

Feb. 1, 1955

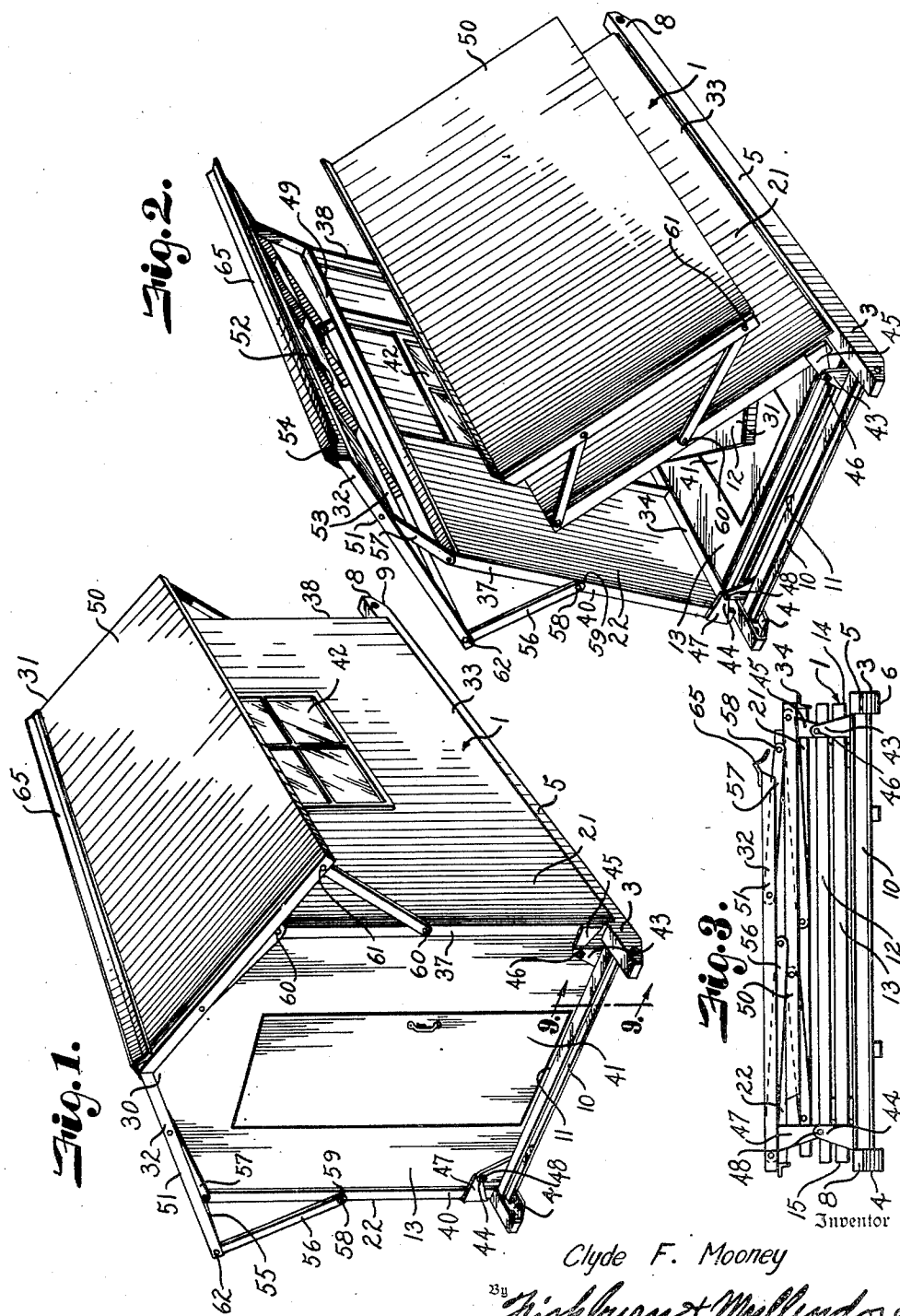
C. F. MOONEY

2,701,038

PORTABLE HOUSE

Filed Sept. 3, 1949

2 Sheets-Sheet 1



Clyde F. Mooney
Fishburn & Mullendore
Attorneys

Feb. 1, 1955

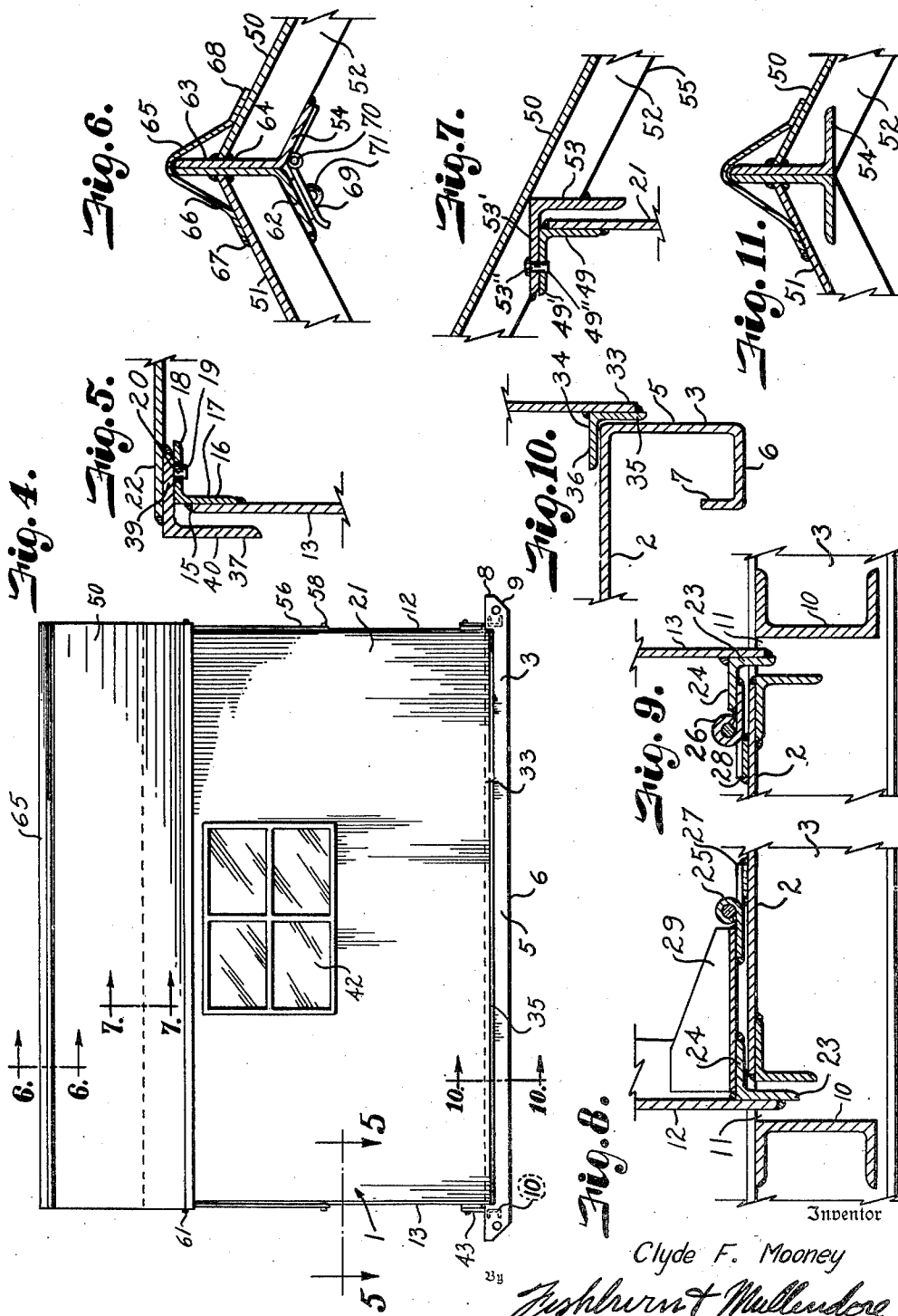
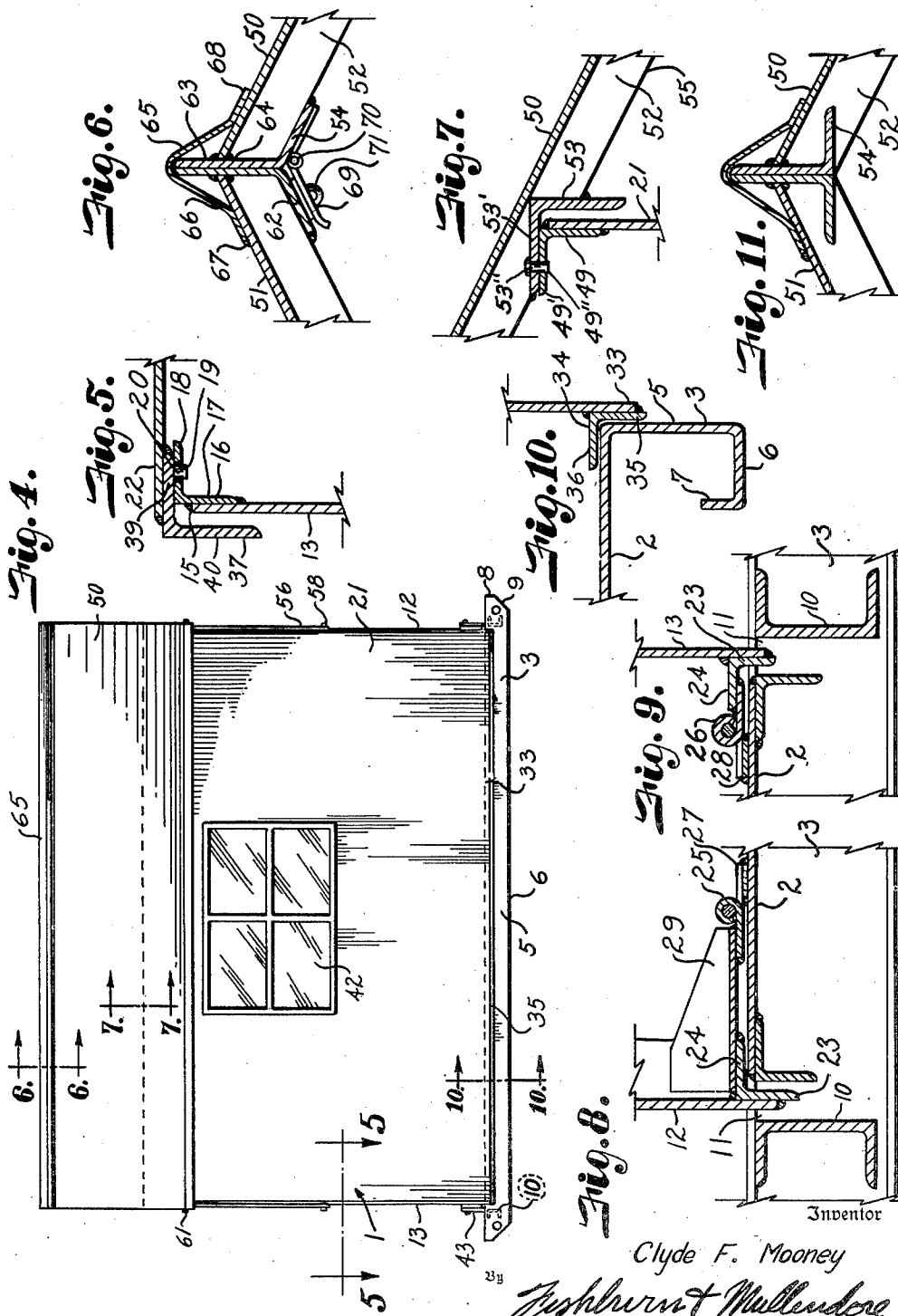
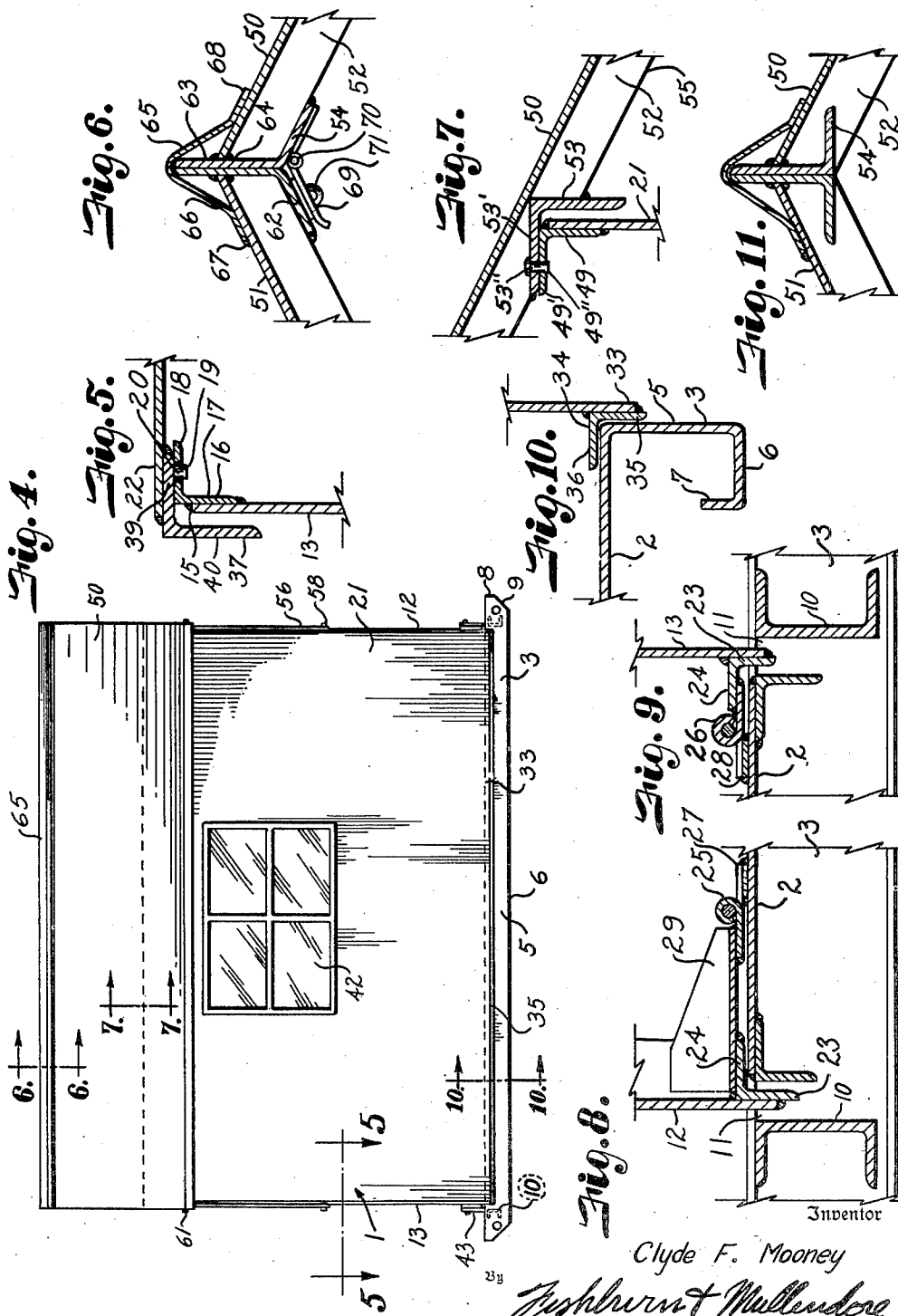
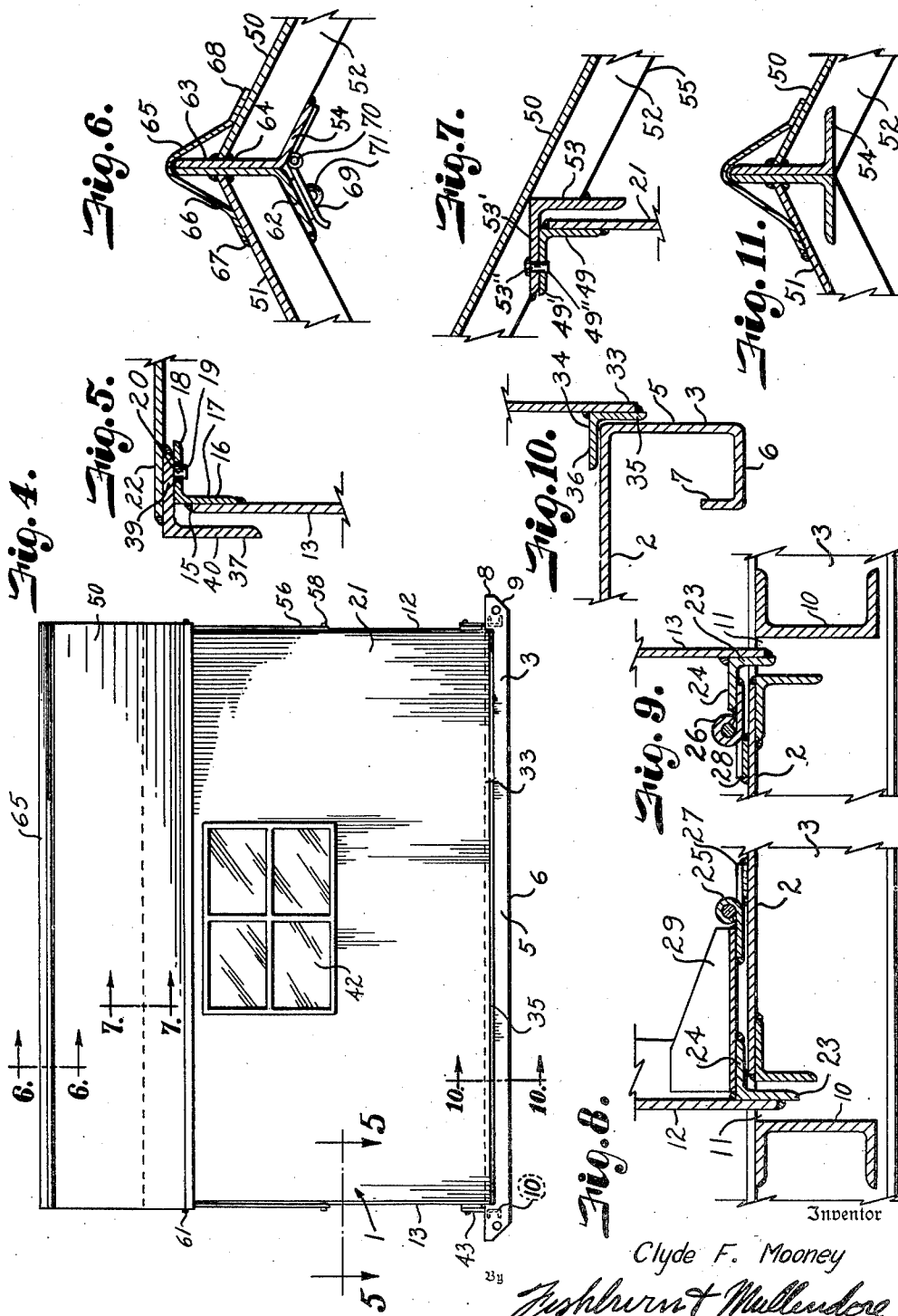
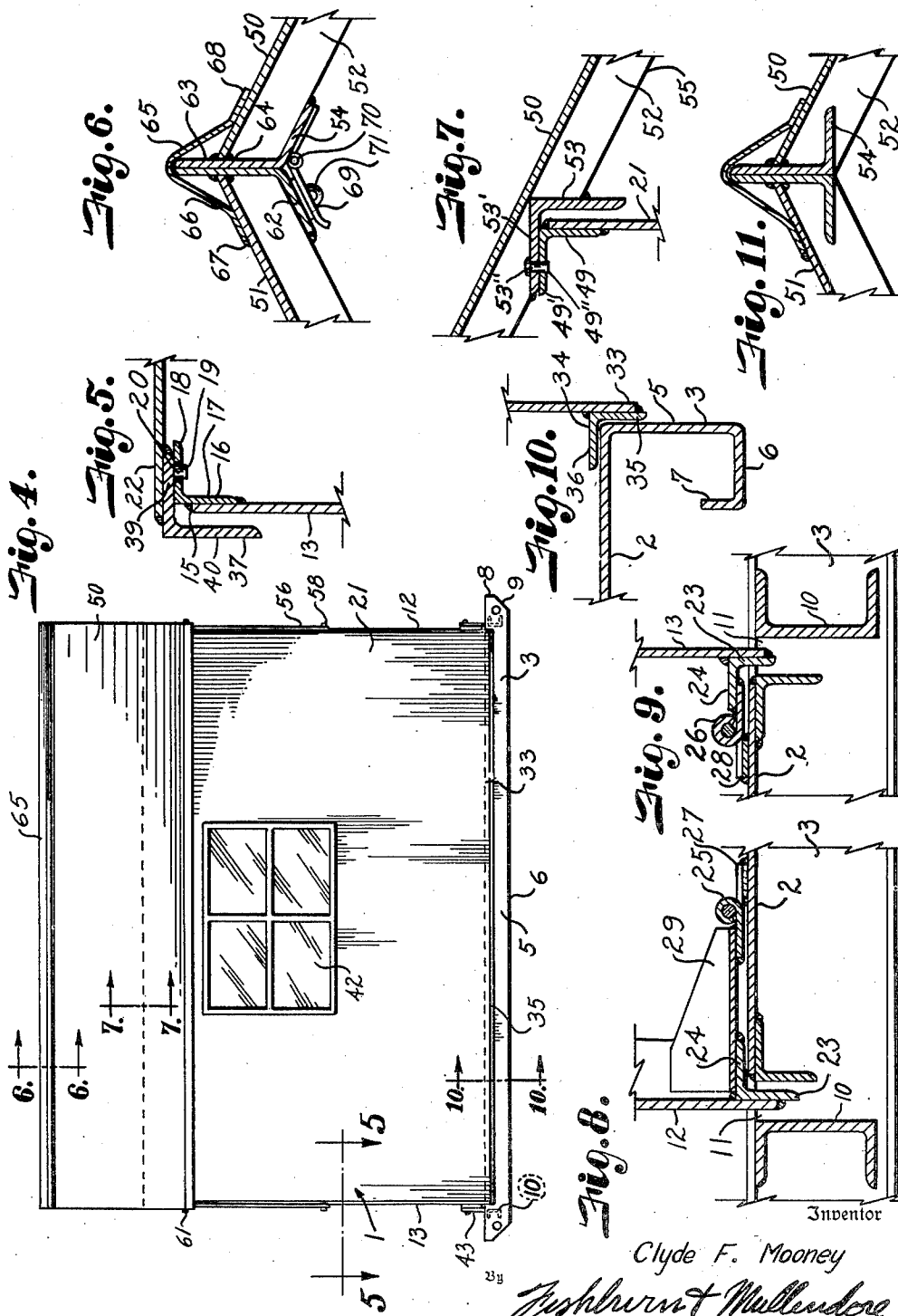
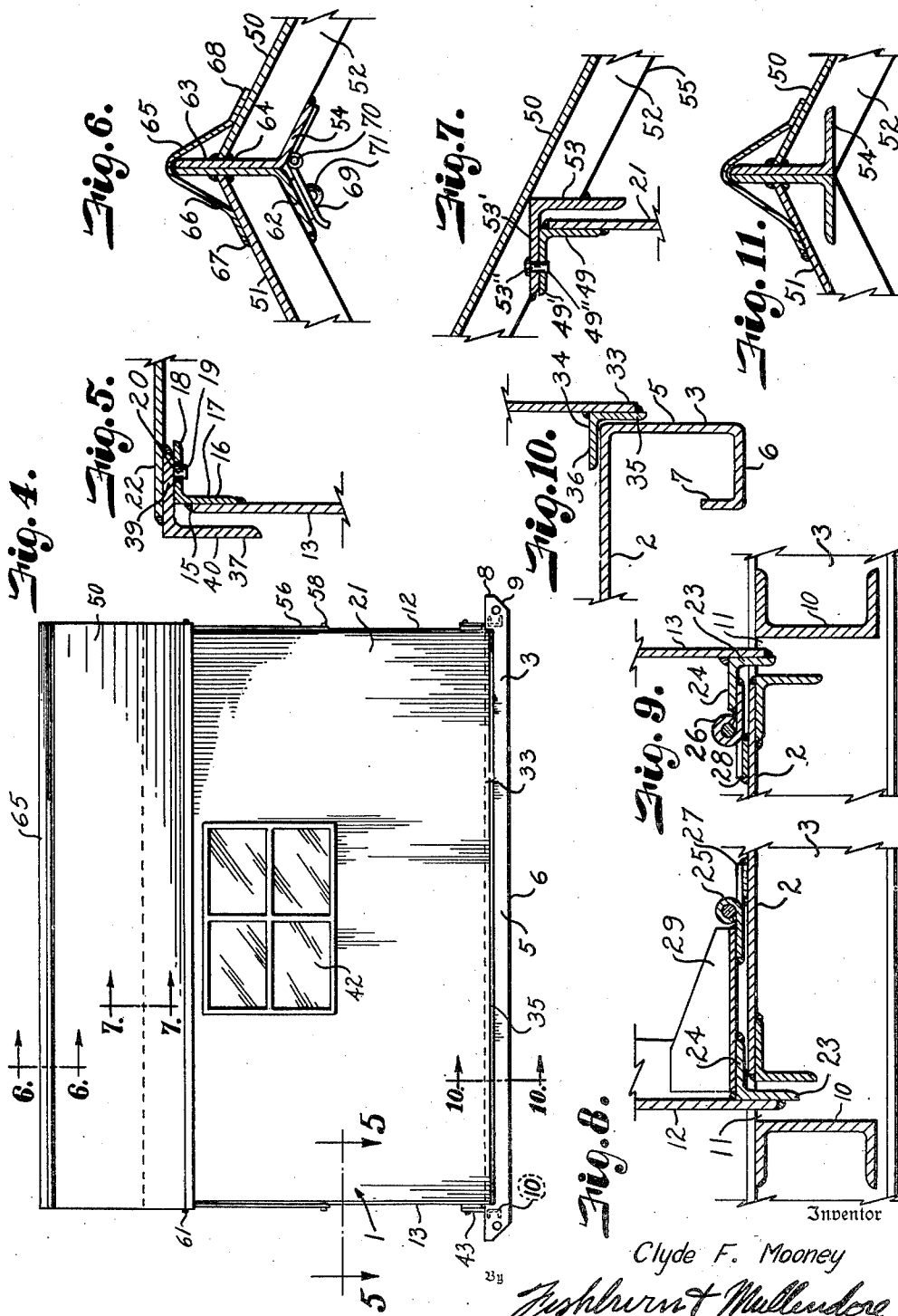
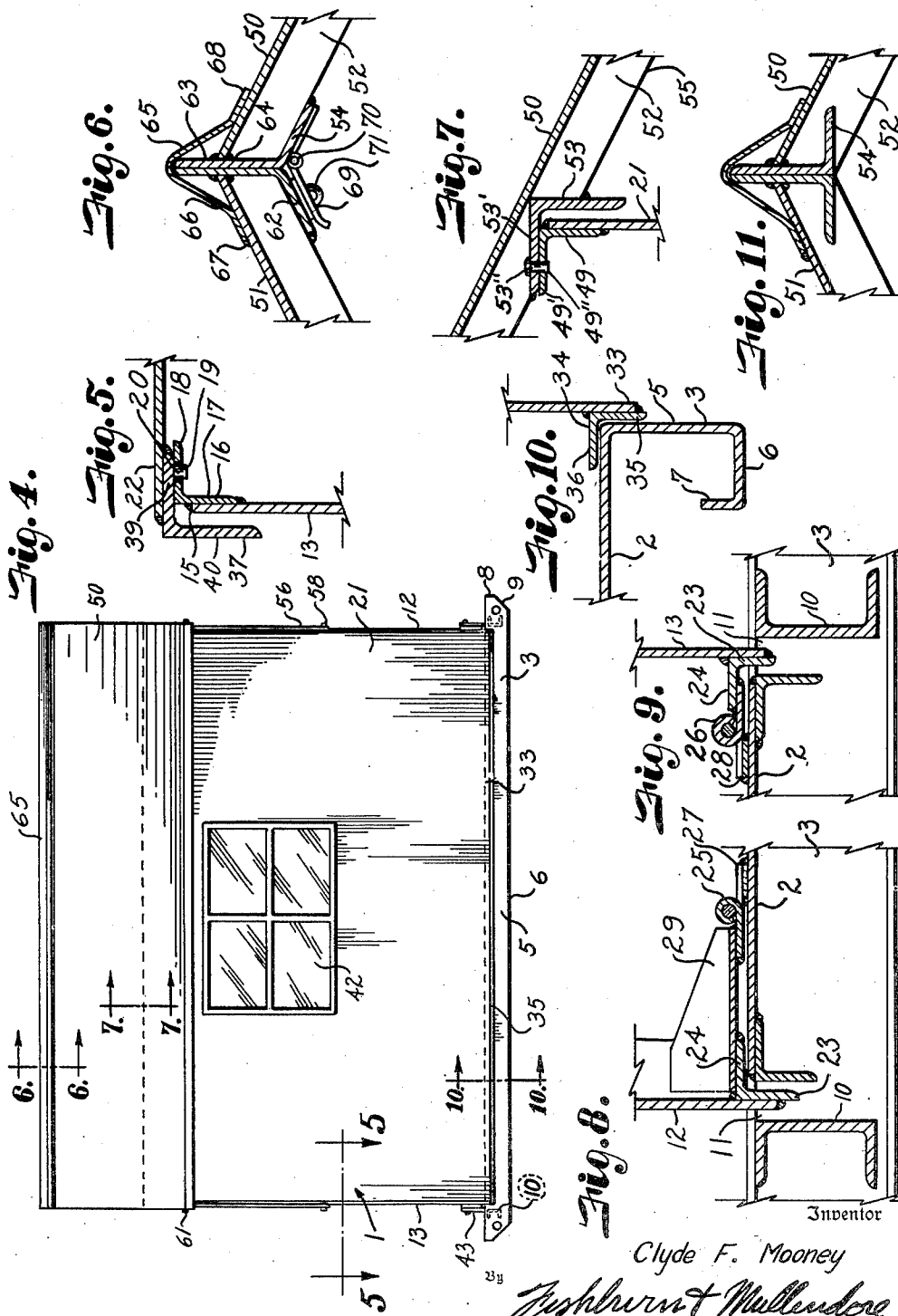
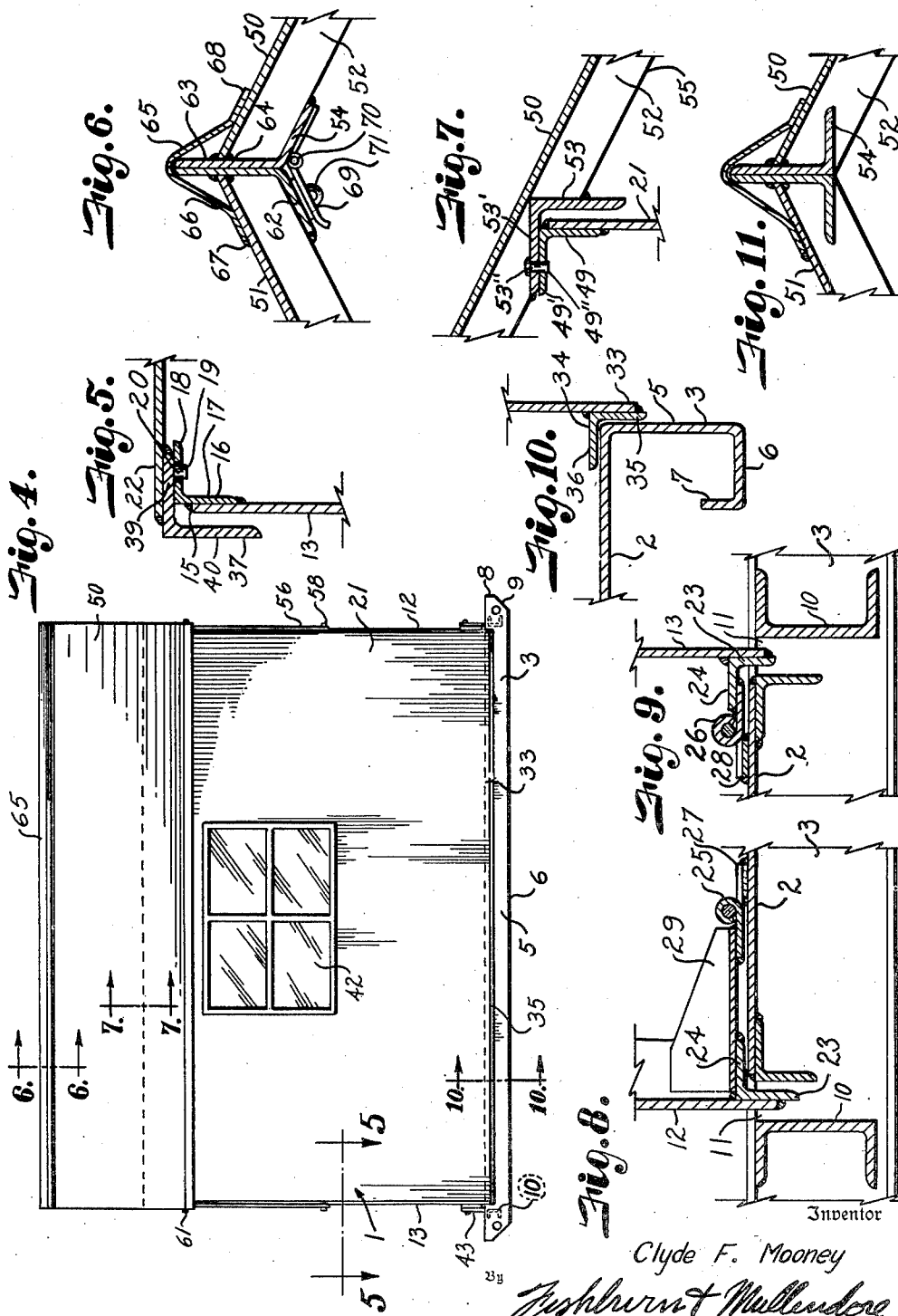
C. F. MOONEY

2,701,038

PORTABLE HOUSE

Filed Sept. 3, 1949

2 Sheets-Sheet 2



Inventor

Clyde F. Mooney

Fishburn & Mullendore

Attorneys

1

2,701,038

PORTABLE HOUSE

Clyde F. Mooney, Tulsa, Okla., assignor to Flint Steel Corporation, Tulsa, Okla., a corporation of Oklahoma

Application September 3, 1949, Serial No. 113,921

6 Claims. (Cl. 189—2)

This invention relates to a portable building and has for its principal object to provide a structure of this type wherein all the parts are incorporated into a single compact package, capable of being hauled about by truck to an erection site and erected without the aid of tools or skilled labor.

Other objects of the invention are to provide a light weight house structure adapted to be folded into a relative flat unit for stacking one upon the other and which may be hauled or transported in stacked position while maintaining low load height; to provide a portable building structure of light weight and high strength so as to withstand rough handling during transportation and erection; to provide roof elements with eave extensions for protecting the windows and providing porch tops; to provide a portable house with interlocking parts which are retained in engagement by an interior locking means; to provide a portable house structure that is adapted for insulation when insulation is required; and to provide a structure that is adapted for use of various wall and roof materials.

In accomplishing these and other objects of the invention, I have provided improved structure the preferred form of which is illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view of a portable building constructed and erected in accordance with the present invention.

Fig. 2 is a perspective view of the parts of the building in partly erected position.

Fig. 3 is an end view of the building in collapsed condition and ready for transportation from one site to another.

Fig. 4 is a side elevational view of the portable building.

Fig. 5 is an enlarged fragmentary section on the line 5—5, Fig. 1.

Fig. 6 is an enlarged fragmentary section through the ridge of the roof on line 6—6, of Fig. 4.

Fig. 7 is a fragmentary section through the eave portion on the line 7—7 of Fig. 4.

Fig. 8 is a fragmentary section through the floor at one end of the building.

Fig. 9 is a similar section at the opposite end of the building.

Fig. 10 is a sectional view through the lower portion of one side wall, and skid on which the building is supported.

Fig. 11 is a section through a modified form of roof ridge construction.

Referring more in detail to the drawings:

1 designates a portable building or house constructed in accordance with the present invention, and which includes a floor section 2 that may be formed of one or more sheets of material such as a light weight metal and which is supported along the opposite side edges on skids 3 and 4, the skids being formed by bending the edges of the flooring downwardly to provide webs 5 terminating in laterally extending flanges having upwardly extending lips 7 coextensive therewith. The web and flange portions 5 and 6 cooperate with the floor in forming skids of somewhat channel-shaped cross section and which reinforce the sides of the building as later described.

The ends 8 of the skids extend beyond the ends of the floor and are shaped to form runners 9 to facilitate sliding of the skids over the ground when the building is shifted in erected condition from one site to another. The ends 8 of the skids are spaced apart by channel-shaped tie members 10 which have their ends welded to

2

the inner faces of the web portions 5 of the channels. If required the skids may be inter-connected along their length by sills to support the floor. The end tie members 10 preferably are spaced from the ends of the floor as indicated at 11 to accommodate lower edges of end walls 12 and 13 as shown in Figs. 8 and 9.

The end walls 12 and 13 are also formed of sheet metal or other suitable material and have vertical side edges 14 and 15 to which are fastened the flanges 16 of angle studding 17 having lateral flanges 18 provided with spaced apertures 19 adapted to receive lugs 20 on the side walls 21 and 22 later described. The lower edges of the end walls are provided with angles 23 having flanges 24 that extend therealong to seat upon the ends of the floor as shown in Figs. 8 and 9. The flanges 24 are hingedly connected with the floor by hinge elements 25 and 26, one leaf of which is welded to the floor as at 27 and 28. The other leaf of the hinge elements 26 are directly connected with the flange 24 of the end wall 13 but since the end wall 12 must overlie the end wall 13 in collapsed position. The other leaf of the hinge elements 25 are connected with the flanges on the wall 12 by brackets 29 (Fig. 8) the brackets being of a length so that when the end section 12 is swung over the end section 13 the end section 12 will lie flatly thereon. The side edges of the end sections extend upwardly to provide the desired height wall and converge inwardly to form gables 30 and 31 at the respective ends of the building, the converging edges of the gables being reinforced by angles 32 similar to the side and bottom angles previously described.

The side walls are also formed of metal or other suitable material and have lower edges 33 that overlap the upper portions of the web 5 and which carry angles 34 that extend therealong with one flange 35 attached to the inner faces of the lower edge portions 33 of the side walls and their other flanges 36 extending over the floor 2 for support thereon as shown in Fig. 10. The ends of the side walls are also provided with similar angles 37 and 38 having flanges 39 welded to the inner faces of the ends of the side walls and having their other flanges 40 overlapping the outer side edges of the end walls as best shown in Figs. 1 and 5 so as to close the joints therebetween when the walls are in erected position. One of the end walls may be provided with a door 41 and the sides and other end be provided with one or more windows 42, Figs. 1 and 4. The side sections are pivoted to the floor sections by hinges 43 and 44 at the respective ends thereof. The hinges 43 comprise relatively short ears 45 connected by hinge pins 46 and the hinges 44 have longer ears 47 connected by pins 48 to permit the side section 21 to overlie the top most end section and the side section 22 to overlie the section 21 when the building is in collapsed condition.

The upper edges of the side sections are reinforced by angles 49 that extend along the inside faces thereof to support the eave portions of roof sections 50 and 51. The roof sections also are formed of sheet metal and have angle members 52, fixed to the ends thereof to provide rafters which are connected at the lower end with eave angles 53 and at their upper ends by ridge angles 54. The flanges 53' of the angles 53 seat upon the intumed flanges 49' of the wall angles 49 and are retained by lugs 53'' on the flanges 53' engaging in openings 49'' in the flanges 49'. The roof sections are of a depth to provide relatively wide eave portions 55 adapted to overhang the side wall sections and protect the windows 42. The roof sections 50 and 51 are hinged to the side wall sections by pairs of parallel links 56 and 57. The ends of the links are secured to the respective vertical angles by suitable fastening devices such as bolts or rivets 58, the links 57 being attached to the ends of the side sections nearer the upper edges thereof and the ends of the links 56 with the vertical angles 37 and 38 about midway of the wall height by hinge pins 59 and 60. The other ends of the links are connected with the rafter angles at 61 and 62, so that the roof sections lie flat upon the gable flanges. The links 56 constitute braces for the eave portions of the roof sections. The rafter angles of the roof sections overlap the gables so as to close the joint therebetween and the ridge angles 54

3

that have flanges 62 welded to the underside thereof as shown in Fig. 6. The other flanges 63 extend upwardly above the roof sections and are welded thereto as indicated at 64. When the building is in an erected position the flanges 63 of the respective roof sections abut and are covered by a ridge roll 65 of substantially inverted V shape cross-section, one side 66 of which is welded to an adjacent roof section, as indicated at 67 and the other side terminating in a flange 68 that is adapted to overlap the other roof section as shown in Fig. 6. The house is retained in an erected position by hasps or other fastening means 69, attached to the under side of one of the ridge members and which have hinged portions 70 adapted to engage over loops 71 that are attached to the under side of the other roof section as shown in Fig. 6. If desired a padlock (not shown) may be passed through the loops 71 to assure unauthorized operation of the various sections composing the building.

When the house is in collapsed or packaged position as shown in Fig. 3, it is easily transported by trucks to the site of erection where it is removed from the trucks and placed with the skids 3 and 4 resting on the ground or other suitable support. The side wall sections 21 and 22 are then raised to an erect position as shown in Fig. 2, the lower portions thereof hinging on the hinge elements 43 and 44, to bring the angles along the lower edge thereof into engagement with the upper portions of the skids. The end wall sections 12 and 13 may then be raised to an erect position by swinging them outwardly between the side sections, the side sections being moved, apart sufficient distance to permit the lugs 20 thereon to engage within the apertures 19 of the flanges 18. In this position the lugs cooperate with the angle studs on the side wall sections to retain the end sections in erect position and the side sections in inter-locked relation therewith. The roof sections are then swung upwardly on the hinging links to bring the ridge angle 0 in abutting relation as shown in Fig. 6. The ridge roll 0 moving over the top of the flanges 63 so that the flange portion 68 rests upon the top of the roof section. The hinge elements 70 of the hasps 69 are then moved over the loop 71 portions and secured in any suitable manner, for example, by passing the shank of a padlock therethrough.

When erected, the house may be pulled about on the skids or left in a permanent position so that it may be used for its intended purpose, for example, a tool house, bunk house or other enclosure as a protection from the weather. When it is desired to collapse the house, the padlock securing the hasps are removed and the roof sections are moved apart to disengage the ridge angles of the roof sections after which the roof sections are moved into engagement with the outer sides of the side wall sections. The side sections may then be moved outwardly to clear the lugs 20, after which, the end sections are folded over the floor section and the side sections are folded over the end sections with the roof sections so lying flatly there against as shown in Fig. 3.

From the foregoing, it is obvious that I have provided a portable building that is of simple and inexpensive construction and which may be erected without the use of tools or experienced labor.

What I claim and desire to secure by Letters Patent is:

1. A portable house including, a floor section, side and end walls, each having lower edges adapted to lap the corresponding sides and ends of the floor section in a downward direction so that any water flowing down the walls will drip from said lapping edges below the floor level, hinge means connecting the side and end walls with the floor section with the hinging axis of said hinge means being offset inwardly of the side and ends of the floor section and above said lapping portions of the side and end walls with the floor section to effect said lap of the side and end walls with the sides and ends of the floor section when the walls are in erect position and to bring lower edges of said lapping portions within boundaries of the floor section when the side and end walls are swung inwardly in superposed relation with each other and in a position parallel with the floor section for transport of said house, said hinge axis of the hinge means being offset different distances at one side and end relatively to the other side and end to accommodate said superposition of the side and end walls in said transport position, roof sections having abutting edges forming a ridge and having opposite sides projecting beyond said side walls to form relatively wide eaves overhanging the side walls, links having one

4

end pivotally connected to the eave portions of said roof sections and their other end connected with ends of the side walls below the upper edges of the side walls, and complementary links pivotally connected with the side walls near the upper edge and with the roof sections nearer the ridge thereof for securing the roof sections to the side walls and effect folding of the roof sections in superposition against the superposed side walls in said transport position with said eave and ridge portions also within the boundaries of the floor sections through positioning thereof by said links, said end walls having gable portions to close the ends of gables formed by the roof sections.

2. A portable house including, a floor section, side and end walls, each having lower edges adapted to lap the corresponding sides and ends of the floor section in a downward direction so that any water flowing down the walls will drip from said lapping edges below the floor level, hinge means connecting the side and end walls with the floor section with the hinging axis of said hinge means being offset inwardly of the side and ends of the floor section and above said lapping portions of the side and end walls with the floor section to effect said lap of the side and end walls with the sides and ends of the floor section when the walls are in erect position and to bring lower edges of said lapping portions within boundaries of the floor section when the side and end walls are swung inwardly in superposed relation with each other and in a position parallel with the floor section for transport of said house, said hinge axis of the hinge means being offset different distances at one side and end relatively to the other side and end to accommodate said superposed relation of the side and end walls in said transport position, flanges on vertical edges of one wall adapted to overlap vertical edges of adjacent walls when in said erect position to form the corners of said house, said flanges and overlapped vertical edges having interengaging lugs and apertures to secure the walls at said corners, roof sections having abutting edges forming a ridge and having opposite sides projecting beyond said side walls to form relatively wide eaves overhanging the side walls, links having one end pivotally connected to the eave portions of said roof sections and their other end connected with ends of the side walls below the upper edges of the side walls, and complementary links pivotally connected with the side walls near the upper edge and with the roof sections nearer the ridge thereof for securing the roof sections to the side walls and effect folding of the roof sections in superposition against the side walls in said transport position with said eave and ridge portions also within the boundaries of the floor sections through positioning thereof by said links position, said end walls having gable portions to close the ends of gables formed by the roof sections.

3. A portable house including, a floor section, side and end walls, hinge means connecting the side and end walls to the floor section to move from an erect position to a position in parallel superposed relation with the floor section when the house is to be transported, roof sections having abutting edges forming a ridge and having opposite sides projecting beyond said side walls to form relatively wide eaves overhanging the side walls, links having one end pivotally connected to the eave portions of said roof sections and their other end connected with ends of the side walls below the upper edges of the side walls, and complementary links pivotally connected with the side walls near the upper edge and with the roof sections nearer the ridge thereof for securing the roof sections to the side walls and effect folding of the roof sections in superposition against the side walls in said transport position with said eave and ridge portions within the boundaries of the floor sections through positioning thereof by said links, said end walls having gable portions to close the ends of gables formed by the roof sections.

4. A portable house including, a floor section, side and end walls, each having lower edges adapted to lap the corresponding sides and ends of the floor section in a downward direction so that any water flowing down the walls will drip from said lapping edges below the floor level, hinge means connecting the side and end walls with the floor section with the hinging axis of said hinge means being offset inwardly of the side and ends of the floor section and above said lapping portions of the side and end walls with the floor section to effect said lap of the side and end walls with the sides and ends of the floor section when the walls are in erect position and to bring

5

lower edges of said lapping portions within boundaries of the floor section when the side and end walls are swung inwardly in superposed relation with each other and in a position parallel with the floor section for transport of said house, said hinge axis of the hinge means being offset different distances at one side and end relatively to the other side and end to accommodate said superposed relation of the side and end walls in said transport position, flanges on vertical edges of one wall adapted to overlap vertical edges of adjacent walls when in said erect position to form the corners of said house, roof sections having abutting edges forming a ridge and having opposite sides projecting beyond said side walls to form relatively wide eaves overhanging the side walls, links having one end pivotally connected to the eave portions of said roof sections and their other end connected with ends of the side walls below the upper edges of the side walls, complementary links pivotally connected with the side walls near the upper edge and with the roof sections nearer the ridge thereof for securing the roof sections to the side walls and effect folding of the roof sections in superposition against the side walls in said transport position with said eave and ridge portions also within the boundaries of the floor sections through positioning thereof by said links, said end walls having gable portions to close the ends of gables formed by the roof sections, flanges extending along upper edges of the side walls and having openings therein, angle members carried by the roof sections and having flanges for seating on the flanges at the upper edges of the side walls, and lugs on said seating flanges for engaging in said openings.

5. A portable house including, a floor section, side and end walls, each having lower edges adapted to lap the corresponding sides and ends of the floor section in a downward direction so that any water flowing down the walls will drip from said lapping edges below the floor level, hinge means connecting the side and end walls with the floor section with the hinging axis of said hinge means being offset inwardly of the side and ends of the floor section and above said lapping portions of the side and end walls with the floor section to effect said lap of the side and end walls with the sides and ends of the floor section when the walls are in erect position and to bring lower edges of said lapping portions within boundaries of the floor section when the side and end walls are swung inwardly in superposed relation with each other and in a position parallel with the floor section for transport of said house, said hinge axis of the hinge means being offset different distances at one side and end relatively to the other side and end to accommodate said superposition of the side and end walls in said transport position, flanges on vertical edges of one wall adapted to overlap vertical edges of adjacent walls when in said erect position to form the corners of said house, said flanges and overlapped vertical edges having interengaging lugs and apertures to

6

secure the walls at said corners, roof sections having abutting edges forming a ridge and having opposite sides projecting beyond said side walls to form relatively wide eaves overhanging the side walls, links having one end pivotally connected to the eave portions of said roof sections and their other end connected with ends of the side walls below the upper edges of the side walls, complementary links pivotally connected with the side walls near the upper edge and with the roof sections nearer the ridge thereof for securing the roof sections to the side walls and effect folding of the roof sections in superposition against the side walls in said transport position with said eave and ridge portions also within the boundaries of the floor sections through positioning thereof by said links, said end walls having gable portions to close the ends of gables formed by the roof sections, flanges extending along upper edges of the side walls and having openings therein, angle members carried by the roof sections and having flanges for seating on the flanges at the upper edges of the side walls, and lugs on said seating flanges for engaging in said openings.

6. A portable house including, a floor section, side and end walls adapted to be superposed on each other and over the floor section when in transport position, roof sections having abutting edges forming a ridge and having opposite edges projecting beyond the side walls to form relatively wide eaves overhanging said side walls, links having one end pivotally connected to the eave portions of said roof sections and the other end connected with ends of the side walls below upper edges of the side walls, complementary links pivotally connected with the side walls near the upper edge and with the roof sections nearer the ridge thereof for securing the roof sections to the side walls and effect folding of the roof sections in superposition against the side walls in said transport position, said end walls having gable portions to close the ends of gables formed by the roof sections, flanges extending along upper edges of the side walls and having openings therein, angle members carried by the roof sections and having flanges for seating on the flanges at the upper edges of the side walls, and lugs on said seating flanges for engaging in said openings when the side walls are erected and the roof sections are swung on said links to form said gable.

References Cited in the file of this patent

UNITED STATES PATENTS

410,783	Chadd	Sept. 10, 1889
421,034	Shuck	Feb. 11, 1890
1,011,584	Connolly et al.	Dec. 12, 1911
2,090,414	Haaapalakso	Aug. 17, 1937
2,280,729	Sutton	Apr. 21, 1942
2,445,055	Capaul	July 13, 1948