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1,787,447

TILE

Filed March 13, 1925

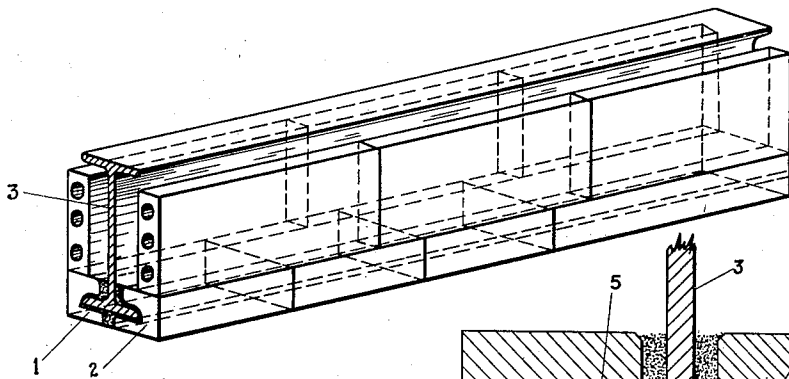


FIG. 1

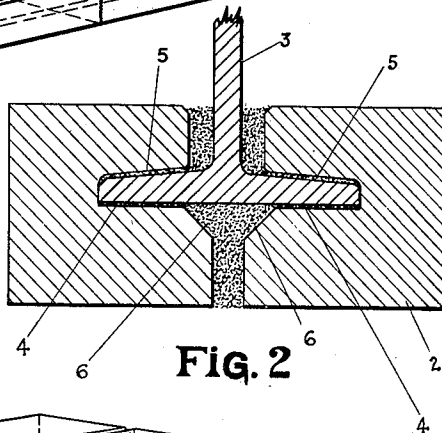


FIG. 2

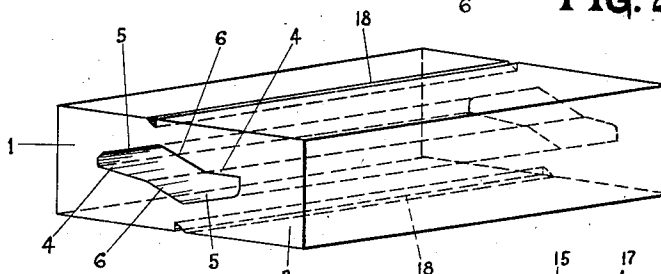


FIG. 3

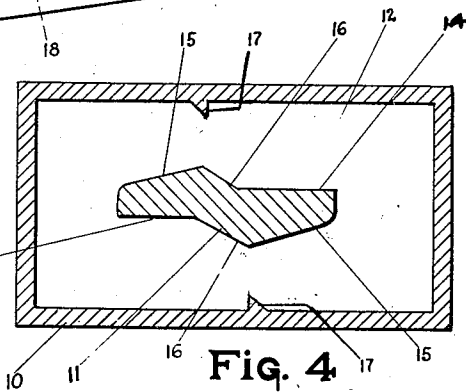


FIG. 4

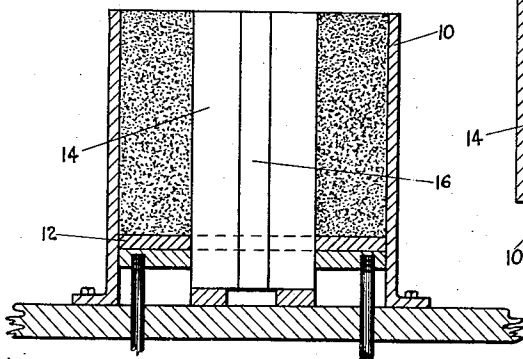


FIG. 5

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TILE

Application filed March 13, 1925. Serial No. 15,239.

This invention relates to improvements in building construction and more particularly to an improved form of tile used in fire-proofing steel beams and the method of manufacturing the same.

The fire-resisting qualities of calcined gypsum have long been recognized and rectangular tiles of this material have been in general use for sometime for the erection of partitions and for surrounding steel beams in floor, roof and wall constructions to render them fireproof or fire-resisting.

It is an object of this invention to provide a calcined gypsum tile that is particularly adapted to fit around the base flanges of I beams used in building construction and which will act as a support for rectangular tile protecting the webs of such beams.

While the preferred form of this invention is illustrated on the accompanying sheet of drawing, yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

In the drawing:

Figure 1 is a view in perspective of a floor or roof I beam illustrating an application of the flange surrounding tile in accordance with this invention.

Figure 2 is an enlarged detail view in cross section illustrating the same.

Figure 3 is a view in perspective of the double tile as it is moulded.

Figure 4 is a horizontal sectional view of a tile mould with the core in place.

Figure 5 is a transverse vertical sectional view through a tile mould, illustrating a tile therein and the core, in side elevation.

As shown in Figures 1 and 2 the tiles 1 and 2 are each provided with similar recess to receive the opposite members of the base flange of the I beam 3, each having horizontal portions 4 parallel to the bottom of the tile to pass under the bottom of the I beam flange and angular portions 5 to pass above the top of the said flange, with the horizontal portions beveled, as at 6, to the vertical edges and the distance between the outer and inner vertical edges of the tile greater at the bottom than at the top, so that approximately the same amount of mortar or other binder may

be applied between each upper vertical edge and the adjacent surface of the web as between the lower vertical edges of the opposite tiles, and the beveled corners forms a key for the binder on the lower side, as shown.

It will be seen that the tile embracing one flange is the reverse of the tile embracing the opposite flange and it has been found that by making the inner adjacent vertical edges of equal length, one tile when inverted will form a rectangular block with the other and therefore can be cast in one piece, as shown in Figure 3.

Calcined gypsum when mixed with water forms a plastic mass which may be moulded or cast and having assumed a definite shape will set and in drying out will maintain that shape. This invention contemplates the casting of a pair of tiles in a mould 10, such as illustrated in Figures 4 and 5, having a stationary core 11 and a movable follower 12. The core is provided with surfaces 14, 15 and 16 corresponding to surfaces 4, 5, and 6 of the tile shown in Figure 2 and two opposite sides of the mould are provided with vertical ribs 17 on the sides adjacent the meeting edges of surfaces 15 and 16 of the core which will form grooves 18 in the cast block. The mould is filled with the plastic material and after it has set sufficiently to hold its shape the follower 12 is moved upward to eject the formed article in the form shown in Figure 3, which is removed to a drying kiln or otherwise allowed to dry.

The block in this form is readily cut by a saw along the lines of the grooves 18 to form two tiles, or by lifting the block and bringing it down upon a straight edge along the groove 18 with sufficient force it will readily separate in vertical lines through the grooves to form a pair of tiles for the opposite flanges of an I beam.

A gypsum tile of this character when moulded in this manner maintains its contour and its flat surfaces do not change in drying so that a close fit can be obtained upon the flanges of structural angle irons. This form of tile is particularly designed to be applied to I beams, as illustrated, and while the general shape of the flanges of I beams

remain the same the width of the base flange varies with the thickness of the web in different strengths of beams. By forming the tile with its upper horizontal surface less than its lower horizontal surface, referring to Figure 2, tiles of the same dimensions may be applied to I beams of various strengths.

What I claim is:

1. A calcined gypsum block having a central aperture and a longitudinal groove on two opposite outer surfaces, said aperture having two sets of diametrically opposite inner surfaces parallel to the outer surfaces and two sets of diametrically opposite inner surfaces angularly disposed thereto, with the angularly disposed surfaces meeting each other on each side of the aperture under the outer grooves and joining at each end one of the sets of parallel surfaces, adapted by a blow along one of the outer grooves to separate into two tiles with the apertures forming reverse recesses in the tiles to receive the flange of structural irons.

2. A pair of shoe tiles cast diagonally opposite in a rectangular block, each tile having a recess in one side shaped to receive a structural iron flange; the block having small angular inwardly projecting longitudinal recess grooves on opposite sides, with a central recess having two diametrically opposite surfaces parallel to the sides of the block, and two sets of diagonally opposite surfaces angularly related to said parallel surfaces, meeting each other on the sides of the recess adjacent to the longitudinal grooves and joining at each outer end one of the said parallel surfaces.

3. A rectangular shoe tile block having angular longitudinal grooves in opposite sides and a central recess, the diagonally opposite sides of the recess each having a portion parallel to the outer surface of the block, and an angular extension, the apex of which is adjacent to the groove in the side, the notches and angular extensions providing means for breaking each block into two similar tiles each having one side longer than the other.

4. A gypsum tile having a flange recess in one side shaped to receive a structural iron flange and having opposed outer surfaces parallel to the bottom of said flange recess with the width of the surface immediately adjacent thereto being greater than the other of the opposed surfaces and the outer edge of the bottom of said flange recess being beveled.

5. A cast gypsum shoe tile consisting of two integrally cast portions, severable from each other, each portion when so severed comprising a longitudinally recessed tile, the outer faces of said tile being parallel to each other, one side of said recess being parallel to the faces of the tile and the other side of the recess being inclined relative to the other

side, one side of said tile being broader than the other side of the tile.

6. A calcined gypsum tile having a recess in one side shaped to receive a structural iron flange and having opposite outer surfaces parallel to the bottom of said flange recess with the width of the outer surfaces adjacent to the bottom of said flange recess being greater than the width of the other of said opposite surfaces, and a surface including a beveled portion joining the bottom of said flange recess to the said outer surface of greater width.

7. An integrally cast tile of cementitious material having outer longitudinal grooves formed in two opposed faces thereof and a single centrally disposed opening of irregular configuration extending longitudinally of the tile, said tile being severable along said outer grooves into two substantially similar portions, each having a longitudinal recess and opposed outer faces parallel to each other, one side of said recess being parallel to said opposed outer faces and another side of said recess being inclined relatively to said opposed outer faces, one of said opposed outer faces being of greater width than the other.

8. An integrally cast tile of cementitious material having outer longitudinal grooves formed in two opposed faces thereof and a centrally disposed opening of irregular configuration extending longitudinally of the tile, said tile being severable along said outer grooves into two substantially similar portions, each having a longitudinal recess and opposed outer faces parallel to each other, one side of said recess being inclined relatively to said opposed outer faces so as to coincide substantially with the inclination of a flange of a structural iron, and one of said opposed outer faces being of greater width than the other.

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