O. J. HODGE.
Grate-Bar.

No. 196,015. Patented Oct. 9, 1877.

Fig 1

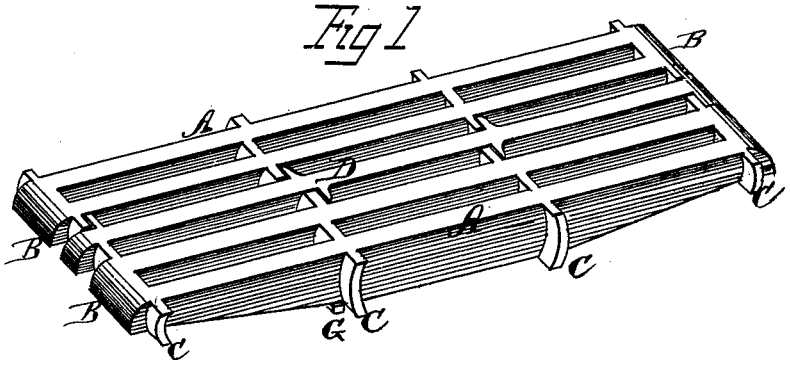
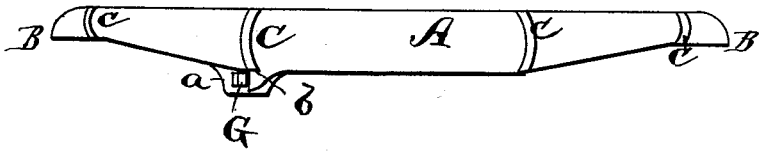


Fig 2



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UNITED STATES PATENT OFFICE.

OTIS J. HODGE, OF NORTH ADAMS, MASSACHUSETTS.

IMPROVEMENT IN GRATE-BARS.

Specification forming part of Letters Patent No. **196,015**, dated October 9, 1877; application filed March 19, 1877.

To all whom it may concern:

Be it known that I, OTIS J. HODGE, of North Adams, in the county of Berkshire and State of Massachusetts, have invented certain new and useful Improvements in Grate-Bars; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to sectional grate-bars; and it consists in providing such sections with a series of concavo-convex flanges on the sides, and the method of locking the sections, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a perspective view of my invention, and Fig. 2 is a side view of the same.

My grate is composed of a series of double grate-bars, A A—that is, each grate-bar is composed of two parallel bars connected by suitable cross-bars, and the ends of such double grate-bars formed, as shown at B B, to rest upon the cross-bars in the furnace. The double grate-bars A A are, on their sides, provided with corresponding curved or concavo-convex flanges C C, which, when the bars are put together, coincide or interlock with each other. D represents a single grate-bar, provided with similar side flanges, and on the bottom edge with a slotted projection, *a*, through which a wedge-shaped key, G, is passed, said key bearing against lugs *b b* on the under sides of the double grate-bars A A, for locking the grate-bars together.

By means of the curved projections or flanges C on the sides of the bars, said bars are held, when laid together, so that they cannot move out of line with one another, either up or down, back or forward, unless they are moved apart, so as to disconnect the projections.

If the flanges C were straight, though more or less inclined, the grate-bars could be lifted vertically upward, and would be liable to such displacement while raking or otherwise attending to the fire. This cannot be done with the flanges made on a curve, as shown and described, so that the grate-bars are held from moving up or down, as well as longitudinally, in either direction.

The single bar D is the key-bar, receiving the key G, said key holding the curved projections on the single bar in contact with those on the double bars, thereby firmly holding the whole in their proper place.

By making the bars double, or, in other words, casting two or more in one piece, they will keep their places better, for the reason that they are broader at the ends where they rest on the bars in the furnace, and consequently they are not so apt to tip over and let the heat strike on one side, as is the case with a single bar.

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

1. In a sectional grate, the double grate-bars A, provided with a series of concavo-convex flanges, C, on their sides, substantially as and for the purposes herein set forth.

2. The combination of the double grate-bars A A, having concavo-convex flanges C C on their sides and lugs *b* on their bottom, the single key-bar D, having corresponding flanges C and slotted projection *a*, and the key G, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

OTIS JULIUS HODGE.

Witnesses:
C. M. BROWN,
A. W. PARKHURST.