G. H. CLARKE.

Grate-Bars.

No. 142,146. Patented August 26, 1873.

Fig. 1.

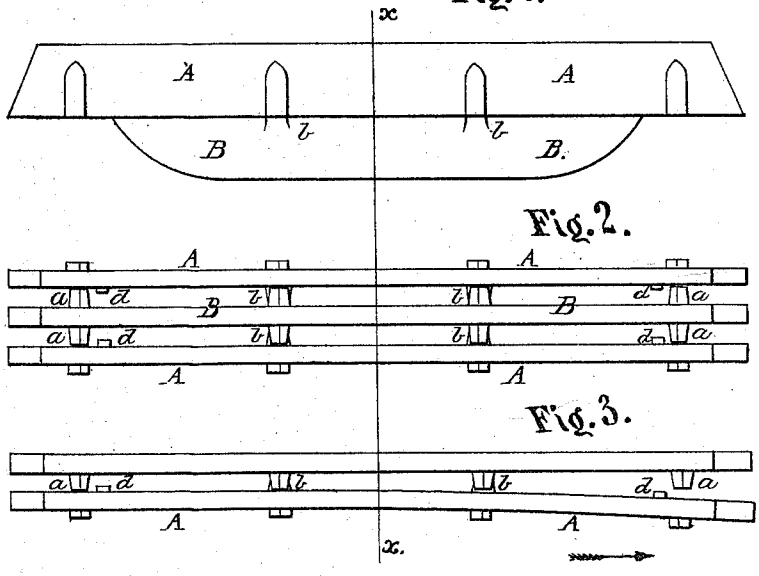


Fig. 2.

Fig. 3.

sec. thro. x.x.

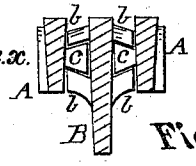
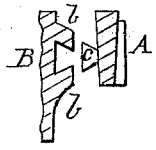


Fig. A.



Witnesses.

E. N. Johnson

J. P. Cranford

Inventor.

George H. Clarke

per A. D. Durgin

Atty.

UNITED STATES PATENT OFFICE.

GEORGE H. CLARKE, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN GRATE-BARS.

Specification forming part of Letters Patent No. **142,146**, dated August 26, 1873; application filed July 15, 1873.

To all whom it may concern:

Be it known that I, GEORGE H. CLARKE, of Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Grate-Bars, of which the following is a specification:

My invention relates to furnace grate-bars; and consists in a novel construction and arrangement of parts, which have for their object a more perfect bar than has heretofore been made, which is simple and easily manipulated in putting together or taking apart the grate.

Figure 1 is a side elevation; Fig. 2, a top view of a group of the bars. Fig. 3 shows the manner of putting the bars together or taking them apart. Fig. 4 represents a sectional view, showing the mode of locking the bars together transversely.

These bars may be locked together in any number. In the drawing, three are shown as comprising a group, in which there is a central supporting-bar, B, between two outside bars, A A. To the bar B, which need not necessarily be a supporting-bar, are cast projections *a a b b*, the latter having dovetailed slots made therein, as shown at Fig. 4, into which slots the dovetailed projections *c* cast on the outside bars A A enter, and thus lock the bars together as regards transverse movement, but which would not prevent their being moved in the direction of their length, which movement occurs more or less as the bars are subjected to varying temperatures. To prevent the bars from moving longitudinally sufficient to withdraw the dovetailed projections *c* from out the slots in the projections *b*, the projections *a a* at the ends of the bar B and the small stops *d d* on the ends of the bars A A are provided, which co-operate to prevent the bars being moved longitudinally in either direction to too great an extent by the stops *d d* coming in contact with the projections *a a*. It will thus be seen that the bars are effectually locked in both directions—that is, both as regards unlocking longitudinally or transversely—and before the bars can be separated the outer one, A, has to be sufficiently sprung away from the central one, B, to allow of the stops *d* passing the projection *a* without coming in contact with it; which done, the dovetailed projections *c c* can be withdrawn from the slots in the projections *b* and the bars taken apart. Fig. 3 shows the bar A thus sprung away from the bar B, and ready to be withdrawn in the direction of the arrow, thus disengaging the locking device *b c* and separating the bars. The stops *d* need not be very prominent, so as to allow of their passing over the projections *a* by springing the bar but moderately.

In putting the bars together, sufficient pressure is exerted on the outer bar to spring it so as to allow the dovetailed projections to enter the slots, when the bar can be readily slid into position.

All the bars composing the grate may be made of a uniform depth, or the deep ones or supporting-bars may be interspersed throughout the series at will.

I claim—

In combination with the bar B, provided with the lugs *a a* and longitudinally-locking lugs *b b*, the bar A, provided with the locking-lugs *c c* and stops *d d*, constructed and operating substantially as described and specified.

GEO. H. CLARKE.

Witnesses:

E. H. JOHNSON,

J. P. CRAWFORD.