

No. 663,365.

G. S. SERGEANT.
GRATE BAR.

Patented Dec. 4, 1900.

(Application filed June 8, 1899.)

(No Model.)

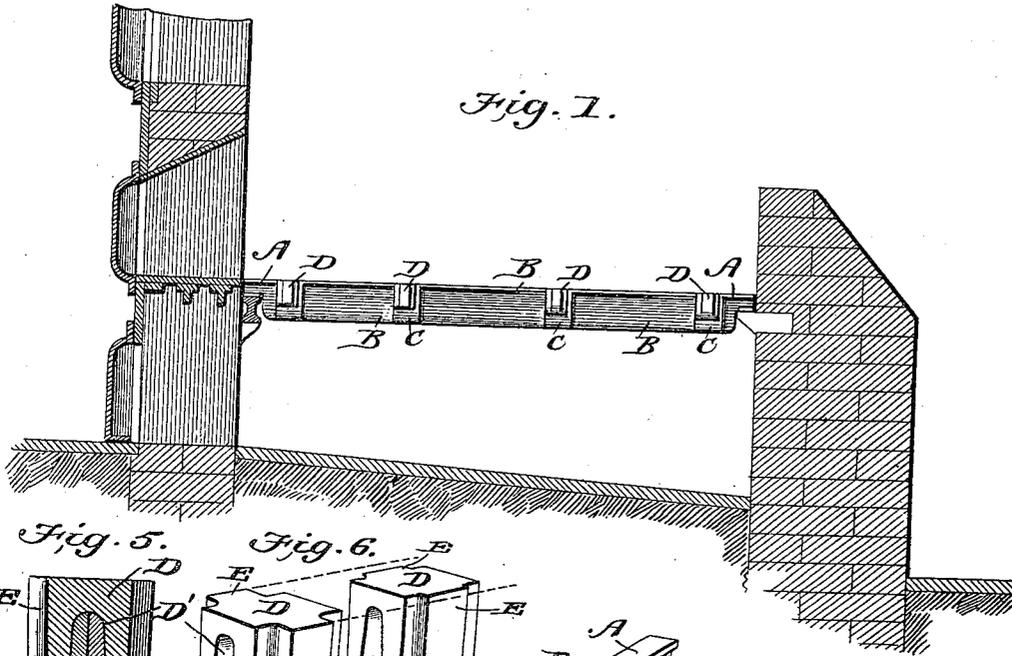


Fig. 1.

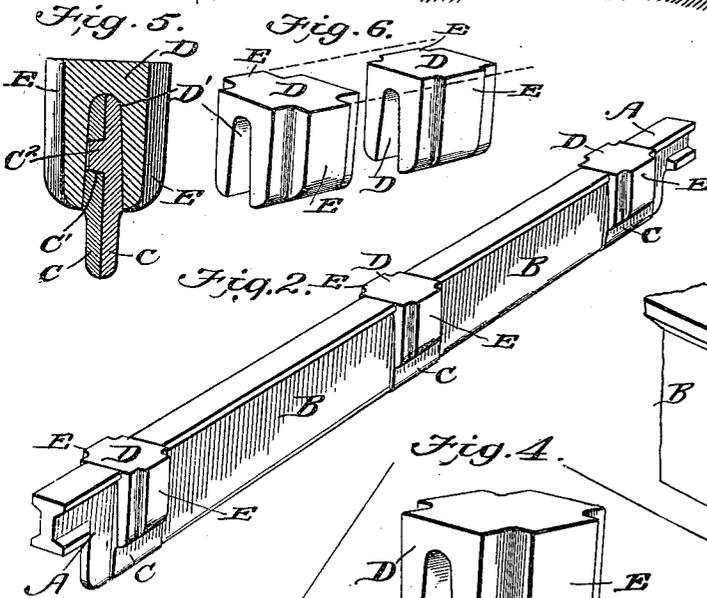


Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

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GEORGE S. SERGEANT, OF GREENSBOROUGH, NORTH CAROLINA.

GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 663,365, dated December 4, 1900.

Application filed June 8, 1899. Serial No. 719,842. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. SERGEANT, residing at Greensborough, in the county of Guilford and State of North Carolina, have made certain new and useful Improvements in Grate-Bars, of which the following is a specification.

My invention is an improvement in grate-bars for furnaces or other like purposes, and has for an object to provide a grate-bar of improved construction formed in sections which are so connected at their ends or joints as to form a self-supporting connection at such point.

The invention consists in certain novel constructions and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the drawings, Figure 1 is a sectional side elevation of a part of a furnace with my improved grate-bar in place. Fig. 2 is a detail perspective view of one of the grate-bars with the sections connected. Fig. 3 is a detail perspective view of one of the joints or connections between the sections. Fig. 4 is a detail perspective view showing the meeting ends of the sections detached, and Fig. 5 is a cross-sectional view of the coupling, and Fig. 6 illustrates in detail the combined coupling and spacing cuff or clasp.

The grate-bar is supported at its ends in the usual or any desired manner and is usually formed of the end sections A or intermediate sections B, the end sections A being supported at their outer ends on walls or other suitable supports in the furnace. At their meeting ends the several sections are constructed alike, so the description of one of the joints will answer for all. Manifestly the intermediate sections may be of any suitable number and of any desired length in order to secure any desired length of grate-bar. I usually in practice make the intermediate sections of assorted lengths, so a manufacturer or dealer can, with a limited supply of the assorted lengths, fill any order which may be made upon him in the usual course of business.

In coupling the sections I aim to effect the coupling in such manner as to secure the desired strength, avoid the necessity of cross-supports, and make the coupling so it will re-

inforce the fire-surface at the joint and will also operate to space the adjacent grate-bars apart, so any desired spacing of the grate-bars may be secured.

In securing the above results I provide the grate-bar sections at their meeting ends with portions C, which are of reduced thickness, are lapped side by side when coupled, and are so secured by a cuff or clasp D, which fits over the lapped meeting portions from above, so it will be self-retaining by gravity. The end portions C when lapped side by side are interlocked by providing each with a transverse opening C' and with a lateral stud C² to enter the opening C' of the meeting section. The cuff D is provided in its under side with a recess D', which fits down over the lapped portions C when they are interlocked, so the cuff will hold them in such relation.

By the described construction it will be seen the grate-bar sections are lapped alongside each other and interlock at their meeting ends, and the cuff or clasp fits over the lapped portions from above, holding them interlocked. The cuff is readily removable, so it can be interchanged, and this cuff has an important additional function, in that it forms a means for spacing the grate-bars apart to any desired degree. To this end I form the cuff D at its opposite sides with laterally-extending portions E, and I make these cuffs in series with portions E of different widths, as will be understood from Fig. 6, so in operation a cuff D having a narrower or wider projecting portion E may be employed according to the width of the spacing desired. This is an important feature, as by it I am able to secure by means of a few extra patterns for the cuffs or spacers any desired spacing between the grate-bars.

When the grate-bar sections are coupled as shown in the drawings, they will be self-supported at the coupled joint, thus avoiding the necessity of any cross-bars or similar supports between the opposite ends of the grate-bars.

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

1. A grate-bar made in longitudinal sections and having the meeting ends of said

sections overlapped and interlocked, and a cuff or clasp fitting over the overlapped and interlocked portions whereby the sectional grate-bar is held with its sections interlocked
 5 and is self-supporting at the joint of the sections, and whereby grate-bar surfaces of different lengths may be supplied in the manner substantially as set forth.

2. A grate-bar made in sections and having a detachable clasp or cuff fitted over the sections at the joint thereof and provided with laterally-extended portions whereby to space the adjacent grate-bars apart, the cuff or clasp being removable whereby cuffs may
 15 be interchanged to secure any desired spacing, substantially as set forth.

3. A grate-bar made in sections and having the meeting ends of said sections lapped side by side and interlocked, and the cuff or
 20 clasp fitted over said lapped ends whereby to secure the same interlocked and to cover and to reinforce the fire-surface of the grate-bar at the joint, substantially as set forth.

4. A grate-bar made in sections with the

sections lapped alongside each other and interlocked laterally at their meeting ends, and the cuff or clasp fitted over the lapped portion from above whereby it will be held in place by gravity, substantially as set forth.

5. A grate-bar composed of sections having at their meeting ends portions lapped alongside each other and provided each with a transverse opening and with a lateral stud entering the opening in the other section, and the cuff or clasp fitting over the lapped portions of the sections, substantially as set forth.

6. A grate-bar made in longitudinal sections having at their meeting ends portions of reduced thickness lapped alongside each other, and a cuff fitting over the lapped meeting ends and forming a fire-surface above the same, substantially as set forth.

GEORGE S. SERGEANT.

Witnesses:

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