

(No Model.)

P. MADDOCKS.
LOCK BEARER FOR FURNACES.

No. 585,361.

Patented June 29, 1897.

Fig. 1.

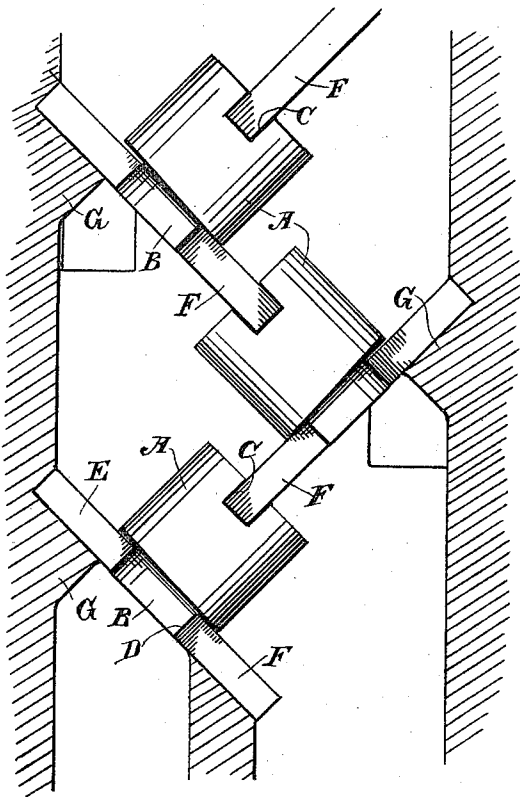


Fig. 2.

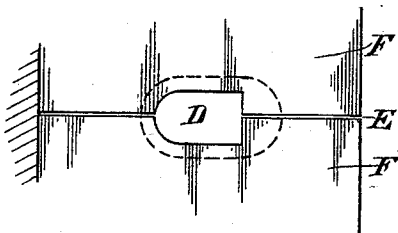
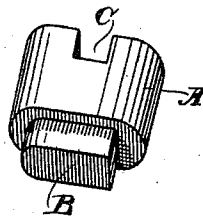


Fig. 3.



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UNITED STATES PATENT OFFICE.

PETER MADDOCKS, OF MIDWAY, CALIFORNIA.

LOCK-BEARER FOR FURNACES.

SPECIFICATION forming part of Letters Patent No. 585,361, dated June 29, 1897.

Application filed February 17, 1897. Serial No. 623,829. (No model.)

To all whom it may concern:

Be it known that I, PETER MADDOCKS, a citizen of the United States, residing at Midway, county of Alameda, State of California, have invented an Improvement in Lock-Bearers for Furnaces; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to what I call a "lock-bearer" for furnaces; and it consists in the parts and the constructions and combinations of parts which I shall hereinafter describe and claim.

Referring to the accompanying drawings, Figure 1 is a vertical section through part of a furnace and its tiles. Fig. 2 is a plan of the meeting-place of two tiles. Fig. 3 is a view of supporting-block.

In the construction of furnaces of this class the inclined tiles F are usually set at an angle of about forty-five degrees alternately upon opposite sides of the vertical chamber, and the ore flows down over these tiles in thin sheets while it is exposed to the heat from the fire.

The alternate heating and cooling causes the expansion and contraction which soon deranges the tiles and causes breakdowns in the furnace.

In my invention I employ what I call a "lock-bearer." This consists of a block A, made of fire-clay, having projecting from one end a lug B, and at the opposite end it has formed in it a channel C, extending transversely across it, this channel being of a width approximately equal to the thickness of the tile, allowing just sufficient space for slight movements of the lower edge of the tile in adjusting and for any expansion and contraction of it.

The tiles may be of any suitable or desired size. They are usually approximately eighteen inches from the upper to the lower edge and may be about three feet in length. These tiles extend horizontally as far as the size of the furnace makes necessary—that is, there may be four, five, or more of the tiles in line with each other. At each end and at points where the ends of the tiles meet projections G are built inwardly from the walls, the upper surfaces of which are inclined, so as to support the upper edges of the tiles, as shown.

The meeting edges of the tiles are formed

with openings, as shown at D, or these may be cut out after the tiles are made and baked, and the channel which is cut out in each of the meeting edges is sufficient to clasp around one-half of the lug B of the bearer. The channel in the next adjacent tile clasps around the other side of the lug B, thus allowing the edges of the tiles to come close together in a line, as shown at E. These bearers are set into the tiles sufficiently distant from the lower edges so that the lower edges of the next tiles above will enter and rest in the slots or channels C, which are formed in the upper edges of the bearers.

The bottom of the bearer stands at a little angle with the upper part, so as to allow it to adjust itself to the position of the tile above and cause the lower edge of this upper tile to fit properly into the slot or channel C. By this means the lower edge of each tile is supported by means of a bearer which is fixed in the meeting edges of the tiles upon the opposite side, these bearers extending all the way to the top of the furnace.

If by reason of the adherence of the bearer to the edge of the plate which enters the slot C and the contraction of the tile in cooling the bearer should be drawn out or partially disengaged from the socket, there is sufficient length to the part B to allow of this movement without entirely drawing it out, so that the parts will always remain locked in position and no expansion or contraction will disengage them.

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

1. In a furnace, the inclined tile surfaces, in combination with a bearer therefor consisting of a block having a projecting lug at the lower end fitting corresponding-shaped openings in the edges of the supporting-tiles, said bearer having in its upper end a channel which extends at right angles with the major axis of said lug and receives and supports the lower edge of the opposite inclined tile above.

2. In a furnace, the inclined tile surfaces, in combination with a lock-bearer therefor consisting of a block having a projecting lug at the bottom, openings made in the meeting edges of adjacent tiles within which said lug

is adapted to fit, a transverse channel made
across the top of the bearer to receive the
lower edges of the oppositely-inclined tiles
next above, said bearer having the bottom
5 standing at a slight angle with the top to al-
low for adjustment of parts.

3. In a furnace, oppositely-disposed in-
clined tile surfaces over which the ore is
caused to pass by gravitation, inclined pro-
10 jections from the furnace-walls upon which
the upper edges of the tiles are supported,
and bearers with projecting lugs engaging

openings in the meeting edges of the tiles,
and with channels formed across the upper
ends of said bearers for engaging and sup- 15
porting the edges of the oppositely-inclined
tiles above.

In witness whereof I have hereunto set my
hand.

PETER MADDOCKS.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.