L. H. ALLEN & W. BARTON.

GRATE BARS.

No. 181,892. Patented Sept. 5, 1876.

Fig. 1.

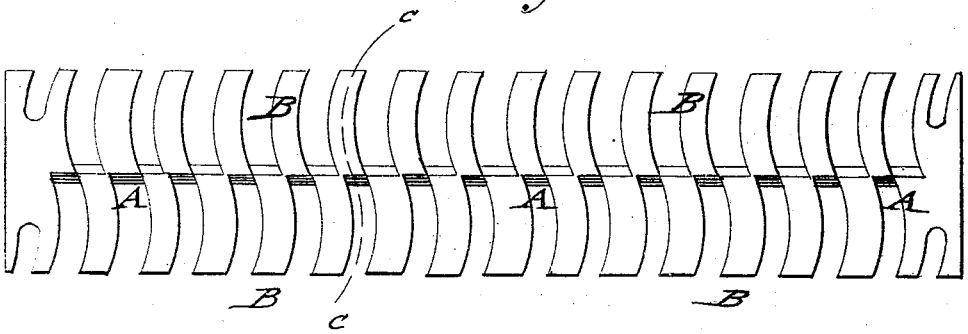


Fig. 2.

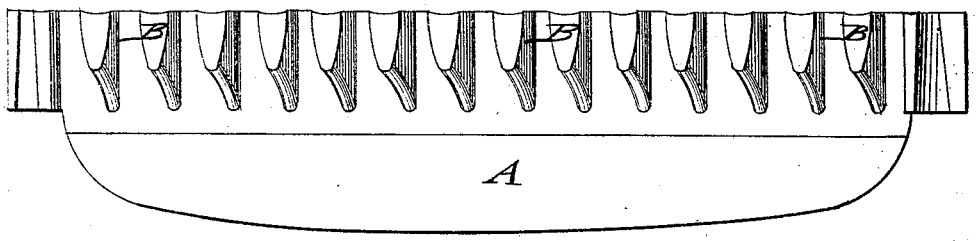
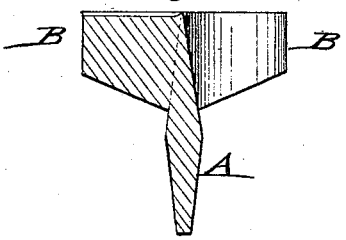


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

LUCIEN H. ALLEN AND WILLIAM BARTON, OF TAMAQUA, PENNSYLVANIA.

IMPROVEMENT IN GRATE-BARS.

Specification forming part of Letters Patent No. **181,892**, dated September 5, 1876; application filed June 26, 1876.

To all whom it may concern:

Be it known that we, LUCIEN H. ALLEN and WILLIAM BARTON, of Tamaqua, in the county of Schuylkill and State of Pennsylvania, have invented a new and Improved Grate-Bar, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, Fig. 2 a side view, and Fig. 3 a vertical transverse section on line *c c*, Fig. 1, of our improved grate-bar.

Similar letters of reference indicate corresponding parts.

The object of our invention is to produce an improved grate-bar, that is prevented from warping, twisting, or getting crooked when exposed to the heat of the fire thereon, by admitting the free passage of cold air around the lower part of the same, the cross-bars being free to expand and contract separately, so as to be not liable to breakage.

The invention consists of a grate-bar made of a longitudinal bearing-bar and curved cross-bars or ribs at both sides, which extend from the upper part of the bearing-bar, the cross-bars at one side alternating in breaking joints with those at the other sides.

In the drawing, A represents the longitudinal bearing-bar, and B the cross bars or ribs, which extend at both sides of the upper tapering part of the bar A. The cross-bars B, at one side of the bearing-bar, are made to break joints with the bars at the other side, and are of curved or arc shape from the bearing-bar to the outer ends, flat or grooved at the top, and diminishing somewhat in height from the bearing-bar upward. The cold air passes around the lower part of the cross-bars, and thereby keeps them cold, so as to prevent the warping, twisting, or getting crooked by the intense heat of the fire. The cross-bars B are disconnected from each other at the ends, and may thereby separately expand and contract without breaking.

When two or more bars are placed side by side, the ends of the cross-bars of one grate-bar come opposite the spaces of the adjoining grate-bar, so as to break joint therewith and allow the air to pass freely between the ends of the cross-bars, keeping them cool thereby.

The ashes settling on the tops of the cross-bars protect the tops of bars against the fire.

The laterally-curved shape of the cross bars has the advantage that the scraper used in cleaning out the fires may pass over the same without getting in between the bars, which is a main point of advantage of our grate-bars.

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

A grate-bar, constructed of a longitudinal bearing-bar and laterally-curved cross bars or ribs, disconnected at their outer ends, extending from the upper part of the bearing-bar at both sides, the cross-bars at one side alternating or breaking joints with those at the other side, substantially in the manner and for the purpose specified.

LUCIEN H. ALLEN.
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Witnesses:
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