CHARLES VAN WAGENEN.

Improvement in Furnace-Grates.

No. 127,203. Patented May 28, 1872.

Fig. 2.

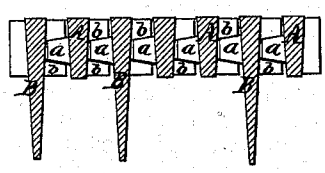

Fig. 1.

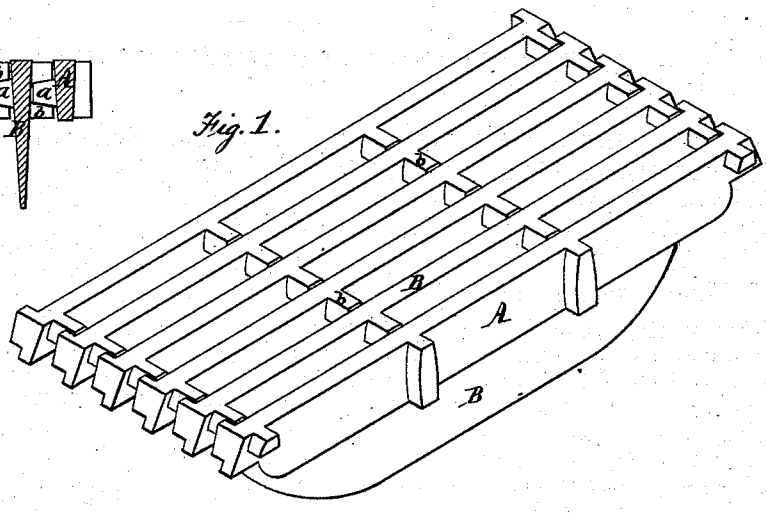

Fig. 3.

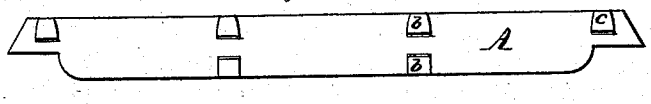

Fig. 4.

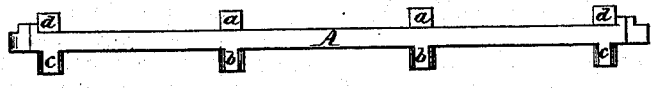

Fig. 5.

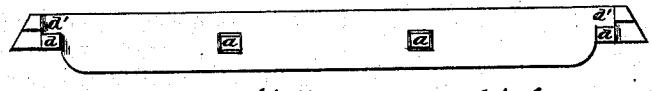

Fig. 7.

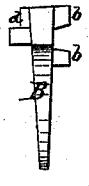

Fig. 6.

Witnesses.

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Attys

UNITED STATES PATENT OFFICE.

CHARLES VAN WAGENEN, OF NEW YORK, N. Y.

IMPROVEMENT IN FURNACE-GRATES.

Specification forming part of Letters Patent No. 127,203, dated May 28, 1872.

SPECIFICATION.

I, CHARLES VAN WAGENEN, of the city, county, and State of New York, have invented certain new and useful Improvements, of which the following is a specification:

Nature and Objects of the Invention.

My invention is an improvement upon the Letters Patent granted to George H. Clarke and myself, October 30, 1866, No. 59,311. This grate-bar, in practice, was defective, for the reason that when the bars were cast in sections they had no means of contracting or expanding independently of each other, without which all grate-bars are defective.

This present invention is designed to obviate this difficulty; and consists in constructing a grate for furnaces of a series of separate interlocking bars, a portion of which are arched to give the required strength and support to the grate; and it has for its object to greatly reduce the cost of grates for furnaces, and at the same time to insure a better draught for the fires, as will be fully set forth hereafter.

Description of the Drawing.

Figure 1 is a perspective view of a series of bars forming part of a grate. Fig. 2 is a sectional view taken in a plane, *x x*, through Fig. 1. Figs. 3, 4, and 5 are views of the separate bars. Fig. 6 is a sectional view through the line *y y*, Fig. 3. Fig. 7 is an end view of one of the flanged bars.

General Description.

The bars composing the grate are constructed with tenons *a a* on one side, which fit into corresponding mortises formed by lugs *b b d d'* on the other side of the adjacent bar, when a series are placed together, each having mortises upon one side and tenons on the opposite side, as clearly shown in the drawing. A portion of the bars are made deeper than the others in the series, being formed with a flange or arch in order to give the requisite degree of strength to the grate without its being necessary to increase the weight of metal in the remaining bars. The flanges upon some of the bars may be made deeper than the others, and placed in the center of the grate, where the heat is the most intense. The flanged bars when placed in the furnace are arranged with one, two, or more narrow bars, A, between them, the number and frequency of the flanged bars being governed by the degree of heat to which the grate is subjected. Each bar, when acted upon by the temperature of the furnace, is free, by this arrangement, to expand and contract independently of the others, and thus all twisting or warping is prevented, while the method of making a portion of the bars with flanges permits the remainder to be made lighter without reducing the effective strength of the grate.

A grate thus constructed will be found to have an increased draught beyond that constructed of bars of the same depth throughout, as by this arrangement the air beneath the grate has freer access to the fuel.

Claim.

A grate for furnaces, composed of a series of separate interlocking bars, a portion of which are arched to give the requisite support and strength to the grate, whereby I am enabled to reduce the cost of the grate and insure a better draught for the furnace, as set forth.

CHARLES VAN WAGENEN.

Witnesses:
EDWARD E. OSBORN,
ROBERT H. MANNERS.