

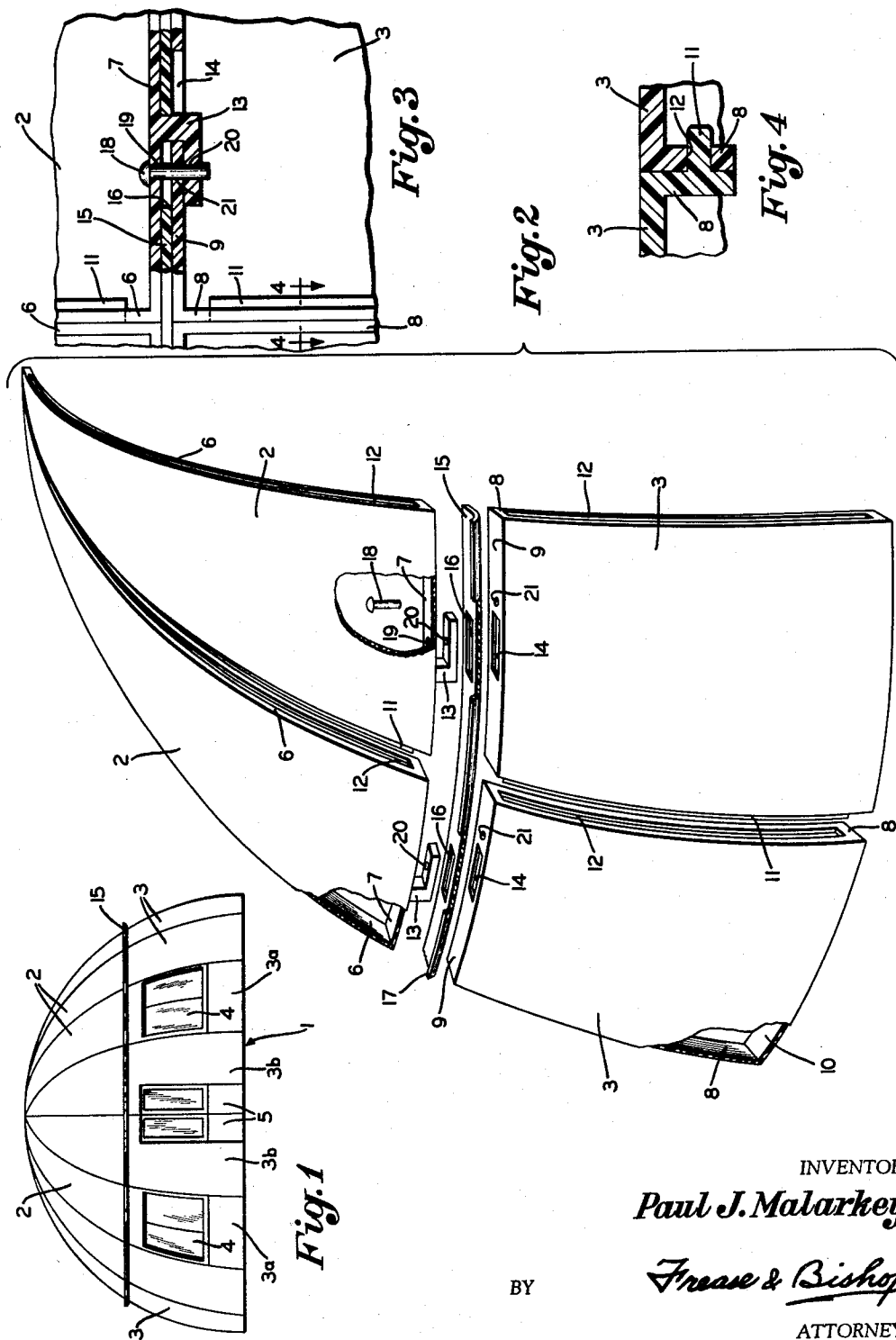
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BUILDING CONSTRUCTION

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BUILDING CONSTRUCTION

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This invention relates to building construction and more particularly it pertains to locking means for securing adjacent panels together.

Wholly or partially prefabricated buildings may be provided with built-in fastening means for securing fabricated sections of the building together. Various means have been used for such purposes with varied success depending upon the composition and configuration of the fabricated sections.

Where the fabricated sections are composed of a molded plastic material the various fabricated sections may be provided with integral fastening means which upon assembly with adjacent parts provide a permanent, tightly assembled unit having a minimum number of parts necessary for their assembly. With fabricated molded plastic material the fabricated sections may be standardized to such an extent that a single locking member may be used for sliding adjacent parts to the locked position after their preliminary assembly in an unlocked position. Thereafter the locking member may be secured in place to prevent its return to the unlocked position. Such a construction involves a minimum number of parts and is quickly assembled from the unlocked to the locked position. It has been found that the several prefabricated parts may be preliminarily assembled in an unlocked position and then simply rotated by a slide locking member from said preliminary position to the final locked position with a minimum of time and effort.

Moreover, the building construction of prefabricated molded members composed of plastic may be disassembled without destruction of the various members or the locking parts involved. It is therefore readily apparent that such a building construction is conducive to permanent or temporary buildings having self-locking means associated therewith.

Accordingly, it is a general object of this invention to provide a building construction having self-locking means included with the various members to be secured together.

It is another object of this invention to provide prefabricated building construction members having molded locking means integral therewith.

It is another object of this invention to provide a prefabricated building construction having interlocking parts with a slidable locking member for securing the entire building together by a single locking movement.

Finally, it is an object of this invention to provide an improved prefabricated building construction which incorporates the foregoing desiderata in an inexpensive manner and with simplified maintenance and operation.

These and other objects and advantages apparent to those skilled in the art from the following description and claims may be obtained, the stated results achieved and described difficulties overcome by the discoveries, principles, apparatus, parts, combinations, subcombinations and elements which comprise the present invention, the nature of which is set forth in the following state-

ment, a preferred embodiment of which, illustrative of the best mode in which applicant has contemplated applying the principles, is set forth in the following description, and which is particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

The building construction of the present invention may be stated in general terms as including a dome-shaped structure having a plurality of triangularly shaped roof members and a plurality of substantially vertical wall members, the roof and wall members having corresponding adjacent sides forming a joint extending around the building in a horizontal plane, the roof members also having apices joined at the uppermost end of the building, each roof member having flanged sides one with a tongue and the other with a groove for receiving the tongue of an adjacent roof member, the wall members having side flanges with corresponding tongue and groove elements, the sides of the roof members forming the joint with the wall members being flanged and having an L-shaped lug extending therefrom, the side of each wall member forming the joint with the roof members being flanged and having a lug-receiving aperture, a locking ring at the joint between the roof and wall members, the ring having a plurality of lug-receiving apertures aligned with the lugs on the roof members, the apertures in the ring also being aligned with the apertures in the wall members, the ring being rotatable to rotate the assembled roof members with respect to the assembled wall members at the horizontal joint, the lugs being movable from an unlocked to a locked position within the apertures of the wall members, and at least one locking pin extending through the flanges and locking ring.

By way of example, the improved building construction is shown in the accompanying drawings, in which:

Figure 1 is an elevational view of a dome-shaped prefabricated building;

Fig. 2 is an exploded view showing various parts of the building in pre-assembled positions;

Fig. 3 is an enlarged fragmentary view showing the interlocking parts in their locked position as viewed from the side opposite that of Fig. 2; and

Fig. 4 is a fragmentary sectional view taken on the line 4—4 of Fig. 3.

Similar numerals refer to similar parts throughout the several views of the drawing.

In Fig. 1 a dome-shaped building is generally indicated at 1. It includes curvilinear roof members 2 and substantially vertical wall members 3. All of the roof members 2 are triangular in shape, having apices which when assembled form the uppermost part of the domed roof. The lowermost edges of the roof members 2 are of equal width.

The wall members 3 are similar in that they have identical outer dimensions. The upper ends of all wall members are equal to each other and to the lower ends of the roof members. Also, the lower ends of the wall members 3 are equal in width to each other.

Certain of the wall members 3a are provided with windows 4 while certain other wall members 3b are provided with door portions 5.

The roof members 2 and the wall members 3 include flanges which extend around the peripheries thereof, preferably in a continuous integral manner. The roof members 2 include flanges 6 extending along opposite sides from the lower end to the upper apices thereof. The flanges 6 of adjacent members are abutable when assembled. In addition, each roof member 2 includes a flange 7 extending along the lower edge thereof between the flanges 6.

Likewise, the wall members 3 include integral flanges

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8 extending along opposite vertical sides thereof, as well as an upper flange 9 and a lower flange 10.

As shown in Figs. 2 and 4, the vertical flanges 6 and 8 of the roof and wall members 2 and 3, respectively, are provided with complementary tongue and groove members 11 and 12 which interfit or interlock together to reinforce the adjacent members when finally assembled.

The assembled building 1 also includes means for securing the upper roof members 2 to the assembled vertical wall members 3. The means includes an L-shaped lug 13 extending from the lower side of the flange 7 of each roof member 2, and a lug-receiving aperture 14 in each flange 9 of the wall members 3.

Moreover, the locking means includes an annular locking ring 15 having a plurality of lug-receiving apertures 16, the spacings of which correspond to the spacings of the spaced lugs of adjacent assembled roof members 3 or the spacing of spaced apertures 14 of adjacent assembled wall members 3.

As shown in Fig. 2, the locking ring 15 includes an upturned flange 17. The flange 17, together with the adjacent roof members 2, may serve as a gutter for rain water falling on the roof members 2.

Finally, the locking means includes at least one locking pin 18 and a plurality of spaced pin-receiving apertures 19, 20, and 21 in the flange 7, the lug 13, and the flange 9, respectively. When the several parts are completely assembled in the locked position as shown in Fig. 3, the locking pin 18 extends through the various aligned apertures 19, 21, and 20.

In operation, the building 1 is assembled by first assembling the tongue and groove members 11 and 12 of the adjacent roof members 2 and wall members 3 together as shown for the wall members in Fig. 4. Thereafter the lugs 13 of the roof members 12 are lowered in place through the aligned apertures 16 and 14 of the locking ring 15 and flanges 9, respectively. The locking ring 15 and the roof members 2 are then rotated to the right as shown in Fig. 2 until the lugs completely engage the under surfaces of the various flanges 9 of the wall members 3. In such position the several apertures 19, 16, 20, and 21 are aligned for insertion of the locking pin 18 as shown in Fig. 3. With the locking pin in place it is impossible for the upper roof members 2 to rotate out of engagement with the wall members 3. One or more locking pins 18 may be used.

The building construction of the present invention is an improvement over previous constructions in that it is composed of a minimum number of parts. The materials used are preferably composed of molded plastic whereby the interfitting or interlocking parts are integral with the several roof and wall members and thereby provide self-locking parts conducive to easy assembly. Moreover, the members may be disassembled without incurring destruction of the several parts involved.

In the foregoing description certain terms have been

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used for brevity, clearness and understanding but no unnecessary limitations are to be implied therefrom beyond the requirements of the prior art, because such words are used for descriptive purposes herein and are intended to be broadly construed.

Moreover, the embodiment of the improved construction illustrated and described herein is by way of example, and the scope of the present invention is not limited to the exact details of construction shown.

Having now described the features, constructions and principles of the invention, the characteristics of the new building construction, and the advantageous, new and useful results provided; the new and useful discoveries, principles, parts, elements, combinations, subcombinations, structures and arrangements, and mechanical equivalents obvious to those skilled in the art, are set forth in the appended claims.

I claim:

1. In a building construction having a dome-shaped structure with a plurality of triangularly shaped roof members and a plurality of wall members, and in which the roof members have lower flanged sides forming a horizontal joint with top flanged sides of the wall members; the combination in which one of said roof and wall members has at least one L-shaped lug and the other of said members has corresponding lug-receiving apertures, a locking ring disposed between the flanged sides of the roof and wall members forming the horizontal joint, the ring having a plurality of lug-receiving apertures aligned with the apertures of the assembled members, and the ring being movable to rotate the assembled roof members from unlocked to locked positions of the interfitting locking members.

2. In a building construction having a dome-shaped structure with a plurality of triangularly shaped roof members and a plurality of wall members, and in which the roof members have lower flanged sides forming a horizontal joint with top flanged sides of the wall members; the combination in which the roof members include L-shaped lugs and the wall members include lug-receiving apertures, a locking ring disposed between the flanged sides of the roof and wall members forming a horizontal joint, the ring having a plurality of lug-receiving apertures aligned with the apertures of the wall members, and the ring being movable to rotate the assembled roof members from locked to unlocked positions.

3. The construction set forth in claim 2 in which the flanges of the sides of the roof and wall members at the horizontal joint are provided with aligned apertures in the locked position, and a locking pin extending through said aligned apertures.

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