Sept. 16, 1941. R. C. HANSEN 2,256,050

BUILDING

Filed Aug. 28, 1939 2 Sheets-Sheet 1

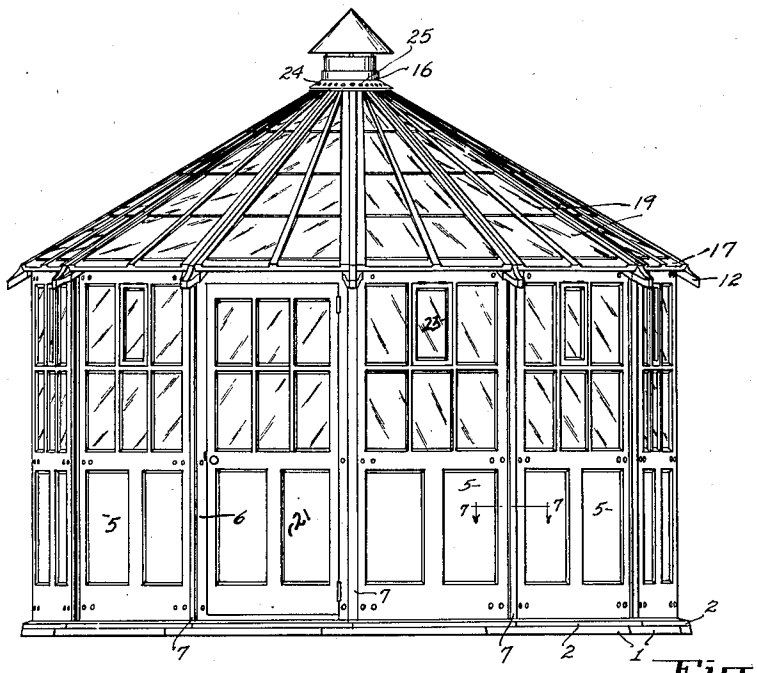


Fig. 1

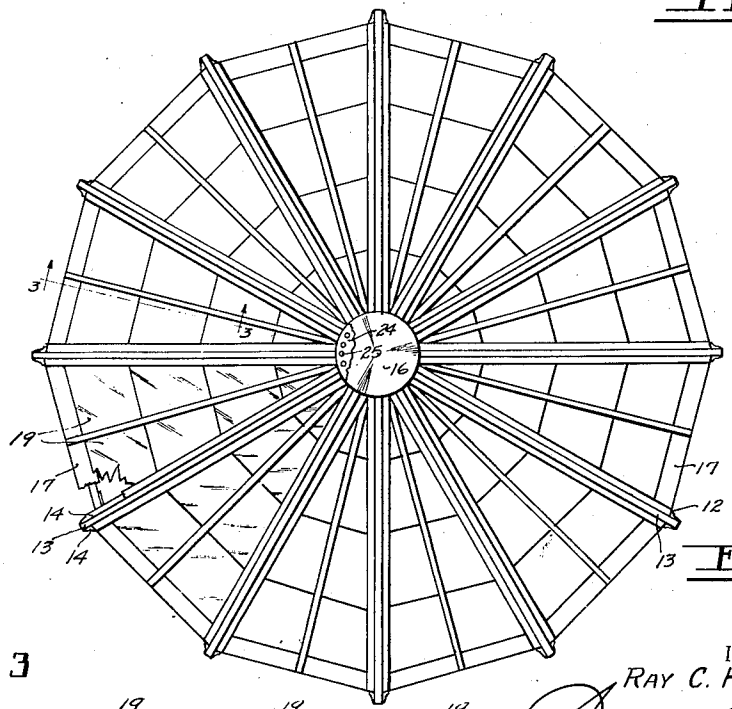
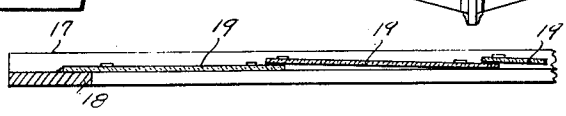


Fig. 2

Fig. 3



INVENTOR.
RAY C. HANSEN
BY Harold L. Cook
ATTORNEY.

Sept. 16, 1941. R. C. HANSEN 2,256,050

BUILDING

Filed Aug. 28, 1939 2 Sheets-Sheet 2

Fig. 4

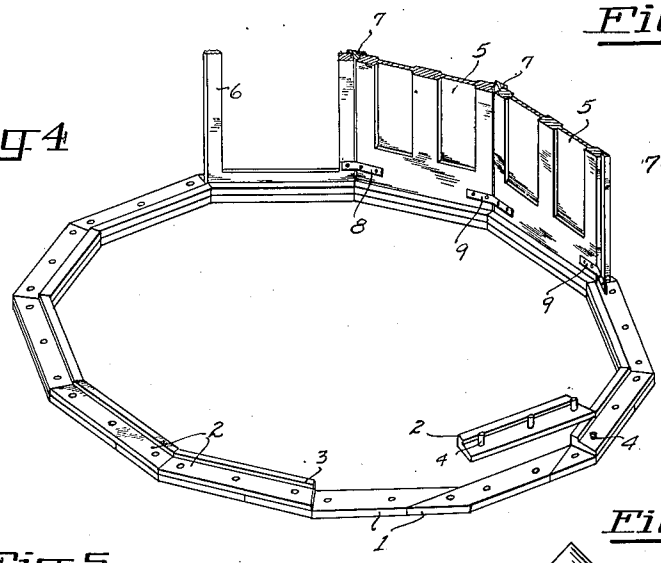


Fig. 7

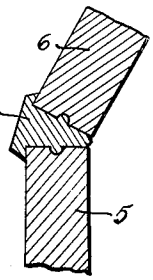


Fig. 6

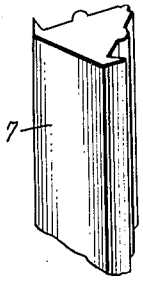


Fig. 5

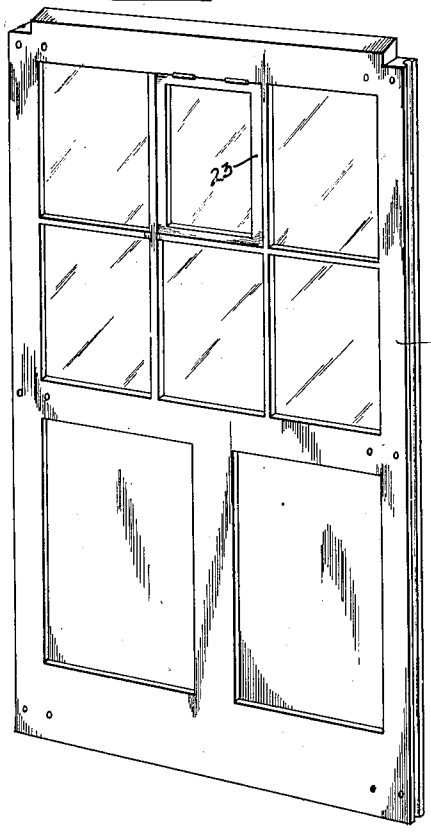


Fig. 10

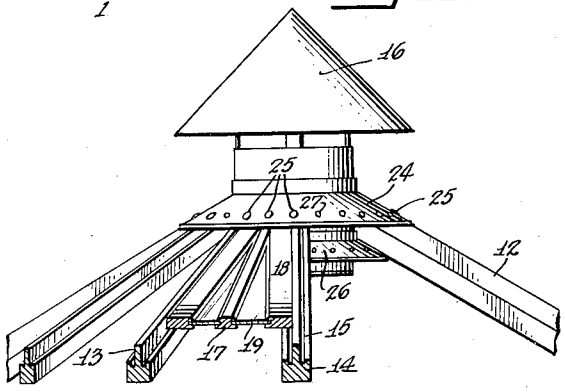


Fig. 9

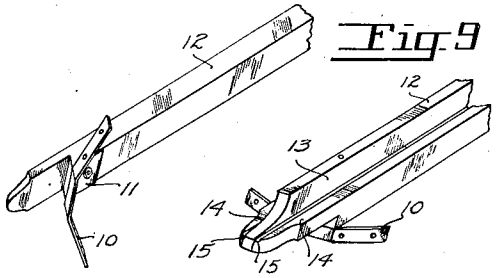


Fig. 8

INVENTOR.
RAY C. HANSEN
BY Harold L. Cook
ATTORNEY.

Patented Sept. 16, 1941

2,256,050

UNITED STATES PATENT OFFICE

2,256,050

BUILDING

Ray C. Hansen, Portland, Oreg., assignor to M and M Wood Working Company, Portland, Oreg., a corporation of Oregon

Application August 28, 1939, Serial No. 292,225

6 Claims. (Cl. 20—2)

This invention relates to a portable house structure, and has special reference to a so-called flower house or greenhouse for the growing of flowers and plants.

This application is a continuation-in-part of an application, Serial No. 254,789, filed February 6, 1939, for Ventilator and roof support, upon which application Letters Patent No. 2,183,645 issued Dec. 19, 1939.

An object of the invention is to provide a portable building, the parts for which may be contained in cartons ready for assembling.

Another object is to provide a portable building consisting of a few simple parts which may be practically completely assembled by one man without assistance.

A further object is to provide a portable building consisting of a plurality of identical parts, such as identical foundation pieces, identical wall panels, identical roof panels, identical rafters, etc., with which prefabricated parts a building may quickly and easily be constructed.

A further object is to provide a portable building which may be assembled without the assistance of a skilled mechanic or carpenter, and with the use of a few simple tools.

A still further object is to provide a flower house or greenhouse which is rugged and strong when assembled, and which will harmonize with any style of home architecture.

Additional objects and advantages of the invention will become apparent as the description proceeds in connection with the accompanying drawings, it being understood that the drawings are illustrative only and that various changes and modifications may be resorted to without departing from the spirit or scope of the invention; and I deem myself entitled to all such changes and modifications as fall within the scope of the claims hereto appended.

In the drawings:

Figure 1 is an elevation view of a greenhouse constructed in accordance with the present invention.

Figure 2 is a top plan view of the greenhouse shown in Figure 1 with portions broken away to show details of construction.

Figure 3 is a sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a perspective view showing details of construction and the manner of assembling the foundation and walls of the building.

Figure 5 is a perspective view of an individual wall section.

Figure 6 is a fragmentary perspective view of an astragal or beaded joint.

Figure 7 is a sectional view taken on the line 7—7 of Figure 1.

Figure 8 is a fragmentary perspective view showing the underside of a rafter.

Figure 9 is a fragmentary perspective view showing the top side of a rafter.

Figure 10 is a perspective view of the ventilating unit illustrating the manner of securing the rafters and roof sections thereto.

The drawings illustrate the principles of the invention as applied to a twelve-sided house having eleven identical wall sections and one door-frame section. The foundation is begun with a set of trapezoidal members 1 laid in edge-to-edge relationship to form a polygon as shown in Figure 4. Superimposed upon the lower members 1 is a second set of trapezoidal members 2 arranged in overlapping relationship with respect to the members 1, so as to break the joints, as illustrated in Figure 4. The trapezoidal members 2 have raised edges 3 along their inner sides for purposes which will presently appear. It is noted that the lower members 1 are arranged with their short bases outwardly, and that the upper members 2 are arranged with their longer bases outwardly. The members 1 and 2 are maintained permanently in the desired relationship by means of dowels 4.

Identical wall sections 5, and the door section 6, are secured in upstanding relationship on the foundation members 2, resting thereon and abutting the raised edges 3 in the manner shown in Figure 4.

Beaded molding joints, or astragals, 7 are secured between the wall sections 5 in the manner shown in Figures 4 and 7, the astragal itself being shown in Figure 6. This construction forms a rigid and weather tight corner at each of the angle points of the house. The various wall sections are retained in position by means of three types of tie plates, 8, 9 and 10, the three bolt tie plate 8 being used to attach the door-frame section, the four bolt tie plate 9 being used between adjacent identical wall sections, and the T-shaped tie plate 10 being used at the tops of all these sections. Each T-shaped tie plate 10 has an upwardly-directed tongue 11 thereon for attaching a rafter.

The manner of attaching the upper, or T-shaped, tie plate 10 to the rafter 12 is best shown in Figure 8. Figure 9 shows a top view of a rafter 12 with tie plate 10 attached thereto as shown in Figure 8. Rafter 12 is of inverted

T shape in section, having a raised portion or rib 13 running the length of the rafter, and having a side portion or flange 14 on each side of said rib, providing a supporting surface for a roof panel. The supporting flange or side portion 14 contains a groove 15 adjacent the rib 13 to provide a water runway to keep rain from seeping through the roof. The upper ends of the rafters are provided with means for attachment to the ventilator 16. The ventilator 16 is provided with an upper flange 24 and a lower flange 26, between which flanges the upper ends of rafters 12 are received and secured. Aligned openings 27 are provided in the upper and lower flanges to receive the bolts 25, there being twice as many bolts as there are rafters, so that the rafters 12 may be secured by alternate bolts.

Triangular roof panels 17 are supported upon the rafters 12 as shown in Figure 1, the upper end of each roof panel being received and secured between the ventilator flanges in the same manner as rafters 12. The apex of each triangular panel fits between the converging ridges or ribs 13 on adjacent rafters and is secured by the alternate bolts 25 not used for securing rafters. Figure 3 shows one manner of constructing the roof panel for use in a greenhouse, the triangular frame 18 containing transparent panels 19 in overlapping relationship as shown.

The door section 6 is provided with a door 21, and is similar to a wall section 5 in the preferred embodiment illustrating a greenhouse, both the door and wall sections being provided with glass panels 22 for admitting sunlight.

Hinged panels as shown at 23 may be provided for ventilation in addition to the ventilator 16. If still further ventilation is desired, the roof panels 17 may be propped up somewhat at the lower ends, by virtue of the single bolt attachment at the upper end, as shown under the cut-away portion of Figure 2.

While the invention has been illustrated in the preferred embodiment as applied to a twelve-sided greenhouse having glass panels at the top and sides, I distinctly do not want to be restricted to a greenhouse, or to a building of any specific number of sides. Buildings may be constructed according to the present invention having either more or less than twelve sides, and having either an odd or an even number of sides. The sides may be provided with openings instead of transparent panels, or they may be constructed solidly without either openings or transparent panels, if desired.

It will be seen that the same identical wall sections may be used for building a house of any desired number of sides, the number of sides or wall sections determining the size of the house. Thus, a mill manufacturing parts for various sizes of portable houses would not be required to manufacture and stock more than one size of wall section. The astragals for a particular house are shaped to provide the proper angle between wall sections, it being found commercially desirable to standardize on certain sizes, such as nine sided houses and twelve sided houses. The same wall sections would be used in the twelve sided house as in the nine sided house, but the other parts, in general, would have to be made differently, because of the difference in the interior angles between the sides.

In order to enable a person to construct a house according to the principle of the present invention, I shall now briefly describe the method of assembling the various parts and sections in order to provide a completely erected house of the type illustrated. It is intended, in the first place, that the parts will be provided in cartons convenient to handle, with similar parts packed together, and the hardware contained in burlap bags. The correct number of parts for the house will be contained in the cartons and bags, and all parts will be in finished condition, requiring no further shaping or sawing. It has been found desirable to provide the wood members with a primer coat of paint.

The first step in construction is the laying of the foundation. This is done according to Figure 4, securing the members 1 and 2 in the manner previously described, by means of dowels 4. An astragal 7 may be nailed to each wall section 5, and to the door frame section 6; whereupon, the various sections may be bolted together, one by one, by means of the tie plates 8 and 9 in the manner illustrated in Figure 4. After the sides are completely bolted in place, the tie plates 10 may be attached, one to each rafter, as shown in Figures 8 and 9. Two rafters may be bolted on diametrically opposite sides of the ventilator 16, and the ventilator and the two rafters may then be raised into position, and the tie plates 10 on the lower ends of the two rafters bolted to the tops of appropriate wall sections. Thereafter, the rafters may be bolted in place, one by one, until the roof framework is completed and ready for the roof panels. Roof panels 17 may then be laid in place and attached by their single bolt securing means, shown in Figure 2. With the hanging of the door 21 the greenhouse is then completed, all with small expenditure of effort, without shaping or sawing, and without the assistance of a skilled mechanic or carpenter. In addition, most of the work of assembling can be done by one person working alone, assistance being required only in connection with the placement of the first few rafters.

This invention may be used either in its entirety or in part, and either with or without modification, in any construction requiring a portable house assembled from prefabricated parts; and I deem myself entitled to all such uses, modifications, and variations as fall within the spirit and scope of the appended claims.

Having now described my invention and in what manner the same may be used, what I claim as new and desire to protect by Letters Patent is:

1. In a house construction, a foundation of polygonal form comprising a set of trapezoidal elements, one for each side of said polygon, said elements having their short bases outwardly, a second set of trapezoidal elements overlying said first set and attached thereto in overlapping relationship with their long bases outwardly, and a plurality of identical wall panels, one of said wall panels being supported in upstanding relation by each element of said second set of trapezoidal elements.

2. A house construction of equilateral polygonal form having more than four sides, comprising a plurality of lower foundation members disposed in edge-to-edge relationship and unattached to each other, a plurality of upper foundation members disposed in edge-to-edge relationship and unattached to each other, means for directly attaching each lower foundation member to two upper foundation members and each upper foundation member to two lower foundation members, and a plurality of identical wall panels, one of said wall panels being sup-

ported in upstanding relation on each of said upper foundation members.

3. A corner construction for a portable house having individual wall sections, comprising a beaded astragal fitting between adjacent wall sections and forming a corner moulding, an angular tie plate uniting the tops of said adjacent wall sections and retaining said astragal therebetween, an upwardly-directed tongue on said tie plate, and a rafter secured to said upwardly-directed tongue.

4. A house construction comprising a pair of adjoining wall sections, a tie plate connecting said sections, an inwardly-directed tongue on said tie plate for attaching a rafter, and a rafter secured to said tongue, said rafter having a longitudinal, upstanding ridge and laterally extending flanges at the base of said ridge for supporting roof panels over each of said wall sections, triangular roof panels received between said rafters and supported upon said flanges, and longitudinal grooves on the top surface of said flanges for draining water from the joint between said rafter and said roof panels.

5. In a greenhouse, wall sections arranged to form a polygon, rafters secured at their outer ends to the tops of the wall sections at the apices of the polygon and secured at their inner ends to a common central member, and triangular roof panels containing panes of transparent material supported on said rafters and pivotally attached only to said central member whereby the roof panels may be raised at their outer ends, said panes of transparent material being disposed in overlapping relation.

6. In a greenhouse, wall sections arranged to form a polygon, rafters secured at their outer ends to the tops of the wall sections at the apices of the polygon and secured at their inner ends to a common member, each said rafter having a longitudinal, upstanding ridge and laterally extending flanges at the base of said ridge, and triangular roof panels supported on said flanges and pivotally attached only to said common member whereby the roof panels may be raised at their outer ends.

RAY C. HANSEN.