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2,741,908

PRECAST CONCRETE WALL CONSTRUCTION

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2 Sheets-Sheet 1

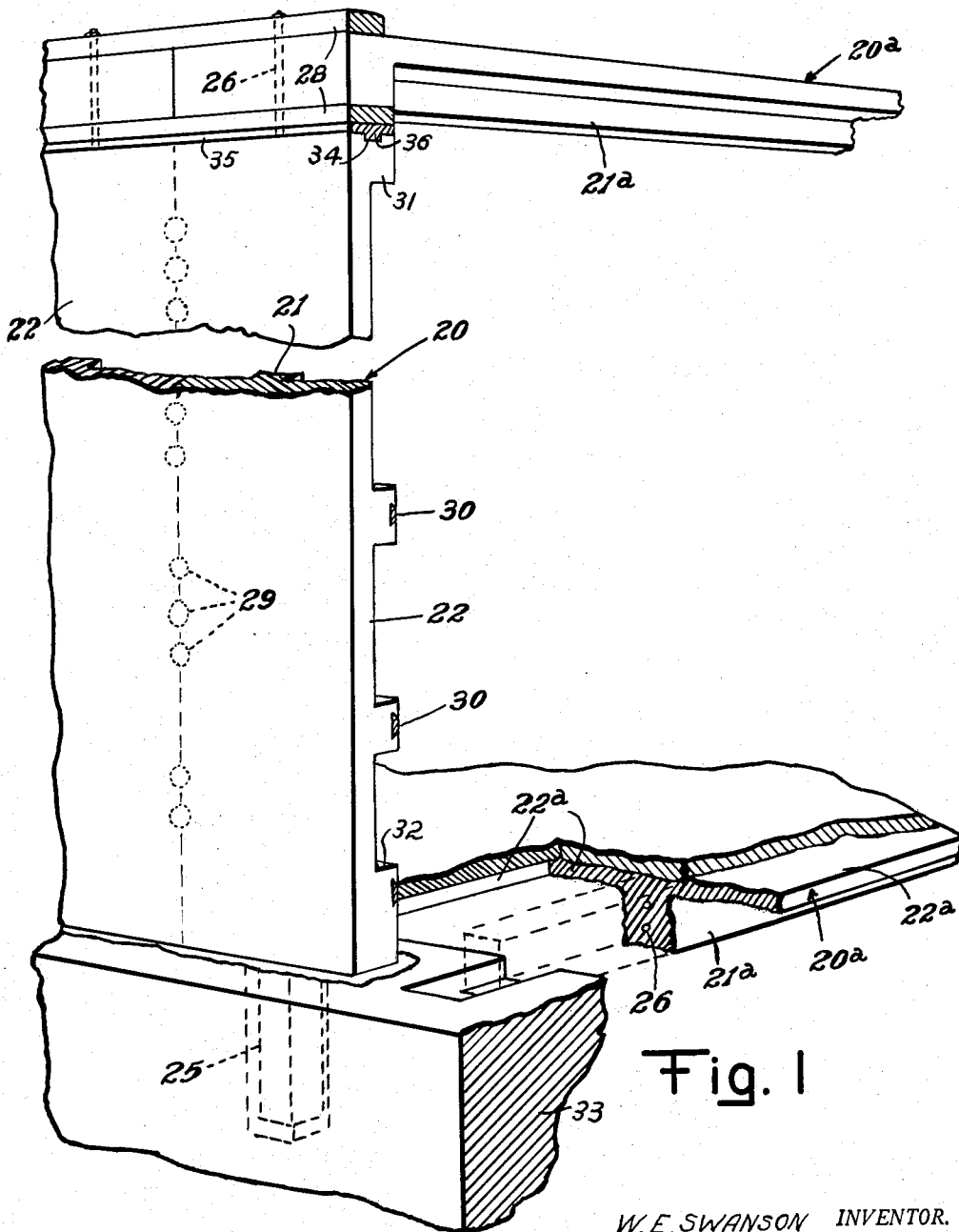


Fig. 1

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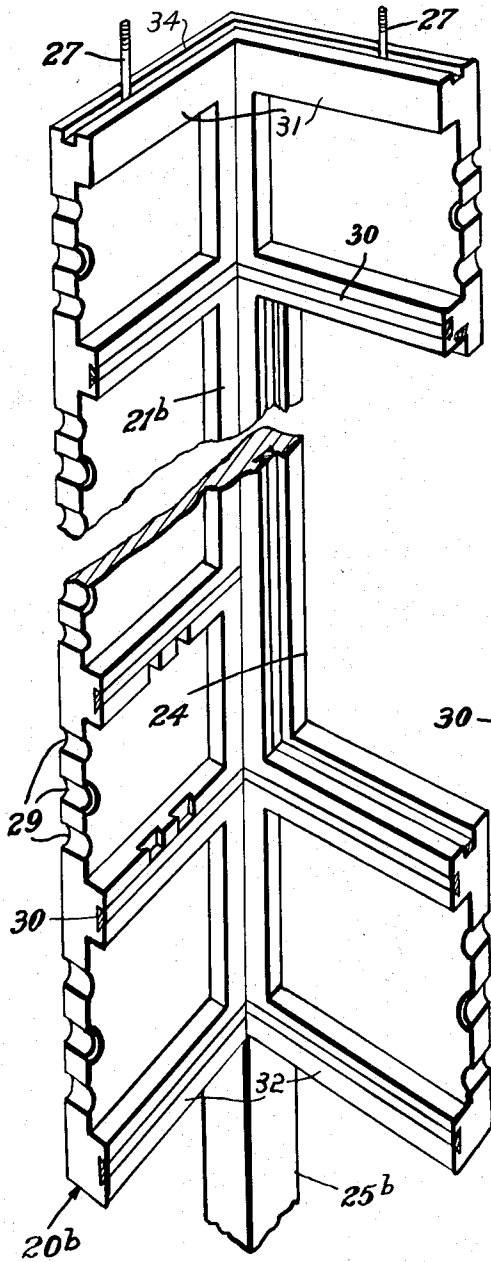


Fig. 2

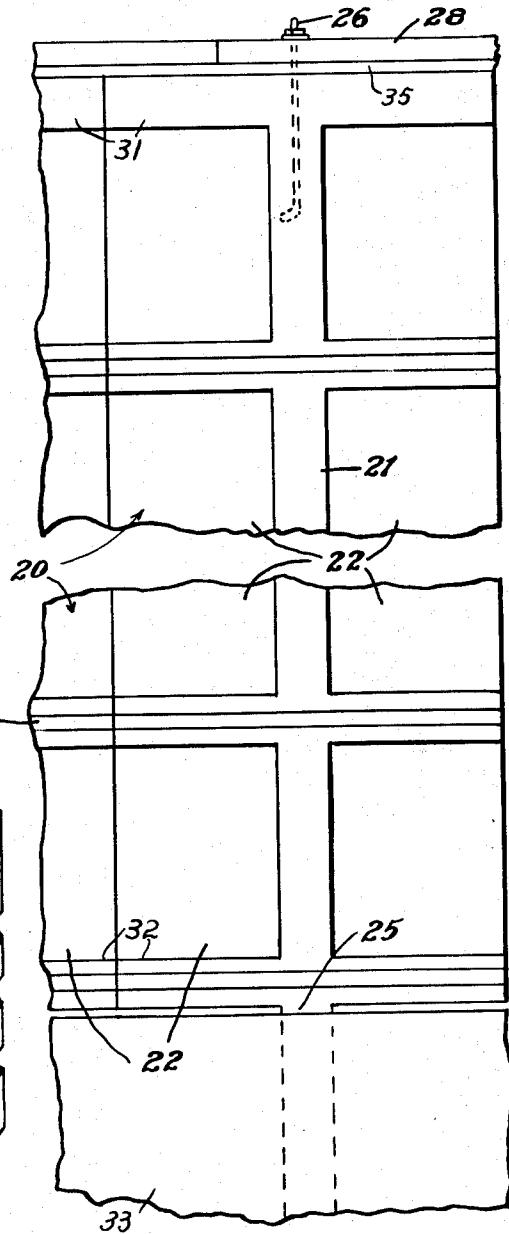


Fig. 3

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PRECAST CONCRETE WALL CONSTRUCTION

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3 Claims. (Cl. 72-16)

This invention relates to building construction and particularly to prefabricated building units.

An object of the invention is to provide a readily assembled building from prefabricated units, and to provide units of improved construction for the purpose.

An important object of the invention is to facilitate the erection of a building in assembly of the units and retain said units in proper supported position.

A more detailed object of the invention is to provide a monolithic panel or unit having window openings adapted to incorporate corner windows in a building when so desired.

Another object of the invention is to provide an upright panel which will stand by itself when set in the ground or in a hole in the foundation.

A further object of the invention is to provide an upright panel having its vertical reinforcement principally provided by a vertical central or medial rib in the panel.

Yet other objects of the invention are to provide an upright panel with a reinforcing rod therein serving the additional function as a bolt protruding at the top of the panel for retention of a sill, header or other constructional part thereon; to provide a construction readily accommodating inclusion of windows and doors between ribs of adjoining units or panels; to provide a unit fully capable of supporting a roof or other superstructure; to provide a construction likewise capable of use for fencing purposes; and to avoid necessity for side or surface bolts or wire loops to hold the units together.

Still further objects of the invention will appear to those skilled in the art to which it appertains as the description proceeds, both by direct reference thereto and by implication from the context.

Referring to the accompanying drawings in which like numerals of reference indicate similar parts throughout the several views:

Fig. 1 is a perspective view of a portion of a building utilizing my improved prefabricated units;

Fig. 2 is another perspective view of a portion of a building looking at the inside thereof; and

Fig. 3 is an elevation of one full panel and a portion of an adjoining panel in assembled relation.

In the specific embodiment of the invention illustrated in said drawings, the reference numeral 20 designates a wall member generally, which may be made singly for use as a unit in a side wall, as in Figs. 1 and 3, or may be made with the units or portions at angles, such as right angles, for constituting corner units. An essential feature of the invention resides in the panelling and reinforcing of the units which are preferably concrete. Heretofore it has been common practice to provide panels with reinforcing ribs around the edges thereof. Such ribs, when of adequate strength for each unit, were of objectionably heavy cross-section when brought together at the edges of two units. According to the present invention, I utilize longitudinal reinforcing ribs inwardly of the longitudinal edges of the units. For a normal

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size, or single unit, a single longitudinal reinforcing rib 21 is employed substantially medially of the longitudinal side edges of the unit. When several such units are assembled, the panels between ribs will be composed partly of a panel portion 22 of one unit and partly of a panel portion 22 of the adjacent unit, and the vertical reinforcing rib at the middle of one unit is the side edge of the compounded panel, whereas the other side edge thereof is the reinforcing rib of the adjacent unit. Similarly, where windows are to be included, half of the window opening 24 is provided in each of two adjacent units. A further feature of the invention comprises the provision of a post 25 as an integral part of each unit used in the side wall of the lower portion of the building. The post is provided medially between side edges of the panel or of the units, and in vertical alignment with the vertical rib of that panel. The vertical rib and post are accordingly substantially an entity and carry distributed weight on opposite sides thereof involved in the panel constructions. This feature of the invention avoids having a split post with inherent weakness thereof for given dimensions. It further enables each section to be completely installed in the assembly before applying an adjacent section. Partial suspension of one section pending application of an adjacent section is thus avoided.

The feature of medial longitudinal rib is not confined alone to side wall members, but as shown in Fig. 1, is a feature of ceiling and floor construction in which the units 20a have central ribs 21a longitudinally thereof medially between side edges of the units, thus, as above described, resulting in the building assembly in adjacent units providing juxtaposed panel portions to make a complete panel between the ribs of two units. The same feature may similarly be present in assemblies of several units for roof construction, for walls used as fences, or elsewhere as found desirable. It is also within the scope of the invention to assemble two of the normal side-wall units adjacent to each other at the corner of the building in place of the special single-unit member of Fig. 2, and in such instance corner window openings may be provided which will be unobstructed by presence of any rib or corner upright at the corner edge of the building.

Reference herein to the medial location of the longitudinal rib is to be understood not only with the normal or straight-wall side units, but also with respect to corner units. Fig. 2 shows a corner unit 20b and two panel sections 22b having an included angle of 90° therebetween, but any angle may be used as called for by the building. The panel sections match each with a panel section of units in two walls and the post 25b aligned with the rib 21b is located conveniently at the corner of the building.

As shown, the rib may be provided with a longitudinal reinforcing metallic rod 26 therein (see Fig. 1) and if desired, the said rod may be longer than the panel and protrude at the end of the panel for joining an adjacent building element to the said panel. Alternatively, the provision of rods protruding from the end of the unit may be by a short rod 27 less than the length of the unit. The protruding end of the rod in any event may preferably be screw threaded, thereby enabling a wood or other header 28 to be attached.

As shown, each unit has an upper transverse rib 31 and a lower or bottom transverse rib 32, both of which are disposed on the same face of the unit as the medial or vertical rib 21 or 21b. The lower transverse rib 32 rests on the foundation 33 and the upper transverse rib 31 has a mortise groove 34 longitudinally of and in its upper edge. The header for the several units is shown

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with an under section 35 thereof provided with a tenon tongue 36 engaging in said groove.

Furthermore, the side or other edges of the units may have notches 29 cut therein arranged to register in the assembly of adjacent units so that cement can be applied therein to key the sections or units together. It is also contemplated to embed wood or other cleats 30 in the granolithic composition of the units to which inside finish may be applied after the walls of the present invention are erected.

Obviously, other combinations and constructions involving the inventive concept may be made, but the foregoing description and accompanying illustrations are deemed sufficient for an understanding of the invention and further elaboration would be superfluous to persons skilled in the building trade.

I claim:

1. A wall construction comprising a foundation and a plurality of reinforced concrete units positioned in vertical edge to edge relationship and disposed on said foundation, each unit including a centrally disposed rib and panels extending from opposite sides thereof, each panel constituting substantially one half of said unit, means connecting adjacent units along the vertical edges thereof, transverse ribs along the upper and lower edges of said units projecting laterally of said central rib and extending to the opposite side edges of said units, all of said ribs being of substantially equal thickness and being positioned on a common face of the units, the upper edge of each upper rib having a groove therein extending from side to side of the unit, the grooves of

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the units being aligned, and a continuous header seated in said grooves and extending across a plurality of said units, the lower transverse rib being seated on said foundation, said central rib of each unit projecting below the lower edge thereof and forming an anchoring post, each anchoring post being embedded in said foundation.

2. The wall structure of claim 1 wherein the panels of one of said units are disposed in substantially right-angular relationship and constitute a corner unit.

3. The wall structure of claim 1, wherein said means connecting adjacent panels comprises substantially semi-cylindrical notches in the side edges of said panels axially perpendicular to the panel faces, the notches of adjacent units registering with each other thereby providing substantially cylindrical notches extending through the wall, and cement applied in said notches keying said units together.

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