

No. 651,251.

Patented June 5, 1900.

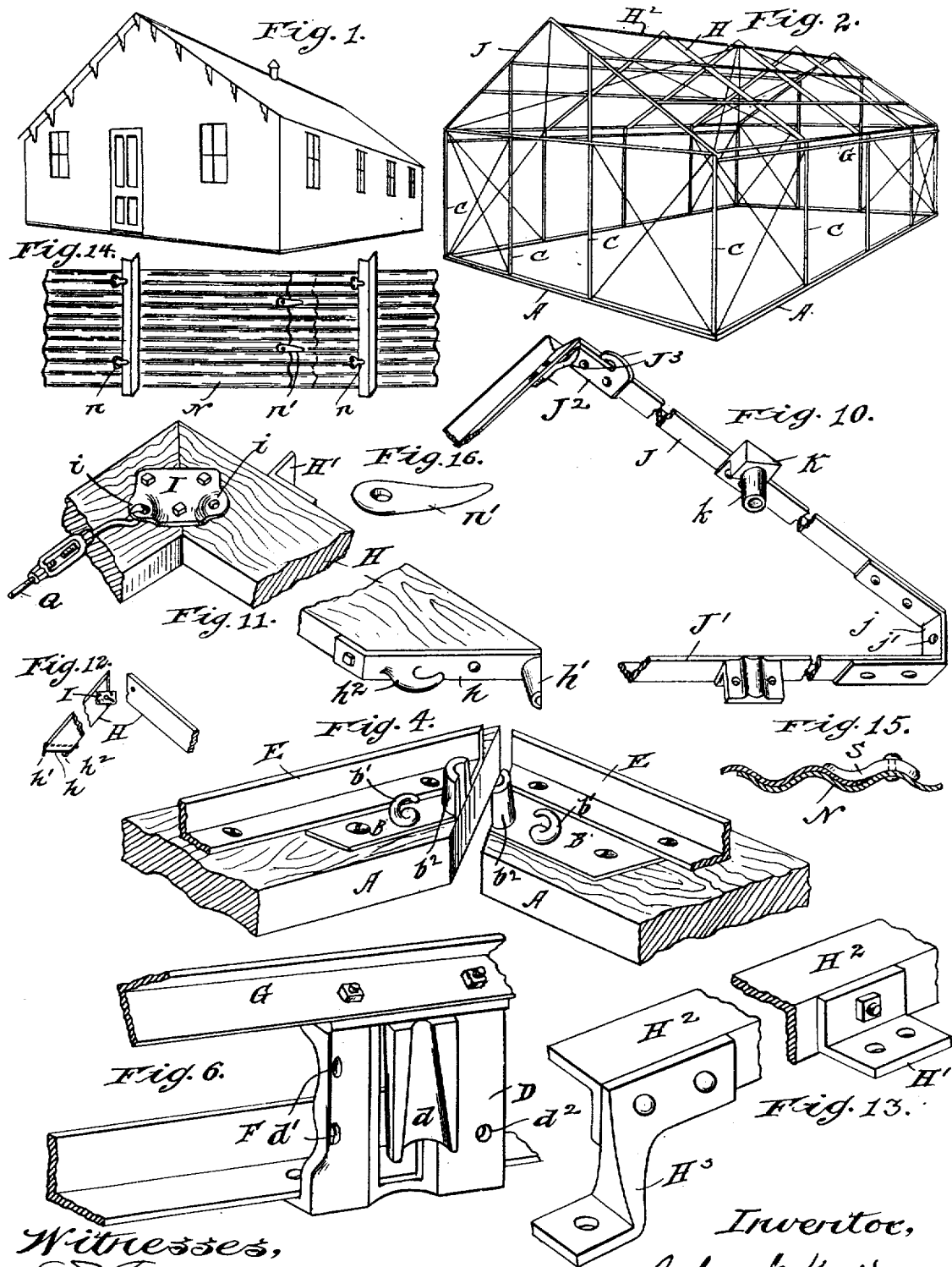
J. C. KARR.

PORTABLE BUILDING.

(Application filed Aug. 6, 1898.)

(No Model.)

2 Sheets—Sheet 1.



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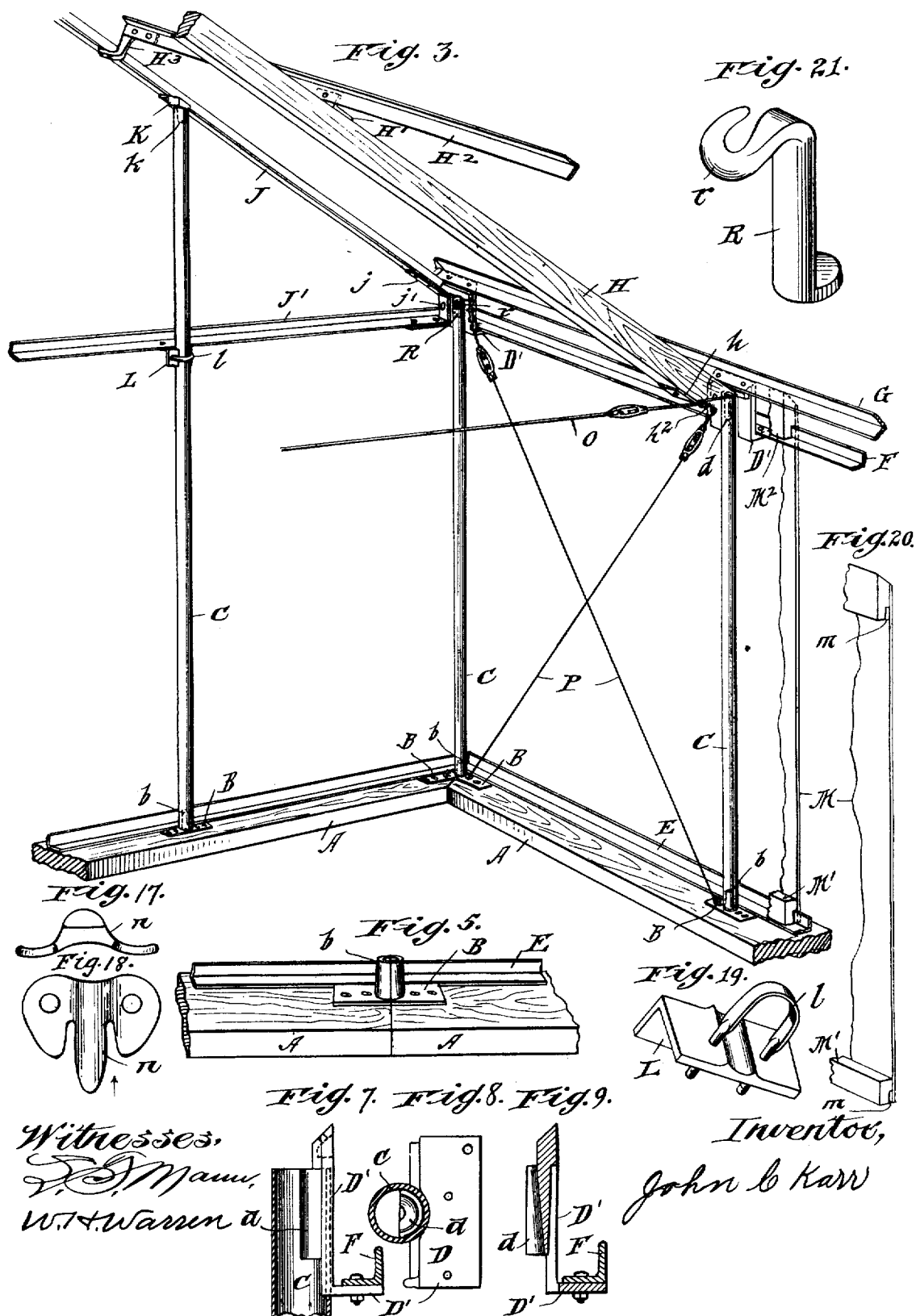
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2 Sheets—Sheet 2.



UNITED STATES PATENT OFFICE.

JOHN C. KARR, OF CHICAGO, ILLINOIS.

PORTABLE BUILDING.

SPECIFICATION forming part of Letters Patent No. 651,251, dated June 5, 1900.

Application filed August 6, 1898. Serial No. 688,005. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. KARR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have
5 invented certain new and useful Improvements in Portable Buildings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which
10 it appertains to make and use the same.

This invention has reference to a novel construction in a portable building, the object being to provide a light building so constructed that it can be set up and taken down readily and with comparatively little trouble and
15 expense and in which the component parts are matched, so that when set together they fit and require no preparation, but are assembled in the correct manner.

This invention consists in the features of construction hereinafter fully described and specifically claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a perspective view of a building constructed in accordance with this invention. Fig. 2 is a perspective view of the frame, taken from an elevation. Fig. 3 is a view, on a larger scale, from the interior of one corner of the frame.
25 Fig. 4 is a detailed view of one corner of the foundation slightly separated. Fig. 5 shows a joint in the foundation-pieces where they meet along the sides or ends of the building. Fig. 6 shows one of the castings used on top
30 of the posts with short pieces of angle-iron attached. Fig. 7 is a view of the same, showing how it fits on the top of the post. Fig. 8 is a view of the same casting-frame beneath. Fig. 9 is a view of the same casting cut in
35 half vertically. Fig. 10 shows a detailed view of a part of the gable-end rafter. Fig. 11 is a detailed view of one of the wooden rafters with castings at each end. Fig. 12 shows the wooden rafter separated at the top. Fig. 13
40 is a view of one of the purlins, showing one casting which fastens to the gable-end rafters and one cast bracket which fastens on the wooden rafter. Fig. 14 shows the manner of fastening the sheet-iron to the angle-iron purlins and also shows manner of joining the
45 sheets endwise. Fig. 15 shows the metal finger which holds the edges of the sheet-iron

together. Fig. 16 shows the metal finger used in joining the sheets of sheet-iron at the ends. Fig. 17 is a view of the metal hook which is
55 riveted to the sheet-iron to catch the purlins, showing how it conforms to the corrugation. Fig. 18 is another view of the same metal hook as Fig. 17. Fig. 19 is a cast bracket and strap to fasten the angle-iron to the pipe-posts
60 at the ends of the building. Fig. 20 is one edge of a siding-section. Fig. 21 is a hook used in the top end of each corner-post to attach wire braces to.

Similar letters refer to similar parts throughout the several views.

In Fig. 1 the brackets on the gable form an ornament as well as a means to fasten the end of the sheet-iron roof which projects over
70 the ends of the building.

In Fig. 2, A indicates the foundation-pieces, which comprise a plurality of sections of suitable lengths to form a rectangular base of wood, commonly two-by-six timbers. The sections at the corners are provided with mitered
75 ends, as shown in Fig. 4, while if more than one section is employed along the sides or ends of the building the ends are square and abut, as shown in Fig. 5, and have a casting B, which bolts flush with each end of the tim-
80 bers, so that when the sections are placed together the castings form a circular pin *b*, over which the pipe-post fits and holds them together. At the end of the corner-sections is a cast plate B', (shown in Fig. 4,) provided at
85 its end and flush with the mitered end of the section A with a half-round pin *b*², which form, in connection with each other, a round pin over which the pipe-post fits. This construction provides a fastening for the lower
90 end of the post as well as a means for fastening the corner. When the cast plates on which the posts rest are merely fastened on the foundation-sections where there is no joint, the projections are solid and circular
95 for obvious reasons. These cast plates B' are bolted permanently to the wooden foundation, and the bolt on each side of the projection *b*², Fig. 4, is provided with a hook *b*¹, to which the wire braces are fastened.
100 The foundation-sections A are also provided with an angle-iron E, extending full length of each section, fastened permanently to the wooden foundation by screws, as shown in

Fig. 4, just to the outside of each cast plate B', which provides a flange E, adapted to enter a groove *m*, (see Figs. 3 and 20,) formed between the lower edge of the siding and a nailing-strip M'. Each section of the foundation is complete in itself, so that all that is necessary in erecting is to lay the several sections in position and set the posts on the pins, which hold them together. The posts C along the sides and ends are common gas-pipe or iron pipe, commonly one and one-fourth inches, which fits over said cast plates B' on the foundation and supports the roof construction, and the flange F, Fig. 3, which catches the upper nailing-strip of the siding sections. In Fig. 6 one of the castings which are mounted upon the upper end of the post is shown in perspective and provided at its lower end with an outwardly-extending shelf D', (shown in Fig. 7,) to which an angle-iron F is riveted or bolted, extending along the eaves of the roof (shown in Fig. 3) from one casting to another, thus fastening the several castings D at the upper ends of the posts together and also providing an upwardly-extending flange which is adapted to enter the groove *m* at the lower edge of the top nailing-strip M² of the siding-sections. The upper end of said casting D is beveled, Figs. 7 and 9, so that when an angle-iron G, Fig. 6, is riveted or bolted to the bevel the upper flange of the angle-iron G slants the same as the pitch of the roof and extends from one casting D to another along the eaves of the roof, as shown in Fig. 3, G and furnishes a purlin to catch the hooks *n* on the lower ends of the roof-sections. (Shown in Fig. 14.) When more than one length of angle-iron is required along the sides, they meet in the center of said casting D, to which one set of angle-irons is riveted and the other set is bolted, so as to be taken apart for transportation. The said casting D' is provided at its inner side with a downwardly-extending semicircular pin *d* to enter the top end of post C. (Shown in Figs. 7 and 8.) The castings are made in rights and lefts, in which one side of the plate is offset and provided with two openings *d'*, Fig. 6, into which the hooks of the turnbuckles of the brace-wires are hooked. Said casting D is provided with bolt-hole *d*², to which casting *j*, Fig. 10, is bolted by a bolt through the bolt-holes *d*² and *j'*, (shown in Fig. 3,) forming a fastening of the end rafter to said casting D'. Said casting D' has a hole in the outer corner of the outwardly-extending shelf, Fig. 8, into which a turnbuckle can be hooked and extended through the siding and connected with a wire which can be fastened to the ground, thus forming a means of fastening the building to the ground.

The posts C at the ends of the building (shown in Fig. 3) extend up to the end rafter, Fig. 10, formed of angle-iron, which is secured so as to leave the upwardly-extending flange of the angle-iron to the outside, so as to enter a groove at the lower edge of the top

nailing-strip of the gable-sections of siding. There is also an angle-iron J', (shown in Fig. 3,) extending across the end of the building from eaves to eaves of the roof, which provides a flange to catch a nailing-strip on the siding at the same height. Said angle-irons J and J', Fig. 10, are composed of three pieces fastened together at the eaves by a casting *j*, to which J is riveted, and J' is bolted so as to separate for shipping. At the peak the angle-irons J are fastened together by means of a casting J², to which one angle-iron is riveted and the other is bolted. Said casting J² is provided with two hooks J³, to which the brace-wires of the roof are fastened. The casting K, Fig. 10, is riveted to the angle-iron J and has a circular pin *k*, which enters a long post C, arranged at the end of the building, as shown in Fig. 3. The angle-iron J', which extends horizontally across the end of the building, (see Fig. 3,) is secured to such post C by means of a strap or clevis *l*, secured to a bracket L, riveted to the angle-iron. This strap may be clamped tightly by means of screw-nuts, and it provides a place for engagement of the hook of the turnbuckle on the brace-wire at the ends of the building.

The rafters occurring between the end rafters are composed of wood, as shown by H in Figs. 11, 3, and 2, having a casting *h* at the lower end provided with a semicircular pin *h'*, which fits in the upper ends of the posts C beside the semicircular pin *d* in Fig. 8. Said casting *h* is also provided with a hook *h*², to which is fastened a wire, as *o* in Fig. 3, to tie the base of the rafters together to keep the building from spreading. Said casting *h* is permanently bolted to the lower end of each wooden rafter. At the peak the rafters are fastened together by means of castings I, Fig. 11, a plate on each side of the rafter fastened together by three bolts, and by removing one bolt, as shown in Fig. 12, the rafters can be taken apart. Said casting I is also provided with two holes *i* *i* at the lower corners, into which the hooks of the turnbuckles of the roof-wires are fastened.

The purlin-plates are made of angle-iron, as shown in Figs. 2 and 3 by II², and are secured to the wooden rafters by being bolted to a cast bracket II', (shown in Fig. 13,) which is nailed or fastened by screws permanently to the top edge of the wooden rafter, Fig. 11. The purlins have a cast bracket IF' riveted to their ends, (shown in Fig. 13,) and this bracket is bolted to the end rafter. (Shown in Fig. 3.) This allows room for the nailing-strip to fit in which is nailed to the top ends of the gable-sections of the sidings.

The cast hook R, Fig. 21, is inserted into the upper end of each corner-post before the semicircular pin *d* of Fig. 6 is inserted, and the circular piece at the lower end prevents its being withdrawn. This hook *r* provides a means of fastening some of the roof-wire braces and some of the end wire braces. All brace-wires P are provided with turnbuckles

to tighten and adjust said turnbuckles, having hooks Q, as in Fig. 11, to hook into the holes d' , Fig. 6, of the casting at the top of the side posts, Fig. 3, the other end of the wire having a loop which loops over the hook b' in Fig. 4 on the end of the bolt which fastens plate B to the foundation-sections. It will be seen that these wire braces are near the walls and do not mar the interior of the building and form a means of binding the frame together, as well as bracing it. There is a brace-wire extending from the top end of each corner-post to the casting I at the peak of the center rafter which forms a brace for the framework of the roof. (Shown in Fig. 2.)

Any-sized building can be built on this principle, only in larger buildings it will require more posts and more rafters and in smaller buildings fewer. The siding is composed of a plurality of sections, a sample of which is shown in Fig. 20. The siding is composed of matched lumber dressed on both sides and extending up and down and nailed to nailing-strips M' and M^2 at the bottom and top. This gives only one thickness of lumber for siding. The inside can be finished to suit the fancy by oiling, papering, or painting, the outside to be painted as the outside of any building. It is understood that doors and windows can be placed in the sides or ends, as is most convenient, and in case I want to put on a wooden roof I use the same nailing-strip as is used in fastening on the siding. These form slots which catch on the angle-iron purlin-plates the same as the siding fastens to the frame.

The roof is commonly composed of corrugated sheet-iron, each sheet forming a section and having a suitable number of metal hooks (shown in Figs. 17 and 18) riveted to the under surface of the sheet-iron, as shown in Fig. 14, so that the hooks n will catch the angle-iron purlins. It will be seen that the rivets go through the sheet-iron in the ridge of the corrugation, so as not to leak. These kind of hooks allow the sheet-iron to pack very close together for shipping, and large quantities may be stacked in one pile and not injure the hooks. In case it requires more than one sheet of sheet-iron in length to cover one side of the roof the metal finger shown in Fig. 16 is riveted to the under side near the lower end of the upper sheet of corrugated sheet-iron. This forms a crevice or slot which slips over the upper end of the lower sheet, which is shown by n' in Fig. 14. Fig. 15 shows the means of holding the edges of the sheets together. There is a suitable number of metal fingers riveted to the top side of each sheet, the metal fingers conforming to the corrugations of the iron and leaving room for the edge of each adjoining sheet to be slipped between the metal finger and the sheet to which it is riveted. Thus it will be seen that these three different metal fasteners, Figs. 15, 16, 17, and 18, make fasteners sufficient to attach a complete roof, which

can be removed or put on at pleasure and any number of times and not damage the roofing.

The castings in the building are preferably all of malleable cast-iron.

For summer use the wooden siding can be left off and canvas siding used instead.

In practice I may stretch a canvas ceiling (not shown) from the lower purlin-plate up along the rafter to the collar-beam and thence straight across. This hides the framework of the roof and forms an attic to break the force of the heat and will make it warmer in winter.

The flooring is made in sections and laid on timbers which are laid on the ground, so that the floor rests on the foundation-pieces of the building. The building can be used with or without a floor.

It will be seen from the foregoing description that I provide a portable structure in which all the component parts are so made that they fit one another, and, furthermore, in small sections, whereby when they are taken apart the entire structure can be packed into comparatively-small space for the purpose of transportation. It will be seen, furthermore, that most of the frame parts are formed of commercial iron, so that the necessity of special castings is reduced to a minimum. The structure is comparatively light and can be made in large sizes at comparatively-small cost and can be used for summer-cottages, photograph-galleries, portable churches, and anything in that line.

I am aware that prior to my invention there have been portable buildings built composed of sections. I therefore do not claim such a combination, broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination in a portable building having a foundation comprising a plurality of sections with mitred ends where they meet at the corners and square abutting ends where they meet along the sides or ends of the building having cast plates bolted to the wooden foundation, said plates having semicircular upward projections at the joints of sections and other plates having circular projections bolted permanently to foundation with bolts having a hook at the upper end to catch brace-wires and an angle-iron on each section near said projections forming a flange to receive siding so when the pipe-posts are set on said projections the several pieces are fastened together and the siding and posts and roof supported on said foundation substantially as described.

2. In a portable building having foundation-sections and iron pipes for posts with a casting to mount on top of each post having a semicircular pin d to slip down in the top of the post with two angle-irons riveted or bolted to said casting one F forming an upwardly-extending flange to catch the top nailing-strip of the siding-sections the other G forming a purlin-plate to catch lower hooks

on the roofing-sections and also having holes into which a canvas will fasten, said casting D being made in rights and lefts having openings *d'* at one side into which turnbuckles
 5 hook which are connected to brace-wires P extending between said castings and bolt-hook *b'* in the foundation with roof and siding substantially as described.

3. In a portable building having foundation-sections tubular posts supporting rafters of wood having a casting *h* bolted permanently to the lower end of each rafter said casting having a semicircular pin *h'* adapted to enter the top of the tubular posts beside
 15 the semicircular pin *d* said casting *h* having also a hook *h*² to which a wire is attached to tie the base of the rafters together said wooden rafters having cast brackets II' fastened permanently to the top edge to receive purlins,
 20 and also joined at the peak by means of casting I and three bolts with roof and siding substantially as described.

4. In a portable building having foundation-sections tubular posts of iron supporting
 25 the gable-end rafter which is composed of angle-irons J and J' bolted or riveted to the casting J² at the peak and bolted or riveted to the casting *j* at the eaves having a casting K riveted to the angle-iron J having a circular pin *k* adapted to enter the top of the post
 30 C at the ends of the building and secured at the eaves to the casting D which is mounted on the top end of each corner-post by means of a bolt through hole *d*² and *j'* said angle-iron
 35 J forming a flange adapted to enter the slot under the top nailing-strip of the gable-end siding-sections also an angle-iron J' extending across the end of the building forming a

flange adapted to catch the nailing-strip on the siding at the same height with roof and
 40 siding substantially as described.

5. In a portable building having wooden foundation-sections posts of iron pipes with angle-iron for framework and the inner rafters of wood with cast fittings and angle-iron outer
 45 or gable end rafter and having angle-irons for purlin-plates having a cast bracket II³ riveted to the outer end of each purlin adapted to bolt to the horizontal portion of the gable-end rafter and being fastened to each
 50 wooden rafter by being bolted to the cast bracket H' which is permanently attached to the wooden rafter with roof and siding substantially as described.

6. In a portable building having a frame of
 55 wood and angle-iron and iron pipes with wire bracing said angle-iron E forming a flange around the building on the foundation-sections, and a flange F at the eaves and J and J' forming flanges at gables of the building, hav-
 60 ing a plurality of sections of siding composed of matched lumber dressed both sides and extending up and down and nailed to horizontal nailing-strips which are rabbeted at the
 65 lower edge and adjacent to the siding thus forming a slot *m* which is adapted to fit over said flanges on said frame thus forming a means of fastening the siding-sections onto the frame by just setting them onto the flanges
 70 with roof substantially as described.

In testimony whereof I affix my signature in presence of two witnesses

JOHN C. KARR.

Witnesses:

W. H. WARREN,
 GUST YOUNGBERG.