

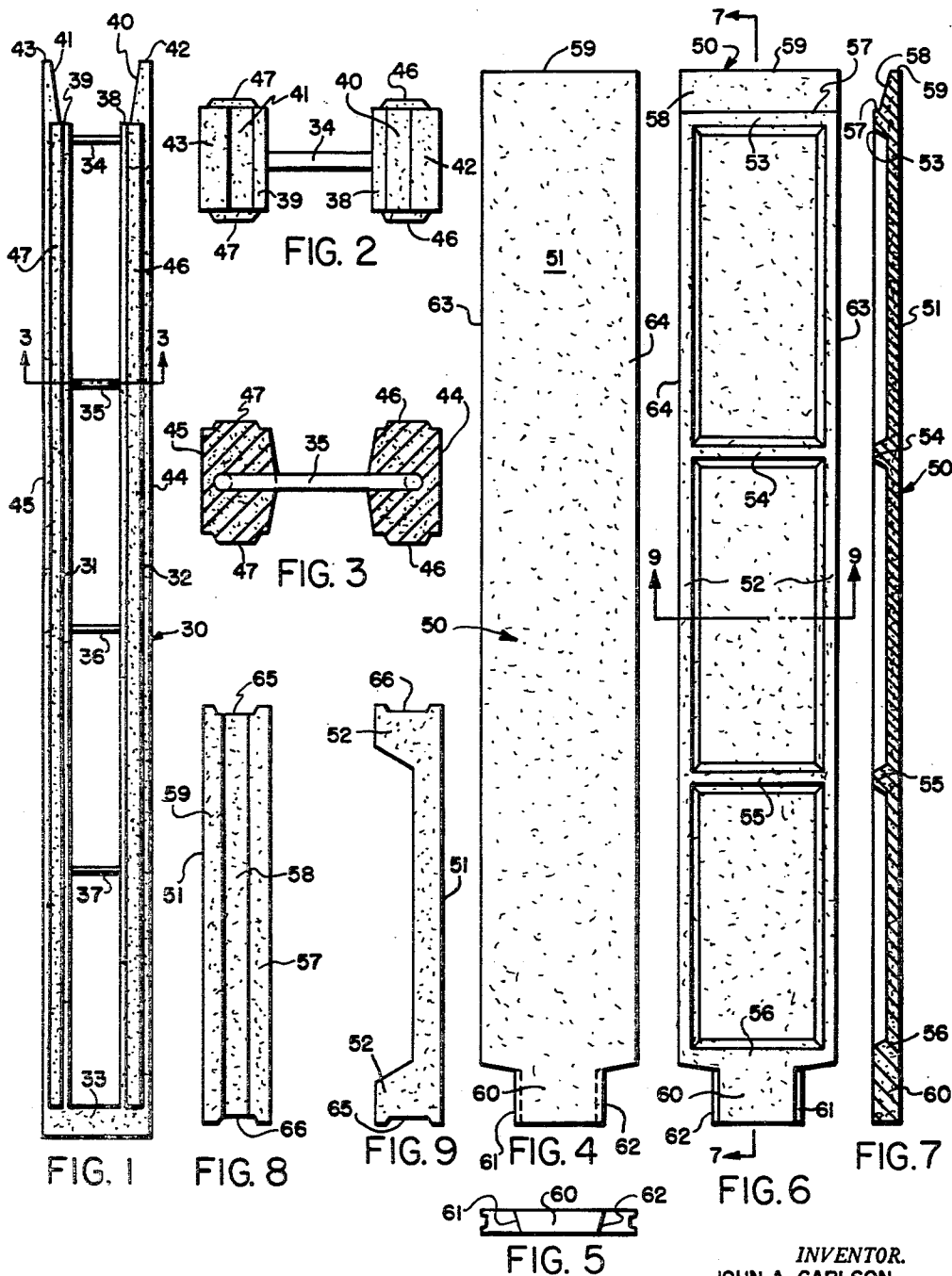
June 14, 1960

J. A. CARLSON
BUILDING CONSTRUCTION

2,940,294

Filed May 2, 1955

5 Sheets-Sheet 1



INVENTOR.
JOHN A. CARLSON

BY *W. E. Evers*

ATTORNEY

June 14, 1960

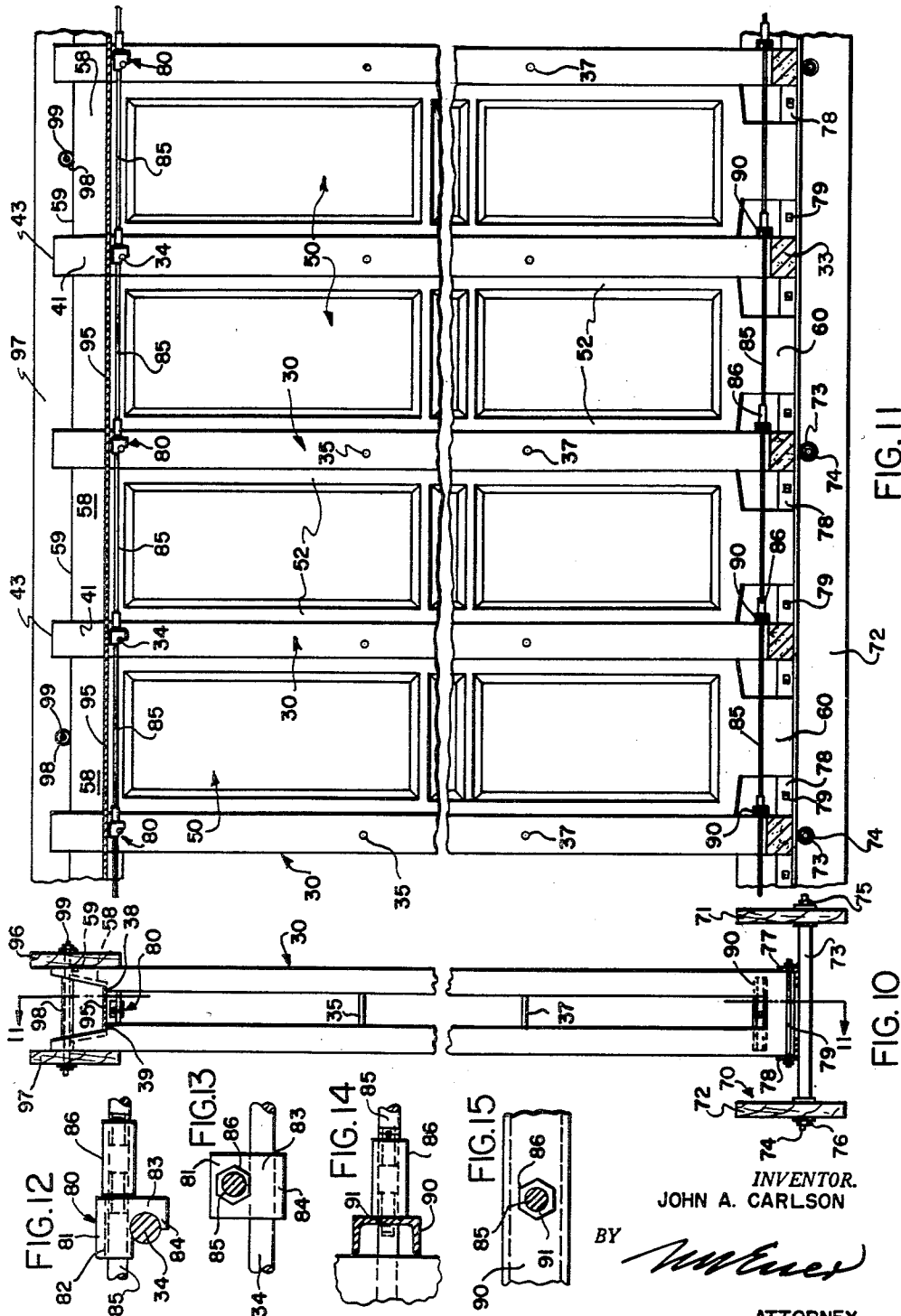
J. A. CARLSON

2,940,294

BUILDING CONSTRUCTION

Filed May 2, 1955

5 Sheets-Sheet 2



INVENTOR.
JOHN A. CARLSON

BY

Wm. E. ...

ATTORNEY

June 14, 1960

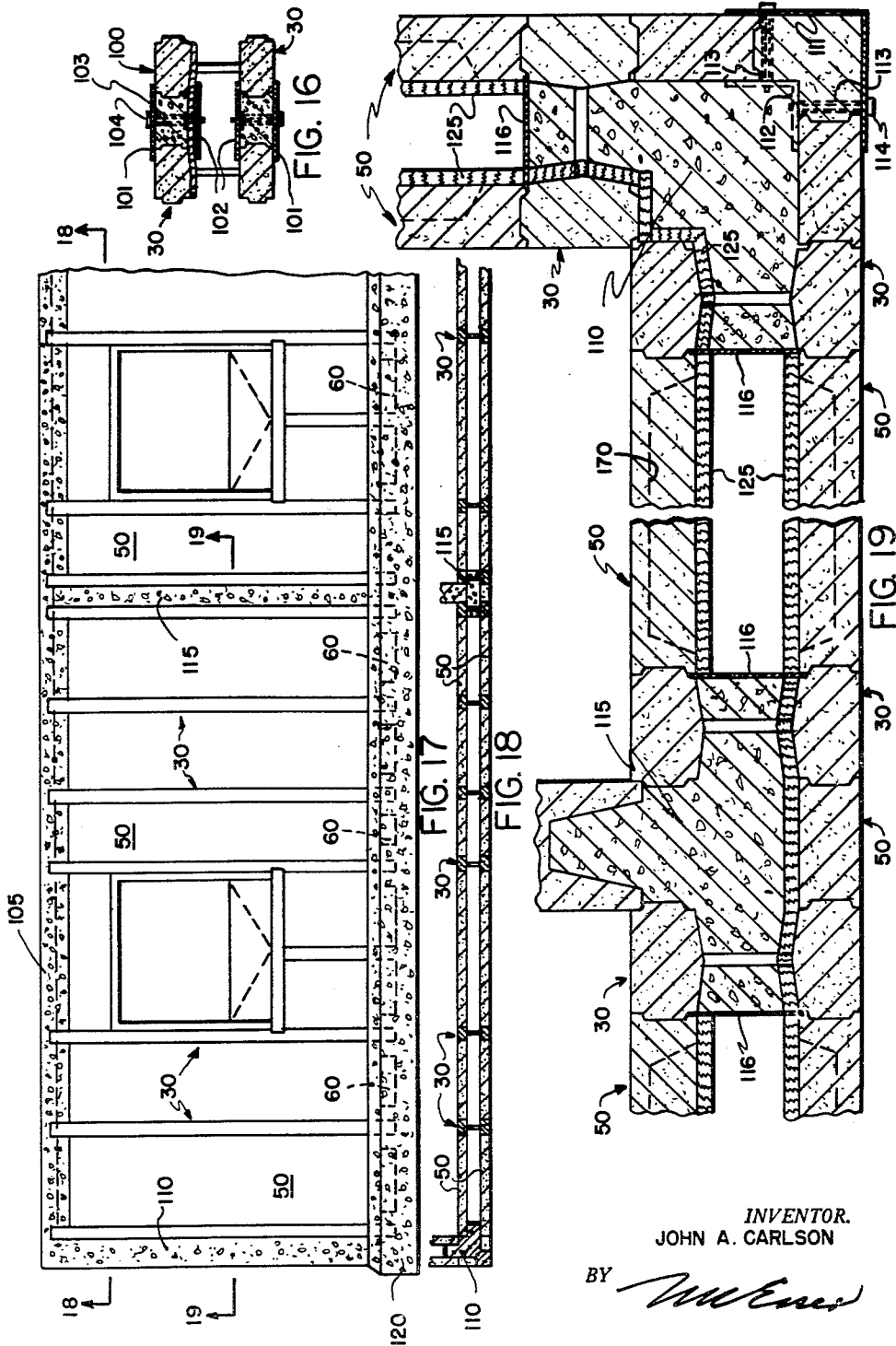
J. A. CARLSON

2,940,294

BUILDING CONSTRUCTION

Filed May 2, 1955

5 Sheets-Sheet 3.



INVENTOR.
JOHN A. CARLSON

BY *W. E. Evers*

ATTORNEY

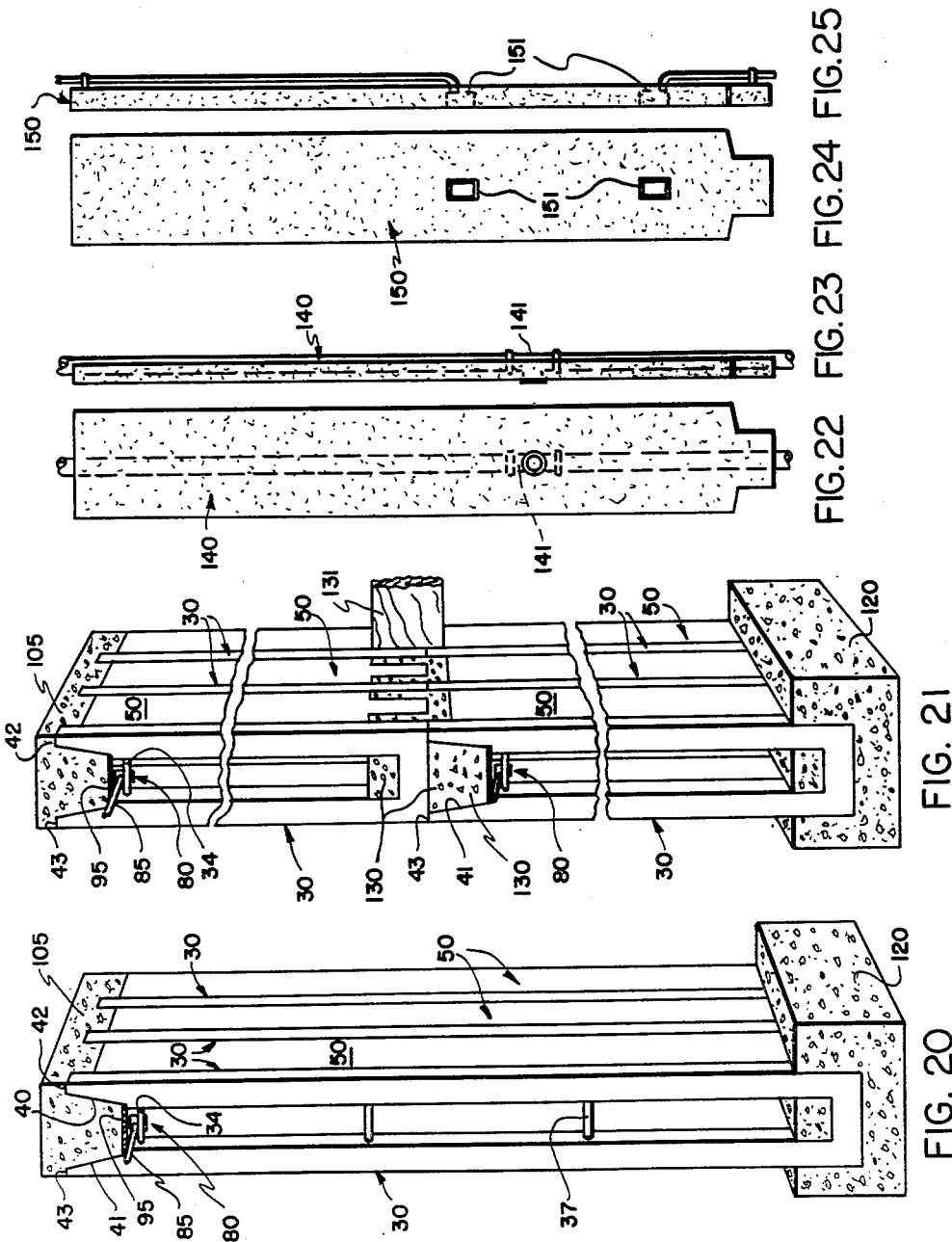
June 14, 1960

J. A. CARLSON
BUILDING CONSTRUCTION

2,940,294

Filed May 2, 1955

5 Sheets-Sheet 4



INVENTOR.
JOHN A. CARLSON

BY *W. E. Evers*

ATTORNEY

1

2,940,294

BUILDING CONSTRUCTION

John A. Carlson, 164 Lovell Ave., Mill Valley, Calif.

Filed May 2, 1955, Ser. No. 505,384

4 Claims. (Cl. 72—1)

This invention concerns building construction of concrete and steel, and more specifically provides a new approach in a combination of precast members and reinforced poured concrete.

In the development of this invention, applicant has given special thought and consideration to achieve a superior and unique construction for the purpose of building houses and other types of buildings durable against the most destructive elements such as tornado, hurricane, earthquake, and windstorm as well as to provide a shatterproof construction to minimize danger to life and damage to property in the event of enemy attack. Moreover, it is fireproof, vermin proof and permanent in nature providing a building of maximum strength with only a minimum of material. With all of these advantages, applicant's invention yet presents a structure competitive in material and erection costs with standard types of frame building construction of equivalent size. Furthermore, being fully insulated, it produces a construction that is cool for hot climates and warm in cold climates and absolutely proof against outside moisture.

This construction provides walls of precast reinforced concrete members and reinforced poured concrete. The precast members are simple to form and are easily and quickly assembled resulting in a sound bonded and practical wall construction. The members are interlocked with specially designed metal rods and fixtures and are then securely bonded together horizontally by embedding their bases in footings and by a poured reinforced concrete girder bonding the upper portions of the members along the top of the wall.

Pilasters are obtained by pouring concrete into a prearranged mold formed essentially of the precast members themselves. Such pilasters may be formed at intervals from corner to corner or to points adjacent the joiner of a partition wall to the outside wall.

The provision of such precast members, fixtures and rods referred to above, together with their assembly into a wall construction, as well as the resultant wall, constitutes the principal object of this invention.

Additional objects and advantages of this invention will become more apparent as the following description proceeds when taken in conjunction with the accompanying drawings, in which:

Fig. 1 is an elevational view of a precast stud member.

Fig. 2 is an enlarged top end view of the member illustrated in Fig. 1.

Fig. 3 is an enlarged cross section taken on line 3—3 of Fig. 1.

Fig. 4 is an elevational view illustrating the surface side of a panel slab.

Fig. 5 is a bottom end view of the panel slab in Fig. 4.

Fig. 6 is an elevational view of the inner surface of the panel slab in Fig. 4.

Fig. 7 is a vertical section taken on line 7—7 of Fig. 6.

Fig. 8 is a top end view of the panel slab illustrated in Figs. 4 and 6.

Fig. 9 is a cross sectional view on line 9—9 of Fig. 6.

2

Fig. 10 is an elevation view of the precast stud member shown in Fig. 1 in position relative to footing forms and also showing top girder forms in position.

Fig. 11 is an inside elevational view taken on line 11—11 of Fig. 10 and showing the location and relationship of panel slabs, studs and interlocking clamps, fixtures and tie rods, top and bottom.

Fig. 12 is a side elevation of an interlocking clamp fixture and rods.

Fig. 13 is an end view of Fig. 12.

Fig. 14 is a side elevation of an interlocking tie bar and rods.

Fig. 15 is an end view of Fig. 14.

Fig. 16 is a top end view illustrating forms for providing a take up joint.

Fig. 17 is a side elevation of a wall incorporating studs and panel slabs, pilasters, girders and footings.

Fig. 18 is a cross sectional view taken on line 18—18 of Fig. 16.

Fig. 19 is an enlarged sectional view taken on line 19—19 of Fig. 17 inverted for convenience of illustration and shows particularly a corner pilaster, partition pilaster, and insulation material fastened to the precast members.

Fig. 20 is a perspective view illustrating studs and panel slabs in position after footings and top girder have been poured, comprising a section of a wall.

Fig. 21 is a perspective view similar to that of Fig. 20 illustrating the arrangement of members and poured concrete for multiple story construction.

Fig. 22 is an elevational view illustrating the surface side of a panel slab into which plumbing pipes and fixtures such as for example vent and sewer pipes, have been cast.

Fig. 23 is a side end view of Fig. 22.

Fig. 24 is an elevational view illustrating the surface side of a panel slab into which electrical service receptacles have been cast.

Fig. 25 is a side end view of Fig. 24.

Fig. 26 is a cross section illustrating studs, panel slabs and pilasters specially adapted for warehouse construction purposes.

Fig. 27 is a cross section on line 27—27 of Fig. 26 illustrating top girder forms to achieve the construction shown in Fig. 28.

Fig. 28 is a side elevation of the wall shown in Fig. 26 including footings and top girder.

Referring now more particularly to the drawings, in Figs. 1, 2, and 3 there is illustrated a stud member 30. The stud 30 in the embodiment illustrated comprises a pair of laterally spaced parallel columns 31 and 32 which are integrally joined at least at the bottom by a reinforced cross member 33. To maintain the parallel spaced relation of the columns 31 and 32, they are provided with several cross rods such as 34, 35, 36 and 37 extending therebetween and the ends of which are firmly embedded in the material forming the columns 31 and 32. The upper ends of the columns 31 and 32 are each provided with a shoulder or ledge 38 and 39. Above the ledges 38 and 39, the internal walls 40 and 41 of the columns taper upwardly so that the central opening reaches maximum width at the top. The upper extremities 42 and 43 of the columns may be at right angles to the outside surfaces 44 and 45 but for a better bond with the poured concrete top girder as described in greater detail hereinafter, may preferably taper slightly downward to the outside surfaces 44 and 45 of the columns 31 and 32. Each lateral longitudinal edge of the columns 31 and 32 is provided with guide like runners 46 and 47 of frustum cross section. The entire stud member, thoroughly reinforced with steel, is formed of concrete as a unitary

member poured in a mold to form the various parts as described above.

In Figs. 4, 5, 6 and 7 there is shown a concrete panel slab 50, the outer surface 51 of which may be smooth or slightly roughened as desired. The other or inside surface of the panel slab 50 is preferably formed with a plurality of stiffening ribs 52-56 extending along the lateral sides of the panel as well as across the panel between the lateral ribs 52. The upper end of the panel slab 50 is provided with a shoulder or ledge 57. Above the ledge 57, as was the case with the stud 30, an internal surface 58 is provided tapering upwardly to the top in a direction toward the outer surface 51. Here again the upper extremity 59 of the panel slab 50, like the upper extremities of the stud 30, taper slightly downwardly to the outer surface 51 (see Fig. 7). The lower end 60 of the panel slab 50 is of reduced width, the purpose of which will appear later. The lateral edges 61 and 62 of the reduced portion 60 are bevelled outwardly to the external surface 51. The lateral edges 63 and 64 of the panel slab 50, above the reduced portion 60 and to the top edge 59 are provided with grooves 65 and 66 shaped to mate with the guide runners 46 and 47 of the stud 30. The ledges 57 of the panel slab 50 and ledges 38 and 39 of the studs 30 are the same distance from the bases of their respective members. The overall height of the panel slabs 50, however, are preferably several inches shorter than the studs 30. These panel slabs are precast in several practical widths consistent with expensive mold casts and are amply reinforced with steel.

Turning now to Figs. 10-15 for a discussion of the manner in which a wall comprising a series of concrete studs 30 and panel slabs 50 is assembled, 70 indicates removable forms into which concrete is poured to form the necessary footings. The footing forms 70 comprise parallel retaining members 71 and 72 which may consist of planking, steel channels or the like, uniformly spaced apart by means of a separator tube or pipe 73. The relative positions of the retaining members 71 and 72 are securely maintained by a rod member 74 extending through the tube 73 and bores in the retaining members, after nuts 75 and 76 have been tightened. To facilitate the tightening of the members 71, 72, if made of wood, suitable inner and outer washers are employed between the tube 73 and the planking 71 and 72 and between the planking and the nuts 75 and 76. Paralleling and spaced from one of the retaining members, 71 for example, an angle iron 77 is secured preferably by tack welding to the tubes or pipes 73. Another angle iron 78 rests on the tubes or pipes 73 and parallels angle iron 77 but is not secured or welded to the tubes or pipes 73, so that its position may be adjusted relative to the fixed angle iron 77. This adjustment is accomplished by cross tie bolts 79 which extend through bores previously drilled in the angle irons at selected spacing to coincide with the openings provided by the reduced bottom ends 60 of the panel slabs 50.

The remaining members will be best described in the discussion of the procedure of erecting a section of a wall incorporating the heretofore detailed studs 30, panel slabs 50 and footing forms 70, to follow. It should be noted that after the forms 70 have been placed in the outline of the building to be constructed, and the angle iron 77 is welded in its proper place in the footing form, there is no further need of a rule or other measuring device to complete the outside walls.

A stud 30 is placed erect between the two angle irons 77 and 78 and intermediate a pair of cross tie bolts 79 which, after the stud has been plumbed true, are tightened to securely hold the stud between the angle irons. To this stud are applied two panel slabs 50 by placing them with their face surfaces 51 outward and their reduced base portions 60 resting opposite each other and spaced apart in the angle irons 77 and 78. The vertical

side grooves 65 and 66 of the panel slabs 50 are partially filled with a mastic cement and then pressed into engagement with the guide runners 46 and 47 on the stud. Another stud 30 is then placed between the angle irons 77 and 78 intermediate the next pair of cross tie bolts 79, and pressed against the mastic filled grooves 65 and 66 of the other lateral edges of the panel slabs 50 already erected. This stud is again plumbed after which the tie bolts 79 are tightened to hold it in place.

At this time a clamp fixture 80 (see Figs. 12 and 13) having an upper body portion 81 bored at 82, and having a lower body portion 83 forming with the upper body portion 81 a hook 84 to engage a cross rod such as 34 of the studs 30 in a direction transverse to the axis of the bore 83, is engaged with tie rod 34 between the dual columns of the stud 30. A tie rod 85 in length equal to the width of a panel slab 50 plus $\frac{3}{4}$ the width of a stud 30, threaded at both ends and anchored to the next previous stud, is inserted through bore 82 of fixture 80. A sleeve nut 86 is turned onto the end of the rod 85, thereby drawing the two studs 30 with the panel slabs 50 therebetween tightly together. The other end of the sleeve nut 86 is open and free to receive the next tie rod 85 to secure the next set of two panel slabs and a stud thereto.

Near the base of the stud 30, another tie rod 85, previously secured to the next preceding stud, extends between and beyond the columns of stud 30. A bar 90 preferably in the form of a channel member and centrally bored at 91 is placed crosswise of the stud 30, over the threaded end of this tie rod 85, and another sleeve nut 86 is turned onto it clamping securely at the bottom the pair of panel slabs 50 between the studs 30. It should be noted that the clamping bar 90 is located within the openings provided by the reduced bottom ends 60 of the panel slabs 50. The other end of this sleeve nut 85 is open and free to accept the next tie rod 85, which with the following clamping bar 90 secures the next set of two panel slabs 50 and a stud 30 thereto. This procedure, top and bottom, proceeds in repeated sequence as successive sets of slabs and studs are erected until substantially an entire wall between any two pilasters is erected.

The panel slabs are made in several convenient and practical widths. Where variations in wall measurements differ from panel width multiples, a take up joint may be necessary. Such a take up joint is illustrated in Fig. 16 and simply comprises pairs of narrow steel plates 101 and 102, suitably bored. Between the plates 101 and 102 and in register with the bores are inserted ferules 103 through which bolts 104 extend. The bores of the inner plates 102 are tapped to receive the bolts 104 so that the plates may be drawn together overlappingly between the last pair of studs 30 in a wall, as indicated in the illustration. As will be brought out later, all of the panel slabs 50 and studs 30 are insulated. This insulation is also carried out in the take up joint by providing insulation material of appropriate width and covered with asphaltum compound, held in place temporarily against the inner form plate 102, and extending from the footings to the top of the joint.

Fine concrete, equivalent to the panel slab and stud material is then poured between the steel plate forms. After this concrete has been set and seasoned, the forms 101 and 102 are easily removed by withdrawing bolts 104.

After a reasonable length of wall section, or a wall section between two pilasters has been erected as discussed above, a thin gauge steel plate 95 is dropped in place on the ledges 38 and 39 of studs 30, and ledges 57 of the panel slabs 50. Plate 95 serves several purposes. It acts as a straight edge to absolutely align the studs 30 into conformity with the angle irons 77, 78 at the base. This steel plate 95 also provides a bottom closure for the pouring of a top girder for the wall to be described

below. Steel plates 95 are inserted around the entire top portion of the wall.

The top wall girder to be made and referred to above is formed by utilizing a form structure similar to that described in connection with the forms 70 for forming the base footings.

Parallel retaining form members 96 and 97 are drawn together against the face surfaces of the upper ends of the studs 30 and panel slabs 50, and against a spacing ferrule 98 by means of a tie rod 99 extending through holes bored in the form members 96 and 97 and the ferrule 98, and suitable washers and nuts in the same manner as described with reference to the setting up of the footing forms 70. The spacing ferrules 98 rest on the top edges 59 of the panel slabs 50 which as noted before, are shorter by several inches in length than the studs 30, the specific purpose for which will be brought out further along. Steel reinforcing, not shown, is incorporated into the top girder to be poured according to accepted standards. Such reinforcing steel may conveniently rest on the ferrules 98.

After the top and bottom forms are thus in place and a final check is made to insure that the members are plumb, concrete is then poured into the footings. All of the tie rods 85 and clamp bars 90 at the bottom are submerged in the concrete footings when poured, adding additional reinforcing material thereto and further assuring the lock-bonding of precast members 30 and 50 in the concrete footings.

After the footing concrete has set, the top wall girder is completed by pouring concrete between the forms 96 and 97 and above the closure plate 95 to the top of the forms. The height of the forms 96 and 97 is determined by the height of girder desired.

In certain instances, the construction may not require a top girder in excess of that which can be provided by the upper portions of the studs 30 and panel slabs 50 above the steel plate 95. In such cases, instead of the forms 96—98, panel slabs in all other respects the same as panel slabs 50 but equal in height to studs 30, are employed.

Figs. 17 and 18 illustrate a finished section of wall, emphasizing the simplicity and ease whereby members already in place provide forms for filling with concrete, resulting in pilasters and girders, with only a minimum amount of form work required. The results provide well recognized pilaster and girder construction for the building. These figures also clearly illustrate in a finished section of a wall, the interlocking and bonding together of the wall girder 105, corner pilaster 110, partition pilaster 115, footings 120, studs 30 and panel slabs 50. It will also be noted with respect to the footings 120, that the purpose for making the base portions 60 of panel slabs 50 of reduced width, is to enable concrete poured into the footing forms 70 to flush and fill between the bases of the dual columns of the studs 30 and between the bases 60 of the panels 50 to the height of the footing forms 70. This is additionally illustrated in Fig. 20. The bevelled sides 62 of the bases 60 provide a further dovetail lock in the concrete footings.

Fig. 19 illustrates in greater detail the points covered above. In addition it shows the simplicity of forming the pilasters by inserting thin gauge steel plates 116 in the joints between the studs 30 and the panel slabs 50 which together with the members already in place automatically provide a form for the concrete to be poured, resulting in the pilasters referred to. The inner joints of the studs 30 and of the panel slabs 50 are all cast with sufficient space to accommodate these steel plates 116 wherever pilasters are required. For corner pilasters 110 it is only necessary to complete the corner by adding an exterior sheet metal angle form 111 and an interior angle strap iron 122 which are secured in place for pouring by spacing ferrules 113 through which bolts 114 extend into tapped bores in the strap iron angle 112.

Fig. 19 also clearly illustrates insulation material 125 as it is permanently incorporated in the finished wall. This insulation material is prefabricated in appropriate widths and lengths to completely cover down to the top level of the footings the inside surfaces of the dual columns of the studs 30 and the inside surfaces of the panel slabs 50. It is secured to these inner surfaces of the various members after they have been cast, cured and dried preferably in the following manner. The entire inner surfaces of the studs and slabs are coated with a moisture proof asphaltum compound, and while wet, the insulation material 125, meeting accepted standards for the particular insulating value required, is pressed and bonded thereby to the various inner surfaces. This procedure provides precast and prefabricated insulated members, to be installed in place as a finished unit. The panel slabs 50 automatically include insulating values in the form of the air spaces 170 between the panel surface and the insulating material 125, which amounts to approximately two thirds of the entire wall area, inside and outside. These air spaces 170 are in addition to the larger air spaces provided in the center of the wall. Such a triple airspace wall assures outstanding insulating values and which, due to the asphaltum material applied to the inner surfaces of all members, also insures a positively moisture proof wall.

Figs. 20 and 21 illustrate particularly the finished girder 105 and the relationship of the upper portion of the studs 30 and the panel slabs 50 embedded in the concrete of the girder 105. This view specially illustrates the importance of the bevelled tops 42 and 43 of the studs 30 and the bevelled tops 59 of panel slabs 50. These bevels provide interlocking dovetails in the concrete girder 105. It also shows with particular clarity the influence of the steel plate closure 95 in the finished wall. It further illustrates the finished footings 120 and shows how thoroughly the bases of the studs 30 and panel slabs 50 have been embedded in the footings, including concrete reaching footing height level between the members.

Fig. 21 illustrates the same general principle of footings 120 and top girders in connection with a multiple story structure, and the manner in which the stud and panel slab members of the upper story are bonded to the stud and panel slab members of the story directly below. The bonded girder 130 between the floors is achieved by forms similar to forms 96—99 positioned after the floor joists 131 have been put into place at desired spacings in the openings provided by the reduced portions 60 of the upper panel slabs 50.

This multiple story construction is also very useful for the purpose of increasing or adding an additional number of stories to the top of a building of conventional construction already constructed. In this manner no hazardous forms or scaffolds which hang out over the outside walls on the exterior would be required. Likewise the hazardous work of afterward removing such forms and scaffolds is also eliminated, and consequently the incident material and labor costs which would otherwise have been involved will be reflected in a lower overall cost for the job.

Figs. 22, 23, 24 and 25 illustrate prefabricated panel slabs 140 and 150 into which sewer and vent pipes 141 and electrical service receptacles 151 are included as part of the panel slabs as cast.

All of the precast members, such as studs 30 and panel slabs 50 are provided with internal reinforcing of steel, such as rods, wire or mesh as appropriate. This of course is accomplished in the casting of these members. Likewise, all of the poured concrete such as the footings, pilasters and girders are provided with steel reinforcing material according to accepted standards.

After the balance of a building has been completed including floor, ceilings and roof, the interior surfaces of the walls may be finished with plaster and the exterior

with a trowelled or pebble dashed cement finish, or any other interior and exterior finishes that may be desired.

Fig. 26 shows this same construction where only single walls are desired, such as for garages, warehouses and the like. This structure 160 is similar in all respects to the wall construction previously described, except that there is provided a single wall instead of a dual wall. The pilasters and corner pilasters are made in substantially the same manner as pilasters 110 and 115 except that the steel plates 116 for completing these pilasters are provided with rods 161 to help hold them in place. Members 117 in the nature of wood templates are used as space maintainers during the time when the fixtures 80, clamp bars 90 and tie rods 85, are tightened into place with sleeve nuts 86 as in the dual wall procedure. The member 117 acts only as a temporary wedge until such time as the footings have been poured, and may then be removed.

As was the case with the dual wall construction, all of the tie rods 85 and clamp bars 90 at the bottom are submerged in the concrete footings when poured adding additional reinforcing and further assuring the lock-bonding of members 30 and 50 in the concrete footings.

The top girder 162 for this type of construction is in most respects achieved in the same manner as are girders 105. However, since only one side is provided with panel slabs 50, after the plate 95 has been placed on the ledges 38 and 39 of the studs 30, and the forms 96-99 have been secured in place, the remaining space between the plate 95 and the form retainer 96 is covered with a sheet metal angle 163. To support the sheet metal angle 163, the retainer form 96 is of slightly lesser depth than retainer 97 and a cleat 164 is secured to its underside and projects inwardly between the stud members 30 as illustrated. Concrete is then poured into the form.

Fig. 28 illustrates the outer appearance of a wall section for warehouse purposes showing an elevated concrete floor, with studs 30 and panel slabs 50 securely bonded in the footings and top girders and pilasters.

It will be understood that applicant's invention resides in the novel combination and cooperation of the various members together with the method of their assembly and the method of bonding them in concrete poured in part at least in forms furnished by the members themselves, and that certain modifications in the arrangements illustrated will be suggested to those skilled in the art. All such modifications as come within the spirit of this invention are intended to be within its scope as best defined in the appended claims.

I claim:

1. Wall construction for buildings comprising in combination, precast studs each having spaced apart dual columns, cross tie means extending between the spaced apart dual columns of the studs, precast panel slabs spaced apart and pressed between pairs of said studs, tie rod means extending transverse to said cross tie means and secured thereto and mechanically clamping said studs and panel slabs rigidly in place, the upper ends of said studs and panel slabs being provided with shoulders in alignment, the inner walls of said studs and panel slabs above said shoulders inclined upwardly toward the outer faces thereof: pilasters positioned at corner wall intersections; said pilasters including a precast stud from each of the intersecting wall sections, abutted at the inside corner of the intersection, a corner column of poured concrete secured to said abutted pair of studs and formed to provide the outside corner of said intersection, and another column of poured concrete filling the space between said abutted pair of studs and said corner column secured thereto:

thus providing a continuous central airspace within the wall between said pilasters, concrete footings, said studs and panel slabs embedded within said footings and one of said cross ties and tie rod means also embedded firmly therein, a supporting plate snugly inserted between said dual columns on said shoulders, and a poured concrete girder resting in part at least on said plate and the inclined inner walls of said studs and panel slabs above said aligned shoulders thus providing a monolithic bond with said pilasters and footings, in which monolithic bond said precast studs and panel slabs are secured.

2. Wall construction for buildings as claimed in claim 1, in which said plate is steel and provides a straight edge aligning the precast studs and panel slabs.

3. Wall construction as claimed in claim 1, in which the bottom portions of the panel slabs embedded within the footings are of reduced width, the edges of which are beveled, said beveled edges further lock-bonding the panel slabs in the footings.

4. Means for pouring concrete for footings and for setting up wall construction to be embedded in said footings, comprising retaining members for said poured concrete, tie rod means for maintaining said retaining members in spaced apart relationship, an angle iron fixedly secured to said tie rod means in preselected spaced relationship to the adjacent retaining member for said concrete, another angle iron movable with respect to said fixedly secured angle iron resting on said tie rod means, and additional tie rod means, shorter than said first mentioned tie rod means extending between and adjustably connecting said angle irons relatively at preselected intervals whereby upright studding placed between said angle irons at selected intervals may be clamped in place therebetween by the tightening of said additional tie rod means and maintained in alignment predetermined by said fixedly secured angle iron.

References Cited in the file of this patent

UNITED STATES PATENTS

1,072,230	Howard	Sept. 2, 1913
1,132,995	Anderson	Mar. 23, 1915
1,343,926	Madsen	June 22, 1920
1,500,445	Dvorak	July 8, 1924
1,519,305	Hahn	Dec. 16, 1924
1,698,557	O'Brien	Jan. 8, 1929
1,730,533	Rose	Oct. 8, 1929
1,836,408	Sutton	Dec. 15, 1931
1,897,327	Olson	Feb. 14, 1933
1,963,410	Kartowicz	June 19, 1934
1,985,328	Rutten	Dec. 25, 1934
2,058,285	Amesuca	Oct. 20, 1936
2,083,781	Groves	June 15, 1937
2,114,048	Davis	Apr. 12, 1938
2,234,797	Burner	Mar. 11, 1941
2,295,216	Joy	Sept. 8, 1942
2,372,038	Westveer	Mar. 20, 1945
2,373,409	Myer	Apr. 10, 1945
2,741,908	Swanson	Apr. 17, 1956

FOREIGN PATENTS

60,012	France	Mar. 24, 1954
126,155	Australia	of 1947
157,210	Australia	June 24, 1954
166,313	Austria	of 1950
341,501	Germany	of 1921
944,569	France	of 1948