United States Patent [19]

Mauroner

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[54] **BUILDING WALLS AND PREFABRICATED REINFORCED CONCRETE WALL SECTIONS**

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[52] **U.S. Cl.** **52/259;** 52/293; 52/389; 52/405; 52/432; 52/587; 52/600

[51] **Int. Cl.** **E04c 2/06**

[58] **Field of Search** 52/293, 259, 389, 410, 52/432, 405, 587, 583, 600

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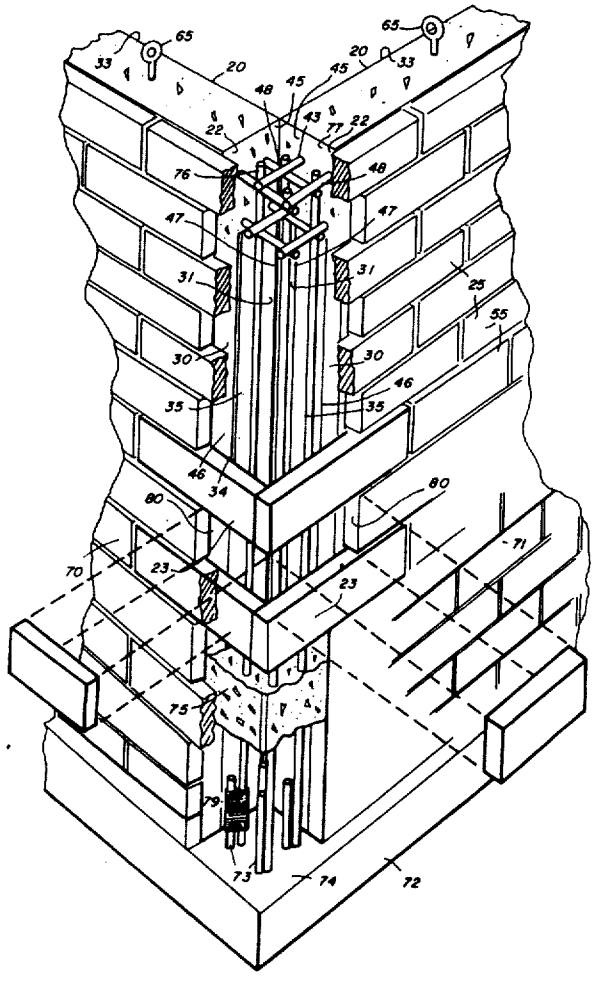
[57] **ABSTRACT**

A building wall made of prefabricated reinforced concrete wall sections features use of sections having spaced reinforced concrete panels that are cast integral with a lintel that overlies the cavity space between the panels. The reinforcing in the panels is interconnected by reinforcing means that extends through the cavity between the panels and the cavity is preferably filled with insulating material. The outer wall panel has a brick veneer surface that projects beyond the end edges of the section to serve in part to define in a wall a cavity for reinforced concrete column that embeds the ends of rods that reinforce and extend through the lintel.

8 Claims, 11 Drawing Figures



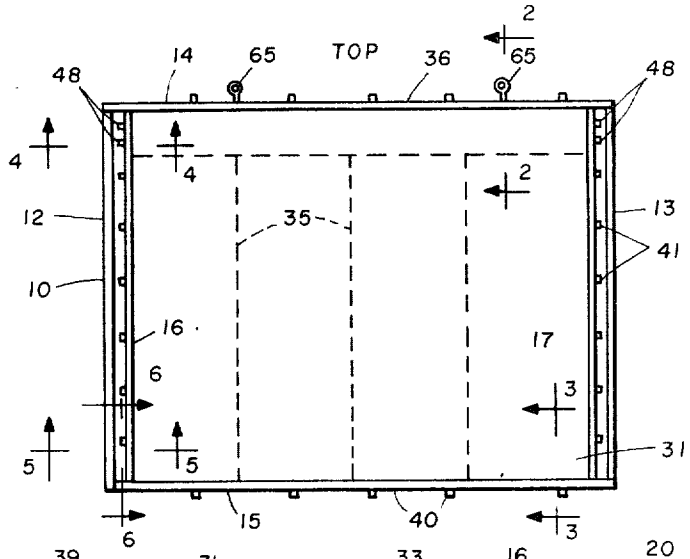


FIG. 1

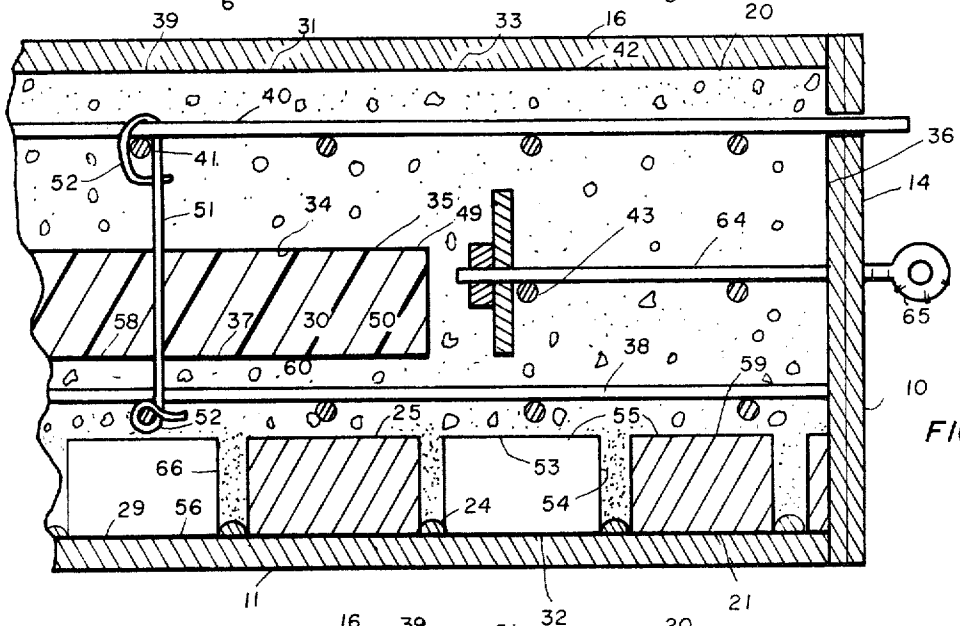


FIG.2

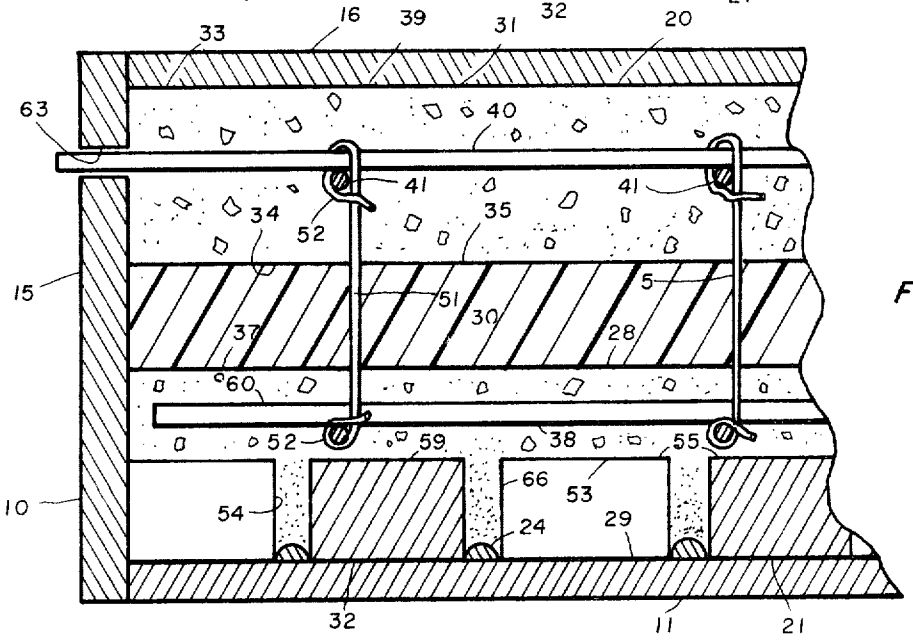


FIG. 3

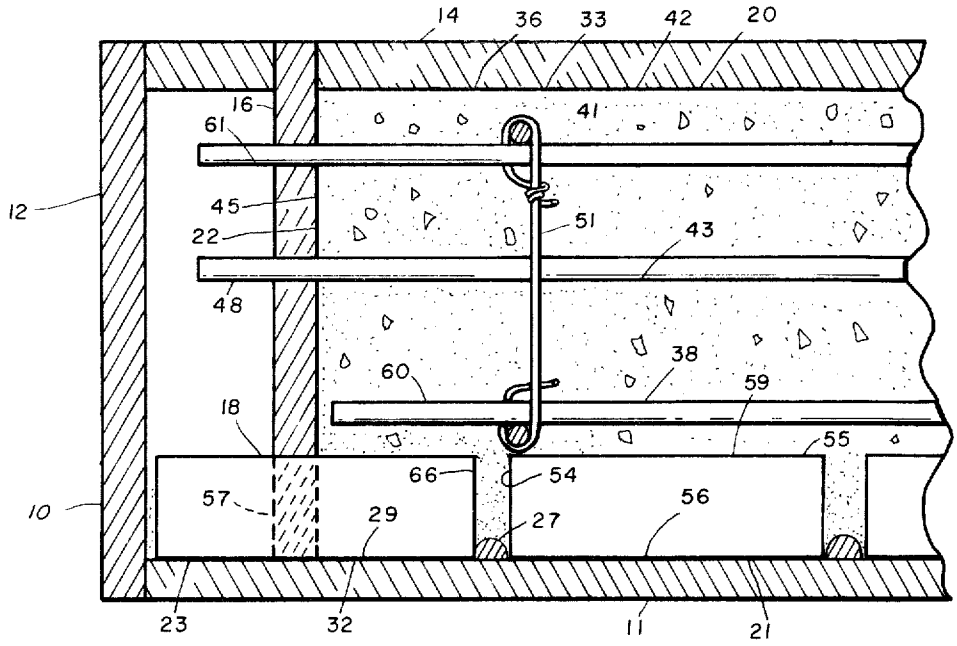


FIG. 4

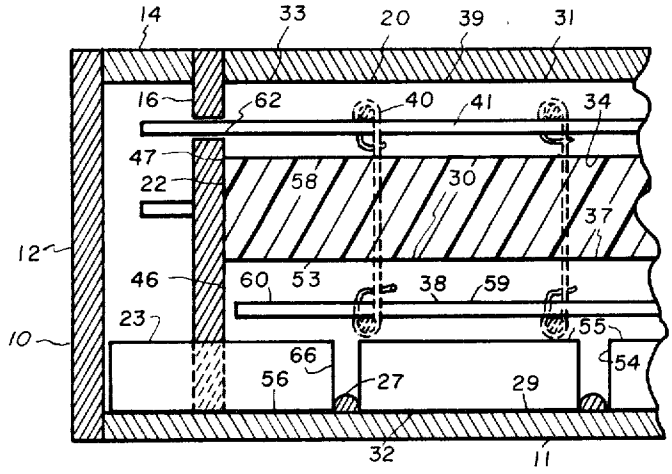
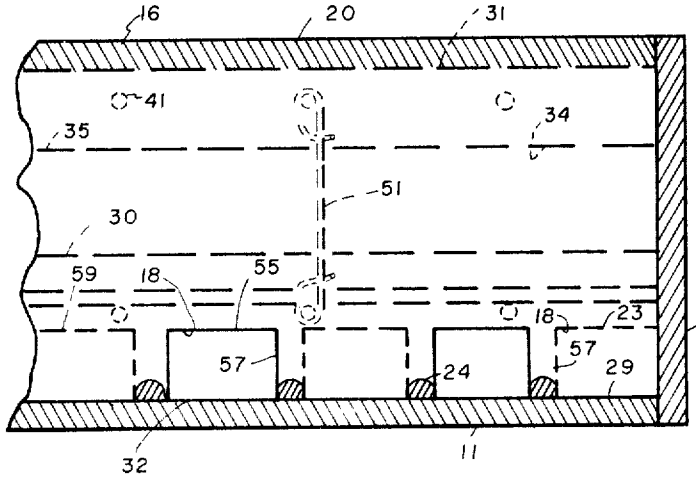


FIG. 5



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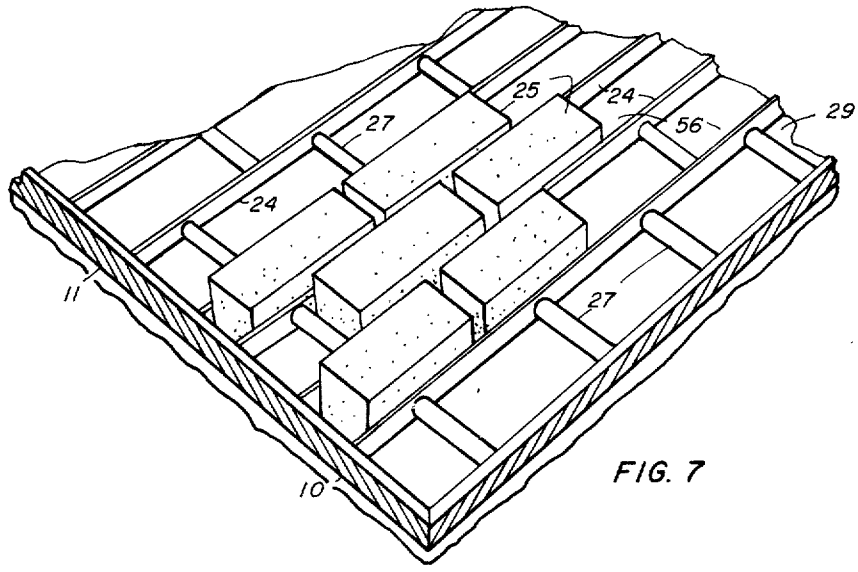

FIG. 7

FIG. 8

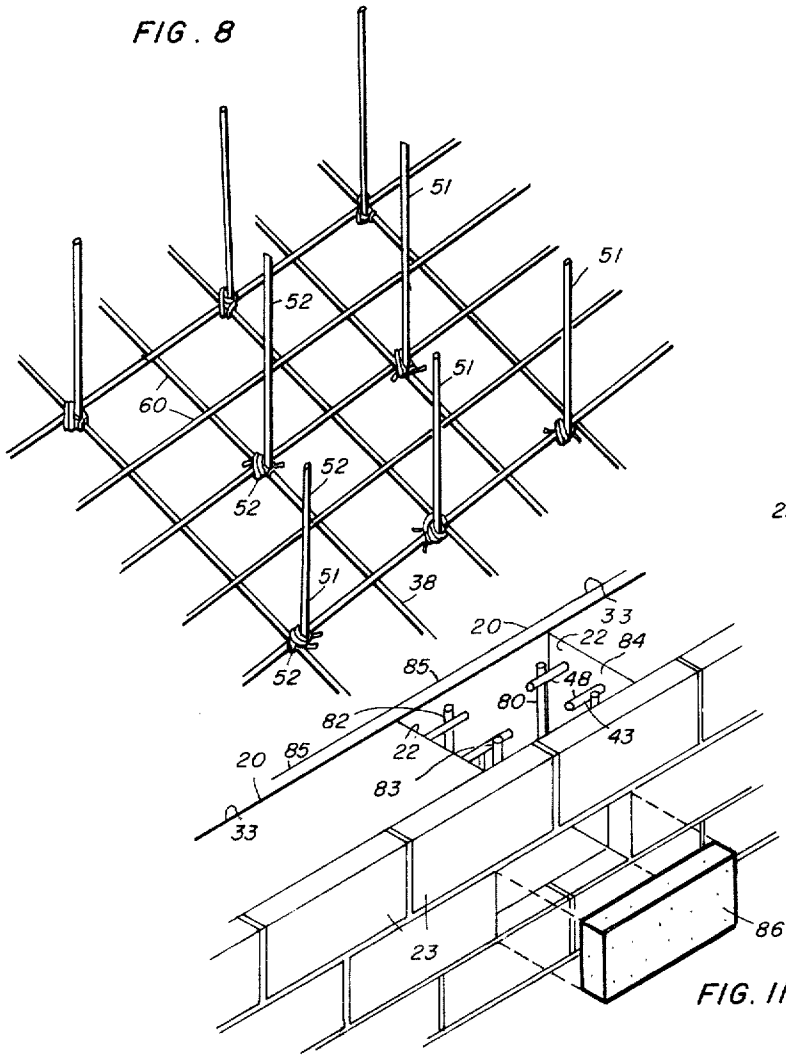

FIG. 11

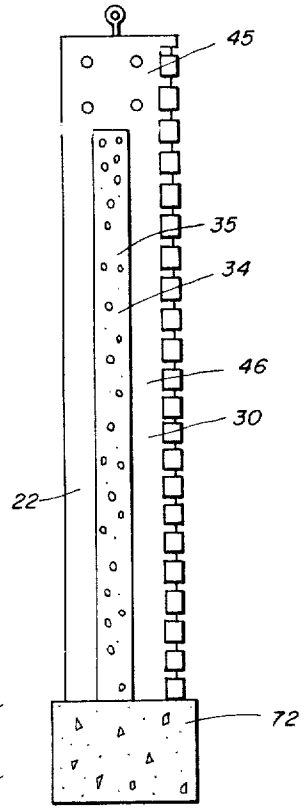

FIG. 9

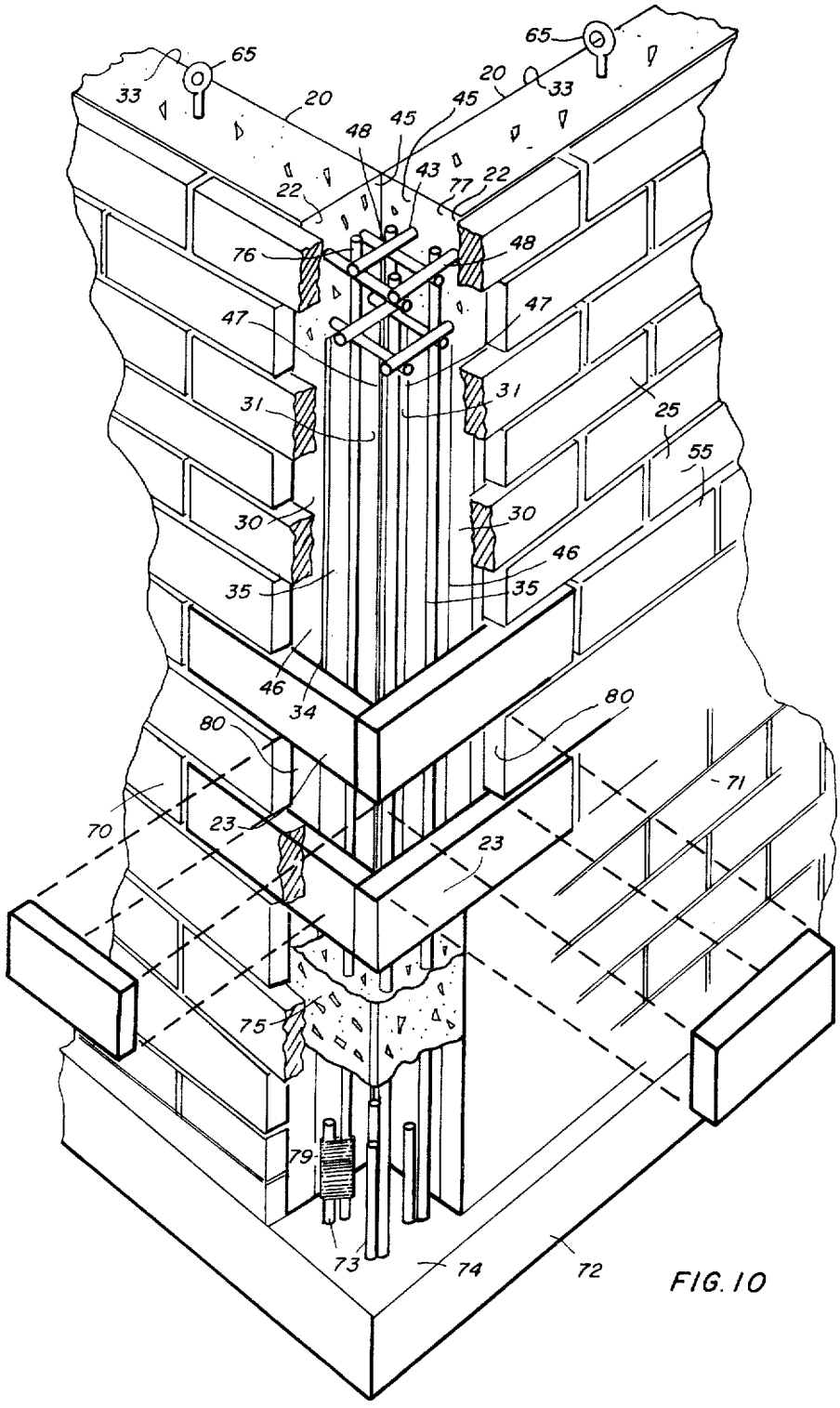
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FIG. 10

BUILDING WALLS AND PREFABRICATED REINFORCED CONCRETE WALL SECTIONS

The invention relates to building walls made from prefabricated reinforced concrete wall sections and to prefabricated wall sections formed from concrete and other cementitious materials.

The construction of building walls from precast reinforced concrete wall sections is known and it is also know to cast the concrete wall sections in a horizontal position in suitable forms. The horizontal casting of such wall sections has several advantages among which may be mentioned the savings in labor costs that are involved in providing decorative exterior wall surfaces and in providing finished interior wall surfaces on wall structures that are otherwise assembled and erected, as for example, from construction block, brick or wall framing. Thus when a wall section is cast horizontally in a suitable form, the upper surface of the cast concrete may be finished by a mason before the concrete hardens and thereafter serve without further labor costs as the interior wall face or surface of the assembled wall structure. Similarly, a decorative exterior wall face or surface may be embodied in such cast wall sections by pouring the concrete over suitably oriented brick or stone that thereafter provides a decorative exterior wall face in the wall structure.

There are several problems that are resident in the use of precast wall sections. For one, there is a need in most cases for some type of thermal and/or moisture barrier between the inner and outer facial surfaces of the wall section. To be effective, such a barrier must be substantially coextensive with the inner wall surface that is being protected from the moisture and/or heat transfer. The barrier may be formed by providing a cavity in the cast concrete structure of the section as by casting spaced apart interior and exterior concrete panels in the wall section. However this has proven difficult to accomplish in practice without the use of concrete structure that interconnects the spaced wall panels and thereafter serves as a capillary route for the transfer of moisture from the exterior to the interior panels.

Yet another problem that has detracted from the use of cast concrete wall sections is the need heretofore for special devices and appliances in order to rigidly tie in and fix the cast wall sections together in the assembled wall structure. Such devices and appliances usually take the form of a metal-type structure that is rigidly fastened to the adjacent wall sections through the use of bolts or similar fasteners which are so-cast into the concrete structure of the wall section as to project outwardly therefrom at a suitable position for the attachment of the metal device or applicance. The fasteners in such cases usually project from one or the other of the faces of the cast wall section and this arrangement makes it difficult to handle the heavy concrete sections without damaging the structure through an inadvertent entanglement with the outwardly projecting element.

A general object of the invention is to provide an improved prefabricated reinforced concrete wall section. Yet another object of the invention is to provide wall sections of the type contemplated that have a cavity for housing material that serves as a barrier through the transfer of heat and moisture between spaced reinforced concrete panels and which embodies a minimum amount of interconnecting concrete structure that can serve as a capillaceous route for transfer of moisture from one panel to the other. Yet another object of the invention is to provide wall sections of the type contemplated that can be fixed together in the final assembly of the building wall without the need for special devices or appliances for securing the sections together. A further object is to provide prefabricated wall sections that can be fixed together in the assembled structure by simply pouring a reinforced concrete column between the adjacent sections. A specific object of the invention is to provide a reinforced precast wall section that greatly reduces the labor requirements for forming the sections and for thereafter assembling the wall sections in a finished wall structure.

In accord with the invention, the concrete structures of the panels that are spaced apart to provide the cavity in the wall section are joined and cast integral with the concrete structure of an elongated lintel beam component of the section and this lintel beam component is so arranged when the section is upright and supported on a foundation as to be horizontally arranged and to overlie the cavity space between the panels. The concrete structures of the panels and lintel are reinforced, and the section is provided with elongated elements that interconnect the reinforcing that is used in the spaced panels and extend through the cavity space between the panels. The cavity between the panels in the cast section is preferably filled with a suitable thermal insulating material that is impervious to water, and this material serves to maintain the spaced relation between the cementous materials that are used in casting the spaced panels on a horizontally arranged form therefor. The arrangement has certain advantages in that although the wall panels of the section are interconnected by a concrete structure in the upper reaches of the section, the normal roof overhang of a building, will usually protect the upper reaches of the section from direct encounter with moisture while below the cast concrete lintel the concrete panels are fully spaced apart and devoid of cementous interconnections. To provide the desired rigidity below the lintel beam in the cast wall section, the reinforcing used in the concrete wall panel is interconnected by elongated reinforcing elements that tie in the concrete reinforcing structure and extend through the cavity between the panels.

The lintel beam, as will be subsequently seen, is cast about reinforcing rods that project from the opposite ends of the beam. This arrangement enables the sections to be assembled and secured together in the building wall structure by casting a vertical column between the adjacent sections. The rods under such circumstances are tied into the reinforcement used in the casted in place column, and the concrete structure of the column embeds the lintel rod ends to provide a rigid tie in between the adjacent sections in the wall structure.

One aspect of the invention has to do with the provision of a brick veneer surface on the outer panel of the section and wherein the veneer includes bricks that project beyond the ends of the section. This, as will be subsequently seen, permits a corner wall structural arrangement that defines a space in which a column can be formed with a minimum amount of labor for establishing the form for the column.

The novel features which are believed to be characteristic of this invention are set forth with particularity in the appended claims. The invention, itself, however, both as to its organization and method of operation, to-

gether with further objects and advantages thereof, may best be understood by reference to the following description taken in connection with the accompanying drawings, in which:

FIG. 1 is a plan view of a reinforced concrete wall section embodying the principles of the invention and as seen in a horizontally arranged form in which the section is cast;

FIG. 2 is a section view through the form at the head end of the cast section as seen along the Lines 2—2 of FIG. 1;

FIG. 3 is a section view through the form at the foot end of the section as seen along the Lines 3—3 of FIG. 1;

FIG. 4 is a section view through the form at one of the opposite ends of the lintel as seen along the Lines 4—4 of FIG. 1;

FIG. 5 is a section view through the form at the foot end of the section as seen along the Lines 5—5 of FIG. 1;

FIG. 6 is a section view through the form as seen along the Lines 6—6 of FIG. 1;

FIG. 7 is an isometric view of a fragment of the form seen in FIG. 1 and illustrates certain rib components that serve to shape the mortar joints in a brick veneer surface covering of the section;

FIG. 8 is an isometric view of a fragment of certain reinforcings for one of the cast concrete panels of the section as seen with attached metal elements used for tying in the reinforcing used in the spaced panels;

FIG. 9 is an end view of the section as seen when supported upright on a foundation for the wall structure;

FIG. 10 illustrates the arrangement of two of the cast sections in the formation of a corner portion of an exterior wall assembled from the sections, certain parts being broken away and others presented in an exploded arrangement to facilitate an understanding of the construction of the corner portion; and

FIG. 11 illustrates two cast sections joined in end to end relation.

Reference is first made to FIGS. 1 through 6 and wherein a form for use in casting the wall section is designated at 10. Form 10 includes a rectangular bottom plate 11, opposite end walls 12 and 13, and opposite side walls 14 and 15 that are detachably secured together to provide a shallow open top, box-like structure in which the wall section 20 is fabricated and formed.

Wall section 20 has a brick veneer covering 21 at the exterior side face 32 of the section and the end bricks 23 in every other course 25 of the veneer covering 21 project beyond the opposite end surfaces 22 of the concrete structure of the section as will be subsequently seen. To accommodate this arrangement and contain the concrete during the casting procedure, form 10 is equipped with internal walls 16 and 17 that are offset from the adjacent end walls 12 and 13 and detachably secured at their opposite ends to the side walls 14 and 15. These interior walls 16 and 17 have spaced generally rectangular cutouts 18 which accommodate the end bricks 23 that project beyond the end surfaces 22 that are formed against the internal walls 16 and 17 during the casting procedure.

To facilitate the orientation of the bricks in the veneer structure during the fabrication of the section and to shape the surfaces of the mortar joints between the bricks and the veneer structure, the bottom plate 11 of the form 10 has a plurality of ribs 24 that are spaced apart in a parallel arrangement and fixed to the upper surface 29 of the plate 11. These ribs 24 serve to maintain the space between the brick courses 25 when the wall section is cast and form or shape the recessed mortar bed joints 26 in the finished covering 21. The plate 11 also has short ribs 27 that are spaced apart and fixed to the surface 29 so as to maintain the spacing between the bricks in each course during the formation of the covering and similarly form or shape the mortared head joints 28 between bricks in the finished veneer covering 21.

Before explaining the process of fabricating and forming the wall section 20, the general structure of the section should be noted. Structurally, the wall section 20 includes a pair of flat, reinforced concrete wall panels 30 and 31 which have a generally rectangular configuration. The panels are spaced apart in the structure of the wall section in a face to face arrangement and are generally located at the interior and exterior side faces or surfaces 32 and 33 of the section. The space or cavity 34 between the panels 30 and 31 is preferably filled with a suitable material that forms a thermal and moisture barrier between the panels. In the illustrated embodiment the barrier is made up of a plurality of flat rectangular blocks 35 of foam and polymerized styrene that are arranged in an edge to edge relation and embedded in the concrete structure of the section during its fabrication. Other insulation materials may, of course, be used, such as fibrous glass insulating materials, but foam materials such as the foam polystyrenes or polyurethanes are preferred because of their superior insulating qualities and because of their substantial incompressibility under the weights of the concrete that are involved in casting and forming the concrete sections.

In addition to the panels 30 and 31, section 20 has an elongated reinforced concrete lintel component 36 that extends between the opposite end surfaces 22 and is supported by the panels 30 and 31 when the section is arranged upright as seen in FIG. 9. The lintel 36 under such circumstances overlies the cavity 34 in its span between the opposite ends 22 of the concrete structure.

The concrete structure 37 of the outer wall panel 30 is suitably reinforced in the illustrated embodiment as by means of a wire mesh 38 that is embedded in the structure 37 during the casting procedure. The concrete structure 39 of the inner wall panel 31 is also suitably reinforced, and in the case of the embodiment illustrated, the structure 39 is reinforced by means of elongated metal rods 40 and 41 that are embedded in the structure 39 during the casting procedure. Rods 40 are spaced apart and extend vertically when the section 20 is supported upright on a foundation while rods 41 extend horizontally under such circumstances.

The concrete structure 42 of the lintel beam 36 is in part reinforced by portions of the wire mesh 38 and vertical rods 40 which extend into the beam area of the structure but it is mainly reinforced by a plurality of elongated metal rods 43. These rods 43 are spaced apart and embedded in the structure 42 as seen in FIG. 2, and are horizontally arranged when the section is mounted upright on a foundation. The opposite end surfaces 45 of the concrete structure 42 lie in parallel planes that are common to the adjacent opposite side edge surfaces 46 and 47 of the panels 30 and 31, and the opposite ends 48 of these rods 43 project laterally of the end surfaces 45.

The concrete structures 37 and 39 of panels 30 and 31 are integrally joined at their upper portions 49 and 50 to the concrete structure 42 of lintel 36 by the casting procedure used in forming the wall section. Below the lintel 36, the reinforcing components of the panels are interconnected by a plurality of elongated metal elements 51. These elements 51 are spaced apart and extend transversely of the section through the cavity 34 between the panels 30 and 31. As seen in FIGS. 2 through 4, each of these elements 51 has opposite end portions 52 which are embedded in the concrete structures 37 and 39 and which are secured to the metal reinforcing means embedded in these concrete structures. These elements 51 serve to rigidly tie the panels together below the lintel and extend through the blocks 35 of insulation material that is disposed in the cavity 34, as illustrated in the figures.

The outer panel 30 of the section 20 has a brick veneer covering 21 that covers the outer surface 53 thereof for decorative purposes. The spaces 54 between the bricks 55 of the veneer 21 are filled with mortar 66 in the process of forming the wall section and which not only serves to join the bricks together in the joint areas of the veneer but which is integrally joined with the concrete structure 37 of the panel in the casting procedure used in forming the section. The veneer covering in the embodiment as previously pointed out, includes bricks 23 that project beyond the end surfaces 22 of the concrete structure of the section and which as will be subsequently seen, cooperate in certain arrangements of the sections to define a space in which a reinforced concrete column may be poured to tie in adjacent sections in the wall structure.

The section 20 is fabricated and formed by a sequence of steps that first involve a placement of the bricks 55 for the veneer covering 21 in the recesses 56 that are formed by the ribs 24 and 27 at the upper surface 29 of the bottom plate 11 of form 10. Thereafter the internal walls 16 and 17 are positioned in the form with the end bricks 23 projecting through the cutouts 18 and with the end bricks in the courses adjacent thereto flush against the wall portions 57 that lie between the cutouts 18. The cutouts are, of course, provided to accommodate the staggered arrangement of the bricks in adjacent courses shown in the illustrated embodiment. It is within the purview of the invention however to provide a veneer arrangement where the head joints are vertically aligned in each course and under such circumstances of course, the internal walls of the form would be adapted to permit about half of each end brick in the courses to project laterally of the end surfaces 22 of the concrete structure.

After the walls 16 and 17 are assembled in the form, the spaces 54 between the bricks 55 are filled with mortar to at least the inner face 59 level of the bricks 55 that are supported on the plate 11. This, of course, transpires between the internal walls 16 and 17 of the form in the illustrated embodiment, and basically provides the bed and head joints 26 and 28 in the finished veneer structure 31 at the surface 53 of the outer panel 30.

After the joint areas 54 have been filled with mortar 66, the wire mesh 38 is placed in the form 10 between the walls 16 and 17 and is suitably spaced above the inner face level 59 of the bricks so as to thereafter assume an embedded position in the concrete structure 37 of the outer panel 30 which is intermediate the faces thereof. It may be pointed out that the tie elements 51 are previously attached to the mesh 38 as illustrated in FIG. 8. This is accomplished by preferably bending one of the opposite ends 52 of each tie 51 around an intersect of the mesh wires 60 and in a manner such that all of the ties 51 are spaced apart and project laterally of one side of the mesh as seen in FIG. 8. Hence when the mesh is placed in the form 10, the ties project upwardly to facilitate the placement of the insulation blocks in the form once the concrete for the panel 30 has been poured.

After the mesh 38 with attached ties 51 is placed in the form 10, concrete is poured into the form between the interior walls 16 and 17 to the level contemplated for the interior surface 58 of the outer panel 30. Part of this concrete of course flows into the structural area of the lintel 36 at the head end of the section as will be evident from a consideration of FIG. 2. After the concrete has been floated to the proper level of the contemplated interior surface 58, the blocks 35 of insulation material are positioned in the form to establish the cavity area in the finished section. In doing this, the blocks 35 are impaled or pierced by the elongated tie elements 51 so that after the blocks 35 are arranged in place, the upper ends of the ties project upwardly of the insulation to facilitate their attachment to the reinforcing rods 40 and 41 of the inner panel 31. The elongated blocks 35 are, of course, placed in an edge to edge relationship in the form as generally illustrated in FIG. 1 and are, of course, offset from the head end side wall 14 to accommodate the position of the lintel. It should also be noted that the insulation material is arranged flush against the side wall 15 and flush against the interior walls 16 and 17 between the lintel and foot end of the section so that the cavity area in the finished section basically communicates with the exterior of the cast section at the foot end of the section and along the opposite end surfaces 22 thereof.

Once the insulation blocks have been appropriately placed in the form, the reinforcing rods 40, 41 and 43 for the inner panels 31 and lintel 36 are suspended from the walls of the form 10. Thus, the internal walls 16 and 17 are provided with aligned holes 61 to receive the opposite ends 48 of the reinforcing rods 43 for the lintel 36 (see FIG. 4) and with aligned holes 62 to accommodate the opposite ends of the horizontal rods 41 for panel 31. Similarly, the side walls 14 and 15 of the form have aligned holes 63 that accommodate the opposite ends of the vertical rods 40 employed for reinforcing the inner panel 31. The head side wall 14 of the form also has a pair of spaced openings, not shown, to accommodate a pair of anchors 64 that are embedded in the lintel and equipped with eyelets 65 to facilitate the lifting and handling of the section.

After the anchors 64 and the rods 40, 41 and 43 are placed in the form, the upper ends of the ties 51 are bent around and securely tied at the intersects to the rods 40 and 41 so as to provide a tying structure between the concrete reinforcing means used in the spaced panels 30 and 31. Once the reinforcing means used in the panels is tied in, concrete is poured into the form and onto the insulation blocks 35 to a level of the contemplated interior side face 33 of the section 20. This concrete fills the balance of the space for the lintel beam as well as the contemplated area for the internal panel 31 and once the concrete has been floated the in-

terior side face 33 of the section can be finished by the mason.

In fabricating and forming the section, it is preferable to pour the concrete for the outer wall panel before the mortar between the bricks has cured so as to provide an integral cementous bond between the mortar and concrete structure of the outer panel. Similarly, the pour of concrete for the inner panel and remainder of the lintel is preferably made before the concrete in the outer panel has cured to any substantial extent so as to provide a similar integral cementous bond throughout the concrete structure of the section.

After the concrete structure of the section has set and sufficiently cured to enable handling thereof, the walls of the form may be dismantled and the ends of the rods 40 and 41 which project beyond the end surfaces 22 and beyond the concrete structure at the head and foot ends of the section may be cut off.

FIG. 10 illustrates the manner in which a pair of the concrete wall sections 20 may be assembled on a foundation 72 in the formation of a corner wall portion 70 of an exterior building wall 71. As seen in this figure, the corner 74 of the foundation 72 is poured with a plurality of vertically extending short lengths of reinforcing rods 73 that are anchored in the foundation at the foot end of a reinforced concrete column 75 that is poured in place to tie the wall sections 20 together in the corner structure 71. When the sections are elevated and placed in an upright supported position on the foundation 72, they are arranged in a perpendicular arrangement such that the end surface 22 of each section 20 that is located at the corner 74 of the foundation lies in the plane of the interior side face 33 of the other wall section. The laterally projecting end bricks 23 under such circumstances are offset from the end surface 22 of the other wall section and the arrangement is such as to define an elongated vertically extending space 77 in which the concrete column 75 may be poured. Once the perpendicularly arranged wall sections are supported in place on the foundation 72, vertically extending rods 76 for reinforcing the concrete structure of the column may be inserted in the spaces and tied at their opposite ends to the anchored foundation rods 73 and to the end portions 48 of the lintel rods 43 of the sections. This may be accomplished through the use of wire type metal ties 79 that can be manipulated to tie in the anchored rods 73 and rods 76 through the space 80 between the end bricks 23 of the respective sections. Thereafter a mason can install bricks 81 in the intervening spaces 80 between the end bricks 23 using mortar, of course, to provide suitable bed and head joints for the installation. Thereafter the space 77 for the column 75 may be filled with concrete to provide a poured in place concrete column that embeds the reinforcing structure in the space, including the opposite ends 48 of rods 43 to fully anchor the wall section to the foundation and integrally tie the sections together.

It should be noted that at the column ends of the sections, the end surfaces 45 of the lintels of the respective sections as well as the edge surfaces 46 and 47 of the panels of the sections confront the space 77 in which the column is poured in place. With this arrangement the cavity space 34 communicates along the side edges of the panels with the space occupied by the column. As such, when the column is poured the edge of the cavity area of each section is covered by concrete and this arrangement permits some of the concrete used in the pour to press slightly into the cavity area at the ends of the insulation material to aid in rigidly joining the section to the column. It may also be mentioned at this point that if desired and in lieu of cutting off the ends of the horizontal rods 41, these end portions may be left uncut to also be embedded in the concrete structure of the column.

The wall sections 20 may also be joined in end to end relation when arranged in a substantially coplanar arrangement on the foundation as seen in FIG. 11. Under such circumstances, the interior side faces 33 are arranged in the same plane so that the adjacent end surfaces 22 confront one another in the supported arrangement for the section. Once the sections have been supported on the foundation vertical concrete reinforcing rods 82 may be inserted in the space between the confronting surfaces 22 and tied into the opposite ends 48 of the lintel rods 43 as by means of metal ties 83. Thereafter the space for the column 84 may be enclosed by a suitable plywood form 85 and by installing the bricks 86 in the spaces 80 between the end bricks 23 of the wall section. Following this the concrete can be poured into the space 84 to again form a column between the sections.

While only certain preferred embodiments of this invention have been shown and described by way of illustration, many modifications will occur to those skilled in the art and it is, therefore, desired that it be understood that it is intended herein to cover all such modifications as fall within the true spirit and scope of this invention.

What is claimed as new and what it is desired to secure by Letters Patent of the United States is:

1. A prefabricated exterior wall section for a building, said section being supported upright on a foundation therefor and having interior and exterior side faces, said section comprising a pair of substantially rectangular, reinforced concrete panels that are spaced apart in a face to face arrangement and respectively located at said interior and exterior side faces of said section, and an elongated horizontally arranged reinforced concrete lintel that is supported by and overlies the space between said panels; said lintel comprising a concrete structure and reinforcing means embedded in said concrete structure, each of said panels having an upper portion and comprising a concrete structure which is joined along its upper portion to and precast integrally with the concrete structure of said lintel, and each of said panels comprising reinforcing means embedded in its concrete structure; said section further comprising a plurality of elongated metal elements that are spaced apart and extend through the space between said panels, each of said elements having opposite ends which are embedded in the respective concrete structures of said panels and secured to the respective reinforcing means embedded therein, the concrete structure of said lintel having opposite end surfaces that lie in respective vertical planes, and each of said panels having opposite side edge surfaces that respectively lie in said vertical planes.

2. A prefabricated exterior wall section in accord with claim 1 comprising insulation means disposed in the space between said panels.

3. A prefabricated exterior wall section in accord with claim 1 where the reinforcing means of the lintel comprises elongated metal rods embedded in the concrete structure thereof, each of said rods having oppo-

site ends that respectively project laterally outwardly of said opposite end surfaces.

4. A prefabricated exterior wall section in accord with claim 1 where the one of said panels that is located at the exterior side face of the section has a brick veneer surface covering that includes spaced bricks, and mortar which is located in the spaces between said bricks and which is joined to and precast integrally with the concrete structure of said one of said panels.

5. A prefabricated exterior wall section in accord with claim 4 where said brick veneer surface covering includes bricks that project laterally outwardly of the opposite side edge surfaces of said one of said panels.

6. An exterior building wall comprising a poured-in-place concrete corner column that is supported upright on a foundation for said wall, and a pair of prefabricated wall sections that are supported upright on the foundation and define the space occupied by said corner column; each of said wall sections having an exterior side face, and an interior side face that is arranged in a vertical plane which is perpendicular to the vertical plane of the interior side face of the other wall section, and each of said wall sections comprising a pair of substantially rectangular, reinforced concrete wall panels that are spaced apart in a face to face arrangement and respectively located at the interior and exterior side faces of its wall section, an elongated horizontally arranged reinforced concrete lintel that is supported by the panels of its wall section and overlies the space therebetween, and a plurality of elongated metal elements that are spaced apart and extend through the space between said wall panels; said lintel comprising a concrete structure having an end surface which confronts the space occupied by said corner column and which lies in the plane common to the interior side face of the other wall section, and elongated horizontally arranged concrete reinforcing metal rods which are embedded in the concrete structure of the lintel and which have end portions that project outwardly from said end surface and into the space occupied by said column; each of said wall panels having an upper portion, and a side edge surface which confronts the space occupied by said column and which lies in the plane common to the interior side face of the other wall section, and each of said wall panels comprising a concrete structure which is joined along its upper portion to, and precast integrally with, the concrete structure of said lintel, and reinforcing means embedded in its concrete structure, each of said metal elements having opposite ends respectively embedded in the concrete structures of said wall panels and respectively secured to the reinforcing means embedded therein, and the one of said panels that is located at the exterior side face of the wall section having a brick veneer surface covering that includes spaced bricks, and mortar which is located in the spaces between said bricks and which is joined to and precast integrally with the concrete structure of said one of said panels, said bricks including bricks that project laterally outwardly of the side edge surface of said one of said panels and confront the space occupied by said column, and the space between said panels being arranged to communicate along the side edge surfaces thereof with the space occupied by said column.

7. An exterior building wall in accord with claim 6 where the space between the panels of each of said wall sections is occupied by insulation means.

8. An exterior building wall in accord with claim 6 where said foundation has reinforcing rods with ends projecting vertically thereabove and into the foot end of the space occupied by said column, where said column has elongated reinforcing metal rods connected to the rod ends that project into the foot end of said space and to the end portions of the metal rods of said lintel.

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