

*Alfred Greenaway & Hugh Needham's Improvement
In Fire Grates.*

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Fig 1.

PATENTED JUN 27 1871

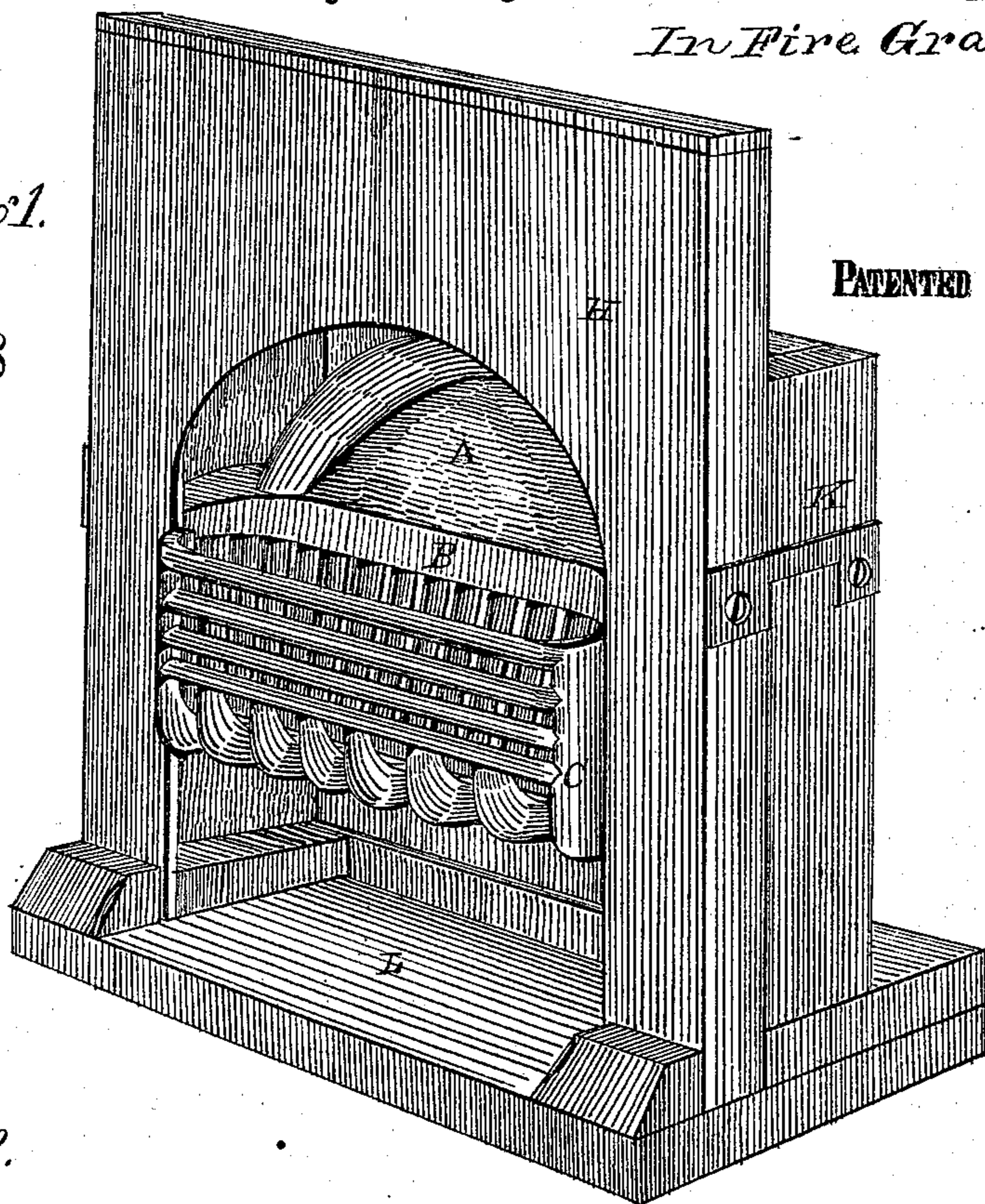
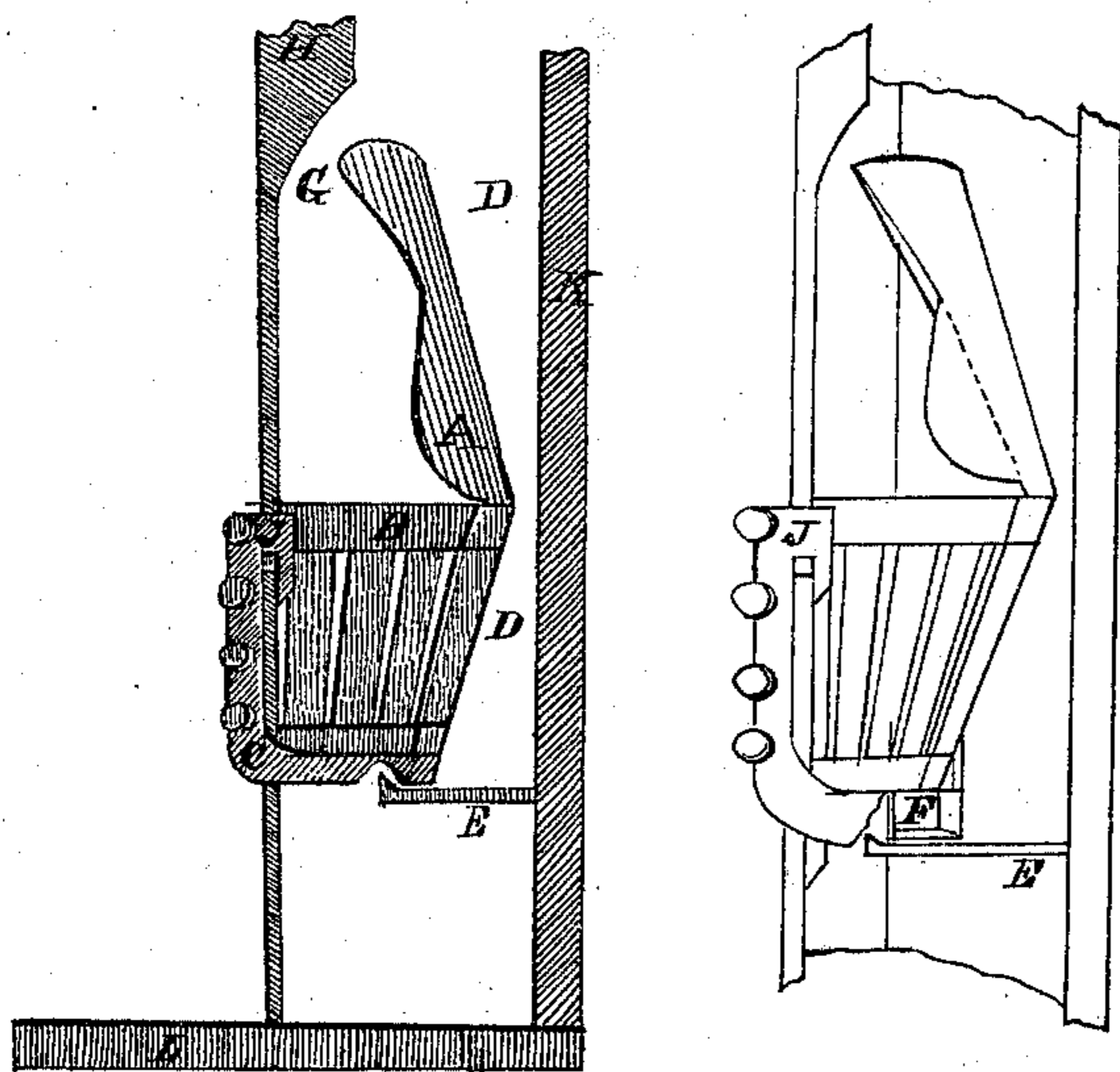


Fig 2.



*Witnesses;
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UNITED STATES PATENT OFFICE.

ALFRED GREENAWAY AND HUGH J. NEEDHAM, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN FIRE-PLACE GRATES.

Specification forming part of Letters Patent No. 116,438, dated June 27, 1871.

To all whom it may concern:

Be it known that we, ALFRED GREENAWAY and HUGH J. NEEDHAM, of the city of New Albany, county of Floyd and State of Indiana, have invented certain new and useful Improvements in a Fire-Grate and the Tile used for the back thereof, of which the following is a specification:

This improvement consists, more especially, in the grate and the tile that forms the back.

The front part of this grate is made of iron, and hung on lugs on the inside of the grate front, similar to those now in common use; but the ends and back are formed by another grate, with perpendicular bars extending up as high as the front, leaving an air-space of some three or more inches behind the back and at the ends. The tile forming the back is made to rest on the edge of the grate, pitching forward at the top according to the thickness of the arch at the top of the fire-place, the ends being built in or closed with common fire-brick or tile made for the purpose, leaving an air-space at the ends and back, between them and the main walls of the fire-place, for the purpose of conducting all dust and ashes out through the flue. The tile forming the back is made plain on the back side, straight across the lower edge, and somewhat in the form of a section of an ellipse, or flat arch at the top, the ends extending somewhat below what would be the center line, in order to suit the height of the arch in different fire-places when resting on the back of the grate. The inside edge of this tile has a beveled rim, about three or more inches wide, raised about two inches high, around the top, extending down the ends, forming a part of the end walls of the grate; the central part of this last-named tile within the rim is made to project in the center somewhat in the form of the section of a hemisphere, with the lower edge rounded off where it rests on the back of the grate.

The great advantage which I claim for my invention is, first, the use of a tile, the central part of which projects in front in connection with the open-bar grate under it, which admits the air behind, causing the fire to burn clearly at that point, and not appear smothered or deadened, as in cases where the concave or straight backs are used, and made to pitch forward very much; I also claim

the flue or air-spaces behind the grate as being a great advantage in conducting off all dust or ashes through the flue, and also to give ample space for the ash-pan under the grate.

Having thus fully described the nature and object of my invention, a more complete understanding of which may be had by reference to the drawing. Figure 1 is a view of the front of the grate, showing the open grate in the back, and tile above it. Fig. 2 is a sectional view of the grate and tile, showing the air-space behind it. Fig. 3 is an unimportant sectional view, simply showing the rest in the wall which holds up the grate-back.

H is the front frame of the grate. C is the front part of the grate, suspended to the frame by the hook J at the top, the lower part resting on the spike E under it. Two or more spikes may be used, the heads or hooks of which being so placed as to come between the bars. B is the open grate in the back, which also forms the ends, and is made with perpendicular bars, closed in smaller at the bottom than at the top so as to lap over and rest on the bottom of the front grate. A is the tile which forms the back above the grate, and when in position is made to pitch forward at the top, leaving only sufficient flue-space between it and the arch of the fire-place, and is held in its place by the brick that is built in to close up the sides. G is the flue-space in front. D D is the air-space in the back. K is the main walls of the fire-place. F is a rest in the same to hold up the back grate. L is the hearth.

Having thus fully described the drawing, what we claim as new, and desire to secure by Letters Patent, is—

The tile A, as above described, and the air-space D D behind it and at the ends, in combination with the open grate-back B, when made separate from the front part; also, the front C, when hung to the frame H by the hook J at the top, and held up by the pin E at the bottom, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

ALFRED GREENAWAY.
HUGH J. NEEDHAM.

Witnesses:

E. F. HUYCK,
P. McCANN.