Oct. 26, 1926. 1,604,796

E. F. WIEDERHOLDT

TILE CONSTRUCTION

Filed April 23, 1925

Fig. 1.

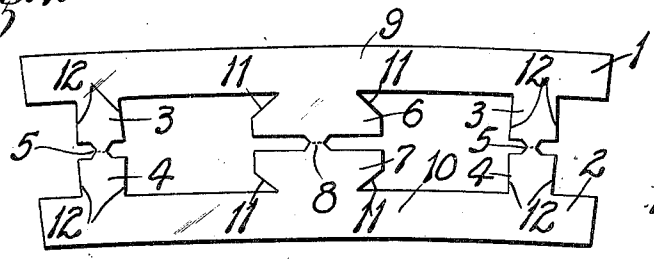


Fig. 3

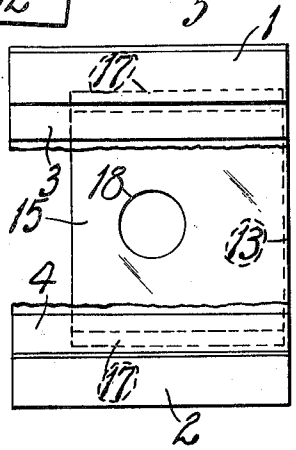


Fig. 2.

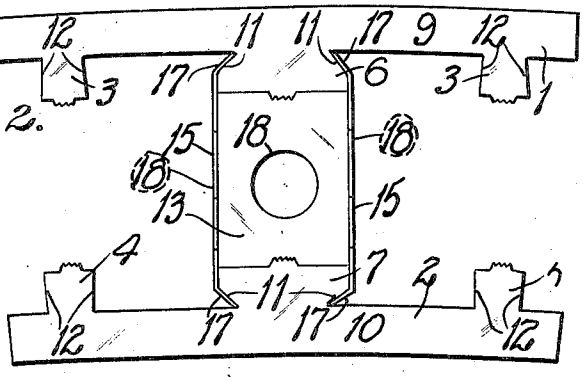


Fig. 4.

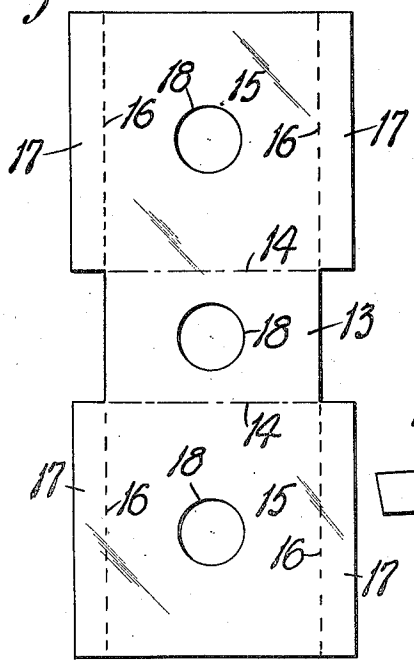


Fig. 5.

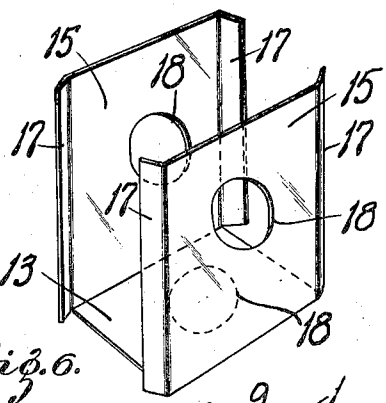
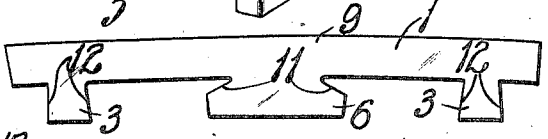


Fig. 6.



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UNITED STATES PATENT OFFICE.

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TILE CONSTRUCTION.

Application filed April 23, 1925. Serial No. 25,179.

This invention relates to certain new and useful improvements in the construction of tiles, adapted more particularly for employment in the building of chimneys, but equally applicable, according to the shape given the tile, for use in building walls or similar structures, and, in fact, in any structure where tiles of the character hereinafter indicated are employed.

The tile constructed according to the present invention is substantially H-shaped in plan view and is curvilinear in form, which shape of tile is intended particularly for use in the construction of the walls of circular chimneys. A tile of this general shape and type is shown in my prior Patents No. 835,769, dated November 13th, 1906, and No. 989,677, dated April 18th, 1911.

The present invention is designed as an improvement over the construction set forth in the last of the patents named above.

In this prior patent, a substantially H-shaped tile formed of clay is provided, in the course of its production, with frangible webs connecting opposite ends of the tile for the purpose of strengthening the same, so that it will maintain its shape while being dried and burned, and will be able to withstand the rough usage to which it is subjected during the handling in the drying kiln and furnace, and while in transit to the place of use. Before being used, the frangible web of each tile is knocked out, suitable weakening grooves being provided near opposite ends of the webs to enable the breaking to be readily effected.

Tiles made according to the patent aforesaid are, however, relatively quite expensive to manufacture, and I have devised the present invention with the idea in view of reducing the cost and simplifying the manufacture of this type of tile, while, at the same time, retaining all of its advantages.

The invention is characterized by the production of a tile in two parts, either originally produced separately, or joined together and then separated, and connecting the two parts of the tile together at any desired distance of separation, by means of a connecting clip, which latter is preferably of metal, and forming the cross-bar of the H-shaped tile.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is an end view of a tile formed in two separable parts, which view may represent the tile after it has been dried and burned, or in its plastic state ready for such operations;

Figure 2 is a similar view showing the two parts of the tile separated a suitable distance and connected together by my improved clip;

Figure 3 is a view in side elevation of the tile shown in Figure 2;

Figure 4 is a plan view of a sheet of metal in condition to be bent into shape to provide my improved clip;

Figure 5 is a perspective view of the clip ready for application to the two parts of the tile, as shown in Figure 2; and

Figure 6 is an end view of one member of the tile formed as a separate unit.

Referring now to the drawing, the numerals 1, 2, (Figure 1) indicate the two parts of a tile constructed according to my invention, having near their ends inward projecting portions 3, 4, connected by a narrow neck 5. At the center, the two parts of the tile are provided with two oppositely extending projections 6, 7, of considerable width as compared with the portions 3, 4, and connected centrally by a narrow neck 8. The parts 1 and 2, constituting the outer and inner members of the tile, respectively, are in the form, as to their body portions 9, 10, respectively, of relatively thin sheets or slabs, the two parts being correspondingly curved as shown, so that the tiles, when placed endwise, may form a circular structure. This is particularly true of the outer body portion 9. From the point of connection of the projections 6, 7, with the bodies 9 and 10, said projections have their upper surfaces outwardly inclined, as indicated at 11, to form shoulders to be engaged by the sides of the clip, as hereinafter recited. The inwardly projecting portions 3 and 4 at either end of the tile are also preferably formed with outwardly inclined side walls, as indicated at 12, which provide locking spaces at opposite sides of the tile for the cement when inserted within the tile.

The tile shown in Figure 1 may be formed

in a continuous strip by forcing the clay through a correspondingly shaped die under hydraulic or other pressure, the strip being subsequently cut into the desired lengths for the tiles. The tiles are then dried and burned in the ordinary manner, the connections 5 and 8 at the ends and center of the walls 1 and 2 of the tile serving to brace it and prevent warping, and also after the tile is burned, to enable it to withstand the rough usage to which such tiles are ordinarily subjected.

The walls 9 and 10 of the tile as shown in Figure 1 are closer together than is desired for the tile when ready for use in building a wall or the like. To complete the tile and place it in the desired form, the necks 5 and 8 are broken away and the parts 1 and 2 separated from each other and connected at the desired distance apart by application of the clip shown in Figure 5. This clip, as shown by Figure 4, is preferably constructed of an oblong sheet of metal which is cut away centrally at opposite sides to provide a narrow body portion 13, the two end portions of the sheet beyond this body portion being bent at right angles thereto along the dotted lines 14 to form the side members 15 of the clip. Each of the side members 15 has its side edge portions bent inwardly along the dotted lines 16 at an angle corresponding to the incline of the undercut portion 11 of the projections 6 and 7 to form retaining flanges 17, the flanges 17 of the two side members being oppositely directed, or extending toward each other, as shown by Figure 5. For the purpose of lightening the structure and at the same time to permit free access of cement into the interior of the clip, the latter is provided in its body 13 and side members 15 with apertures 18.

The parts 1 and 2 of the tile having been separated at the points 5 and 8, as previously described, are connected by inserting the open end of the clip over the projections 6 and 7 in such manner that the corresponding flanges 17 will engage or clamp the inclined surfaces 11 of such projections, the clip being pushed inward until its top or body 13 rests upon the outer faces of the projections 6 and 7. As shown by Figure 3, the free ends of the side members 15 need not extend to the opposite sides of the tile, but it is sufficient if said side members project about half way of the depth of the tile.

The walls 9 and 10 of the tile may be connected at different distances apart, and to this end, the clips for connecting them are made in varying sizes so that the desired thickness of tile may be secured. It will be understood, of course, that at the base of a structure, such as a chimney, the walls are thicker than at the upper part of the structure, and hence larger tiles are used in the base than in such upper portion. In varying structures, also, different thicknesses of tiles are desired, and my invention permits the desired thickness of tile to be made by using a clip of the appropriate size.

In use, the tiles constructed in the manner as shown in Figure 2 are placed in endwise relation around a circular area, and the ordinary vertical and horizontal tie-rods being placed in position therein and thereon, cement is poured into the tiles to completely fill the space between the two walls thereof and the space between the side members 15 of the connecting clips. A second layer of tiles is then placed on the first, preferably in a manner to break joint therewith, and filled with cement as before. The manner of employing the tiles is fully described in my prior Patent No. 835,769, above referred to, and no further description thereof need be given, as the same forms no part per se of the present invention. It is only necessary to state that in the construction of the prior patent, where the cross-bar of the H-shaped structure was formed integral with the walls, it was necessary to cut away said cross-bar in order to provide a space for the horizontally disposed tie-rods. In the present instance, this space is automatically provided by causing the ends of the clips to terminate short of the side of the tile, whereby, as shown by Figure 3, a trough is provided for the reception of the tie-rods.

Referring to Figure 6, the structure there shown differs from that of Figure 1 simply in the fact that the member shown, corresponding to the part 1 of the tile of Figure 1, is formed independently of the part 2 by being forced through a die in the usual manner. The part 2 of the tile would be correspondingly formed, and then the two parts connected by the clip in the manner already described. My experience leads me to prefer the manner of forming the tiles shown in Figure 1, however, as the same is stronger and there is less danger of warping when the tile is dried and burned.

As indicated above, the walls 1 and 2 may be straight and parallel with each other instead of curved as shown, and, in fact, within certain limitations, could have other than a curved or straight form without departing from the spirit of my invention. Preferably, however, whether the walls 9 and 10 be straight or curved, the tile as a whole will be substantially H-shaped.

I claim:

1. A tile comprising two separated walls and a unitary spacing clip inserted between the walls and having at its opposite ends clamping members engaging the material of the walls centrally and transversely along the inner sides thereof, said clip extending

from one edge of each wall throughout a major portion of the depth thereof and rigidly holding the walls in fixed spaced relation.

2. A tile comprising two separated walls and a unitary spacing clip comprising a body portion and substantially parallel side members extending at right angles to the plane of said body portion and engaging at the opposite ends of its side members the material of the walls centrally and on the inner sides thereof for a major portion of their depth and rigidly connecting and holding the walls in spaced parallel relation.

3. A tile comprising two separated walls each of which is provided on its inner side with an inward projection extending in the direction of the depth of the walls from one side thereof, and the clip having a body portion extending between said walls and end members engaging opposite sides of said projections for a major portion of their depth to space and rigidly connect the two walls.

4. A tile comprising two separated walls each of which is provided with a central inward projection, and a clip inserted between said walls and having at its opposite ends clamping members engaging over said projections for a major portion of their length to space and rigidly connect the two walls.

5. A tile comprising two separated substantially parallel walls, each of which is provided with an inward projection having converging sides, and a clip comprising connected side members having inwardly directed flanges at their outer sides inserted between said walls with the flanges thereof engaging over the inclined sides of said projections.

6. A tile comprising two substantially parallel walls separated a given distance from each other and having inward projections near their ends and at their centers, central projections providing shoulders at opposite sides, and a clip inserted over and connecting said central projections, said clip comprising a metal plate having a top or body portion and parallel side members extending at right angles thereto and provided with lateral flanges, said flanges, when the clip is in position on the projections, engaging the shoulders thereof.

7. A tile comprising two separated walls and a spacing clip having parallel side members inserted between the walls and engaging at their opposite ends the material of the walls centrally of the latter and along a portion of the depth of the walls and connecting and holding the walls in spaced relation, the side members of said clip being of less depth than the depth of the tile.

8. A tile comprising two separated substantially parallel walls, each of which is provided with a central inward transverse projection affording shoulders, and a clip comprising connected side members of less length than the depth of the tile, inserted between said walls, said side members having retaining portions at their outer ends inserted over and engaging the shoulders of said projections.

In testimony whereof, I have hereunto set my hand.

ERNEST F. WIEDERHOLDT.