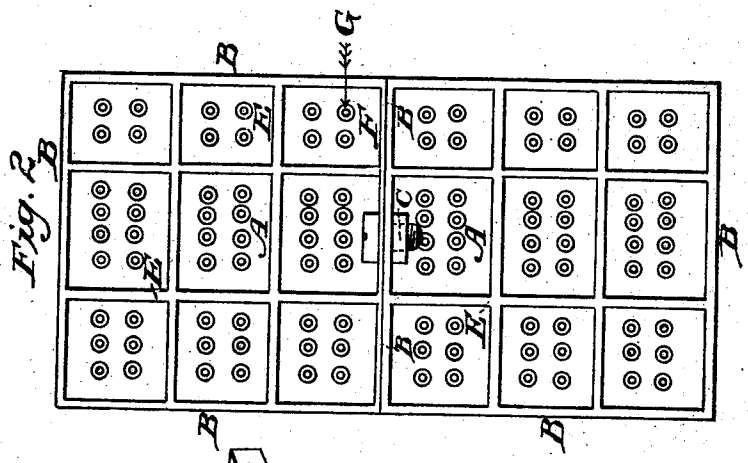
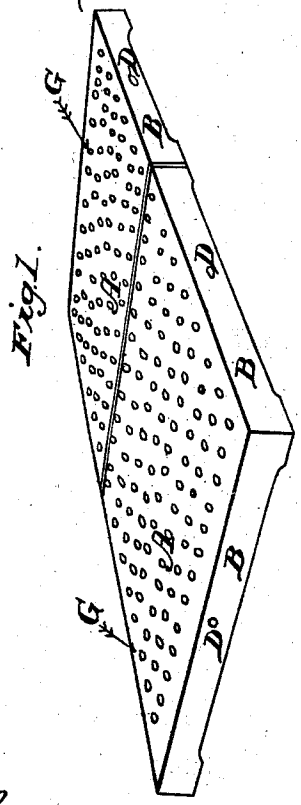
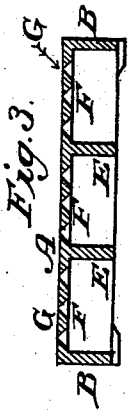
T. G. ARNOLD.

Malt-Kiln Tile.

No. 80,110. Patented July 21, 1868.







Witnesses
Franklin Barritt.
A. Barritt

Inventor:
T. G. Arnold

United States Patent Office.

THOMAS G. ARNOLD, OF NEW YORK, N. Y.

Letters Patent No. 80,110, *dated July* 21, 1868.

IMPROVEMENT IN MALT-KILN TILES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THOMAS G. ARNOLD, of the city, county, and State of New York, have invented certain new and useful Improvements in Cast-Iron Malleable Malt-Kiln Tiles; and I do hereby declare that the following is a full description of the same.

In malt-kiln tiles heretofore made, clay, or perforated wrought sheet metal has been used. The objections to the use of clay tiles are numerous, but particularly their liability to break and chip or splinter off, thereby making an uneven floor, and greatly adding to their expense to keep the floor in order.

To overcome these objections, perforated wrought sheet metal has been introduced into use. Though they obviate the chipping and splintering of the clay tiles, they fail entirely to overcome the greater evil of unevenness, owing to their dishing out, or bending down between their supporting-points, under the weight of the maltsters in walking on them, to stir up the malt in the process of malting.

My invention, therefore, is to overcome these objections to the use of either the clay or perforated wrought sheet-metal tiles.

And the nature thereof consists in making malleable cast-iron tiles of any suitable size, strengthened on the under side by ribs crossing each other at right angles, and uniting with a marginal ledge surrounding them, so that they may be bolted together to form the floor, and thereby obtain the solidity of the clay tiles, with the toughness and strength of wrought iron, and the cheapness of cast iron.

But to describe my invention more particularly, I will refer to the accompanying drawings, forming a part of this specification, the same letters of reference, wherever they occur, referring to like parts.

Figure 1 is a perspective view of two of the tiles, as bolted together.

Figure 2 is a lower plan view of the tiles, showing the ribs, and mode of bolting the tiles together.

Figure 3 is a cut section of one of the tiles, showing the mode of casting the perforations in them.

Letter A represents the tile, having on its under side a continuous marginal ledge, B, of any suitable depth for supporting the tiles upon and above the bed on which they are laid. The object of this ledge-formation is, first, to obtain a framework, (or what may be called side-rails,) so that the tiles may be locked or bolted together, as shown at *c*, fig. 2, through the bolt-holes D, fig. 1; as the bolt-holes are all formed at the same part in each rail, and the tiles are all of one size, it will readily be perceived that they will fit together in any position in which they may be placed; second, to form a supporting framework on which the tiles rest, and thus give solidity to them on the bed of the kiln.

To strengthen the tiles between the ledges or side-rails, a net-work of ribs, E, is cast on their lower sides, of a depth nearly equal to the depth of the ledges B. The object of this is obvious, as it enables me to reduce the thickness of the tiles to the minimum of perforated wrought sheet-metal tiles, and yet retain the requisite strength when made malleable; and, secondly, in consequence of casting them as thin as wrought perforated sheet-metal tiles, enables me, by the device of flaring the perforations on the under side of the tile, as shown at F, fig. 3, to cast the tiles with the perforations G in them. Without thus having the tiles as thin as sheet metal, and making the holes flaring on the under side it would not be possible to make a cast-iron tile with the numerous small perforations required. This fact may not be so generally known as to be appreciated by those not conversant with the practical difficulties in moulding and working in cast iron. To those, however, well acquainted with the subject, the importance of these improvements would be recognized at once, as entirely overcoming the difficulties heretofore experienced in making cast-iron malt-kiln tiles cheap enough to compete with the clay-burnt or wrought perforated sheet-metal tiles, and at the same time making a smoother and more solid floor, and of greater durability of wear than possible to be obtained by the use of either.

Having now described my invention, I will proceed to set forth, what I claim and desire to secure by Letters Patent of the United States.

I claim cast-iron malleable malt-kiln tiles, having a marginal ledge, and cross-bars or ribs on their under sides, as a new article of manufacture, constructed substantially as hereinbefore set forth, and for the purposes described.

T. G. ARNOLD.

Witnesses:

FRANKLIN BARRITT,

CHARLES L. BARRITT.