Sept. 27, 1960 R. E. TATRO 2,953,873

BUILDING CONSTRUCTION

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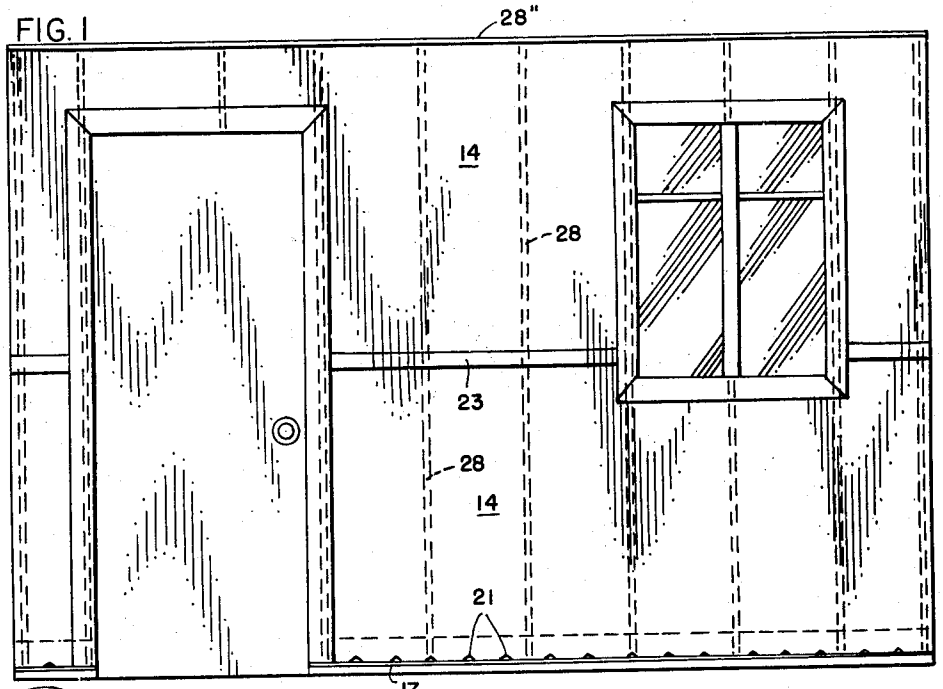
FIG. 1



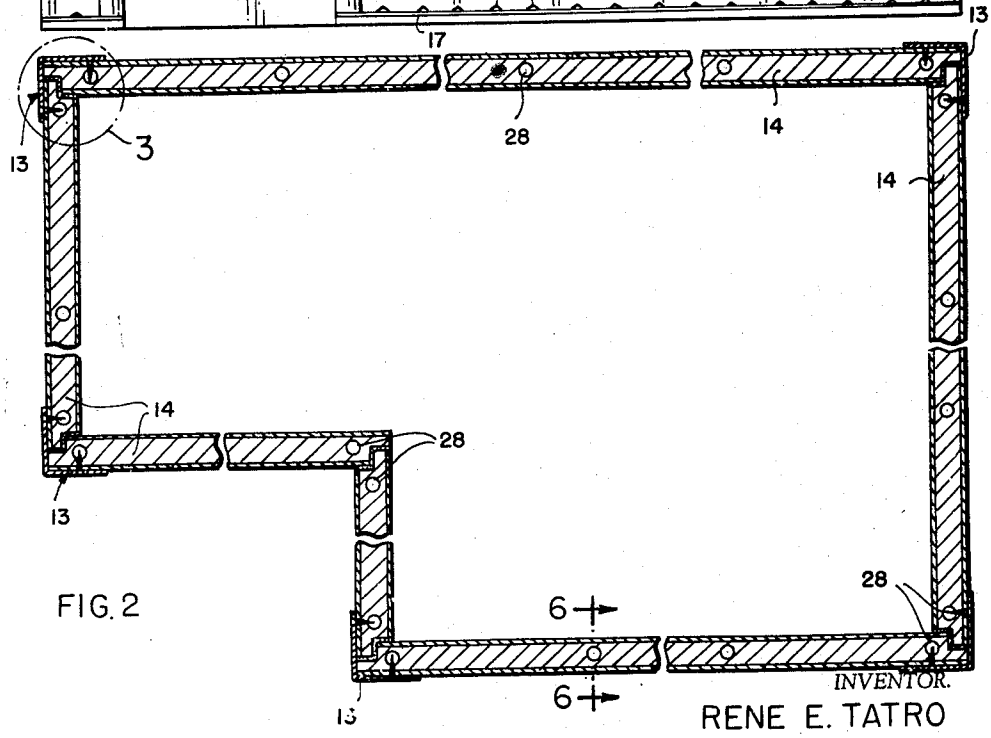


FIG. 2

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FIG. 3

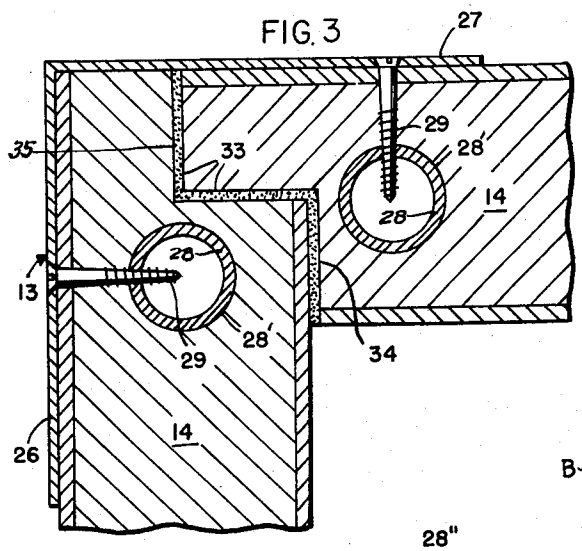


FIG. 4

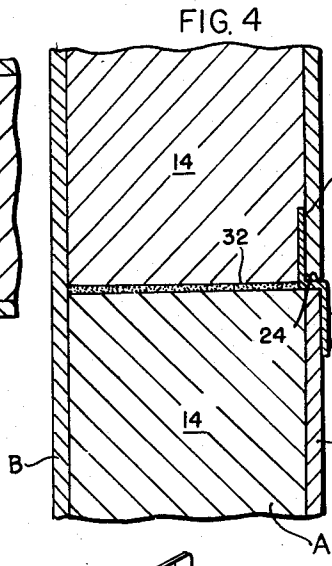


FIG. 5

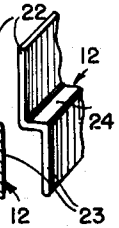


FIG. 6

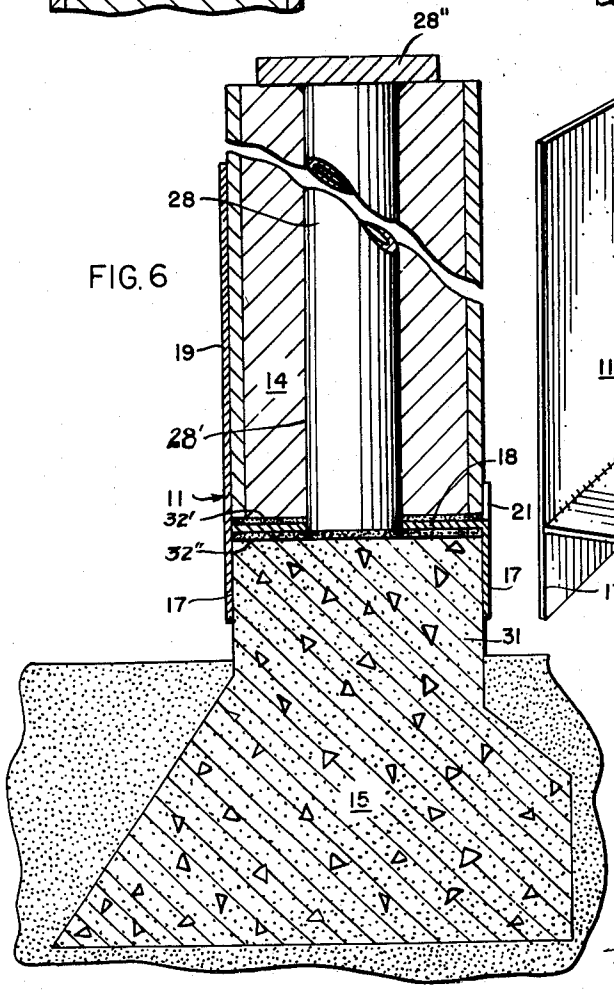
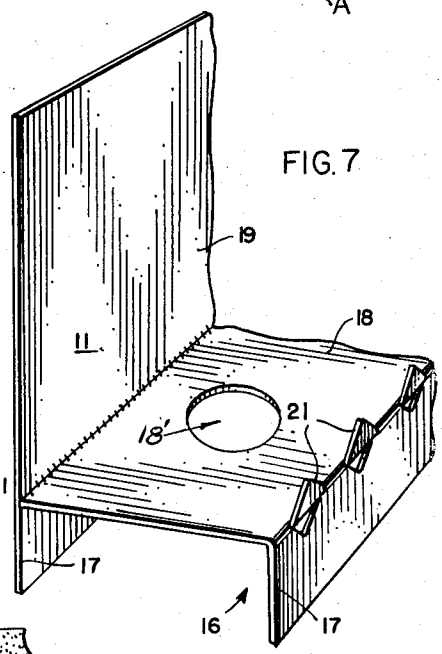


FIG. 7



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2,953,873

BUILDING CONSTRUCTION

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1 Claim. (Cl. 50—168)

This invention relates to the means and the method of fabricating walls from preformed standard-dimension panels.

Increasingly, in modern buildings, the walls are structured of panels of laminated, specially-treated cores and exterior facings. Currently-produced panels of this kind are light in weight but of contrastingly great strength and high resistance to damage or destruction from fire and water. Heretofore, various means and methods have been employed to anchor these panels to a base and in coplanar relationship to constitute walls.

The main objects of this invention are to provide an improved means and method for anchoring the edge-to-edge assembly of special composition panels on a supporting base; to provide a new method of fabricating the wall structure of buildings by using prefabricated wall panels which may be assembled in the factory, warehouse or on the job site and raising the completed wall sections and setting same on retainer footings; to provide an improved trio of brackets for contemporaneous use to securely anchor the panels one to another in coplanar and angular disposition; to provide improved brackets of this kind for use in an assembly of panels for almost any desired floor plan; and to provide an improved trio of panel-anchoring brackets of this kind of such simplicity as to make their mass production extremely economical, their use on the job exceptionally facile, and the finished wall of exceptional durable character.

In the adaptation shown in the accompanying drawings:

Figure 1 is a side elevation of a wall of normal height which has been fabricated from two longitudinally disposed panels anchored together, one on the other by a trio of brackets constructed in accordance with this invention;

Fig. 2 is a horizontal section of an enclosure the wall panels for which have been anchored to one another and a retaining wall or footing by a trio of brackets constructed in accordance with this invention;

Fig. 3 is an enlarged, fragmentary, sectional view of the ends of two panels anchored in right-angular relationship by one of the trio brackets constructed in accordance with this invention; the view being of the section within the circle "3" of Fig. 2;

Fig. 4 is an enlarged, fragmentary section of the two panels anchored in coplanar relationship by another of the trio of brackets;

Fig. 5 is a perspective of an end portion of the bracket shown in Fig. 4;

Fig. 6 is an enlarged, fragmentary section of a base footing mounting a panel anchored thereto by the third of the trio brackets constructed in accordance with this invention; and

Fig. 7 is a perspective view of the end portion of the bracket shown in Fig. 6.

The essential concept of this invention involves a trio of variously-formed brackets adapted for contemporaneous use in anchoring abutting panels in vertical coplanar relationship, either one above the other or side by side, and in vertical right-angle relationship, all on a retainer wall or base footing.

Elements for and a method of fabricating wall panels embodying the foregoing concept comprises a trio of elongated brackets **11**, **12**, and **13** adapted for contemporaneous anchoring to panels **14** on a base footing **15** in coplanar and angled relationship, by procedural steps as hereinafter will be explained fully.

The bracket **11** here is shown as similar in shape to a lower case **h** with a channel part **16** having its parallel legs **17** extending downwardly from the opposite lateral edges of a transverse part **18** and an upwardly-extending stem part **19**. Along the juncture of one of the legs **17** and the transverse part **19**, prongs **21** are struck out of the bracket material and extend upwardly substantially in the plane of the leg **17** and parallel to the stem part **19**. As here shown the prongs **21** are of triangular shape and struck out from the leg **17**. Obviously, the prongs **21** could be shaped otherwise and struck out from the transverse part **18**. The distance between the exposed faces of the stem part **19** and the prongs **21** accords with the thickness of the panels with which the brackets are to be used. The bracket **11** here is shown as formed in two pieces, one angular piece and the other flat, welded together in the shape of an **h**. However, the bracket might be formed of a single piece of material. The length of the bracket is determined by the length of the wall to be constructed on the footing **15**. The stem part **19** is positioned so as to face the interior of the building structure and hence it becomes the base moulding.

The bracket **12** here is shown having a pair of oppositely-extending arms **22** and **23** transversely spaced apart in parallel relationship by a short transverse section **24**. The length of the bracket **12** is determined by the length of the wall to be erected and extends from end to end of the wall section. The important factor is to have the arms **22** and **23** of a length and the section **24** of a width such that with the embedding of one of the arms in the opposed edge of one of two coplanar panels and the overlap of the other arm on the other panel will result in a rigid connection between these abutting panels **14—14** as well as form a waterproof joint.

The bracket **13** is a conventional piece of angle bar positioned to embracively contact the adjacent exterior faces of two abutting right-angularly-disposed panels. The width of the arms **26** and **27** is not critical. It is important only that the arms extend an appreciable distance beyond the respective inner faces of the abutting panels. The length of the bracket is determined by the height of the wall to be constructed. A series of apertures is formed in each of the arms **26** and **27** adjacent if not along the longitudinal median of the respective arms, for the reception of anchoring screws **29**.

This trio of brackets **11**, **12** and **13** generally would be made up in various lengths, which well might depend upon the lengths of the conventional building walls with which these brackets are to be used.

As shown, the panels **14** in each wall section are two in number and one is placed on the other in edge-to-edge relationship. These panels are of a particular form wherein each is drilled or bored vertically, as at **28'**, completely through the core on centers such as **16"**, to receive the studs **28** which, as here shown, are in the form of black pipe so that the studs are positioned across the vertical width of the building wall in predetermined spaced relationship. An elongated plate **28"** is welded on the upper ends of the studs **28** whereby to bear against the upper surface of the upper panel **14**. The lower ends

of the studs 28 extend through the apertures 18' located in the horizontal plate 18, where they are welded thereto whereby the studs reinforce the panels 14.

Obviously, this trio of brackets could be used with almost any of the conventionally available panel materials. However, the panels with the reinforcing studs or pipes 28, besides being of greater strength than panels without reinforcements, facilitate making a more rigid anchoring of the brackets 11 and panels 14. Also the combination of the studs 28 and the plates 28'' form a load-bearing surface for the roof structure (not shown).

The herein-disclosed improved method of fabricating panel walls involves the following steps:

First step: Initially there is the production of the trio of brackets 11, 12, and 13 of the respective forms herein shown and described and the studs 28 with their plates 28''. Although these brackets could be formed on the job from available materials, the most obvious procedure would be to mass produce them in quantities that would make them available in whatever quantities were likely to be needed over a period of time. In either instance the respective brackets would be produced in lengths most practically usable with conventionally obtainable panels.

Second step: Preliminary to the actual positioning of the panels certain of them have to be grooved and/or recessed. Grooves would be cut along edges of a predetermined number of panels, depending upon the nature of the wall being fabricated. (See Fig. 4.)

Third step: A further preliminary step is the forming of the base footing or retaining wall 15 to provide a top ridge 31 of a width to match the distance between the opposed faces of the legs 17 of the channel section 16. (See Figs. 6 and 7.)

These preliminary steps having been duly effected, actual wall fabrication begins with the

Fourth step: Assembling the two panels one on top of the other, with the cooperating brackets 12 in place and waterproofing adhesive 32 applied. (See Figs. 4–6.) This is all done while the panels are in a horizontal plane and preferably accomplished in the factory or warehouse. The length of the panels having been predetermined and cut to correspond with the length of the wall to be erected. Then

Fifth step: The studs 28, with their plate 28'' are inserted into the borings 28' from what will be the upper surface of the wall when the wall is erected.

Sixth step: The brackets 11 are next inserted on the lower ends of the panels 11 with an appropriate layer of waterproofing adhesive 32' provided on the upper surface of the member 18 or the lower edge of the panel 14.

Seventh step: The lower ends of the studs having been seated in the apertures 18' they are now welded to the lower face of member 18 around the periphery of the stud end, and a coating of waterproofing adhesive 32'' applied to the lower surface of member 18 or the upper surface of the top ridge 31 of the footing 15.

Eighth step: Where two adjacent wall sections are to be in right-angled relationship to each other the two adjacent panels are provided with mating rebates 34—35 respectively at their meeting edges and the rebates extend the heighth of the respective panels. Waterproofing adhesive 33 is applied to one of the faces of one of the rebates.

Ninth step: The remaining wall sections are fabricated in the same manner as steps "fourth through ninth."

Tenth step: One wall section is now positioned upright and the channel 16 placed on the appropriate reduced portion 31 of the footing 15.

Eleventh step: An adjacent wall section is likewise positioned on the respective portion 31 of the footing 15 and the corner bracket 13 placed in position and appropriate holes drilled in the core 14 and stud 28 whereby screws or other fasteners 29 are used to anchor the members 13 to the wall sections.

It is to be understood that a plurality of fasteners 29 are employed whereby to securely anchor the corners of the wall constructions.

The balance of the wall sections are then one by one secured in interfitting right-angled relationship. As illustrated in Fig. 2 six wall sections are used to form the walls of this particular embodiment, which has actually been built in Kankakee, Illinois.

The particular panels 14, used in the house built, are commercially known as "Transitop." This is a product of Johns-Manville and is a core A of impregnated and compressed fibrous mtaerial sandwiched between facings of asbestos cement B. This material can be purchased on the open market and has a width of 4' 0'' and various lengths ranging from 6' 0'' to 12' 0''. The thickness ranges from $1\frac{1}{16}$'' to 2''. The house built in Kankakee, Illinois, used two panels lengthwise and placed one on the other to provide a wall heighth of eight feet. The lengths varied with length of the wall desired.

A wall of panels assembled as above explained and shown in the drawings, can be accomplished with the minimum of labor and made as stable and rigid as, if not superior to, any structures attained by any of the current conventional procedures and materials.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of the invention as defined by the following claim.

I claim:

A building, the walls of which comprise a plurality of complete and partial sections of currently-available, standard-dimension, read-to-use, composition panels positioned on a base-footing abutting one above another and at right angles, reinforcing elements spaced apart longitudinally of the panels and extending transversely through two vertically-arranged panels, a plate disposed along the top edge of the upper panel and bonded to the ends of the reinforcing elements, a first bracket simulating an h with prongs struck out and bent up in spaced parallel relationship to the upright stem part of the bracket, the first bracket being seated over the base-footing and seating a panel on the transverse part of the bracket between the prongs and the upright stem part and bonded to the lower ends of the reinforcing elements and thereby anchoring the panels in vertical disposition, and a second bracket of right-angular shape embracing the perimetrical edges of abutting panels and secured by fasteners penetrating the panels and the reinforcing elements of the abutting panels for anchoring them in right angle relationship.

References Cited in the file of this patent

UNITED STATES PATENTS

1,939,624	Cohan	Dec. 12, 1933
2,038,115	Keller	Apr. 21, 1936
2,076,404	Herrington	Apr. 6, 1937
2,104,872	Levy	Jan. 11, 1938
2,130,788	Boyd	Sept. 20, 1938
2,137,767	Betcone	Nov. 22, 1938
2,205,730	Morgan	June 25, 1940
2,234,559	Jacobs	Mar. 11, 1941
2,261,077	Schultz	Oct. 28, 1941
2,339,220	Crowley	Jan. 11, 1944