No. 828,355. PATENTED AUG. 14, 1906.

J. F. WARWICK.

FURNACE TILE.

APPLICATION FILED FEB. 17, 1906.

Fig. 1.

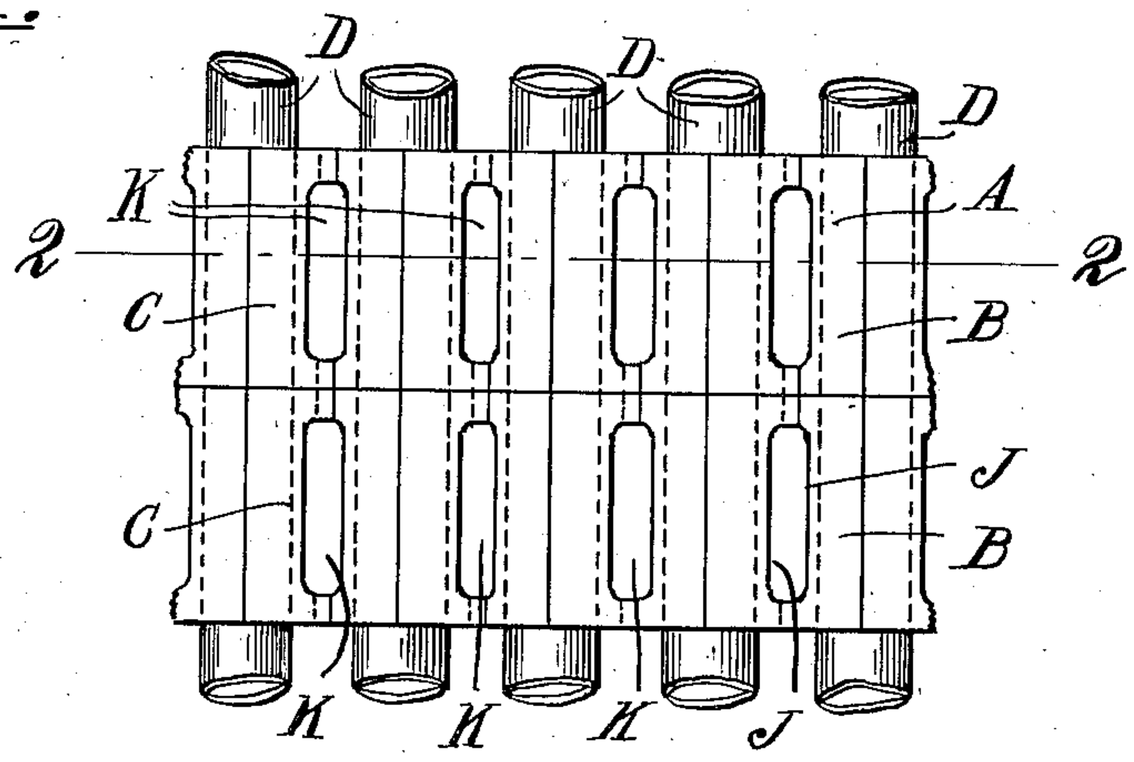


Fig. 2.

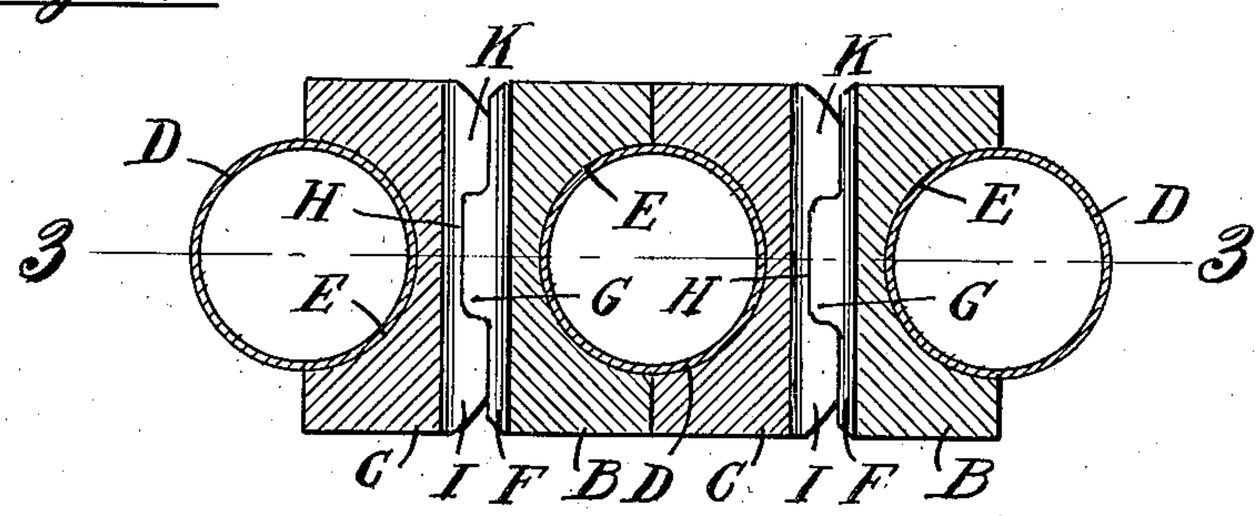
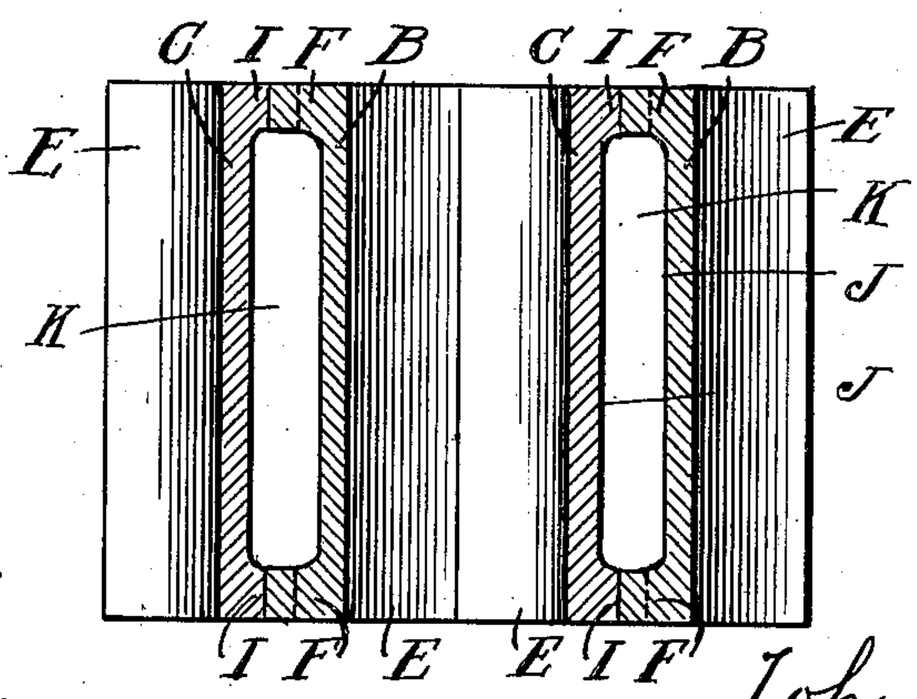


Fig. 3.



Witnesses

H. C. Harper.

R. A. Fischer

Inventor

John F. Warwick

By

C. F. Wilson Atty.

UNITED STATES PATENT OFFICE.

JOHN F. WARWICK, OF CHICAGO, ILLINOIS.

FURNACE-TILE.

No. 828,355. Specification of Letters Patent. Patented Aug. 14, 1906.

Application filed February 17, 1906. Serial No. 301,697.

To all whom it may concern:

Be it known that I, JOHN F. WARWICK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Furnace-Tiles; and I 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.

My invention relates to a new and improved form of tiling designed particularly for use in connection with water-tube boilers, the object being to provide a protection for those tubes which are nearest to the fire-box without reducing the flue-space to any practical extent; and it consists in the features of construction and combinations of parts hereinafter fully described and claimed.

It has been found that the tubes which are nearest to the fire-box in water-tube boilers quickly deteriorate and have to be replaced in consequence of their being heated to too high a degree.

Many forms of brick tiling have been devised; but they have not met with much practical approval, owing to the fact that they have cut off the free passage of the product of combustion between the tubes and have been frail in their construction, and hence requiring frequent renewal. To overcome these objections and to other ends, my tile is so designed that it completely covers the tubes protected, while leaving passages or flues for the products of combustion to pass between the tubes, and they also interlock with each other and the tube upon which they are placed, so that when they are once in position they cannot be accidentally displaced.

In the accompanying drawings, illustrating my invention, Figure 1 is a fragmentary elevation of a portion of a tiling curtain constructed in accordance with my invention shown in position upon a number of tubes. Fig. 2 is a cross-section on the line 2 2 of Fig. 1. Fig. 3 is a cross-section on the line 3 3 of Fig. 2, the boiler-flues being removed.

In said drawings the curtain A is made up of a number of single tiles B and C, which are adapted to surround and be supported by the boiler-tubes D. Each of said tiles B and C is provided with a substantially semicylindrical groove E in one longitudinal face adapted to receive a boiler-tube D. The opposite faces of said tiles are provided with horizontally-projecting ribs formed to interlock with each other to hold said tiles in relative position. The ribs F on the tiles B are cut away at their ends, leaving a central projection G, adapted to fit within a recess H, provided in the ribs I of the tiles C, and thus lock said tiles against movement circumferentially when in position. Said tiles B and C are provided with recesses J in their faces between said ribs F and I, which when the tiles are in position together form the passage or flue K, through which the products of combustion may freely pass. To place said tiles in position on the tubes D, they are first placed against the tube they are to protect, then moved bodily around the tube circumferentially through an arc of about ninety degrees or until directly between two adjacent tubes, when they can be moved longitudinally into place.

The outer corners of the ribs F and I are cut off to permit same to pass between the boiler-tubes.

In addition to the protection afforded to the boiler-tubes by my tiling the fact that the heated products of combustion are brought into very close proximity to highly-heated fire-brick in passing through said narrow passages K as they pass from the fire-box to the boiler tends to oxidize the free carbon in the gases and prevent smoke, as well as tend very largely to economy in the use of the fuel.

I claim as my invention—

1. A covering-tile for boiler-tubes, each provided in one face with a longitudinally-disposed substantially semicylindrical recess adapted to receive the tube, and provided in its opposite face with a laterally-disposed recess, and interlocking means disposed on the end portions of said last-named face of said tile and adapted to engage corresponding interlocking means on the corresponding face of the next adjacent tile.

2. A covering-tile for boiler-tubes, each provided in one face with a longitudinally-disposed substantially semicylindrical recess adapted to receive the tube, and provided in its opposite face with a laterally-disposed recess, and projections disposed on the end portions of said last-named face of said tile to enter recesses in the corresponding portion of the next adjacent tile.

3. A covering for boiler-tubes comprising tiles in pairs and provided on opposite faces with substantially semicylindrical grooves in

which the tubes are adapted to be received, the faces of said tiles opposite to said grooved faces being provided between their ends with lateral recesses, interlocking means disposed on the end portions of said last-named faces and engaging corresponding means on the other tile of the next adjacent pair.

4. A covering for boiler-tubes comprising tiles in pairs and provided on opposite faces with substantially semicylindrical grooves in which the tubes are adapted to be received, the faces of said tiles opposite to said grooved faces being provided between their ends with lateral recesses, interlocking means disposed on the end portions of said last-named faces and engaging corresponding means on the other tile of the next adjacent pair, said interlocking means comprising projections on one tile of a pair adapted to be received in corresponding recesses in the other tile of the next adjacent pair.

5. A covering for boiler-tubes comprising tiles in pairs and provided on opposite faces with substantially semicylindrical grooves in which the tubes are adapted to be received, the faces of said tiles opposite to said grooved faces being provided between their ends with lateral recesses, interlocking means disposed on the end portions of said last-named faces and engaging corresponding means on the other tile of the next adjacent pair, said interlocking means comprising outwardly-projecting ribs, said ribs on one of the tiles of a pair being provided with a central recess and a central projection on the ribs of said other tile of a pair adapted to be received in said last-named recess.

In testimony whereof I have signed my name in presence of two subscribing witnesses.

JOHN F. WARWICK.

Witnesses:

E. F. WILSON,

WM. J. ROBINSON.