Aug. 9, 1932. H. W. REEL 1,870,422

BUILDING CONSTRUCTION

Filed Jan. 2, 1929

Fig-6

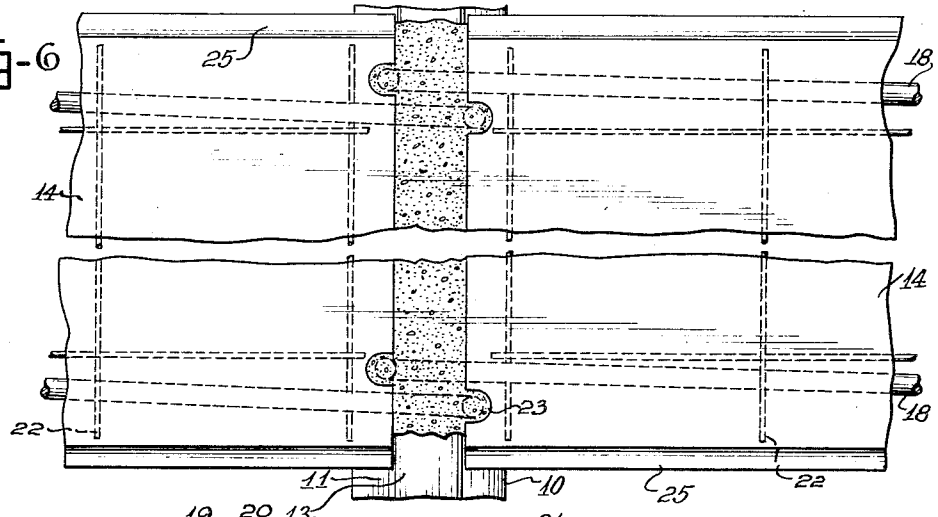


Fig-5

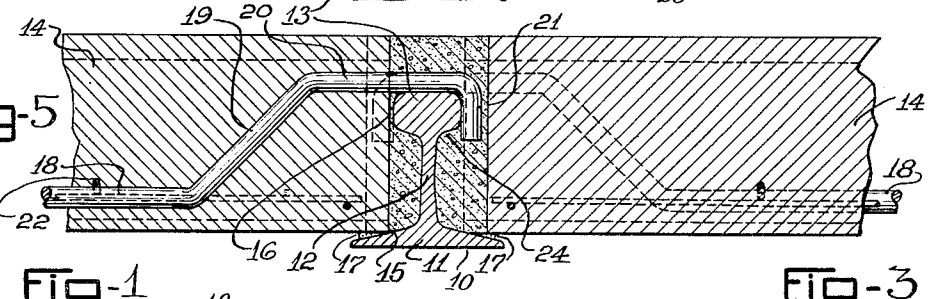


Fig-1

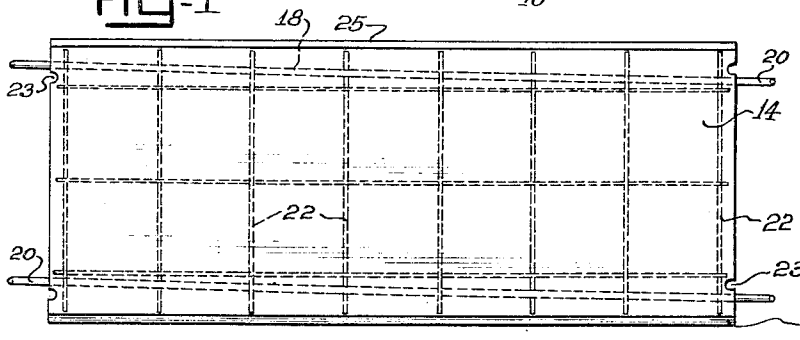


Fig-3

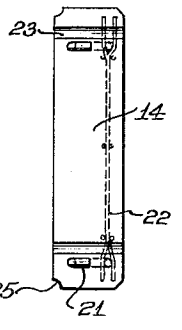


Fig-2

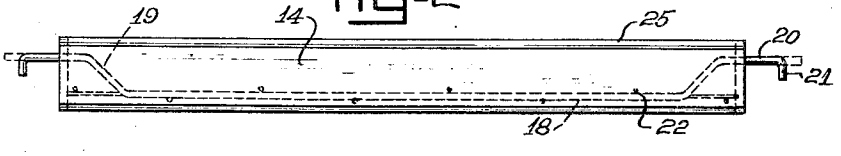
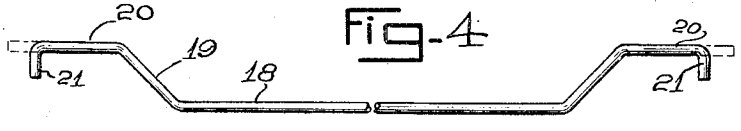


Fig-4



INVENTOR
HERBERT W. REEL.
BY L. A. Paley
ATTORNEY

Patented Aug. 9, 1932 1,870,422

UNITED STATES PATENT OFFICE

HERBERT W. REEL, OF HINSDALE, ILLINOIS, ASSIGNOR TO UNITED STATES GYPSUM COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS

BUILDING CONSTRUCTION

Application filed January 2, 1929. Serial No. 329,824.

This invention relates to improvements in building construction, and more particularly to tiles, slabs, or blocks used in the erection of roofs or floors.

It has been customary to employ tiles of light weight material, such as gypsum, with metal reinforcing members cast therein for roofs and floors in which the tiles are supported upon metal structural members forming the purlins, subpurlins or beams of the building.

An object of this invention is to provide such a tile with the ends of the reinforcing members protruding from the ends thereof to coact with the purlins to form a rigid and monolithic roof or floor construction.

Another object of the invention is to provide a precast tile which rests at its ends on structural support members such as a rail, said tiles having square ends forming a clearance above the ball of the rail, so that grout may be poured into said clearance and flow around the rail to substantially embed same in said grout; also to improve building constructions in other respects hereinafter specified and claimed.

Reference is to be had to the accompanying drawing forming a part of this specification, in which

Fig. 1 is a plan view of my improved precast tile,

Fig. 2 is a side elevation of the tile,

Fig. 3 is an end view of the tile,

Fig. 4 is an elevation of one of the reinforcing bars,

Fig. 5 is a transverse sectional view of a floor constructed according to my improved design, and

Fig. 6 is a fragmentary plan view of the floor shown in Fig. 5.

In the preferred form of my invention, the steel supporting members, beams or purlins, are composed of ordinary railroad rails, but any other desired shape of structural member may be used. This rail 10 usually consists of a base 11, a web, 12 and a ball 13. These rails 10 are spaced apart a predetermined distance and my improved building tiles 14 are positioned with their ends 15 resting upon the bases 11 of said rails. These tile are of sufficient length to fit properly between the balls 13 of the rails with a slight clearance 16 between the end of the tile and the ball to permit grout 17 to flow downwardly about the web 12 and substantially embed the rail in the grout. The clearance above the balls 13 between the ends of the tiles 14 is also filled with the grout so that a level surface is provided in the plane of the upper surface of the tiles.

My improved tiles are characterized in that reinforcing bars having horizontal sections 18 pass longitudinally through the tiles these bars preferably being arranged one pair in each tile. The outer ends of the flat sections 18 of the bars are bent upwardly to form inclined integral bar sections 19 and then are bent again horizontally to form sections 20 which are substantially parallel to the sections 18. The bars are so shaped that they follow a line through the tile which is best adapted to resist the stresses in the tile when supported on the purlins. The extreme ends of the reinforcing bars are bent downwardly, either during manufacture or at the job, to form hooks 21 which are spaced apart from the ends of the tile and adapted to extend over the balls 13 of the rails and thus form an interlocking system of reinforcing for the precast tile. Lateral reinforcing mesh or rods 22 are embedded in the tiles, and extend from one reinforcing rod to the other. The reinforcing bars may be threaded through the mesh 22 or may be connected thereto by welding and the like.

A pair of grooves 23 is formed in each end of a tile, these grooves being adapted to receive hooks 21 of an adjacent tile. The reinforcing rods preferably extend at a slight angle to the longitudinal edges of the tile so that protruding ends of the reinforcing bars and the grooves 23 will match with a similar end of the adjoining tile as seen in Fig. 6. It will be noted that both ends of each tile are alike in that they can be formed from end mold members which are alike, thus simplifying the molding operation. The grout 17 bonds with the ends of the tiles and engages under shoulders 24 of the balls 13 of the rails so as to prevent the tiles from being

lifted out of place by tornadoes or other extraneous stresses. Grooves 25 along the longitudinal edges of the tile are provided so that grout can be poured therein to give a smooth, upper surface to the floor.

It should be noted that my improved construction for buildings provides a monolithic floor or roof in which the precast tiles are provided with reinforcing members which coact with the beams or purlins to make an interlocking reinforcing system along the floor or roof, with a monolithic construction formed by the grout 26. In the use of gypsum materials, this construction is especially efficient and easy to apply. Other materials, such as concrete, may be used for the tiles and grout, if desired.

I would state in conclusion that, while the illustrated example constitutes a practical embodiment of my invention, I do not wish to limit myself precisely to these details since, manifestly, the same can be considerably varied without departing from the spirit of the invention as defined in the appended claim.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:—

In a building tile, a rectangular mass of precast cementitious material, and reinforcing members extending through said tile with the ends of said reinforcing members extending beyond the ends of said tile, the ends of said reinforcing members being adapted to be bent downwardly upon supporting members to form hook ends, said reinforcing members extending at an angle to the longitudinal edges of said tile, the ends of said tile being provided with grooves for the reception of the hook ends of the reinforcing members of adjacent tile, said hook ends and grooves on one end of each tile being substantially similar in spaced relation with the grooves and hook ends on the opposite end of said tile.

HERBERT W. REEL.