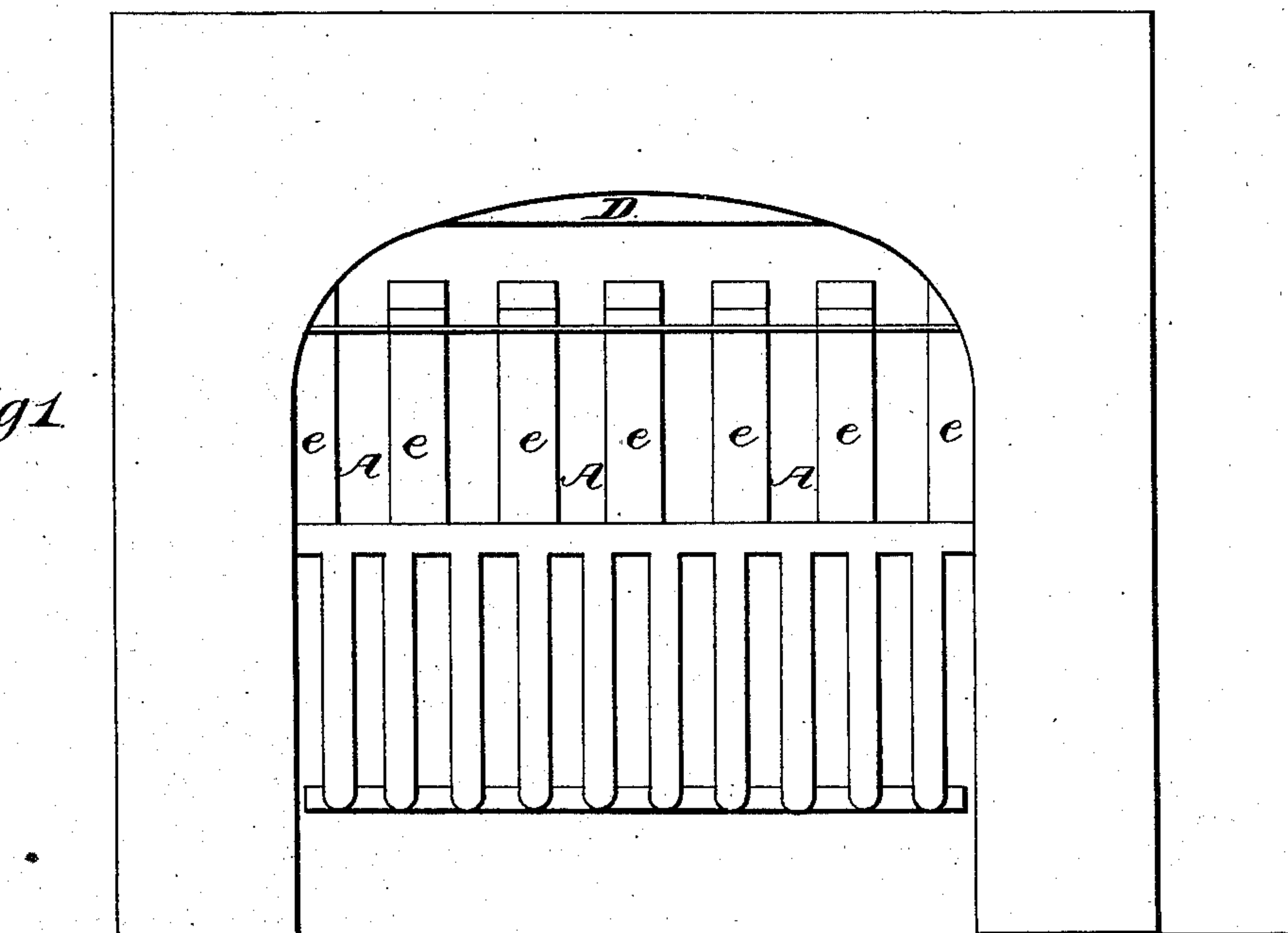


J. H. GARRARD.  
Fire-Place.

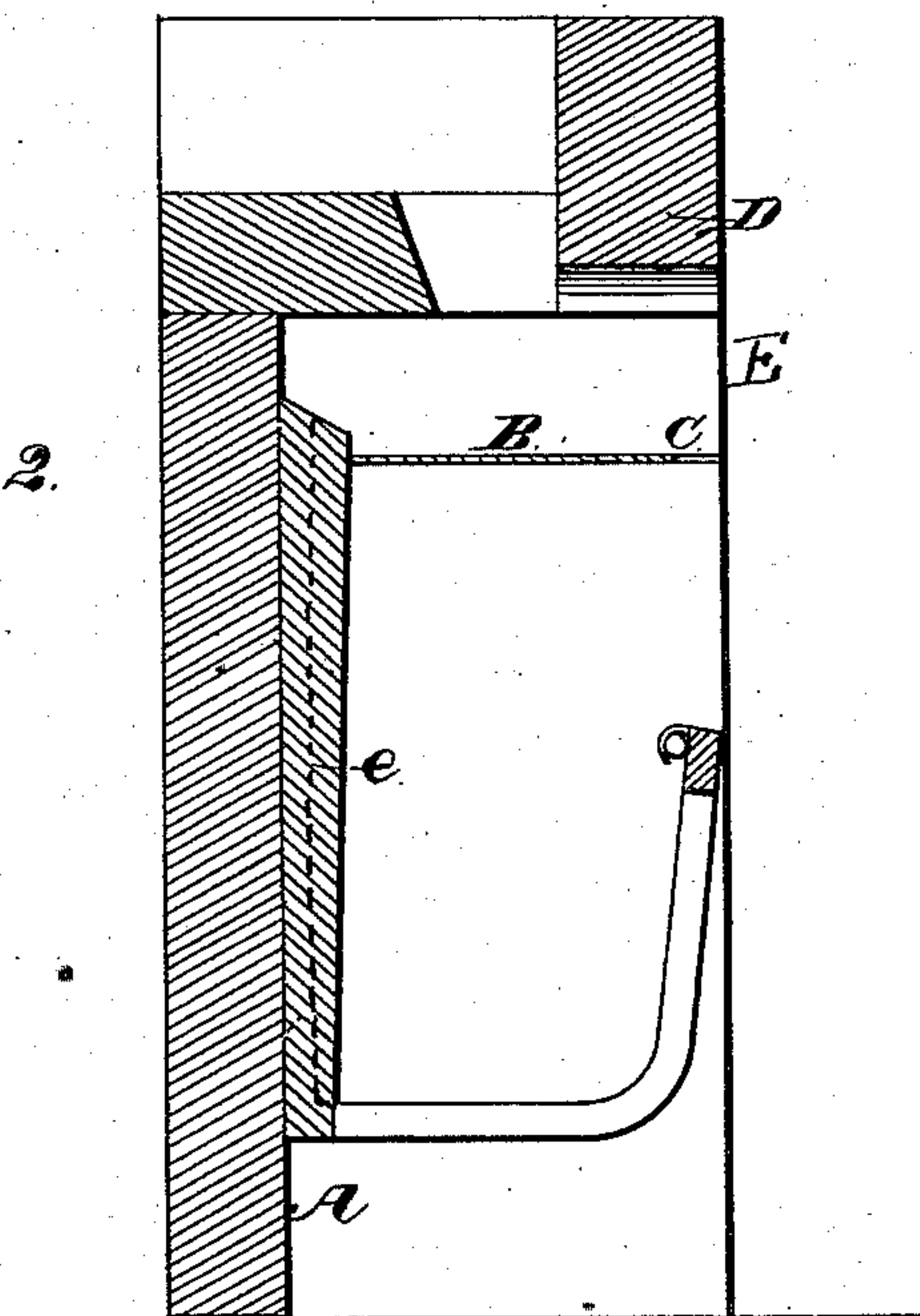
No. 162,745.

Patented May 4, 1875.

*Fig 1*



*Fig. 2.*



*Attest:*

*Jackson Boggs.*  
*J. L. Buhart.*

*Inventor:*

*John H. Garrard.*

# UNITED STATES PATENT OFFICE.

JOHN H. GARRARD, OF ALLEGHENY, PENNSYLVANIA.

## IMPROVEMENT IN FIRE-PLACES.

Specification forming part of Letters Patent No. **162,745**, dated May 4, 1875; application filed August 27, 1874.

*To all whom it may concern:*

Be it known that I, JOHN H. GARRARD, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Fire-Chamber of Fire Places, by which the smoke and gases are more perfectly consumed; and I do hereby declare that the following is a full and clear and exact description of the construction and operation of the same, reference being had to the annexed drawings and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a front elevation, and Fig. 2 a longitudinal section.

The nature of my invention consists in forming the back of the grate and fire-chamber with a fire-tile, A, made in one piece, or in sections, with grooves or open flues, *eeeeee*, about two inches broad, and from half an inch to an inch deep at one end, graduating to two and a half or three inches at the other end; the tile A to be from sixteen to eighteen inches long by the necessary width for any grate, the grooves or flues *eeeeee* of the fire-tile A to be placed vertical at the deepest end of the grooves or open flues at the top, the tile A to be so adjusted that the bottom of the grate will lie against the lower edge of the grooves or open flues *eeeeee* of

the fire-tile A, so as to admit a free current of air up said grooves or open flues *eeeeee* of the fire-tile A. There is to be a cast-iron plate or tile, B, laid horizontally against the top of the grooves or open flues *eeeeee* of the fire-tile A, the same to slide horizontally in iron grooves C C, to be built in the side walls of the fire-chamber, and to have about one inch of sliding room, either to the grooves or open flues *eeeeee*, or to the front E, the said iron plate or tile B to act as a deflector, and to be from four to six inches above the top of the fire-grate, and to be coped over by a fire-tile, D, laid horizontally three or four inches above said iron plate or tile B, and thereby checking the gases and burning the smoke, and producing a perfect combustion of the fuel.

What I claim as my invention is—

A fire-tile, A, with grooves or open flues *eeeeee*, set vertically, an iron plate or tile, B, to lie horizontally as a deflector, the same to be coped over by the fire-tile D, laid horizontally against the top of the fire-tile A, as described and set forth, the whole combined substantially for the purpose intended.

JOHN H. GARRARD.

Witnesses:

JACKSON BOGGS,  
G. S. EBERHART.