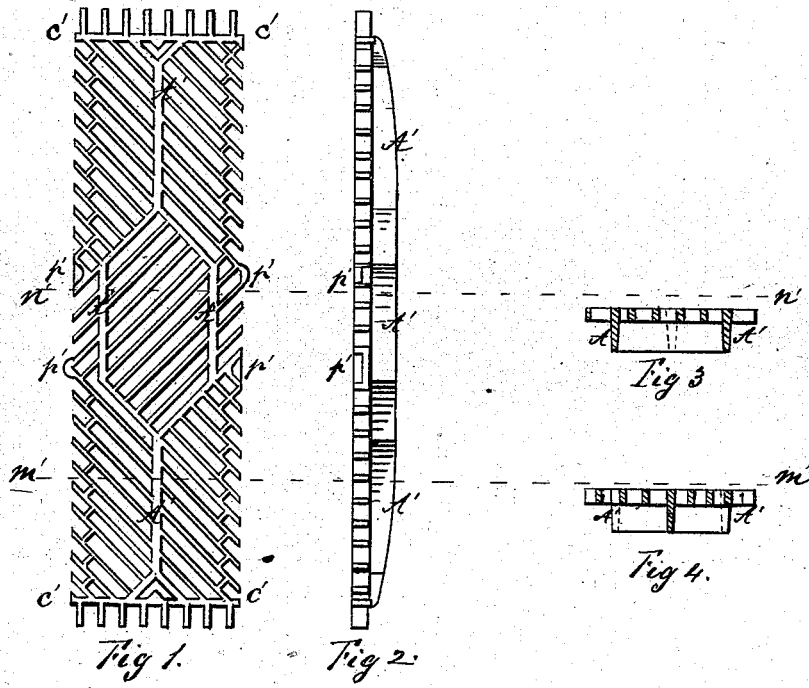


M. G. IMBACH.  
FURNACE-GRATE.

No. 192,070.

Patented June 19, 1877.



Witnesses  
August Bell,  
Emory Cummings,

Inventor  
Martin G. Imbach

# UNITED STATES PATENT OFFICE.

MARTIN G. IMBACH, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN FURNACE-GRATES.

Specification forming part of Letters Patent No. **192,070**, dated June 19, 1877; application filed December 6, 1876.

*To all whom it may concern :*

Be it known that I, MARTIN G. IMBACH, of Brooklyn, county of Kings, State of New York, have invented a new and useful Improvement in Grates for Furnaces, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan; Fig. 2 a side elevation; Fig. 3 a transverse sectional elevation at a point indicated by dotted line *n' n'*, and Fig. 4 a transverse sectional elevation at a point indicated by dotted line *m' m'*.

The object of the invention is to construct a grate of superior durability and strength, at a comparatively small cost, which will not retard or obstruct the admittance of air in sufficient quantities necessary to secure uniform and perfect combustion of fuel placed upon any part of its surface, though provided with interstices so small as to render the economical use of fuel, such as sawdust, shavings, coal, and coke-dust, &c., possible.

The grate is composed of the girder *A'*, transverse bars *C' C'*, as shown in Figs. 1 and 2, and numerous other bars of smaller transverse sectional dimensions and various lengths, combined and joined to each other and the former, at various angles, to form the surface of the grate and the interstices for the admittance of air.

The girder *A'* is composed of alternate

single, furcated, and double sections, as shown in Figs. 1, 3, and 4, and serves, in connection with transverse bars *C' C'*, to unite and support all the remaining portions of the grate and to form a part of its surface.

The sides of the grate are provided at *p' p' p' p'*, Fig. 1, with cavities and corresponding projections, to prevent, when several of them are used adjoining each other, their shifting in a direction parallel with their sides.

The invention consists in constructing a grate with a girder of novel shape, composed of single, furcated, and double sections, thereby securing great strength to resist any injurious influences to which furnace-grates are liable to be exposed, at a small outlay of material.

It will be evident that the whole grate may be cast in one or several separate parts, and fastened together afterward, and that any or all the several sections of which the girder is composed may be formed of straight or curved bars.

I claim as my invention the grate provided with a girder composed of alternate, single, furcated, and double sections, as shown, and for the purpose specified.

MARTIN G. IMBACH.

Witnesses:

AUGUST BELL,  
EMORY CUMMINGS.