

United States Patent

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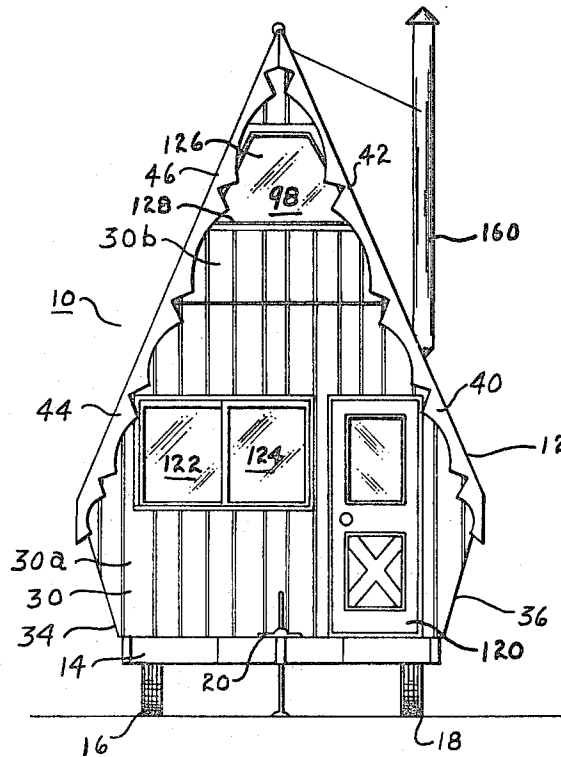
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[54] **FOLDABLE AND TRANSPORTABLE HOME**
14 Claims, 9 Drawing Figs.

[52] U.S. Cl..... 296/23,
 52/69, 296/27
 [51] Int. Cl..... B60p 3/34
 [50] Field of Search..... 296/23, 26,
 27; 52/69, 71

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ABSTRACT: A foldable and transportable home having two sidewalls and end walls forming a body, with the two end walls having an upper and lower portion. The upper portion is hinged to the lower portion and is triangular in shape and folds inwardly and downwardly. The roof includes two lower and two upper roof sections forming a gable configuration, with one of the two upper sections hinged on one side to one lower roof section, the two upper sections being hinged together to fold downwardly over the other lower roof section. The body is removably mounted on a frame and undercarriage for transporting the home and forming a temporary base for the unit.



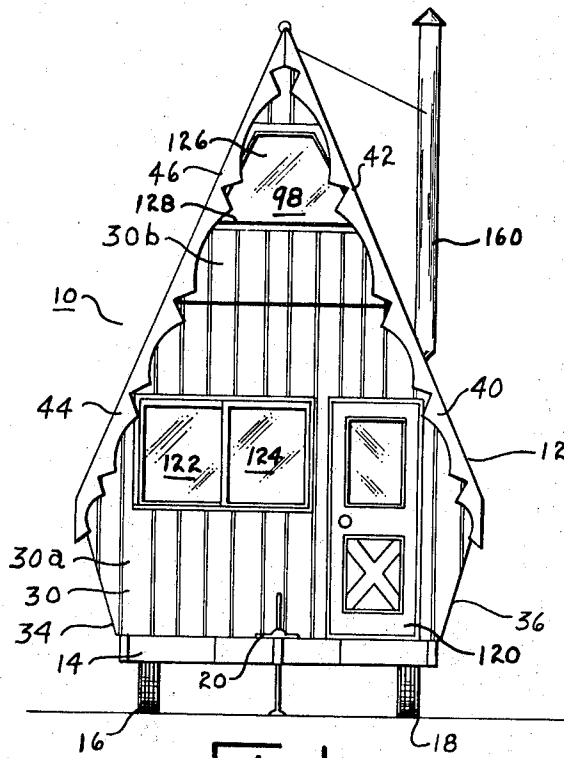


Fig. 1

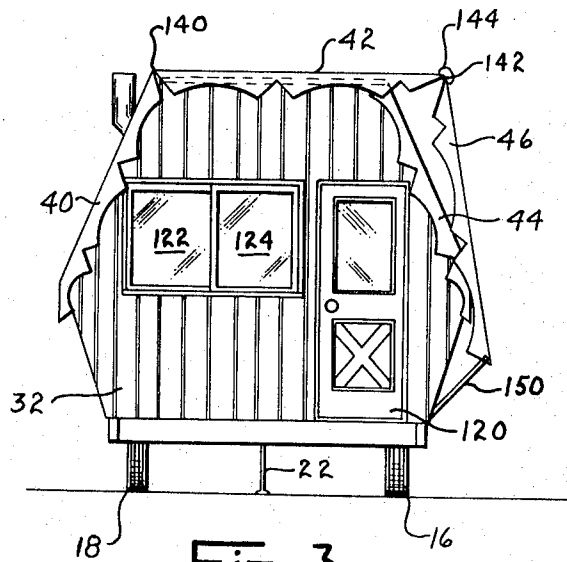


Fig. 3

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Fig. 2

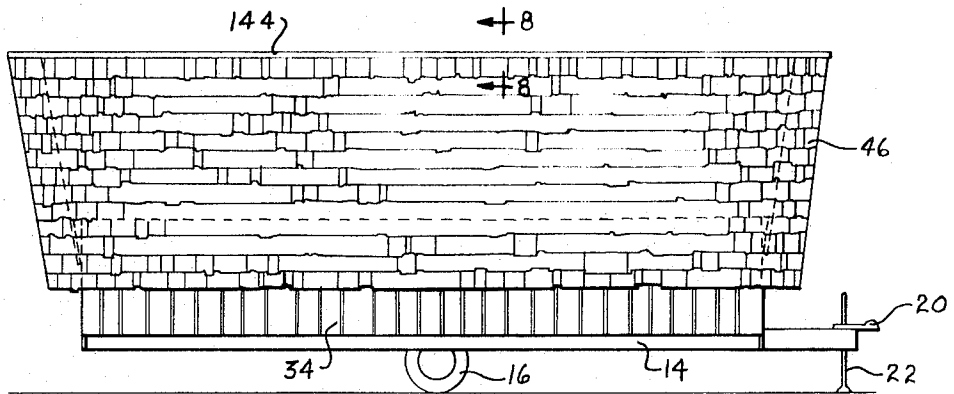
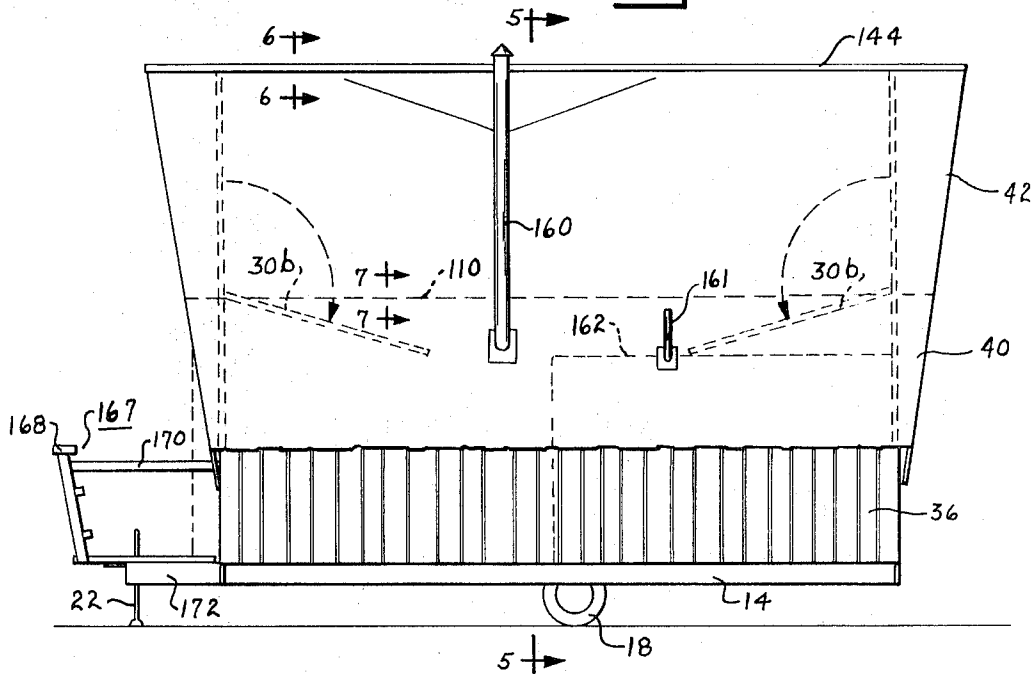


Fig. 4

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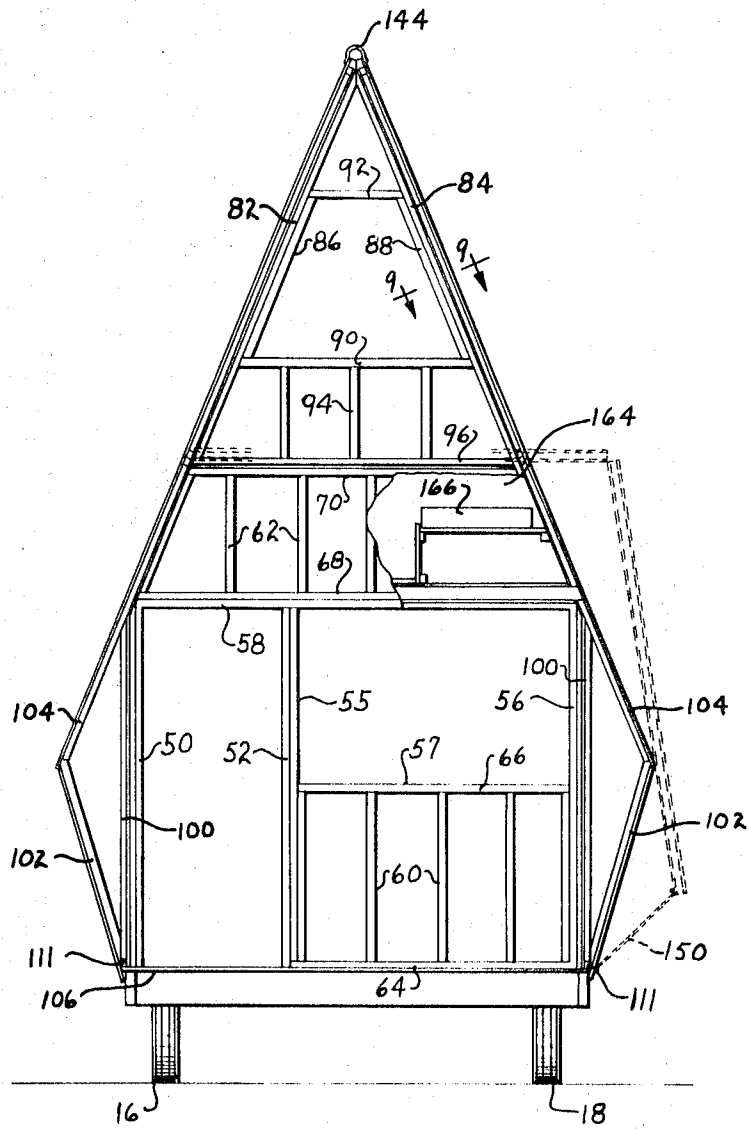
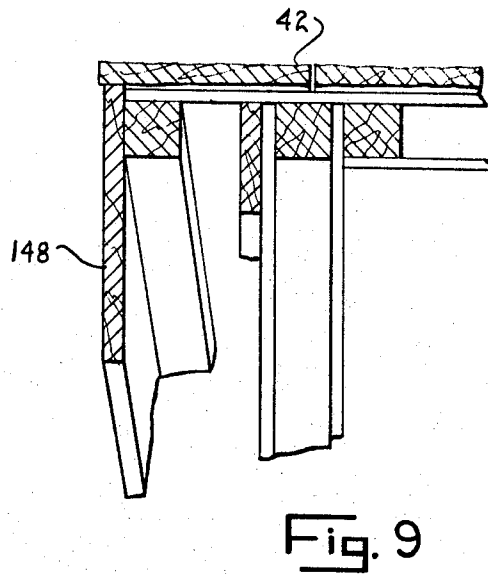
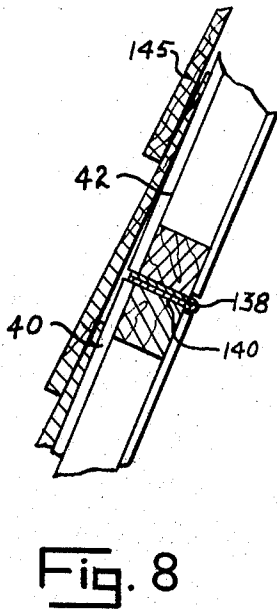
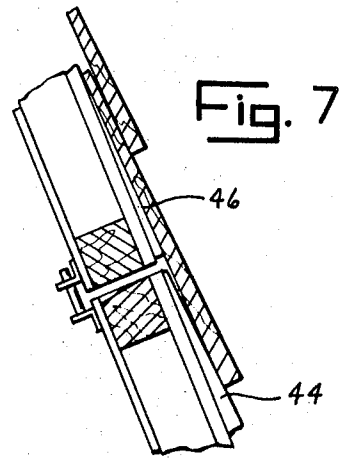
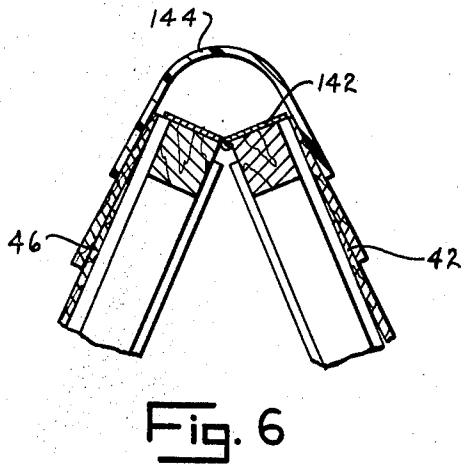


Fig. 5

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FOLDABLE AND TRANSPORTABLE HOME

The trend in mobile homes has been primarily to construct them larger in both length and width and to include tip-out sections and in some instances to make them expandable. In most of these prior attempts to provide increased living space, the basic design and appearance have been that of a trailer or similar vehicle, with the final lines or silhouette resembling the conventional trailer on which only refinements have been generally made. These vehicles rarely have the appearance of a conventional home, and notwithstanding the fact that the vehicles are used most of the time as permanent structures at fixed locations, little consideration has been given to design and construction which have the appearance of a conventional home in a natural setting. The vehicle trailer's appearance is particularly noticeable and equally unattractive and unsightly when the mobile home is placed in a natural setting of a conventional home, and there is little improvement in the general appearance even in modern mobile home parks. The vehicular appearance has been maintained primarily in order to render the vehicle suitable for movement on highways and streets consistent with normal traffic flow patterns, even though the vehicle will rarely be transported and will usually be mounted on a stationary understructure at a home site, and thereafter used as a normal home for extended periods of time or for the rest of the life of the vehicle. In the attempts which have been made to make the mobile home expandable into large structures, the structures still resemble vehicular configuration. It is therefore one of the principal objects of the present invention to provide a foldable and transportable home, which has the distinct appearance of a conventional home, lodge or cottage, yet which can be folded into a compact structure and moved conveniently on a highway as a normal trailer or conventional mobile home.

Another object of the invention is to provide a home or house which, when unfolded, has the appearance of an attractive lodge usable as a conventional home, and which is normally mounted on an undercarriage to permit it to be moved easily from place to place after it has been folded with furniture, clothes and other living appurtenances contained therein.

Still another object of the invention is to provide a foldable and transportable home of the aforementioned type, which will fold into a size which can readily be maneuvered into various positions and easily be towed by an automobile or truck and thereafter used on the undercarriage or mounted on a permanent foundation or other suitable understructure.

A further object is to provide a foldable home which is, in effect, a two-story structure when in its unfolded condition, and which will fold into a structure which can be transported on conventional highways with no interference from standard overpasses, and which can be folded and unfolded in a short period of time by one man with the use of only simple equipment and tools.

Additional objects and advantages of the present invention will become apparent from the following description and accompanying drawings, wherein:

FIG. 1 is an end elevational view of the present foldable and transportable home;

FIG. 2 is an elevational view of one of the sides of the present home, showing the home in its unfolded position;

FIG. 3 is an elevational view of the end opposite that shown in FIG. 1, showing the foldable and transportable home in its folded position;

FIG. 4 is an elevational view of the side opposite that shown in FIG. 2, showing the home in its folded position;

FIG. 5 is a vertical cross-sectional view, taken on line 5-5 of FIG. 2, of the present foldable home with projected portions shown in order to better illustrate the internal construction of the home structure;

FIG. 6 is an enlarged fragmentary section taken on line 6-6 of FIG. 2;

FIG. 7 is an enlarged fragmentary sectional view taken on line 7-7 of FIG. 2;

FIG. 8 is an enlarged fragmentary cross-sectional view taken along the hinge line of the roof section opposite that shown in FIG. 4, showing the roof extended instead of folded as in the previous figure, the section being taken on line 8-8 of FIG. 4; and

FIG. 9 is an enlarged fragmentary view taken on line 9-9 of FIG. 5.

Referring more specifically to the drawings, numeral 10 designates generally the foldable and transportable home, numeral 12 the body structure of the home, and 14 the undercarriage of the home. The undercarriage structure shown in the drawings may be considered conventional, having side frame members and wheels 16 and 18 journaled on an axle (not shown). The frame extends forwardly from the body of the home and is normally provided with a fixture 20 constituting a part of a hitch for connecting the home to a towing vehicle. The frame is retained in a horizontal position when disconnected from a towing vehicle by a jack or support 22 connected to the forward end of the frame and resting on the ground or pavement. Since the undercarriage structure is considered to be conventional for the purpose of the present description, it will not be described in detail herein.

The body of the home consists essentially of front and rear ends 30 and 32, sides 34 and 36, and roof sections 40 and 42 on one side and sections 44 and 46 on the opposite side. The forward and rear ends are essentially the same in construction, and the section and cutaway drawing of FIG. 5 illustrates the construction of both ends; however, the one shown in the figure is the rear end. Each end consists of a lower section 30a and an upper section 30b, hinged to the upper edge of the lower section 30a and adapted to swing inwardly in the manner illustrated in FIG. 3, from the vertical position to a substantially horizontal position. The ends include framing 50 and 52 for a door, and framing 55, 56 and 57 for a window, the beam 58 forming the upper part of the door and window. Studding 60 and 62 both below and above the window are conventional in structure and are connected to transverse runners 64 and 66 for studding 60 and runners 68 and 70 for studding 62. The upper portion 30b is a triangular shape and is connected to the upper edge of section 30a by a hinge. It consists of side frame members 82 and 84, window frames 86, 90 and 92 and studding 94 between frame members 90 and 96, and window 98, which is enclosed by the window frames, is adapted to open inwardly.

One of the particular features of the present invention is the construction of the sides which makes it possible to support the relatively large foldable roof structure, the side frames consisting of a plurality of studs 100 along each side and lower and upper framing 102 and 104, each framing forming a plurality of spaced studding connected at the bottom to the floor structure 106 and at the top to horizontal frame members shown in broken lines at numeral 110 in FIG. 2. The upper part of framing 102 is joined to the lower part of 104, thus forming a triangular stud with member 100 to form a firm support for the roof. Studding 100 and framing 102 are connected to a plate 111 along each side, which in turn is connected to the floor structure. The construction of the floor may be considered conventional for the purpose of this description and is normally supported directly on the frame of the undercarriage. Both the lower and the upper sections of the two ends are covered by suitable weather sheeting material such as aluminum or boards, the material shown in the drawings being in vertical position and joined together by a series of joints. The siding likewise is preferably of the same construction.

Both ends preferably contain a door 120 and windows 122 and 124. The windows are slidable to permit one or both to be opened. Various other door and window arrangements may be used to satisfy the requirements and to provide variations in design. A window 126 is provided in the upper section 30b of each end and is preferably opened by hinge structure 128 at the lower edge thereof, thus permitting the window to tilt inwardly when it is opened.

Sections 40 and 44 of the roof are rigidly connected to end portions 30a and edge 34 and 36, thus forming a rigid basic structure with the sides and end walls of a size substantially the same as a normal mobile home or trailer structure. Roof section 42 is connected at its lower edge to roof section 40 by a piano hinge or other suitable hinge means 138 along joint 140, and section 46 is connected to the upper edge of section 42 by a piano hinge or other suitable hinge means 142. The hinge means permits sections 42 and 46 to assume a gable or triangular configuration, as shown in FIG. 1, and likewise permits section 42 to fold downwardly to a horizontal position and section 46 to extend downwardly along one side of the body. The hinge means 142 is enclosed with a vinyl sealing member 144 forming a watertight seal between the two sections when the sections are either in the unfolded position as shown in FIG. 1 or in the folded position of FIG. 3. The roof sections may be covered by any suitable material such as sheeting and shingles 145 or aluminum sheet or panel material, to give the desired weather protection and authentic lodge or cottage appearance. The roof sections are shown as having a finishing strip of facework 148 which gives the home an appearance of a lodge or cottage such as would be used in a camping or vacation home.

When sections 42 and 46 are in their upright positions, as illustrated in FIG. 1, the lower edge of section 46 is clamped, bolted or otherwise secured to the upper edge of section 44 or to adjacent body framing in order to provide a rigid structure. The end sections 30b are then swung upwardly into the positions illustrated in FIGS. 1, 2 and 5. When sections 42 and 46 are in their folded position, section 46 is held firmly along the side of the body by one or more hooks 150 connected to the base of the body. These hooks are preferably removed from the external surface when the roof sections are uprighted; however, they may be folded in along the side if desired.

The home may be heated by any suitable means, such as a gas or electric heater, or by a fireplace or a stove, vented to a chimney 160. The chimney, which is shown as a metal pipe, extends through roof section 40 and is removed when the roof section is folded downwardly from the position shown in FIG. 1 to the position shown in FIG. 3 preparatory to transporting the home. The chimney and toilet vent pipe 161 would normally extend through the roof of section 40, which is not enclosed by section 46 when the unit is folded.

When the roof sections 42 and 46 are in their elevated position and the two end sections 30b are in their vertical positions, a room which is normally used as a bedroom is provided in one end, as illustrated by broken line 162 and by the offset elevational portion 164. One or more bunk beds 166 may be permanently installed in the elevated section which would normally be reached by a ladder; however, a staircase may be used if desired. Various arrangements of the rooms and compartments, including the kitchen, bathroom and bedrooms, may be made to satisfy requirements. A porch 167 having railings 168 and 170 may be provided if desired, and it may be mounted on the forwardly projecting portion 172 of the vehicle frame. The porch may also be made larger than the forwardly projecting portion and, if so, it would be foldable to permit the transportable home to be easily connected to the towing vehicle. A similar porch may be provided at the rear, or steps may be used at the rear door.

The manner in which the present foldable and transportable home is manipulated and used is apparent from the foregoing description, however, when the home is to be moved, the chimney 160 is removed and the two ends 30b are folded inwardly to the horizontal position as illustrated in FIG. 2. Thereafter roof sections 42 and 46 are folded from the position shown in FIG. 1 to the position shown in FIG. 2, and the lower end of section 46 is secured firmly in place by hooks 150. It should be noted that the projecting part of roof section 46 is on the right-hand side of the vehicle so that the overhang in excess of that on the opposite side, is less of a traffic hazard than it would be if it were on the left-hand side. After the unit has been transported to the desired location, if the location is

to be permanent, the home may be removed from the undercarriage and placed on a permanent foundation. If it is only to be used temporarily at the location, it would normally remain on the undercarriage as illustrated in FIGS. 1, 2, and 3.

When the home has been moved to the new location, the two sections 42 and 46 are elevated to their upright position and the ends 30b are moved from horizontal to vertical position and locked in place by any suitable latching means. After chimney 160 has been reinstalled, the unit is ready for occupancy with the furniture and appliances having remained in place in the unit throughout the transporting operation. When sections 42 and 46 are in their folded position, the unit is compact and occupies only the normal space of a conventional trailer or mobile home of moderate size.

While only one embodiment of the present foldable and transportable home has been described in detail herein, various changes and modifications may be made without departing from the scope of the invention.

We claim:

1. A foldable and transportable home comprising two end walls and two sidewalls forming a body, each of said end walls having a lower portion and an upper portion hinged to the upper edge of said lower portion to fold inwardly into said body and being generally of a triangular shape, a roof structure having four longitudinal sections, one of said sections being mounted along one side of said body and having a lower and an upper edge, a second section being hinged at its lower edge to the upper edge of said one section, a third section being hinged at its upper edge to the upper edge of said second section, hinge means connecting said first, second and third sections together in both the folded and unfolded positions of said roof structure, a fourth section being mounted along the other side of said body, and means for releasably connecting the lower edge of said third section to the upper edge of said fourth section to retain said second and third sections in a triangular configuration embracing the upper portion of said end walls and to permit said second section to fold downwardly when said upper portions are folded inwardly and simultaneously to permit said third section to move downwardly along the outside of said fourth section.

2. A foldable and transportable home as defined in claim 1 in which said body is mounted on a frame and said frame is supported by an undercarriage including two wheels for transporting said home.

3. A foldable and transportable home as defined in claim 2 in which said frame projects forwardly beyond said body and a porchlike structure is mounted on said frame.

4. A foldable and transportable home as defined in claim 1 in which partitions divide the internal space of said body into a lower compartment and an upper compartment and said upper compartment corresponds generally in shape to the upper portion of the two end walls.

5. A foldable and transportable home as defined in claim 4 in which one of said end walls includes a door and window in the lower portion and a window in the upper portion.

6. A foldable and transportable home as defined in claim 1 in which each of said end walls contains a door and window in the lower portion and a window in the upper portion.

7. A foldable and transportable home as defined in claim 4 in which each of said end walls contains a door and window in the lower portion and a window in the upper portion.

8. A foldable and transportable home as defined in claim 1 in which said sidewalls are constructed of studding forming a generally triangular structure in vertically arranged position and said sidewalls project outwardly and upwardly and are connected respectively to said one and said fourth roof sections.

9. A foldable and transportable home as defined in claim 4 in which said sidewalls are constructed of studding forming a generally triangular structure in vertically arranged position and said sidewalls project outwardly and upwardly and are connected respectively to said one and said fourth roof sections.

10. A foldable and transportable home as defined in claim 2 in which said third roof section folds downwardly over said fourth roof section and in which said fourth roof section is on the right-hand side of said body as positioned on said frame and undercarriage.

11. In a foldable and transportable home having two end walls and two sidewalls forming a body, each of said end walls having a lower portion and an upper portion hinged to the upper edge of said lower portion to fold inwardly into said body and being generally of a triangular shape: a roof structure including four longitudinal sections, one of said roof sections being disposed along one side of said body and having a lower and an upper edge, a second roof section being hinged at its lower edge to the upper edge of said one section, a third roof section being connected to the upper edge of said second section, hinge means connecting said first, second and third sections together in both the folded and unfolded positions of said roof structure, a fourth roof section being disposed along the other side of said body, and means for releasably connecting an edge of said third section to the upper edge of said

fourth section to retain two adjoining roof sections in a triangular configuration embracing the upper portion of said end walls and to permit said second section to fold downwardly when said upper portions are folded inwardly, and simultaneously to permit said third section to move downwardly with respect to said second section while attached to said second section.

12. A foldable and transportable home as defined in claim 11 in which said frame projects forwardly beyond said body and a porchlike structure is mounted on said frame.

13. A foldable and transportable home as defined in claim 11 in which partitions divide the internal space of said body into a lower compartment and an upper compartment and said upper compartment corresponds generally in shape to the upper portion of the two end walls.

14. A foldable and transportable home as defined in claim 11 in which one of said end walls includes a door and window in the lower portion and a window in the upper portion.

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