

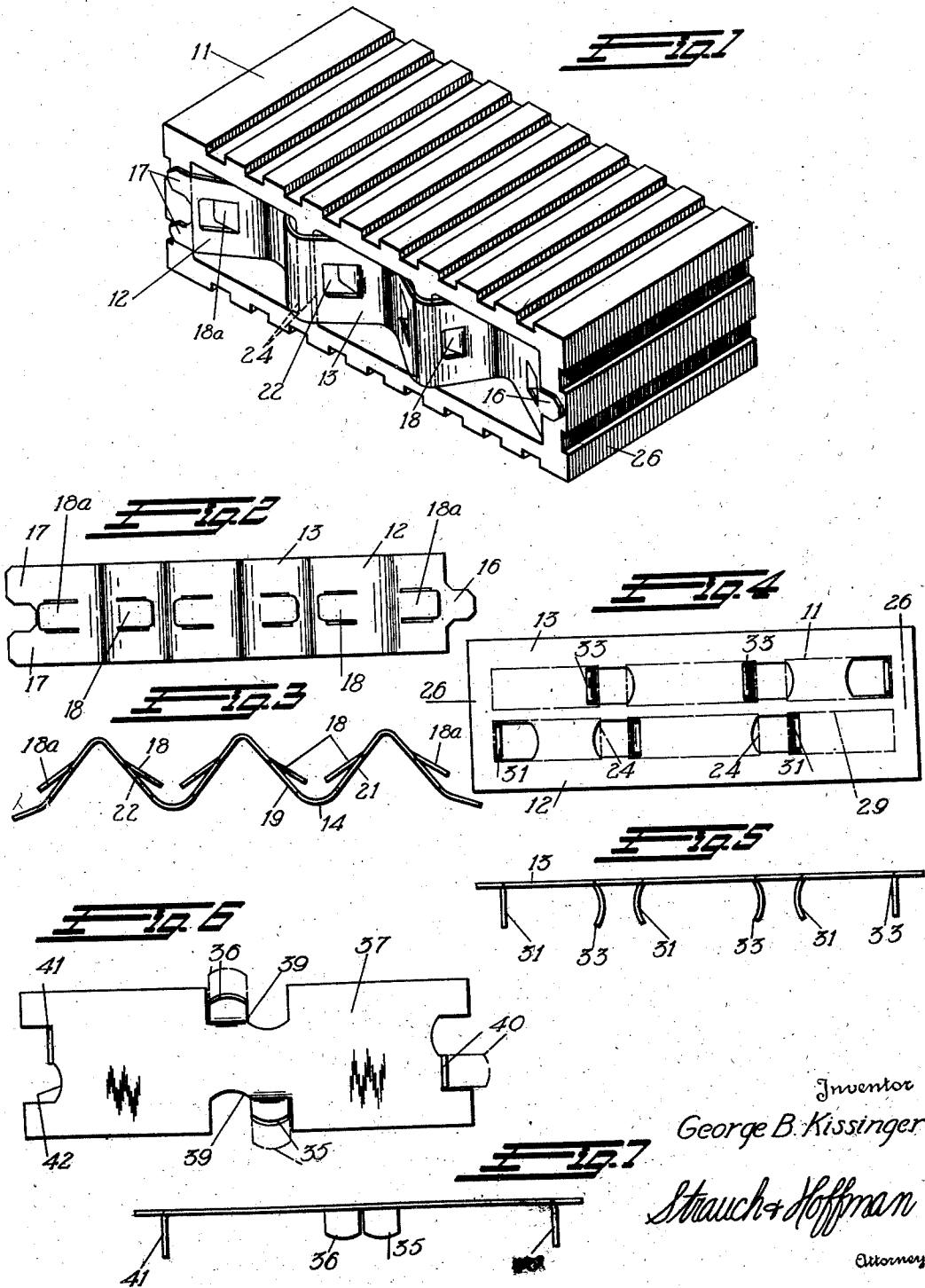
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END CLOSURE FOR TILE BLOCKS

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END CLOSURE FOR TILE BLOCKS

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This invention relates to an end closure for hollow blocks when used in concrete and tile structures, and resides more particularly in the provision of an improved light and substantial cover to permit concrete to enter the openings of the tile block to form bonds of limited extent intimately connecting the concrete to the tile, which reinforces these hollow blocks, but prohibiting the entry of the heavy masses of concrete to the interior of the tiles.

In the use of hollow tiles with concrete structures, cellular tiles are disposed at closely spaced intervals in a row and the rows of tiles so laid are spaced from each other. Concrete in a "wet" or plastic condition is poured around the tile and sufficient concrete is supplied to not only surround the individual blocks but to lie above them. As a result a slab composed of tiles and concrete is produced. In some instances covers are placed over the openings to the interior of the tiles to exclude plastic concrete therefrom.

This invention has for its primary object to provide improved covers for the openings to the interior of hollow tiles, the improved covers being held firmly in position over the openings in the tile to exclude the plastic concrete from the interior of the tile in uncontrolled quantities, the means holding the improved cover on the block providing means to admit sufficient concrete to form a secure keying bond between the tile and the concrete in an improved manner.

It is a further object of the invention to provide an improved cover for hollow tiles in a tile and concrete structure to secure connection of the tiles to an adjoining wall lying in a plane at an angle to the plane of the tile.

Covers for the tiles are used in quantities on a given piece of construction and are distributed by hand and handled individually when applied to the tiles. Therefore, it is a still further object of my invention to provide an improved tile cover which may be easily and cheaply manufactured by cutting from a blank, and which is capable of being assembled for transportation in a compact and conveniently handled bundle or package.

Further and more specific objects of my invention will appear in the following disclosure of a preferred embodiment of my invention and from the terms of the appended claims.

In the drawing:

Figure 1 is a perspective view of a conventional hollow or cellular tile block illustrating a cover according to my invention in position thereon.

Figure 2 is a view in plan of the embodiment of Figure 1.

Figure 3 is a view in elevation of the cover of Figure 2.

Figures 4 and 5 are plan and elevational views respectively of a modification of the improved cover, a conventional tile block being indicated in dot and dash outline.

Figures 6 and 7 are plan and elevational views respectively of another embodiment of my improved tile block cover.

Reference character 11 of Figure 1 illustrates a conventional type of hollow or cellular tile block used in the fabrication of monolithic concrete and tile slabs, or other structures common in the building arts. These tiles in the preparation of the tile and concrete structure are usually laid in rows, each tile of the row being spaced slightly from an adjacent tile. A series of these rows spaced from one another makes up the tile portion of the slab or floor structure. Concrete in a semiplastic condition is poured between the tiles so as to surround them. During the course of the application of the concrete in semiplastic form, unless covers are provided for the openings into the interior of the hollow blocks, concrete will flow within the block and substantially fill the spaces or cells therein adding considerable dead weight to the completed structure.

The embodiment of my improved cover 12 illustrated in detail by Figures 2 and 3 comprises a body portion preferably of a light flexible material such as sheet metal or fibrous material, such as cardboard or the like. Body portion 13 is formed into wide folds or corrugations, the tops of which are indicated by reference character 14. Tabs 16 are provided at each end of body portion 13 by removing the material of body portion 13 on each side of the tab. The cover may be cheaply manufactured with substantially no waste or scrap loss by blanking out from a large sheet of material, so that tab 16 remains on one end of a cover when double tabs 17 are provided on the adjacent cover which is cut from the blank sheet. This method of manufacture will result in covers 12 having a single tab 16 on one end and double tabs 17 at the opposite end. It is to be understood that both the ends of body portion 13 may be provided with a single tab 16 or with double tabs 17 if so desired.

Tongues 18 are struck from walls 19 and 21, the free end of each tongue being adjacent the top 14 of the fold or corrugation. Apertures 22 in body portion 13 result when tongues 18 are bent or sprung inwardly of the corrugation or fold for a

purpose to be described. Tongues 18a, similar to tongues 18, are struck from the walls of the folds or corrugations at the ends of body portion 13. Apertures 22, which result when tongues 18a are bent or sprung from the walls of the corrugation in which they are formed cooperate with apertures 22 at tongues 18 as will be described.

Cover 12 when used as a stop or cover for a tile is applied thereto with tops 14 of the folds or corrugations overlying the ends of partition walls 24 of the tile. Tabs 16 and 17 rest on the ends of walls 26 of the tile block and prevent the ends of body portion 12 from being pressed inwardly by the mass of semiplastic concrete as it is being applied.

The free ends of tongues or projections 18 engage each side of partition walls 24 of the block. Tongues 18a engage end walls 26. This engagement of tongues 18 with the partition walls of the tile is particularly effective in holding cover 12 thereon, as the free ends of tongues 18 project forwardly toward the ends of partition walls 24 and resist removal of the cover by a wedging or toggle action. Tongues 18 offer very slight resistance to the fitting of cover 12 to block 11, but firmly resist removal by their wedging or toggle action.

As the semiplastic concrete is poured it enters the cavity formed between the walls 19 and 21 of adjacent folds or corrugations, forming a key which is integral with the main body of the mass of concrete after it has set. A small part of the concrete which penetrates into the opening of the block to form the key within walls 19 and 21 penetrates through openings 22 to the sides of wall 24 to form an intimate bond with these walls. A small part of the concrete also penetrates openings 22 at tongues 18a to form an intimate bond with walls 26.

In each cell of the hollow block the key is joined to the four walls of the cell to form in effect a strut or brace strengthening the entire block. Walls 26 are braced by the concrete which enters the apertures at tongues 18a. The blocks are braced from wall to wall and a portion of the load imposed on each block is transmitted by the concrete brace to the mass of concrete.

It will be seen that I have provided an improved cover which is retained securely in position and which allows integral portions of the main body of the concrete to enter partially within the hollow cells of the block to form in effect keyed connections therewith, and an intimate bond of limited extent with the sides of the partition walls thereof.

Covers 12 of the form described may be readily nested one within the other and stacked for convenient shipment or transportation and may be readily handled in small nested bundles which may be conveniently carried by a workman and applied individually to the tiles.

A slightly modified embodiment of my improved cover is illustrated on Figures 4 and 5 of the drawing.

Referring to these figures a conventional form of cellular block or hollow tile 11 is indicated in dot and dash outline. The embodiment of my improved cover about to be described may be used as a cover for the three-cell type of block illustrated in Figure 1, or may be used on tiles having a double row of cells with a longitudinal partition wall 29.

Curved tongues 31 integral with body portion 13 are struck out therefrom and bent at an angle. Tongues 31 lie in a row adjacent one edge of body

portion 13. A similar set of curved tongues 33 is provided in a row near the other edge of the body portion. Tongues 31 and 33 between the ends of cover 12 are spaced apart so that partition walls 24 of the tile block are grasped between them when the cover is applied to the end of the block. Tongues 31 and 33 adjacent the ends of cover 12 are bent at right angles to body portion 13 to contact with end walls 26 of the block.

It will be obvious that improved covers of the modified form just described may be nested in compact bundles, and may be formed in quantities from a single blank sheet.

The embodiment illustrated in Figures 4 and 5 may be applied to tiles having a single or double row of openings to the interior of the block, as will be seen by an inspection of Figure 4.

Plastic concrete after having been poured around block 11 is prevented from penetrating to the interior of the cells in the block but enters the openings in body portion 13 remaining when tongues 31 and 33 are bent to their holding position to form a bond of limited extent with partition walls 24 and end walls 26.

Another slightly modified form of an improved tile cover according to my invention is illustrated by Figures 6 and 7. In this embodiment tongues 35 and 36 extend beyond the edges of body portion 13 and are bent downwardly and are preferably slightly curved as described in detail in connection with tongues 31 and 33. In producing the embodiment illustrated in Figures 6 and 7 of the drawing, a single metallic or fabric sheet of material may be used which is cut at intervals to the outline of the adjacent edges of the body portions 37. Notches 39 remain in body portion 37 after severing tongues 35 or 36 of the adjacent cover which is formed from the blank sheet. Adjoining edges of the covers cut from the central part of a blank sheet may be cut to provide tongues 40 of the size indicated in dot and dash outline in the manner just described in connection with tongues 35 and 36. To substantially eliminate and prevent waste material the tongues cut from the portions of the blank sheet near its outermost edges may be formed as indicated by reference character 41. The resulting notch 42 may, if desired, be made to correspond with notches 39 in width by making tongues 41 of double width.

Improved covers according to Figures 6 and 7 may be nested in convenient packages for transportation.

The cover of Figures 6 and 7 is applied over block 11, tongues 35 and 36 lying in contact with the top and bottom walls and tongues 40 and 41 lying in contact with the side walls of the block to retain the cover in position after it has been applied prior to the pouring of the concrete. Concrete enters notches 39 and the apertures which remain after tongues 40 and 41 are bent in position to operatively engage the walls of the block. The concrete entering these openings forms a bond of limited extent, securing the main body of concrete intimately to the walls of the tile block.

From the foregoing it will be seen that I have provided a cover of novel structure for use in concrete and tile structures to secure close intimate bonding between the mass of concrete and hollow or cellular tile blocks embedded therein with a minimum of penetration of the concrete to the interior of the hollow block or tile.

Each of the several embodiments of my improved cover may be made from a single blank sheet of sufficient size to furnish material for 75

a number of covers substantially without scrap loss or waste. The size of the blank is limited only by the cutting facilities available.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are therefore to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are therefore intended to be embraced therein.

What is claimed and desired to be secured by United States Letters Patent is:

1. A cover for hollow tiles having partition walls comprising a continuous metallic strip provided with end tabs formed in folds or corrugations, cover retaining tongues struck from the walls of said corrugations, the free end of said tongues lying adjacent the top of said corrugations, said tongues when in contact with the partition walls of the tile being directed outwardly toward the end of the partition wall whereby to retain said covers in position to receive plastic concrete in the bottoms of said corrugations and in the apertures provided by the formation of said tongues.

2. In a tile and concrete floor construction, tile blocks comprising partitions providing openings extending from end to end thereof, covers for said openings comprising a continuous metallic strip slitted to provide tongues parallel to the longitudinal center line thereof, said strip being adapted to overlie the tile and substantially close the openings therein, said tongues being disposed at an angle to said strip, providing concrete admitting apertures therein of limited extent, said tongues yieldingly contacting with the partition walls, the concrete entering said aperture forming a bond of limited extent with said walls.

3. In a tile and concrete floor construction, tile blocks comprising partitions providing openings extending from end to end thereof, covers for said openings comprising a continuous metallic strip formed in folds or corrugations, cover retaining tongues struck from the walls of said corrugations, said tongues when in retaining contact with said partitions being directed outwardly toward the end of said partition walls, the concrete lying in said corrugations and entering walls thereof whereby to intimately unite and key said blocks to the concrete mass of the structure.

4. A cover for a hollow tile block of varying numbers of cells consisting of a body portion, a group of integral tile wall engaging tongues struck from said body portion with their centerline parallel to and adjacent an edge of said body portion and connected thereto at their ends nearest one edge thereof, a single tongue aligned with said group of tongues connected to said body portion at its end more remote from the edge nearest the point of connection of said first mentioned tongues, and a second group of tongues struck from said body portion with their center line parallel to and adjacent the other edge of said body portion and joined to said body portion at

their ends to extend in a direction opposite to said first mentioned tongues.

5. In a tile and concrete floor construction, tile blocks comprising partitions defining cells extending from end to end thereof, covers for the openings of said cells consisting of a continuous metallic strip formed in folds or corrugations, the walls of said corrugations being apertured, the concrete lying in said corrugations and joining with the top and bottom walls of said blocks and entering said apertures to join with the side walls of said cells, whereby to brace and strengthen the blocks.

6. A cover for hollow tiles having partition walls defining cells, comprising a continuous metallic strip formed in folds or corrugations to receive plastic concrete in the bottoms of said corrugations within the end of the cells of the block, the walls of said corrugations being apertured to permit the concrete lying in the corrugations to penetrate said apertures, whereby the top, bottom and side walls of said cells are braced by the concrete within the folds.

7. A cork or plug device of the class described consisting of a body of sheet material, opposed edges of which are provided with outwardly flaring yielding wall members adapted to flex inwardly in mounting the device in the chamber of a hollow member, said side wall members including prongs fastened from the material thereof and extending outwardly with respect to said side walls and adapted to engage the walls of said chamber under compression to retain the device against displacement, and the free ends of said side wall members terminating in angular flanges for limiting inward movement of the device with respect to its support and for positioning the body of the device within said chamber.

8. In building tile of the class described employing hollow chambers extending therethrough, means for corking the open ends of the chambers in said tile to limit the admission of concrete in said chambers when placed or poured around the tile, said means comprising a thin body portion of an area substantially equal to the cross sectional area of the chamber in the tile, prongs formed on the peripheral edges of said body adapted to engage the walls of said chamber under compression to retain said body against displacement therefrom, said body including yielding side wall members, said prongs being fashioned from the material of said wall members, and the wall members at one side of said body being disposed intermediate the wall members at the opposite side thereof.

9. A cork or plug device of the class described, consisting of a body of sheet material provided with outwardly flaring yielding portions adapted to flex in mounting the device in the chamber of a hollow member, said flaring portions including prongs fashioned from the material thereof and extending outwardly with respect to said flaring portions when said device is mounted in position in said chamber, and adapted to engage the walls of said chamber under compression to retain the device against displacement and other portions of said body at the outer ends of said flaring portions, said last-named portions serving to limit inward movement of the device with respect to its support and to position the body of the device within said chamber.

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