W. GWYNN.

GRATES FOR LIME-KILNS.

No. 182,999. Patented Oct. 10, 1876.

Fig. 1

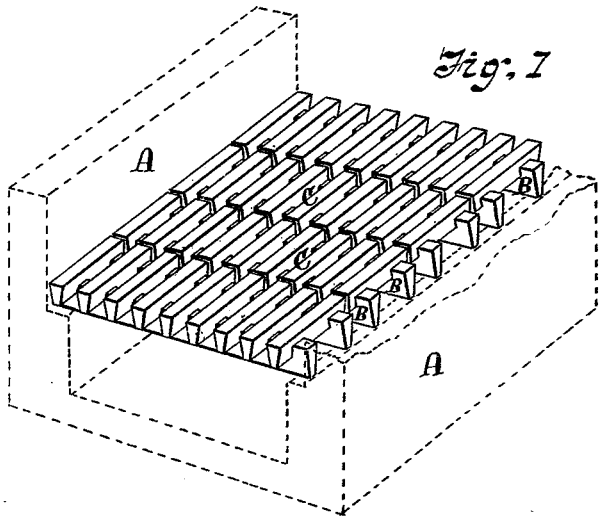


Fig. 2,

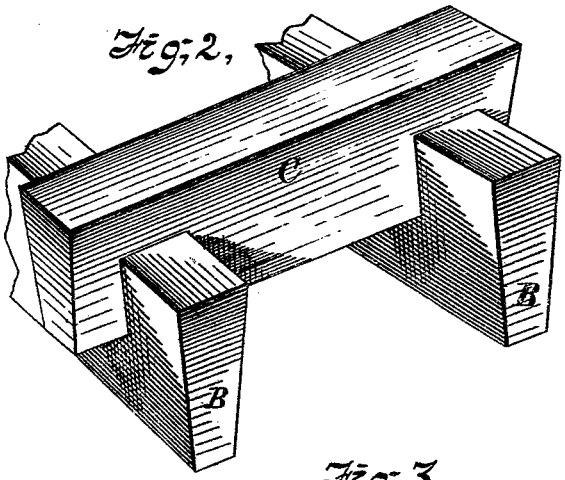
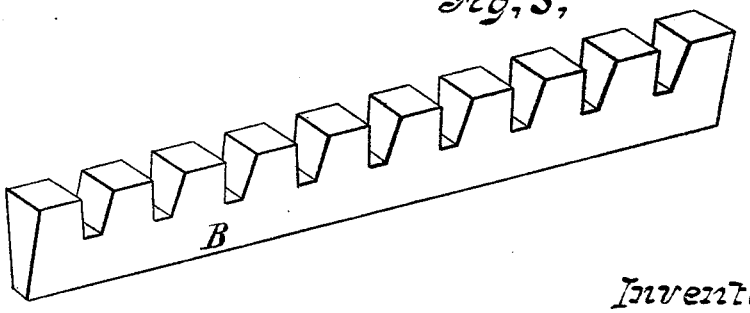


Fig. 3,



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UNITED STATES PATENT OFFICE.

WILLIAM GWYNN, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN GRATES FOR LIMEKILNS.

Specification forming part of Letters Patent No. **182,999**, dated October 10, 1876; application filed August 7, 1876.

To all whom it may concern:

Be it known that I, WILLIAM GWYNN, of the city of Sacramento, in the State of California, have invented a new and useful Improvement in Grates for Limekilns, &c., of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In the annexed drawings, forming a part of this specification, Figure 1 represents a view in perspective, showing my improved grate; Fig. 2, a view of one of the fire-brick or tile-bars, known to the trade as "arch-brick." Fig. 3 represents a view of the supporting-bar, with openings having inclined sides.

My invention relates to a novel arrangement of grates for lime or other kilns, where all the surface of the grate brought in contact with the fire is made of fire-brick or similar fire-proof material, whereby the supporting-bars, or that portion of the grate made of iron, is prevented from being fluxed by the action of the intense heat, together with the carbon thrown out from the stone during the process of burning.

A, Fig. 1, represents the sides or wall of the kiln. B B represent the supporting-bars, having openings upon their top surfaces at regular intervals, so as to conform to the shape of the brick; C C, fire-brick or tile, placed in position upon the supporting-bar.

The supporting-bars are arranged in the kiln in the ordinary way, while the brick or tile are placed in the openings in the supporting-bars at right angles, thus providing interstices or draft-openings between each brick or tile.

In wood-burning kilns the wood can be placed upon the grate without injury to the brick surface, the grate having a perfectly-level surface, as Fig. 1 shows.

The object of having the brick to suit the openings in the supporting-bars is, that their positions are not changed by reason of the contraction or expansion of the bars, and that when one or more of the bricks become broken or useless they can be easily replaced without taking the entire grate out of the kiln for that purpose.

It is found, in practice, that a grate for kilns constructed as shown and described will last a greater length of time than those now in use, thus saving to the manufacturer of lime a considerable outlay.

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

1. The combination, in a grate for lime or other kilns, of a supporting-bar having depressions or openings with inclined sides, and a surface of fire-brick or similar fire-proof material, of corresponding shape to the openings in the supporting-bar, arranged at right angles to said bar, substantially as described, and for the purpose set forth.

2. The combination, in a grate for lime or other kilns, of a supporting-bar having depressions or openings with inclined sides at regular intervals, with a surface of fire-brick, said brick being of a corresponding shape to the openings in the supporting-bar, and arranged at right angles to said bar, substantially as described, and for the purpose set forth.

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