April 1, 1969 K. A. TYSON 3,435,567

WALL CONSTRUCTION

Filed Aug. 18, 1966

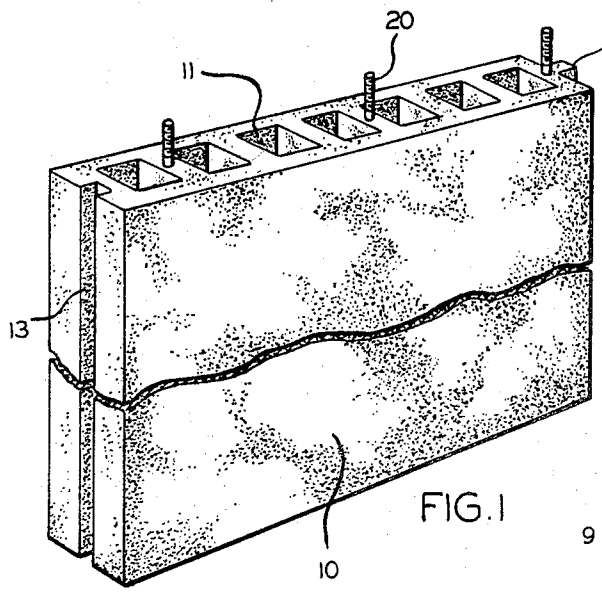


FIG. 1

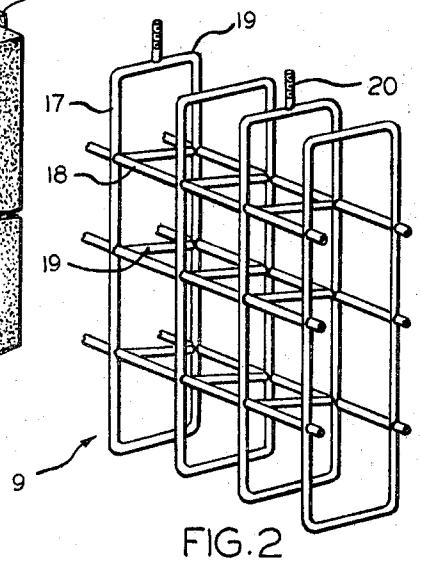


FIG. 2

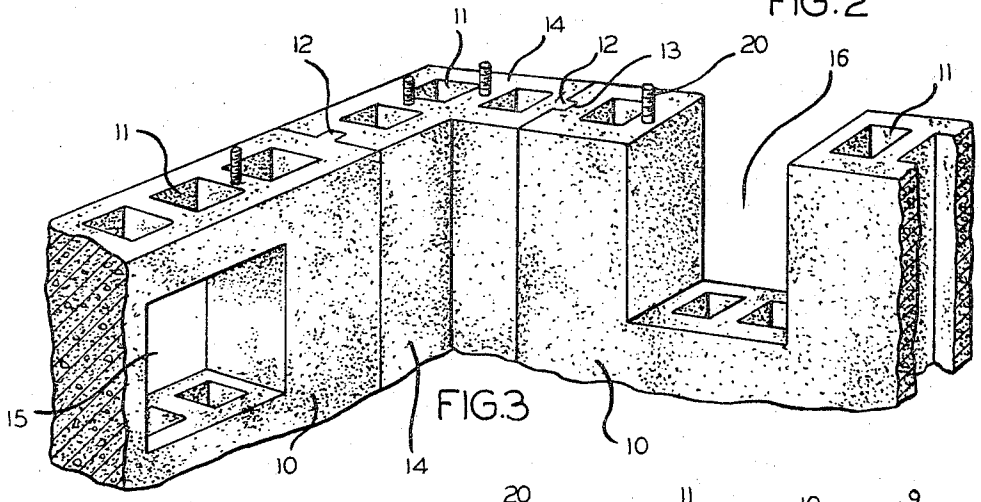


FIG. 3

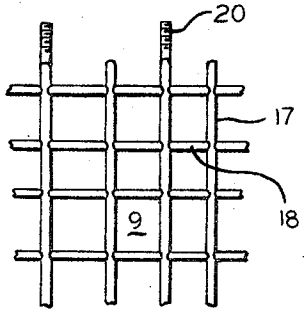


FIG. 4

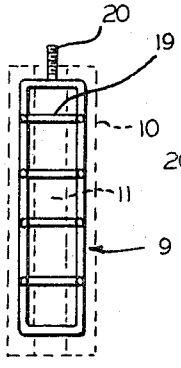


FIG. 5

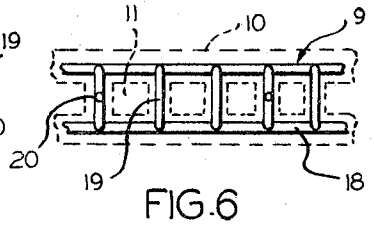


FIG. 6

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WALL CONSTRUCTION

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U.S. Cl. 52—125 3 Claims

ABSTRACT OF THE DISCLOSURE

Reinforced concrete slabs amenable for easy assembly with other like slabs to form building walls. Said slabs having a plurality of internal passageways to minimize the weight of the slabs and to provide conduits for pipes, wires or heating elements. The reinforcements in the slabs are provided by three-dimensional integral lattice structures equipped with means adaptable for use in transporting or lifting the slabs.

My invention relates to improvement in wall construction, and more particularly to a new and improved reinforced concrete panel used in the construction of walls for buildings and the novel method of manufacture of the same.

The prime object of my invention is to provide reinforced concrete panels, of a predetermined height and width, that may be assembled one with the other for constructing basement walls or the like for buildings.

Another object of my invention is to provide a slab or panel of the character described, that may be conveyed as a unit, ready for assembly.

A further object of my invention is to provide a panel that may be molded integrally, with longitudinally extending internal passages employed for insulation or the like.

A still further object is to provide a wall panel, or slab that may be cast in a mold into which the entire reinforcing rods are disposed.

Still another object of the invention is to provide a reinforced wall panel, in which the reinforcing assembly is equipped with means adaptable for hoisting the slab into any desired position, to form a wall.

An additional object of the invention is to provide a novel and useful method of manufacturing a concrete panel for use in the construction of building.

It is manifest to anyone familiar with building construction that basement walls, or the like are usually constructed of a series of conventional concrete blocks in staggered relation to one another, one on top of the other, in horizontal tiers on a previously prepared concrete foundation, and held in position by conventional mortar, or the like. This process necessitates considerable labor in conveying and laying the individual blocks.

The device illustrated, described, and claimed herein, is molded in a form of any predetermined size, such as seven feet wide and ten feet high. The mold or form has a plurality of longitudinal extending tubes about which a pre-assembled reinforcing unit may be placed in the form, adjacent to and encircling the tubes.

The form with the reinforcing unit emplaced is then filled with concrete, which after removal, takes the form of the mold with the reinforcing unit embedded therein and a plurality of longitudinal, vertically extending when in use, passageways.

By providing upwardly extending contact members forming a part of the reinforcing unit, the entire panel of concrete formed by the mold around the tubes and reinforcing member, may be removed from the mold as a complete panel.

Thus, instead of molding the individual blocks and laying them in position individually, one entire slab, or panel may be constructed in one operation and placed into

position in one operation, saving much time and labor and providing a better and stronger wall.

Other more specific objects, advantages and features of this invention will be better understood by reference to the following description of the invention taken in conjunction with the accompanying drawing, in which:

FIG. 1 is a perspective view of the completely constructed wall panel;

FIG. 2 is a perspective view of the assembled reinforcing unit, ready for positioning in the mold, before pouring the concrete;

FIG. 3 is a fragmentary perspective view of a plurality of panels or sections of wall, assembled one with the other, and showing an angular corner section;

FIG. 4 is a front view of the assembled reinforcing unit, as shown in FIG. 2;

FIG. 5 is an end view of the reinforcing unit shown in FIGS. 2 and 4, embedded in the concrete, which is shown in phantom; and

FIG. 6 is a top view of the reinforcing unit embedded in the concrete, which is shown in phantom.

Similar characters of reference indicate corresponding parts and features, throughout the several views, and referring now to the same, the character **10**, shows generally the completed slab or panel, constructed of concrete or the like, and provided with a plurality of longitudinal passageways or openings **11** shown vertically disposed. The panel is shown equipped at one vertical edge with a tongue **12**, and at its other vertical edge with a conformingly sized groove **13**.

Obviously, the panel or slab **10** may be of angular shape as shown as **14** in FIG. 3, or molded to any other form or contour.

In FIG. 3, I also show openings **15** and **16** cut into the panel **10**. These openings **15** and **16** may be of any shape, or size, and may be placed into the panel **10**, at any predetermined or convenient location.

In FIG. 2, I show a perspective view of a portion of an assembled reinforcing unit generally indicated by the numeral **9**, consisting of vertical sections **17** and horizontal sections **18**, together with cross-members **19**. These members **17**, **18** and **19**, consist of steel bars, or the like, welded together or attached to one another in any other efficient or practical manner. The steel sections are spaced in a manner to be embedded in the concrete (see FIGS. 5 and 6), surrounding the vertical openings **11**, and the upper cross-members **19** are shown equipped with vertical threaded members **20**, which are employed for attaching a lifting device (not shown), for hoisting the panel into position while constructing the building wall.

In manufacturing the panel **10**, I employ the steps of first, furnishing a mold defining a slab-shaped hollow and having a plurality of spaced longitudinal members therein. Second, I provide a reinforcing unit **9** composed of a lattice of steel rods interconnected and spaced so as to surround, when placed in the mold, the longitudinal members. Third, I place the unit **9** within the mold and support it so that the rods of the unit are spaced from and free of the mold and the internal longitudinal members. Fourth, I fill the mold with concrete, surrounding the longitudinal members and embedding the unit therein. Fifth, I withdraw, after allowing the concrete to set, the hardened concrete and the embedded reinforcing unit from the mold.

The device illustrated, described, and claimed herein serves a practical purpose, is simplete in construction, and is a means of saving much time and labor, over the conventional method of building a wall with conventional blocks.

Although I have shown a specific structure and arrangement, I am fully cognizant of the fact that many changes may be made without affecting the operativeness of the

device, and I reserve the rights to make such changes as I may deem necessary or convenient, without departing from the spirit of my invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent in the United States is:

1. A reinforced concrete panel having longitudinal transverse ends for use in the construction of walls for buildings,

said panel comprising:

a plurality of adjacent longitudinally extending openings,

a reinforcing unit having a plurality of reinforcing rods formed into a three-dimensional integral lattice surrounding the plurality of spaced adjacent longitudinally extending openings,

said reinforcing unit comprising a plurality of parallel, spaced apart, rectangular sections,

each of said rectangular sections being comprised of a peripheral bar bent to form a closed loop rectangular unit having a pair of longer sides and a pair of shorter sides with the longer sides vertically disposed,

said rectangular units joined together by parallel horizontal bars therebetween that are normal to the longer sides of the rectangular units, in the same plane as the longer sides of the said rectangular units, and located on both sides of said longer sides,

cross-member bars extending between said horizontal bars co-planer with said rectangular units and normal to both the said longer sides and to the said horizontal bars,

a plurality of lifting members,

each of said lifting members comprising a rod extension medianly affixed to the top ones of the short sides of said rectangular units and extending perpendicularly therefrom,

each of said lifting members threaded for receiving a lifting device, and

said reinforcing unit being embedded in the concrete which is formed to define the longitudinally extended openings.

2. The reinforced concrete panel as defined in claim 1, in which said longitudinal openings are vertically positioned and additional horizontal openings through said panel are defined therein.

3. The reinforced concrete panel as defined in claim 1, in which one longitudinal edge end has a longitudinal groove formed therein, and the other longitudinal edge end has a conformingly shaped, longitudinally extending tongue projecting therefrom so that said panel may be tongue and groove edge end connected to a similarly defined panel.

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HENRY C. SUTHERLAND, *Primary Examiner.*

U.S. Cl. X.R.

52—503, 600, 651