Feb. 7, 1967 J. KONOPASEK 3,302,341

PORTABLE BUILDING STRUCTURE

Filed Aug. 1, 1963 3 Sheets-Sheet 1

FIG. 1

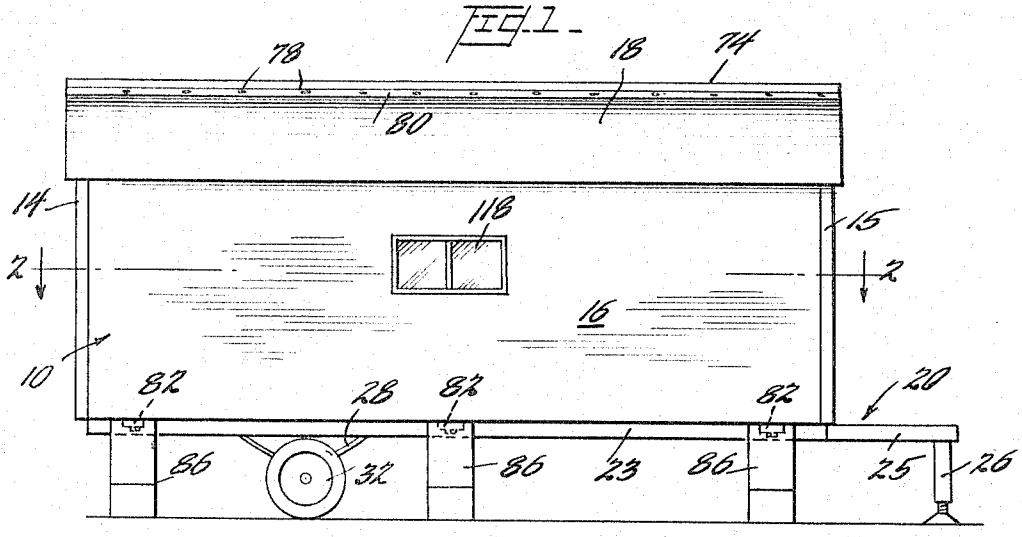
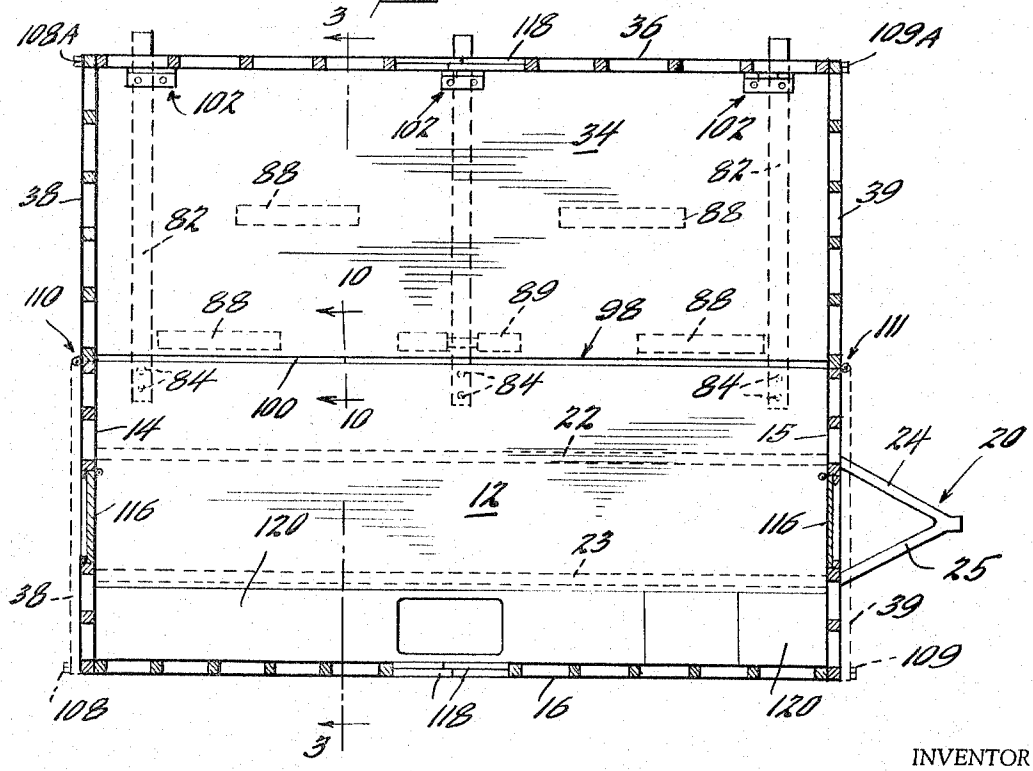


FIG. 2



INVENTOR

James Konopasek,

Feb. 7, 1967 J. KONOPASEK 3,302,341

PORTABLE BUILDING STRUCTURE

Filed Aug. 1, 1963 3 Sheets-Sheet 2

FIG. 3.

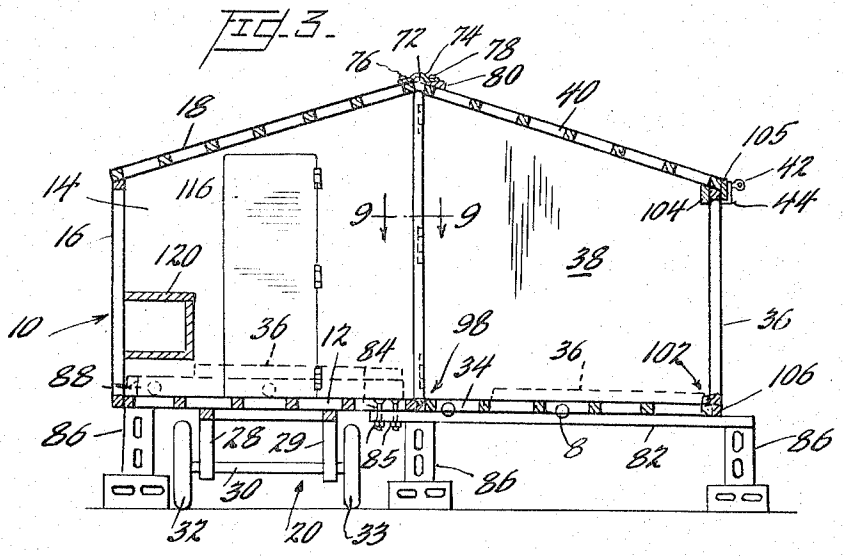


FIG. 4.

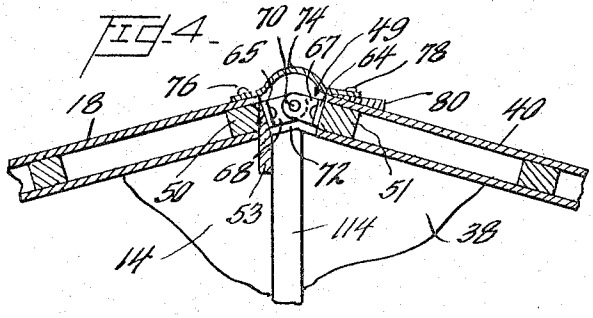


FIG. 5.

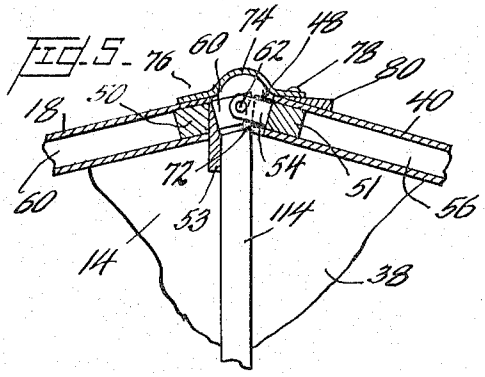
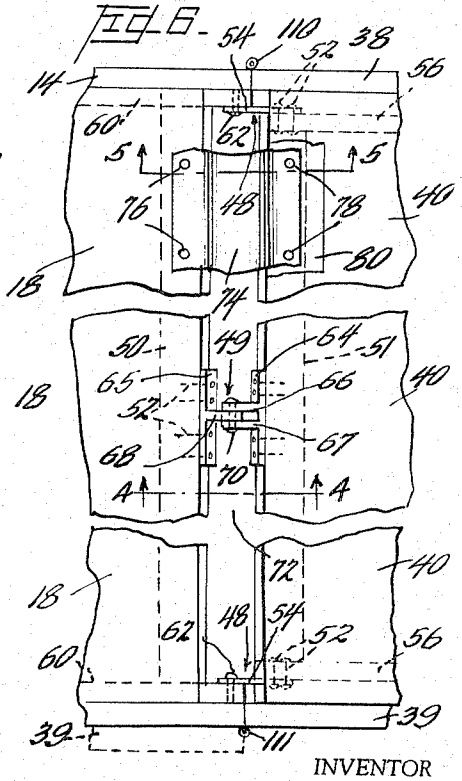


FIG. 6.



INVENTOR

James Konopasek,

Feb. 7, 1967 J. KONOPASEK 3,302,341

PORTABLE BUILDING STRUCTURE

Filed Aug. 1, 1963 3 Sheets-Sheet 3

FIG. 7

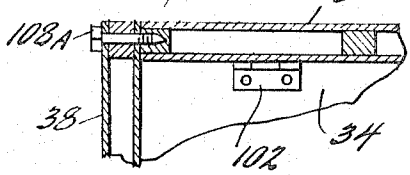


FIG. 8

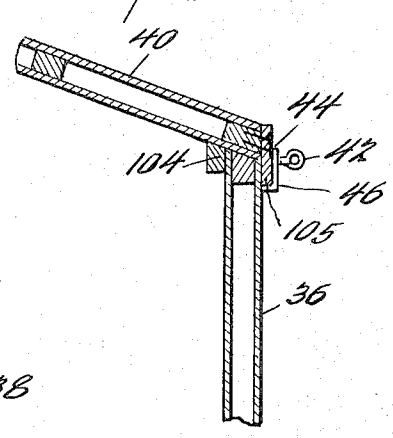


FIG. 9

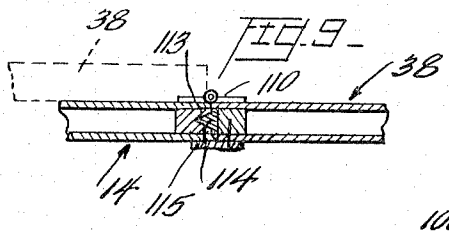


FIG. 10

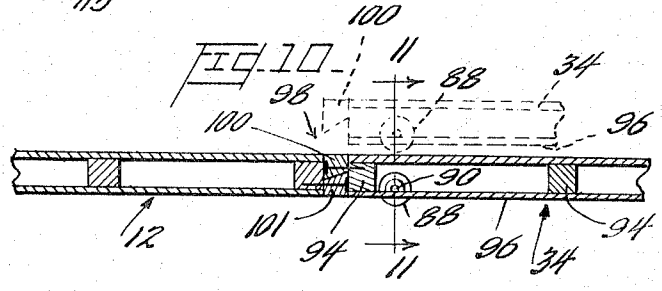


FIG. 11

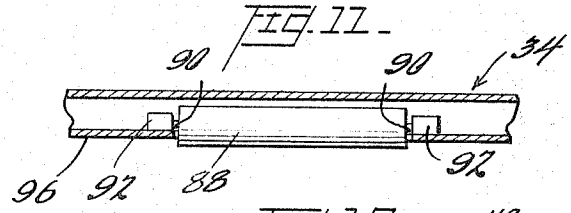
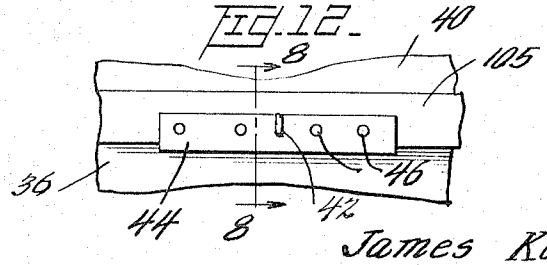


FIG. 12



INVENTOR

James Konopasek,

United States Patent Office

3,302,341

Patented Feb. 7, 1967

3,302,341

PORTABLE BUILDING STRUCTURE

James Konopasek, 810 E. 2nd, Chadron, Nebr. 69337

Filed Aug. 1, 1963, Ser. No. 299,269

11 Claims. (Cl. 52—64)

This invention relates to portable, folding building structures and more specifically to a portable, expandable cabin structure to be used as a semi-permanent dwelling.

There are many public and state parks in existence in the United States today that offer excellent locales for outdoor activities, but most of these areas have regulations prohibiting the construction of permanent dwelling facilities. A wide variety of portable camping structures are available today for use in such areas, but these have several disadvantages; either they are too small and cannot comfortably be used for an extended length of time or else they are so large as to prohibit conveyance over secondary roads to reach highly desirable camping areas. It is to this problem that the present invention is offered as a welcome solution.

An object of this invention is to provide a semi-permanent dwelling that will probably be assembled and dismantled only once or twice a year and yet provide all the space and comfort supplied by a permanent cabin structure.

Another object of this invention is to provide a portable cabin structure that can easily be assembled or dismantled by a crew of 3 or 4 men within a few hours with a minimum of equipment and tools.

Yet another object is to provide a cabin structure that is completely weather proof in either the portable or extended position.

A still further object is to provide a portable cabin structure that allows full use of interior space in the extended position, without the need of interior support beams.

Finally, it is an object of this invention to provide a portable cabin structure with an interior so constructed so as to allow the housing of a floor section with an attached wall section when in the portable or non-operative position.

These and other objects of this invention are provided by the following detailed description of one preferred embodiment of this invention. Referring to the drawings which form a part of invention:

FIG. 1 is a side elevational view of the permanent side of the portable cabin when in the camping position;

FIG. 2 is a sectional plan view taken on line 2—2 of FIG. 1;

FIG. 3 is a sectional view taken on line 3—3 of FIG. 2;

FIG. 4 is an enlarged partial sectional view taken on line 4—4 of FIG. 6 showing the relationship of the two roof halves;

FIG. 5 is an enlarged partial sectional view taken on line 5—5 of FIG. 6, similar to FIG. 4 but showing one of the end blind hinges connecting the two roof halves;

FIG. 6 is a partial plan view of the roof structure with parts broken away to show detail;

FIG. 7 is a sectional plan view showing the upper left hand corner of FIG. 2 to an enlarged scale;

FIG. 8 is an end sectional view showing the upper right hand corner of FIG. 3 to an enlarged scale; it is also a sectional view taken along line 8—8 of FIG. 12;

FIG. 9 is a sectional plan view taken along line 9—9 of FIG. 3 showing the relationship of a fixed wall section to a foldable wall section to an enlarged scale;

FIG. 10 is an end sectional view taken along line 10—10 of FIG. 2 showing the interlocking of the two floor sections to an enlarged scale;

FIG. 11 is a sectional view taken along line 11—11 of FIG. 10; and

FIG. 12 is an enlarged partial view taken from the right side of FIG. 8.

Referring now to the drawings by characters, a central body portion 10 is shown comprised of a permanent floor 12, fixed end walls 14 and 15, fixed side wall 16, and a permanent roof section 18. The body 10 is supported by a suitable cradle 20 having longitudinal support beams 22 and 23 secured to the underside of body 10. At one end of cradle 20 a trailer hitch having braces 24 and 25 is attached to beams 22 and 23 respectively. A screw-jack trailer hitch support 26 is provided at the junction of braces 24 and 25. Rearward of the braces there is a conventional wheeled trailer support consisting of springs 28 and 29, axle 30, and wheels 32 and 33. For use in the extended position, a portable floor section 34 with a foldably mounted wall section 36 attached along one side; swing walls 38 and 39 vertically attached to the open side of end walls 14 and 15 respectively, and a hinged roof section 40 attached to the open end of fixed roof section 18 are provided.

To constitute the cabin for use, the central body 10 is leveled by use of screw-jack trailer hitch support 26. Hinged roof section 40 is then lifted by a winch or other suitable lifting means employing hookeye 42 which is attached to an angle iron 44, the entire assembly being secured to the outer portion of roof 40 by means of screws 46 (FIGS. 8 and 12). It can be readily seen, though that the above method of lifting hinged roof section 40 is merely a preferred treatment. For instance, in some cases, it may be more practical to lift roof section 40 by props. Hinged roof section 40 is secured to permanent roof 18 by end blind hinges 48 and center blind hinge 49 secured to longitudinal rafters 50 and 51 by screws 52. In larger cabins of this type, it may be desired to further provide structural strength for roof section 18 by employing a transverse longitudinal rafter 53 in conjunction with rafter 50. As shown in FIGS. 5 and 6 each end blind hinge 48 consists of a metal strap 54 secured to a transverse rafter 56 of the hinged roof section 40. Strap 54 is then secured to an extension of transverse rafter 60 of permanent roof section 18 by a pin 62. As shown in FIGS. 4 and 6, center blind hinge 49 consists of two plates 64 and 65, plate 64 having two projections 66 and 67, and plate 65 having one projection 68 that fits between projections 66 and 67, said projections 66, 67 and 68 joined by a pin 70. Plate 64 is secured to hinged roof section 40 by screws 52; plate 65 is secured to permanent roof section 18 by screws 52. Blind hinges 48 and 49 and the opening 62 between the roof sections 18 and 40 are protected from weather by a strip of sheet material 74 secured to roof 18 by screws 76. Strip 74 is attached to a triangular longitudinal wedge 80 by screws 78. The wedge rests upon roof 40 when roof 40 is in the open or camping position. Wedge 80 drops with roof 40 when roof 40 is lowered to the closed or portable position and further aids in protecting blind hinges 48 and 49 and opening 72 from weather when roof 40 is either in the open or closed position.

When hinged roof section 40 has been raised, transverse support beams 82 are attached to the open side of permanent floor 12 by bolts 84 and suitable support means 86, cinder blocks or the like, are placed beneath the ends of each support beam 82 as well as beneath floor 12 in line with beams 82 and along the edge of floor 12 substantially beneath wall 16. As shown in FIG. 3, bolts 84 are mounted permanently in floor 12 and support beams 82 are mounted from beneath floor 12 and secured by nuts 85. Portable floor section 34 is then removed from its position upon floor 12 by means of rollers 88 and center roller 89 secured within portable floor 34 by pins 90 attached to metal strap supports 92 mounted between floor joists 94 on sheathing 96. As

shown in FIG. 10, portable floor 34 is then dropped into place on support beams 82, center roller 89 being conveniently notched so as to allow floor 34 to fit correctly on beam 82, and is secured to permanent floor 12 by a longitudinal interlocking weather seal 98 composed of two strips 100 and 101 of trapezoidal configuration in cross-section, strip 100 attached to permanent floor 12 and strip 101 attached to portable floor 34.

Foldable wall section 36, attached to the outer elongated side of portable floor 34 by strap hinges 102, said wall section 36 resting upon said floor when folded, is then raised to the vertical position and hinged roof section 40 is lowered to rest upon wall section 36. Wall 36 fits between downward projections 104 and 105 secured beneath the outer edge of hinged roof section 40, said projections extending along the full length of roof section 40 and forming a weather seal between wall 36 and roof 40. The lower edge of wall 36 is in the form of a projection 106, allowing wall 36 to fit around the exposed longitudinal edge of portable floor 34 and forming a weather seal when wall 36 is in the vertical position.

Swing wall sections 38 and 39, which are folded against fixed wall sections 14 and 15 respectively when the structure is in the closed position, are rotated 180° so as to meet hinged roof 40, foldable wall section 36, and portable floor 34, after removing lag screws 108 and 109 or any other suitable means used to secure walls 38 and 39 to fixed side wall 16 during transport. Walls 38 and 39 are attached to the open ends of fixed walls 14 and 15 by strap hinges 110 and 111, each set of said hinges thus forming a vertical axis of rotation for swing walls 38 and 39 respectively. Swing walls 38 and 39 are then secured to either end of foldable wall section 36 by lag screws 108A and 109A or by any other suitable means, conveniently the same means used to attach walls 38 and 39 to fixed side wall 16 during transport. Each wall section 38 and 39 has projections on the lower end of each to form a weather seal with the corresponding end edges of portable floor section 34 in the same manner as projection 106 of wall 36 forms a seal against floor 34. As shown in FIG. 9, a longitudinal bar 114 of generally triangular section is permanently attached to swing walls 38 and 39, conveniently fitting into groove 113 when the structure is in camping position. As a further protection against the elements, longitudinal plate 115 may be attached to the interior of walls 38 and 39. Section 114 and plate 115 are preferably made of sheet metal or any other suitable and substantially rigid material.

To dismantle the extended cabin into the portable or closed position, the reverse of the above procedure is followed, that is, swing wall sections 38 and 39 are detached from foldable wall section 36 and placed against and secured to end walls 14 and 15 respectively. Portable roof section 40 is raised and foldable wall section 36 is lowered to rest upon floor section 34, said floor section then being lifted and rolled into place upon permanent floor 12. Finally roof section 40 is lowered to enclose the exposed open end of the structure. For further security in transit, roof section 40 may be secured to permanent floor 12 by any suitable means.

For convenience when in use, the structure may be provided with suitable doors 116 and windows 118 in any desired number and location. Furthermore, the floor, walls and roof may be constructed of any lightweight material of suitable strength; however, the preferred construction is the conventional stud-sheathing arrangement so as to provide space for suitable insulation between the inner and outer faces of said floor, walls and roof.

For further convenience, suitable cabinet structures 120 may be provided along wall 16 in the interior of the structure. Such structures are placed a sufficient distance above floor 12 so as to allow portable floor section 34 and attached wall section 36 to fit beneath said structures

and rest upon floor 12 when the structure is in the portable or folded position.

From the foregoing it is readily seen that I have devised a highly desirable cabin structure, simple in construction and usable as a semi-permanent dwelling. It is further obvious that a variety of expedients may be used to accomplish the purposes of this invention and I am not to be limited to the strict construction described above except within the scope of the following claims in which I claim:

1. A portable expandable cabin structure or the like comprising a central body portion with a fixed floor, fixed walls and a fixed roof providing an open vertical side thereof, said open vertical side having generally the same dimensions as said fixed roof, a portable floor slidable from a stored position substantially parallel with and above said fixed floor to an expanded position substantially coplanar with said fixed floor, said portable slidable floor having a wall section hingedly mounted along one side of said portable floor, a foldable roof section hingedly mounted along the open side of said fixed roof, and a pair of wall sections vertically mounted swingably on said fixed walls at opposite open ends of said central body portion and engageable with said portable floor, said first hinged wall section and said foldable roof section, said cabin being in an expanded position.

2. A structure as in claim 1 wherein longitudinal support beams are provided for said fixed floor, draft hitch means mounted at one end of the body and wheeled support means mounted below the body remote from said draft hitch means.

3. A structure as in claim 1 wherein said portable floor is provided with anti-friction means interposed between the two floors, said portable floor being positionable upon said fixed floor in parallel plane relationship therewith when said cabin structure is in the stored position.

4. A structure as in claim 1 wherein said portable floor is supported by transverse support beams removably engageable with said fixed floor near said open vertical side when said portable floor is in the expanded position, said beams being further supported at the ends opposite said removably engageable ends, and sealing means interengaging said fixed floor and said portable floor when in expanded position.

5. A structure as in claim 1 wherein said roof section is attached to said fixed roof by blind hinges, said hinges protected by a strip of sheet material which completely encloses the opening between each roof section.

6. A portable cabin structure or the like comprising a central body portion with a fixed floor, fixed walls and a fixed roof providing an open vertical side thereto, said vertical side being entirely closable by a roof section hingedly mounted along said open vertical side, a portable floor slidable from a stored position substantially parallel with and above said fixed floor to an expanded position substantially coplanar with said fixed floor, fixed cabinet structures or the like mounted along a fixed wall in the interior of said cabin structure a sufficient distance above said fixed floor so as to allow said portable floor to be placed in parallel plane relationship above said fixed floor, a swingable wall section mounted along an edge of said portable floor and engageable with said roof section and a pair of hingedly mounted smaller wall sections vertically attached along said open side to a pair of fixed wall sections and engageable with said portable floor, roof section and said first swingable wall section, said cabin being in an expanded position.

7. In a portable cabin structure comprising a fixed floor section, a fixed side wall, fixed end wall sections, and a fixed roof section, a portable floor slidable from a stored position substantially parallel with and above said fixed floor to an expanded position substantially coplanar with said fixed floor removably engageable with said fixed floor section, said portable floor section having a side wall section foldably mounted along one side thereto, end wall sections foldably secured to said fixed end wall

sections, said end wall sections engageable with said portable floor section, and a hinged roof section mounted along the open side of said fixed roof, said hinged roof section engageable with said foldable side wall section and each of said end wall sections, sealing means comprising a downward projection extending along the bottom edge of said side wall section and each of said end wall sections, said sealing means being substantially rectangular in cross section, the depending length of said sealing means extending at least as far as the lower edge of said portable floor section.

8. A structure as in claim 7 wherein said portable floor section is engageable with said fixed floor section by a seal means consisting of two mating members, one of said members being generally trapezoidal in cross-section and extending along the length of said fixed floor section, the other of said members also being generally trapezoidal in configuration but extending along the length of said portable floor section, said members, when joined together, interlocking to form a structure substantially rectangular in cross-section.

9. A structure as in claim 7 wherein each of said movable end wall sections is secured to one each of said fixed end wall sections respectively by strap hinges or the like so as to allow a vertical axis of rotation substantially in the same plane as the outer facing of each of said fixed wall sections, a generally triangular section of material mounted between the abutting edges of the fixed and movable end walls, said triangular section fitting into a mating groove to form an inner seal between a fixed and a movable end wall section when said movable end wall section is rotated so as to be coplanar with said corresponding fixed wall section.

10. A structure as in claim 7 wherein the outer longitudinal edge of said hinged roof section is provided with a pair of downwardly depending projections, extending along the length of said outer longitudinal edge, the distance between said each of said pair of projections being substantially the same as the thickness of said movable side wall section, said pair of projections thus engageable with said movable side wall section and forming a seal between said hinged roof section and said movable side wall section.

11. A structure as in claim 7 wherein said hinged roof section is secured to said fixed roof section by hinges forming a horizontal axis of rotation substantially within an extended plane of each of said roof sections, the opening between each of said roof sections being covered by flexible exterior covering strip having a transverse dimension greater than the opening throughout, and a longitudinal dimension at least as great as the length of said opening, said covering strip being secured to said fixed roof section along one longitudinal side thereof, the other longitudinal side being secured to a wedge having a longitudinal dimension at least as great as the length of said opening, said wedge being adapted to rest in both open and closed positions upon said hinged roof section, said transverse dimension of said covering strip being great enough to allow said wedge to rest entirely upon said hinged roof section in both positions.

References Cited by the Examiner

UNITED STATES PATENTS

2,519,517	8/1950	Van Tassel	296—23.3
2,733,095	1/1956	Crivella	296—23
2,836,456	5/1958	Schultz	296—23
2,902,312	9/1959	Ferrara	296—23.3
3,155,418	11/1964	Miner	296—23.3
3,234,696	2/1966	Spencer	52—66

FOREIGN PATENTS

599,734	6/1960	Canada.

References Cited by the Applicant

UNITED STATES PATENTS

2,634,462	4/1953	Graven.

REINALDO P. MACHADO, *Primary Examiner.*

HARRISON R. MOSELEY, *Examiner.*

A. I. BREIER, *Assistant Examiner.*