

Jan. 30, 1945.

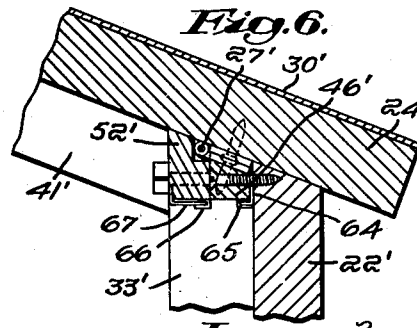
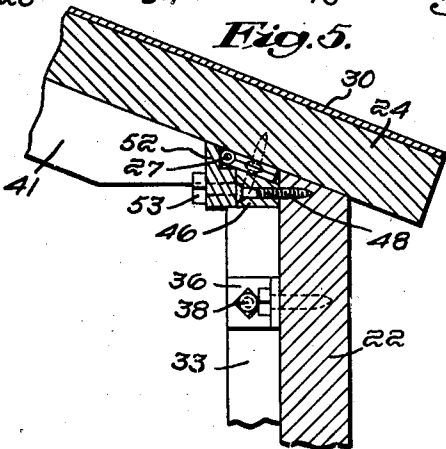
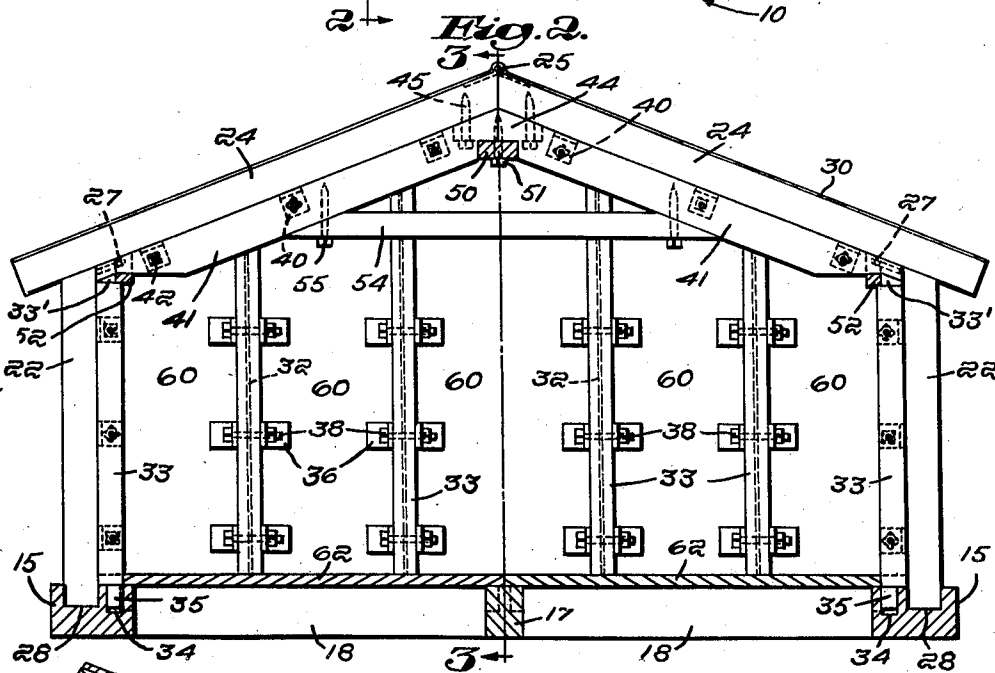
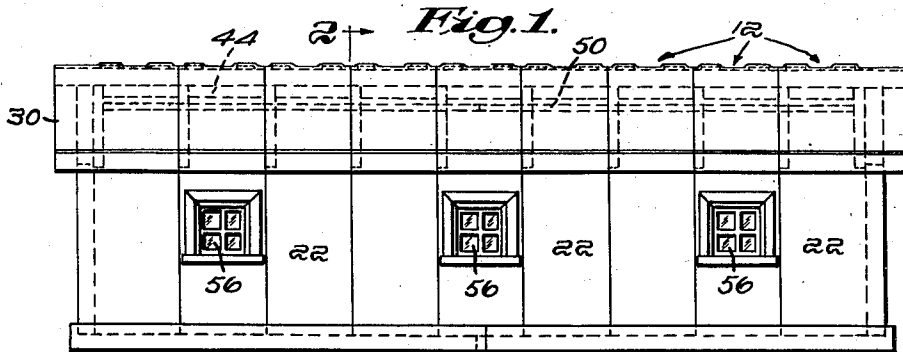
S. E. COWBOURNE

2,368,523

PORTABLE BUILDING

Filed March 18, 1942

2 Sheets-Sheet 1



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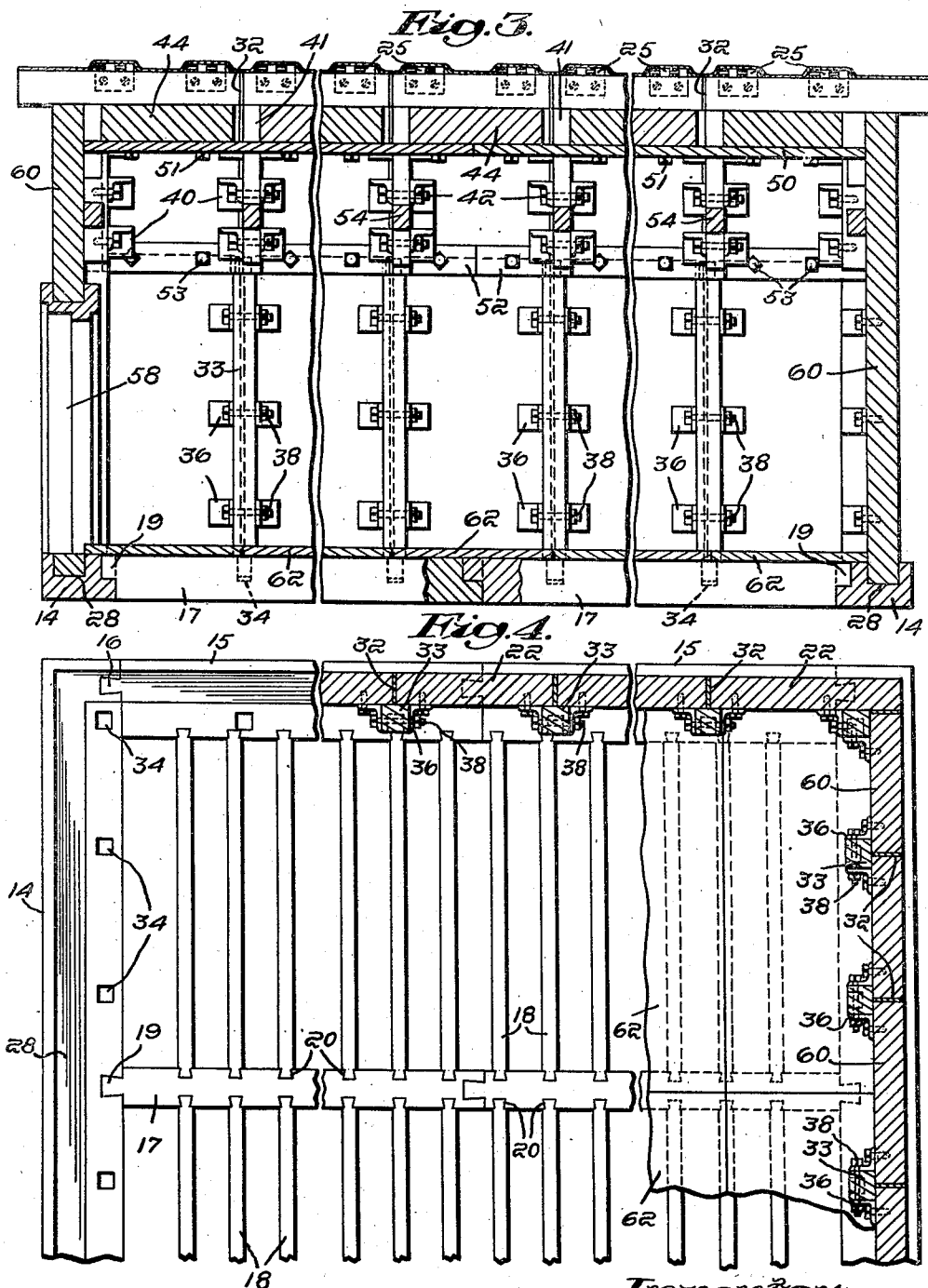
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UNITED STATES PATENT OFFICE

2,368,523

PORTABLE BUILDING

Spencer E. Cowbourn, Arlington, Mass.

Application March 18, 1942, Serial No. 435,213

2 Claims. (Cl. 20—2)

This invention relates to portable buildings and more particularly to a building structure which can be prefabricated into a plurality of units adapted to be conveniently assembled in any desired location and as easily disassembled for removal to new locations. I am aware that buildings of this general nature have been heretofore known and my invention resides more especially in a novel and improved method of assembly and in structural improvements which render the building construction more substantial and rigid and facilitates the assembly and disassembly of the structure.

My invention contemplates a building construction in which a plurality of like roof and side wall sections are juxtaposed in cooperating relation to produce a building of the desired length supported on foundation sills recessed to receive the side wall sections directly thereinto and in which the framing is thereafter erected in a manner joining the side wall and roof portions into rigid sections and the sections into a rigid building unit.

Other elements of the construction include pre-cut sectional foundation sills and vertically extending studs seated in the sills and cooperating with and supporting the side wall sections. Removable rafters likewise are provided to cooperate with and unit the roof sections, and a further feature of the invention resides in leakproof gaskets located between the sections, and means holding the sections in tight contact with the gaskets, the roof sections being furthermore provided with a leakproof covering which directly cooperates with the gaskets at the section joints. Other means extending longitudinally of the building is provided for rendering the roof and side wall portions of the sections substantially rigid and securing the sections into a unit building of substantially rigid construction. The primary object of the invention resides in the production of an improved portable building embodying these novel features.

These and other features of the invention will be best understood and appreciated from the following description of a preferred embodiment thereof selected for purposes of illustration and shown in the accompanying drawings in which:

Fig. 1 is a side elevation of a portable building embodying my improvements,

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1,

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

Fig. 4 is a fragmentary view showing the foundation in plan elevation and the side walls in section,

Fig. 5 is a fragmentary view showing the roof and side wall connection, and

Fig. 6 is a view similar to Fig. 5 but showing a modified construction.

My invention contemplates the production of a portable building constructed from pre-cut parts joined to produce sectional portions which are adapted to be juxtaposed in requisite numbers to produce buildings of desired length or size, and an important feature of the invention resides in a novel and improved method of construction which consists in first erecting the shell of the building, including the side walls and roof, on a pre-cut foundation and thereafter erecting the interior frame and securing the parts and sections together into a substantial rigid building unit.

In the drawings 10 indicates the foundation and 12 indicates a plurality of side wall and roof sections thereon and joined together to produce a building of the desired length. The foundation comprises sills which can be in one piece 14 for the ends of the building and in sectional pieces 15 of predetermined lengths for the sides of the building, the latter being provided with pre-cut interlocking ends 16 whereby to accommodate the foundation to a building of the desired length. Cooperating with the main sills is a cross sill 17 made up of like sections with pre-cut ends and joists 18 with pre-cut ends, the sills and joists being adapted to drop into predetermined locking position in mortises in the foundation at their ends 19 and 20. These simple pre-cut parts are adapted conveniently to be joined together in the manner illustrated in Fig. 4 to produce a foundation of the necessary size, as will be readily apparent.

The side walls and roof are pre-cut and made up in sections 12 adapted to easy transportation and easy assembly on the foundation. Each section comprises two side wall panels 22 and two roof panels 24 which are conveniently constructed of plywood. For convenience in assembly and transportation I have illustrated the roof panels as hinged together at 25 and the side wall panels as hinged to the roof panels at 27. These four piece sections are of relatively light weight and can be conveniently opened from the folded transporting relation and assembled on the foundation. This assembly is facilitated by grooving the sills 14 and 15 longitudinally at 28 to receive the side wall panels 22 thereinto, the grooves being of a width tightly receiving the panels and

being of a depth to give substantial support thereto.

The several panels are juxtaposed in end to end relation and the engagement of the panels 22 in the sill grooves 28 is sufficient to give preliminary support to the sections. The roof panels 24 are covered with a layer of suitable leak-proof roofing material 30 and the joints between the adjacent sections are closed by gaskets 32 of any suitable material for providing substantially tight and permanent calking thereof. Stud 33 are provided for cooperating with and supporting the side walls and the sills are mortised at 34 to receive tenons 35 on the bottom ends of the studs. The mortises 34 are spaced to the width of the side wall panels whereby to bring each stud into cooperating relation with two adjacent panels at their junction. Angleiron brackets 36 are secured to the panels 22 in position to embrace a stud between adjacent brackets and bolts 38 extending through the brackets and studs are adapted to hold the panels and studs together as a unit.

In like manner the roof panels 24 are provided with angleiron brackets 40 located in position to embrace a rafter 41 between adjacent brackets, the rafters being located at and along the junction of the panels 24. Bolts 42 extending through the brackets and rafters are adapted to hold the panels and rafters together as a unit. It will also be apparent that the bolts 38 and 42 serve to draw the adjacent panels into tight contact with the gasket 32 therebetween and the leak-proof roofing layer 30 into contact with the adjacent gaskets.

Each two roof panels 24 joined at 25 are held in rigid relation at the hinge joint 25 by a block 44 fitting the V-contour of the panels beneath the joint, this block being held to the panels by suitable fasteners 45. In similar manner the hinge joint 27 between the panels 22 and 24 are supported by blocks 46 fitting the V-contour beneath the hinge joint and attached to the side panels 22 by fasteners 48. When the blocks 44 are secured in place, pieces 50 and 52 of lengths engaging several of such blocks are placed and secured to the blocks in a manner connecting the several sections into a rigid building unit. The piece 50 cooperates with the blocks 44 and is secured thereto by fasteners 51 and the piece 52 cooperates with the block 46 and is secured thereto by fasteners 53. The pieces 52 are thus secured to the blocks 46 and bear directly against the roof panels 24 (Fig. 5). The pieces 52 also bear directly against the extreme top end portions 33' of the studs 33 as shown in Fig. 2. Further rigidity is also given to the sections by cross beams 54 extending transversely across the longitudinal center of the building and secured by fasteners 55 to the rafters.

The side and end panels can be provided with window frames, door frames and the like as desired, windows 56 being illustrated in the side

panels 22 and a door frame 58 being illustrated in one of the end panels 60. The flooring 62 which can also be of plywood is supported on the joists 18.

In Fig. 6 I have illustrated the Fig. 5 construction somewhat modified. Angleirons 64 are carried by the blocks 46' which are secured to the side panels 22' and in position to be received by U-shaped irons 65 carried by the studs 33'. Other U-shaped irons 66 carried by the studs 33' are adapted to receive angleirons 67 carried by the piece 52'. These interfitting irons serve to locate and hold these parts in the predetermined relation illustrated.

It will now be apparent that I have produced a new and improved combination of pre-cut portable building elements and a novel and economical method of uniting such elements into a substantially rigid building unit. The several pieces can be pre-cut at the mill, conveniently transported to the building location, and assembled into the completed building with great convenience and a minimum of labor. Particular attention is directed to the method of procedure which embodies first the erection of the foundation, the erection of the housing shell on the foundation, and then the framing of the shell into a rigid building unit. When the removal of the building to another location becomes necessary, the advantages present in the method of originally erecting the building are of the same advantage in the disassembling of the building and re-erecting it on the new location.

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. A portable building, comprising foundation sills each provided in its top face with relatively spaced mortises therealong and a longitudinally extending recess parallel with and spaced from the mortises, vertically extending studs on the sills at the mortises and each having a tenon on its bottom end engaging within its mortise, vertically extending side wall sections in edge to edge relation and resting tightly in said recess and with their edge junctions overlapping the studs, pairs of brackets carried by the sections along their cooperating vertical edges, and screw threaded means connecting each pair of brackets and holding the sections together and to the adjacent stud as a unit.

2. In a portable building, a series of panels secured together in edge to edge relation and cooperating with another series of panels likewise arranged, the two series joining each other at an apex forming an obtuse angle therebetween within the building, abutment blocks engaging the panels at said apex within the building for holding the panels of the two series against relative movement, and an element extending longitudinally of the building and secured rigidly to the blocks.

SPENCER E. COWBOURNE.