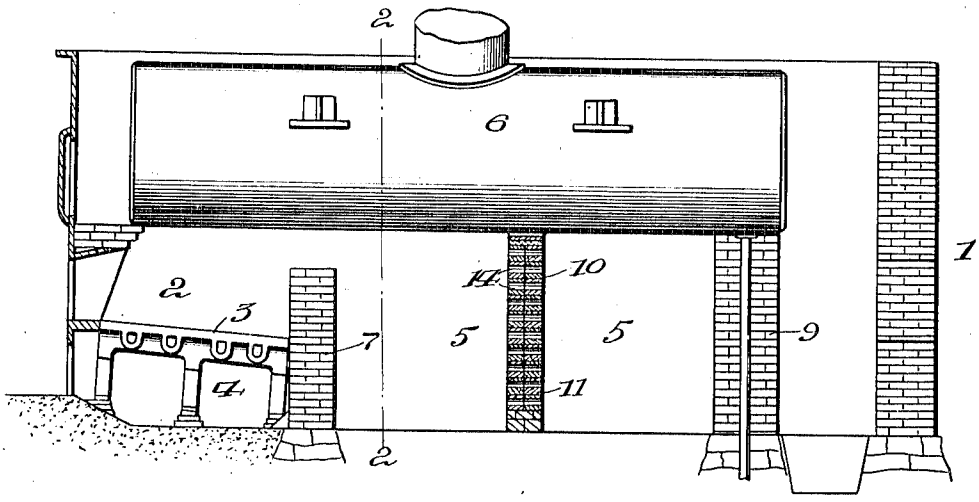
J. REAGAN.

STEAM BOILER FURNACE.

APPLICATION FILED APR. 24, 1913.

1,080,368. Patented Dec. 2, 1913.

Fig. 1.



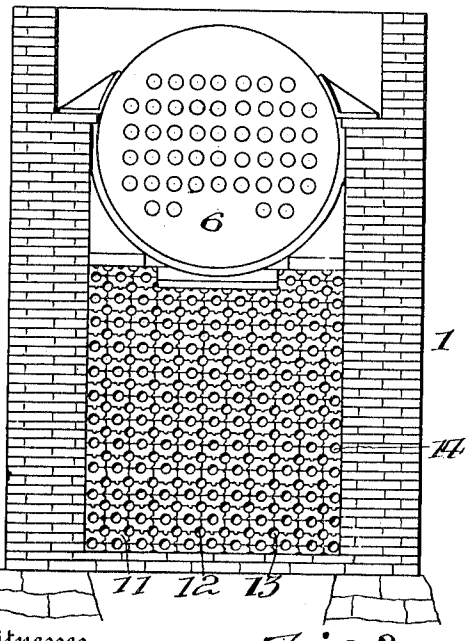


Fig. 2.

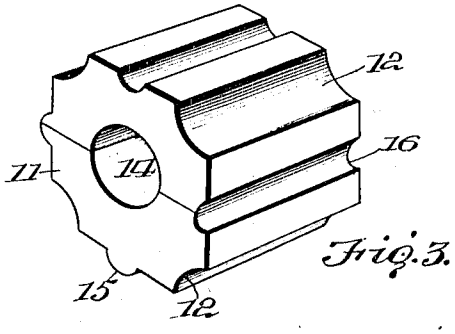


Fig. 3.

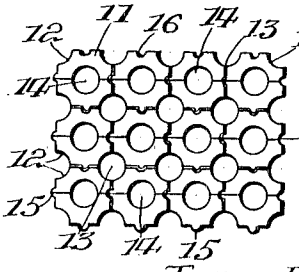


Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

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STEAM-BOILER FURNACE.

1,080,368. Specification of Letters Patent. Patented Dec. 2, 1913.

Application filed April 24, 1913. Serial No. 763,331.

To all whom it may concern:

Be it known that I, JAMES REAGAN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Steam-Boiler Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates generally to steam-boiler furnaces, but more particularly to the walls, and the tiles therefor, employed in the combustion-chambers for baffling or retarding the flames; and it consists of a so-called "checkered" wall constructed of novelly-formed tiles, as will be hereinafter fully described in this specification and briefly stated in the claims.

In the drawings—Figure 1 is a vertical, longitudinal section of a boiler-furnace, showing my improved wall applied thereto; Fig. 2, a vertical, transverse section on line 2—2 of Fig. 1; Fig. 3, a perspective view of the tile, and Fig. 4 an elevation of a section of the wall.

Referring to the several views, the numeral 1 indicates an ordinary boiler-furnace provided with the usual fire-box 2; grate-bars 3; ash-pit 4 and secondary combustion-chamber 5, the boiler 6 being supported therein in the usual or any preferred manner.

Within the secondary combustion-chamber, between the bridge-wall 7 and the supports 9 of the rear end of the boiler, is erected a "checkered" wall 10 for baffling and retarding the flame. This wall is constructed of tiles 11 of peculiar formation, each tile being substantially rectangular and laid loosely together in rows one above the other, so as to provide for expansion and contraction. Each tile has each corner formed with a longitudinal, quarter-circle groove 12, so that when the tiles are laid in rows, a longitudinal circular passage 13 will be formed through the wall at the intersection of every four tiles. Each tile is also formed with a longitudinal passage 14 through the center thereof, and the tiles are locked together by locking tongues 15 and grooves 16, two sides of each tile being formed with longitudinal tongues 15 and the other two sides with longitudinal grooves 16, so that when laid side by side, and one above the other the tongues of one tile will be received in the groove of the adjacent tile, thereby dispensing with the mortar or fire-clay usually employed in laying tiles and bricks. The tiles are preferably divided longitudinally, so as to provide for greater expansion, and to facilitate removal from the molds.

A wall constructed of my tile, loosely laid together, possesses great advantage over the so-called checkered walls now in use in boiler-furnaces, in that there is less friction to the passage of the products of combustion through circular passages, and they can be kept clean by the draft, there being no corners in which the products of combustion may be deposited. The wall checks or baffles the flames until the gases become ignited, and becoming thoroughly heated, as the flames pass through the circular passages, all smoke will be practically oxidized or consumed. By laying the tiles loosely, expansion and contraction of the tiles is provided for, and by forming the tiles in half-sections their molding will be facilitated and further allowance for expansion secured.

Having thus fully described my invention, what I claim is:—

1. In a boiler-furnace, the combination with the combustion-chamber thereof, of a baffle or retarder wall constructed of interlocked tiles, laid loosely one upon the other, said tiles being of substantially rectangular shape provided with longitudinal, circular passages therethrough, and with grooved corners to provide circular passages at the intersection of the adjacent tiles.

2. A furnace tile of substantially rectangular shape, having a central, longitudinal passage therethrough; its corners grooved to form, when laid in a wall, circular passages at the intersection of the adjacent tiles, and two of its sides provided with tongues and the other sides with grooves for interlocking purposes.

3. An interlocking furnace-tile longitudi-

nally divided into half-sections, each section having a semi-circular groove to form, when placed together, a circular passage therethrough, and the corners of the tile being grooved to provide circular passages at the intersection of the adjacent tiles when laid in a wall.

In testimony whereof I affix my signature, in the presence of two witnesses.

JAMES REAGAN.

Witnesses:
OTTO DUYDOPFEL,
J. W. CASSIDY.