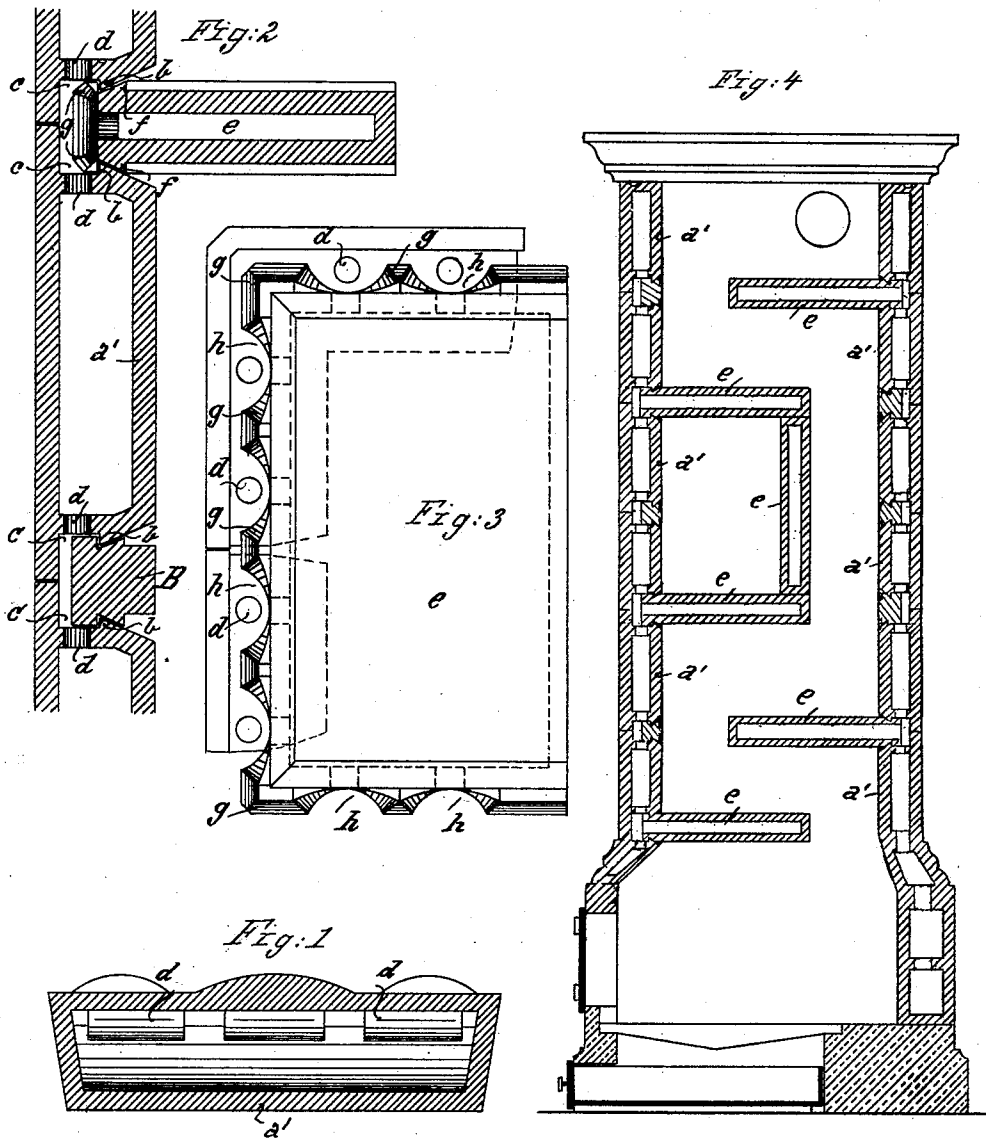


(No Model.)

R. MEYER.
TILE STOVE.

No. 480,603.

Patented Aug. 9, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

REINHOLD MEYER, OF WILDBURGSTETTEN, GERMANY.

TILE STOVE.

SPECIFICATION forming part of Letters Patent No. 480,603, dated August 9, 1892.

Application filed November 13, 1891. Serial No. 411,968. (No model.) Patented in Austria-Hungary October 8, 1889, No. 16,316 and No. 44,852; in Germany January 24, 1890, No. 50,514; in Norway March 12, 1890, No. 1,558; in Denmark March 15, 1890, No. 642; in Sweden October 23, 1890, No. 2,622, and in Switzerland September 7, 1891, No. 1,387.

To all whom it may concern:

Be it known that I, REINHOLD MEYER, a subject of the King of Bavaria, residing at Wildburgstetten, Bavaria, Germany, have invented certain new and useful Improvements in Tile Stoves, (which have been patented in Austria-Hungary, No. 16,316 and No. 44,852, dated October 8, 1889; in Sweden, No. 2,622, dated October 23, 1890; in Germany, No. 50,514, dated January 24, 1890; in Norway, No. 1,558, dated March 12, 1890; in Switzerland, No. 1,387, dated September 7, 1891, and in Denmark, No. 642, dated March 15, 1890,) of which the following is a specification.

It is a well-known fact that the tiles of the form at present employed become coated with soot very rapidly and that their recesses are not easily accessible, and the process of cleaning them is hence attended with difficulty. On the narrow sides of the stoves, where the so-called "sight-openings" are located, there is no possibility whatever of cleaning. Inasmuch as the soot materially impairs the conduction of the heat, it follows that the tiles or fire-brick are heated with difficulty and that their heating effect is not in a proper relation to the amount of fuel consumed. These defects are radically removed in the improved stove-tiles hereinafter described.

In the drawings, Figure 1 represents a stove-tile in cross-section; Fig. 2, a vertical section showing one flue; Fig. 3, a plan view of one layer of tiles with a flue-plate, and Fig. 4 a vertical section of a tile oven provided with the improved double-walled tile.

An additional plate *a'* is laid upon the lateral flanges of the tile, thus closing the same whereby the access of soot and ashes to the interior of the tile is prevented. This plate, being of equal thickness throughout, may be made very thin without incurring the danger of cracking. It is not necessary, moreover, to glaze the same, and it hence remains porous. These properties both combine to induce a rapid and effective transmission of heat, such as cannot possibly be attained by the usual stove-tiles, for the latter must be made very thick on account of the designs, whose contours are often of great depth, and

their only heat-transmitting surface is, furthermore, coated with a layer of glazing, closing its pores.

To assemble the tiles to form a stove, the same may be constructed as follows: The improved tiles are provided at their tops and bottoms with a deep recess or rabbet having a rib *b* and a throat *c*, the latter having openings *d* drilled or cut into them. These openings permit the expansion of the air in the interior of the tile and the circulation of the same. These rabbets afford a joint for the attachment or putting in place the hollow plates *e*. These hollow plates take the place of the flues formed of single massive plates and may also be substituted for the customary so-called "sight-openings," (usually made of sheet iron,) as indicated, *e. g.*, in the vertical section of the stove. The hollow plates *e* are provided with openings at their front or rear ends, and in the corner-pieces these openings are provided in the sides. These openings serve to admit the hot air issuing from the tile and to convey it in the desired direction. These plates *e* are, moreover, provided with two enlargements or ribs *f g*, Fig. 2, at the points where they are supported by the tiles, the first to prevent the warping of the stove as it expands when the fire is started, the second to provide a small clearing or free space, which facilitates the unimpeded influx of the heat, Fig. 1. For this purpose the outer enlargement is provided with any desired recesses or indentations, as at *h*. These hollow plates have the advantage, in addition to that already referred to, of absorbing the heat developed in the interior of the stove, and which with the flues now in use escapes through the chimney unutilized, and conveying the same outwardly. They thus increase in a considerable degree the heating-surface, and hence also the heating effect of the stove, because the upwardly-flowing heated gases impinge particularly against these hollow plates with increased force. At the points where the smoke and products of combustion are to pass from one layer of tiles to the next above the plate is provided with suitable recesses or mortises. Where a flue is omitted, a piece

or strip similar in shape to the ends of the flues is inserted into the gap formed by the mortises or rabbets on the tiles (see strip B Fig. 2) to prevent the admission of smoke and
5 to obviate any interference with the circulation of the air to the connecting-plate next above.

It is obvious from the above that a stove constructed of the so-described tiles or flues
10 and which presents flat surfaces at all points in its interior may be cleaned very easily and thoroughly and that the utilization of heat therein is the highest conceivable.

The inner plates *a* of the tiles, as well as the
15 hollow plates *e*, are preferably made of fire-proof material for the purpose of durability. No change occurs in the building of the stove, nor is any necessary in putting the flues in place. The tiles are beveled, as will appear
20 from the above, for the purpose of making the necessary joints with clay.

The necessary moldings are formed similarly to the tiles. These moldings might, *e. g.*, be formed integral with the flues, and
25 the flues may be so constructed that their ornamental front edges may serve as an intermediate molding.

The tiles for the lowermost part of the stove are provided with slots or openings on their
30 outer wall for the purpose of replacing the

heated air rising through the interiors of the tiles and passing off at the top by the colder air on the floor, whereby a circulation and a uniform temperature of the entire body of air in the space to be heated is obtained.

What I claim, and desire to secure by Letters Patent, is—

1. A tile stove constructed of superimposed layers of hollow intercommunicating tiles to form the outer walls, in combination with hollow flue-plates, as *e*, communicating with the hollow tiles at their points of connection, substantially as set forth.

2. In a tile-stove, the combination of superimposed layers of hollow tiles provided with rabbets, as *a*, ribs, as *b*, and throats, as *c*, with hollow flue-plates, as *e*, arranged between the hollow tiles, and strips, as *B*, arranged between the said hollow tiles at the points where no flue-plates are arranged, the flue-plates being provided with mortises and the hollow tiles with openings at their tops and bottoms to permit the circulation of air, as described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

REINHOLD MEYER.

Witnesses:

ALBERT WEICKMAN,
CARL MAYER.