United States Patent

[11] 3,632,153

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[45] Patented **Jan. 4, 1972**

[54] **HARD PANEL FOLDOUT BUNK SHELTER**
11 Claims, 14 Drawing Figs.

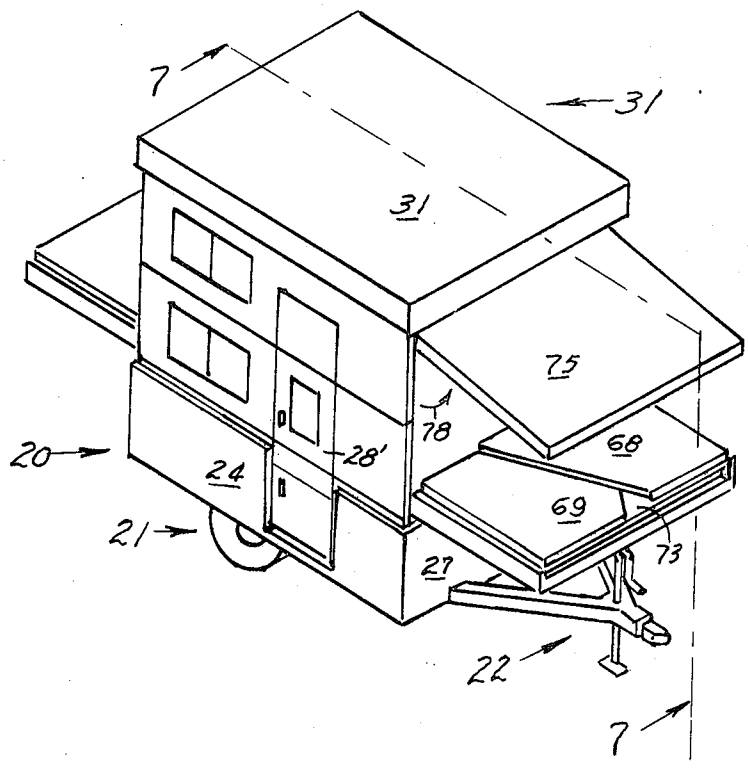
[52] **U.S. Cl.** ..... **296/23 R,** 296/27, 52/66
[51] **Int. Cl.** **B60p 3/34**
[50] **Field of Search** 296/23, 27, 23.2; 52/66, 68, 71, 72

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Primary Examiner—Philip Goodman
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ABSTRACT: A collapsible foldout bunk shelter, extendable from a camper trailer, comprising a floor movable externally through an opening in a wall of said trailer, having stable, hard and impervious wall panels foldable and collapsible over said floor, and a stable, hard and impervious roof panel for such wall panels.



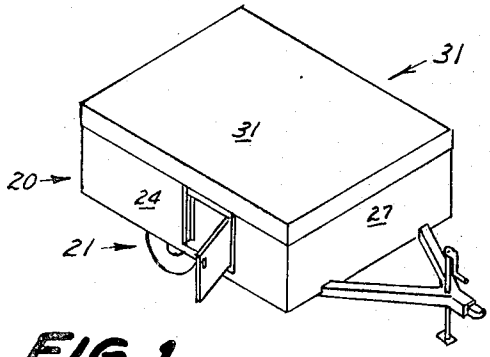


FIG. 1

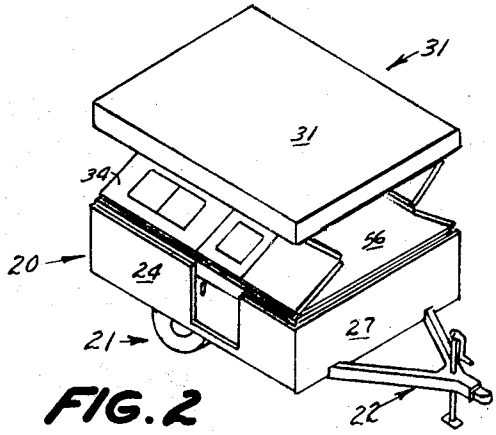


FIG. 2

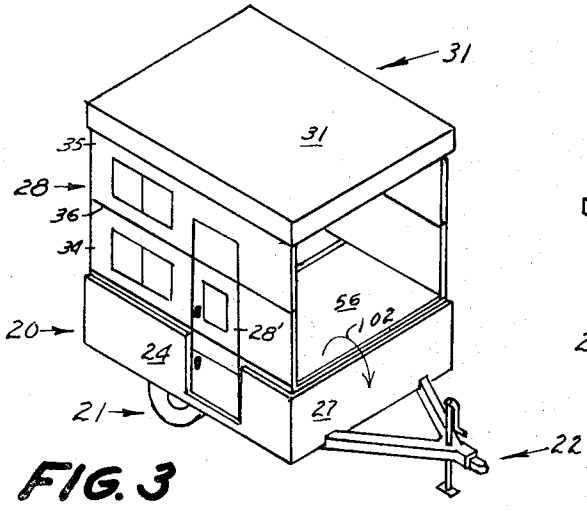


FIG. 3

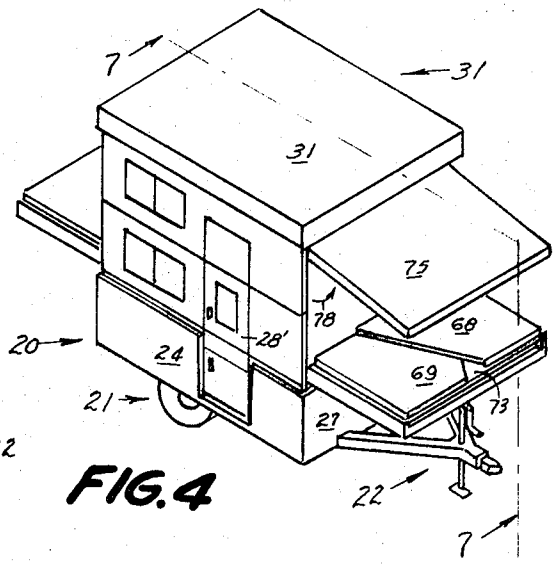


FIG. 4

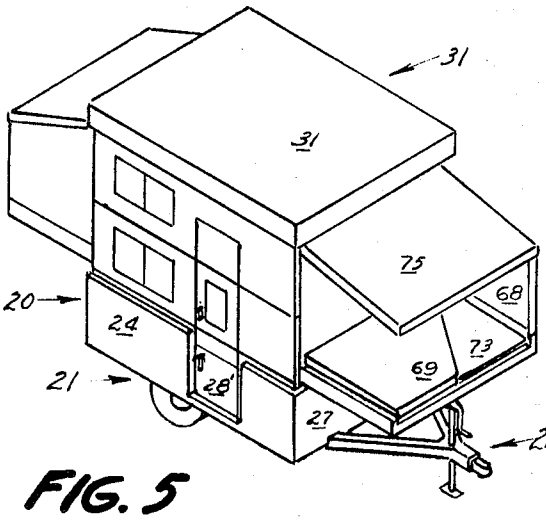


FIG. 5

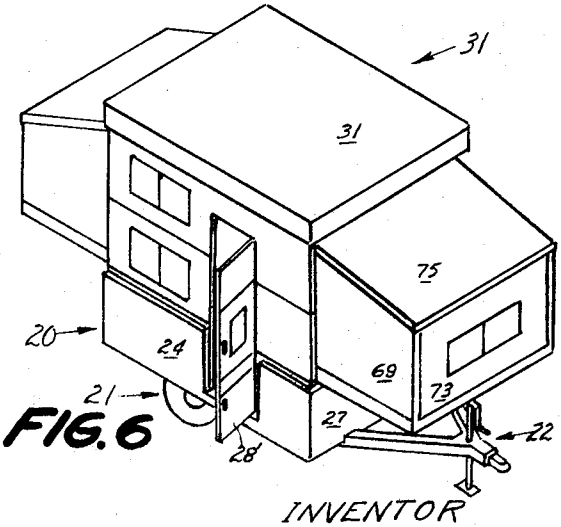


FIG. 6

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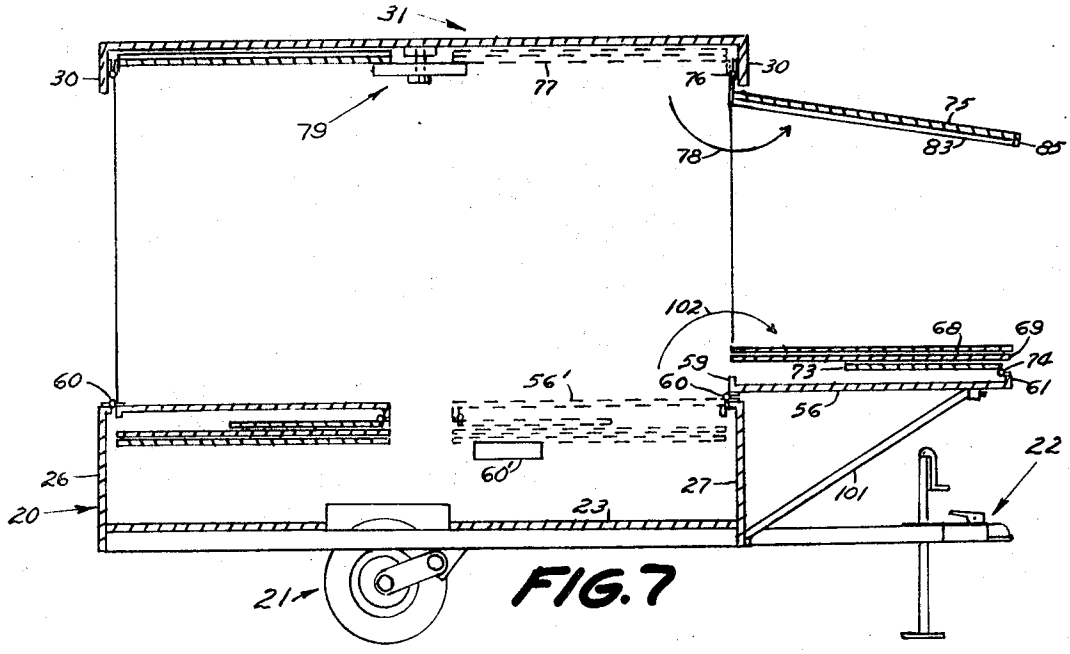


FIG. 7

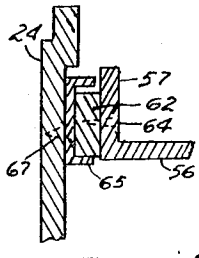


FIG. 13

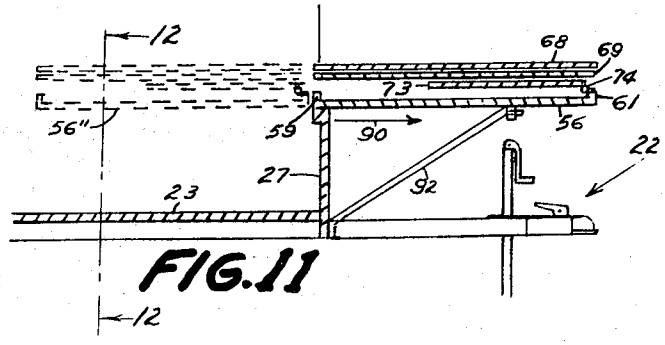


FIG. 11

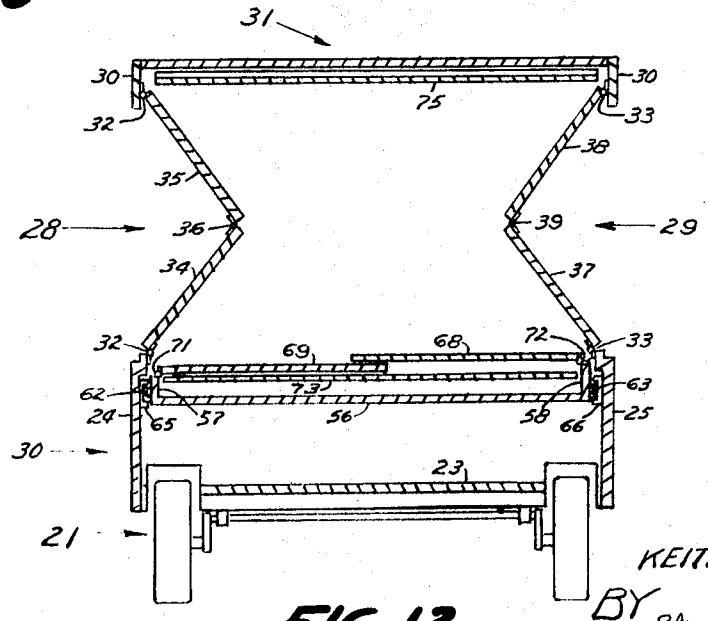


FIG. 12

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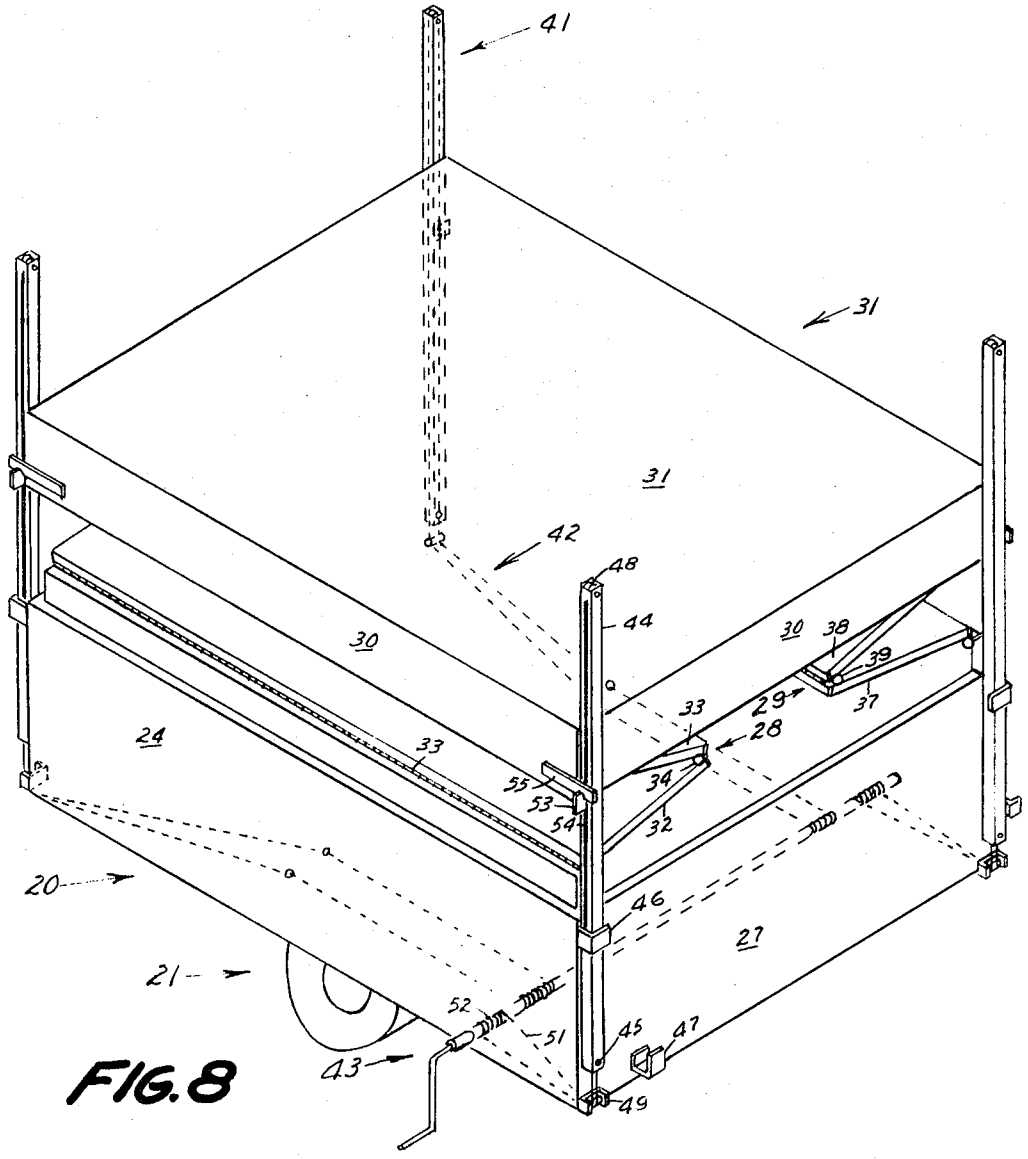


FIG. 8

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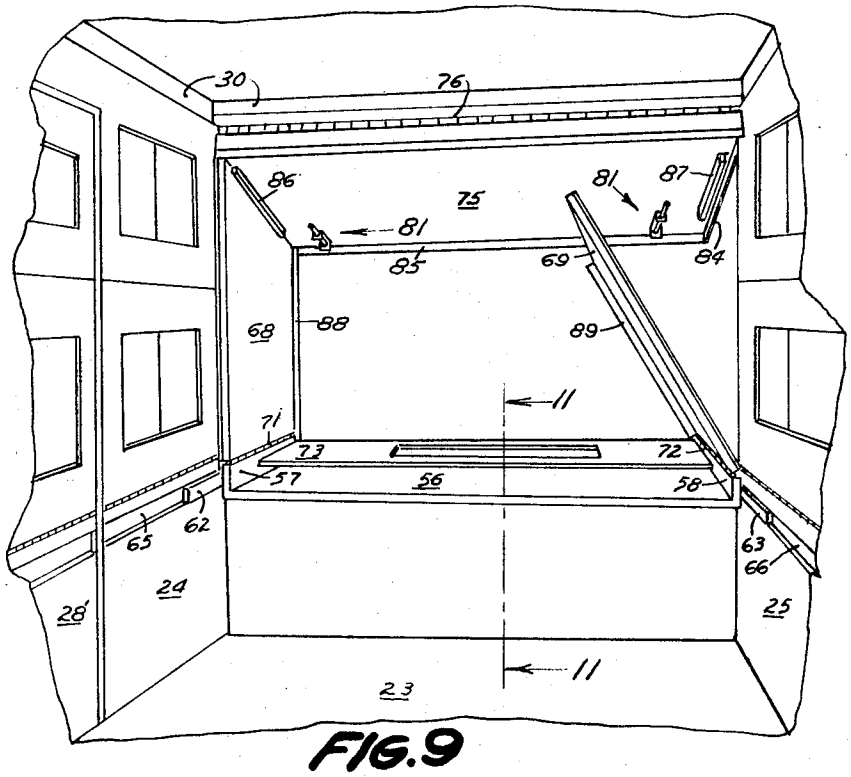


FIG.9

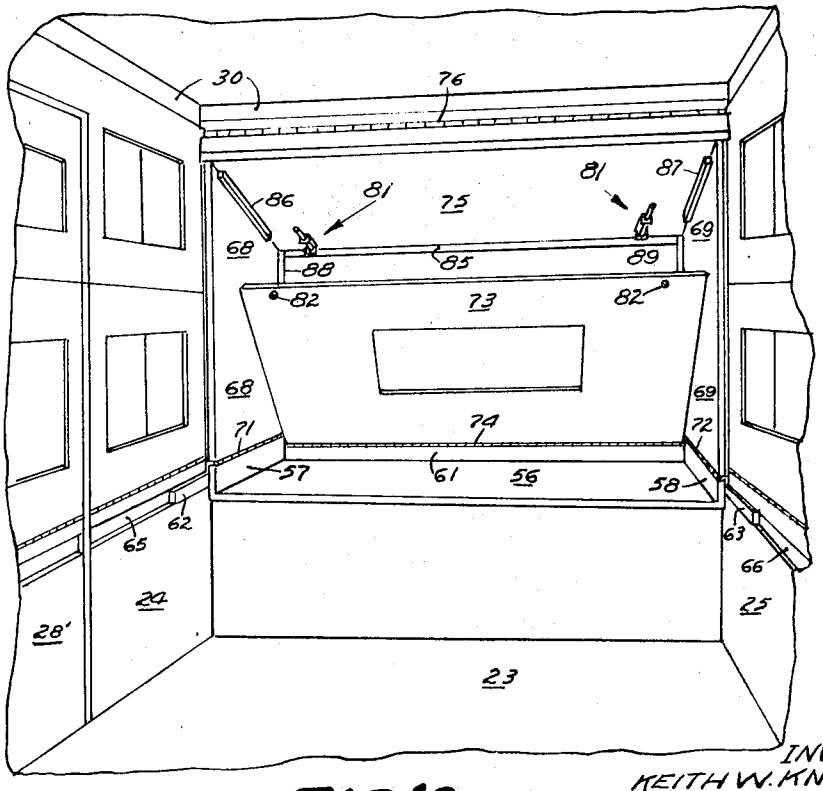


FIG.10

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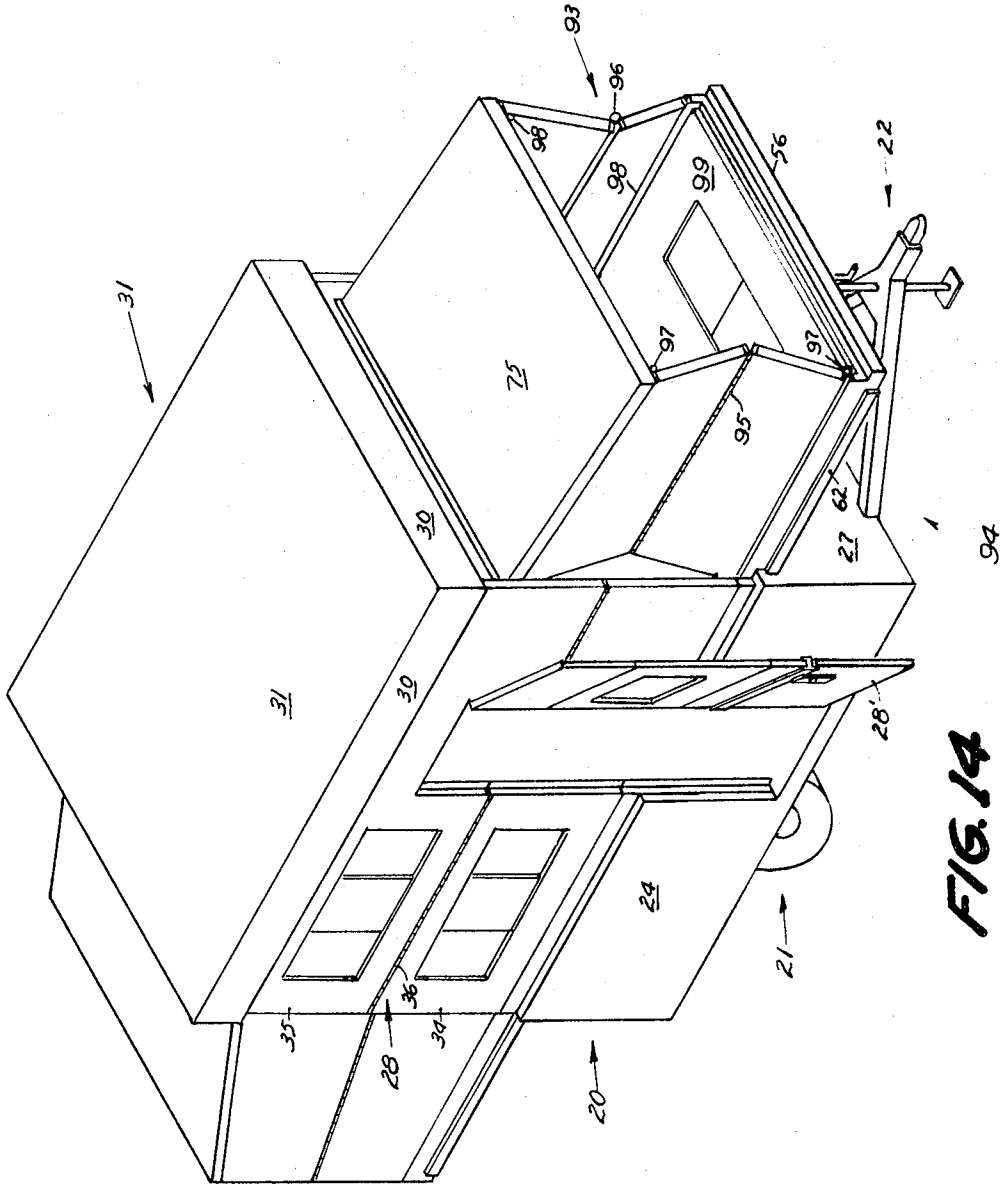


FIG. 14

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HARD PANEL FOLDOUT BUNK SHELTER

Camper trailers, of the expandable type having canvas or tarpaulin foldout bunk shelters, or the like, are quite uncomfortable to live and sleep in because the canvas or tarps of such foldout shelters become damp and clammy in rainy weather, are often too hot or too cold as they fluctuate with changes of outside temperatures, due to poor insulative properties, and present very little safeguard security. Huntsmen, fishermen and vacationers have all experienced the hinterland insecurity, and the discomfort of living under wet, cold or hot canvas for days at a time.

The purpose of this invention is to lessen the above disadvantages and provide a foldout bunk shelter that is impervious to rain, provides a relatively high degree of temperature insulation, and offers reasonable protective security, thereby resulting in a foldout bunk shelter of greatly increased living comfort and suitable for habitation over vacation and hunting periods, whatever the weather.

An object of this invention is the provision of a foldout bunk, for a camper trailer, distinguished by stable, hard, or rigid sidewall and roof panels having good water-impervious and temperature insulation properties suitable for the intended purpose.

Another object is to provide a foldout bunk, for a camper trailer, that is pivotally movable from a position within to a position without the trailer.

Yet another object is to provide a foldout bunk, for a camper trailer, that is supported for slidable movement from a position within to a position without the trailer, and wherein such support means terminates outwardly in cantilever support means.

Still another object is the provision of a foldout bunk having a pitched roof mounted on hard foldable sidewalls, said sidewalls being foldable along their median lines.

Other specific features and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings in which like reference numerals designate like parts throughout the figures thereof and wherein:

FIG. 1 is a perspective illustration showing a fully collapsed camper trailer, in its initial stage, preparatory to its erection;

FIG. 2 is a perspective illustration depicting the second stage of erection, wherein the camper roof is partially raised and the sides partially unfolded;

FIG. 3 is a perspective view illustrating the third stage of erection, wherein the camper shell is fully raised and erected, and showing the folded end bunk, interiorly of the trailer, pivotal outwardly as indicated by the arrow;

FIG. 4 is a perspective illustration disclosing the fourth stage of erection, showing the folded end bunk structure pivotally withdrawn from the trailer and with the roof swung out to an operative cover position;

FIG. 5 is a perspective view showing the fifth stage of erection, and showing one side panel of the end bunk shelter fully raised to an upright erected position;

FIG. 6 is a perspective view illustrating the sixth, and seventh or final, stages of erection, showing the remaining side panel and the end panel, respectively, fully raised and erected, thereby accomplishing a fully erected trailer camper including enclosed end bunk shelters;

FIG. 7 is a longitudinal section view taken on line 7—7 of FIG. 4 showing the collapsed bunk structure pivotally mounted on the trailer, and movable pivotally from a position within the trailer, as indicated by dotted lines, to a position outside the trailer as shown by solid lines;

FIG. 8 is a perspective view of camper trailer, absent the bunk structure, showing the roof support posts, and the crank and cable means for raising and lowering said shell to an erected and collapsed position, respectively;

FIG. 9 is an interior perspective view of a modification, looking outwardly toward one of the end bunk shelters, partially erected, showing slidable support means for supporting the outwardly movable floor of the bunk structure;

FIG. 10 is an interior perspective view, similar to FIG. 9, showing the final stage of erection wherein the end panel of the shelter is partially raised, and showing the releasable latch means on the roof panel for securing said end panel in erected position;

FIG. 11 is a fractional section view, taken on line 11—11 of FIG. 9, showing the collapsed bunk structure disposed within the trailer as indicated by the dotted lines, and slidably disposed outside the trailer as shown by the arrow and solid lines;

FIG. 12 is a section view taken such as on line 12—12 of FIG. 11, showing details of the slidable support means for the movable bunk floor;

FIG. 13 is an enlarged fragmentary view of the slidable support means of FIG. 12; and

FIG. 14 is a modification, in perspective view, showing the roof panel of the bunk shelter hingedly connected to the side panels of the bunk shelter itself, in lieu of being hingedly connected to the roof of the camper trailer, and wherein the side panels are foldable side panels in lieu of rigid side panels.

Referring now to the drawings, wherein like reference characters designate like or corresponding parts throughout the several views, there is shown in FIG. 8 a somewhat conventional collapsible or foldable vehicular camper trailer to which the present invention is applicable.

However, the invention is not limited to collapsible-type trailers, but is also adaptable to permanently erected wall trailers.

The vehicular trailer proper comprises a traylike body generally indicated at 20 supported on a wheeled chassis frame generally indicated at 21 and is provided with conventional bar hitch means such as generally indicated at 22 shown in FIG. 2. An open-ended shell structure, comprising a roof and sidewalls, provide a shelter or covering on the trailer as hereinafter described.

The traylike body 20 comprises a rectangular flat open-top box or base having a bottom 23, two sidewalls 24 and 25, and two end walls 26 and 27.

Inwardly foldable sidewall means generally indicated at 28 and 29, see FIGS. 8 and 12, pivotally interconnect the box sidewalls 24 and 25 with the downwardly extending side flanges 30 of the roof generally indicated at 31 by means of longitudinally extending hinges such as at 32 and 33, respectively, thereby providing a shell or shelter structure over the trailer box.

The foldable sidewall assembly 28 comprises a lower section 34 which is pivotally connected to an upper section 35 by means of a longitudinally extending hinge 36. Sidewall 28 includes a foldable door 28'.

The foldable sidewall assembly 29 comprises a lower section 37 which is pivotally connected to an upper section 38 by means of a longitudinally extending hinge 39.

Conventional elevating means for raising said roof and foldable sidewalls from a collapsed position to an erected position, see FIG. 8, comprise post support means generally indicated at 41, a cable system generally indicated at 42 connected to said roof and with said post support means, and rotary crank means 43 journaled in said body box and operatively connected with said cable system, whereby as said crank means is actuated in one direction the roof is raised; and as said crank is actuated in the opposite direction the roof is lowered.

The post support means comprises four hollow posts mounted at each corner of the trailer box, respectively, such as post 44, which is pin connected to the trailer box by means of pin 45 and held erected by means of friction clip 46. Said posts are pivotally movable downwardly to a horizontal position and held by a bracket such as at 47 mounted on said box, in a collapsed position, when the camper trailer as a whole is collapsed for travel from place to place.

A pin or pulley 48 is mounted in the upper end of post 44, and a companion pin or corner pulley 49 is mounted on the trailer box beneath the lower end of said post 44.

An endless cable **51** has one end wound around the crank means **43**, as at **52**, and the other end threaded through hollow post **44** and looped around pulley **48** at the upper end of aid post **44**. Intermediately, the endless cable passes over corner pulley **49**.

An arm **53**, secured to one run of the cable in said post, extends through a longitudinal slot **54** in said post, and engages a projecting bracket **55** mounted on said roof at the corner thereof. Said arm functions to carry said roof in up and down movement, as said crank is correspondingly actuated.

Similar elevating mechanism is provided at each other corner of the trailer box and roof, each operatively connected to said crank means, for raising the roof uniformly and level.

It is to be noted that the shelter shell of the basic camper trailer of FIG. **8** is shown without end closures. Said end closures of bunk openings of said shell are provided with extendable foldout bunk shelters to increase the living area beyond the box body **20** area, as hereinafter described and shown in FIGS. **1** through **6**, **9**, **10**, **11** and **12**.

In view of the fact that the foldout bunk structures at the front and rear ends of the trailer are identical, the following description of the bunk structure at the front end of the trailer will suffice for both bunk structures.

A rectangular movable platform or floor **56**, such as shown in FIG. **7**, is provided in the trailer having up-turned flanges around the edges thereof, such as side flanges **57** and **58**, and inner and outer flanges **59** and **61**, respectively. Said movable floor **56** is disposed horizontally and inverted, and spaced above the box or trailer floor **23** and at the front end opening of the shell, for an initial position, as indicated by dotted lines **56'**, and pivotally hinged to the front wall of the trailer box as by hinge **60**, see FIG. **7**; or said floor may be disposed horizontally and upright as indicated by dotted lines **56''**, see FIG. **11**, and be slidably supported on the trailer by guideway and slidable rail means, see FIGS. **9** and **10**.

Said slidably supported movable floor is provided with a pair of longitudinally disposed guide rails **62** and **63** mounted on the floor side flanges **57** and **58**, respectively, by any means, such as screws **64**, see FIGS. **9**, **10**, **12** and **13**.

Said guide rails are slidably supported in longitudinally disposed guideways or channel iron members **65** and **66** mounted on box sides **24** and **25**, respectively, by any means, such as screws **67**, see FIG. **13**.

Said guide rails extend rearwardly of the movable floor **56**, see FIGS. **9** and **10**, to provide cantilever support in the guideways when the movable floor is slidably disposed outwardly of said front end or bunk opening with the inner floor edge **59** disposed externally of and adjacent the lower edge portion of said bunk opening, for a final position. At its outer final position the floor is cantilever supported on the rails extended from their guideways.

The side, end, and roof panels hereinafter to be described are of stable material characterized by being hard, strong, and impervious to water, such as of wood, metal, or fiber glass material, foam core material, hollow construction, or the like, suitable for intended purpose.

A pair of such similarly configured stable side panels **68** and **69**, oppositely disposed, are hingedly connected at their lower edge portions to the edges of said side floor flanges **57** and **58**, respectively, by means of longitudinal hinges **71** and **72**, see FIGS. **9**, **10** and **12**, said stable side panels being movable from a collapsed position overlaying said floor **56** to a vertical erected position.

A stable end panel **73** is hingedly connected, at its lower edge portion, to the edge of the outer floor flange **61**, by means of longitudinal hinge **74**, said hard end panel being movable from a collapsed position overlaying the floor **56** to a vertical erected position.

It is understood that the floor flanges **57**, **58** and **61** vary slightly in height to accommodate and allow said side and end panels to fold over each other in a nested arrangement overlaying the floor.

Also, it is understood, that the stable side and end panels are of a size dimension to fall and collapse within the confines of the floor flanges.

Under normal conditions, a cushion mattress, or the like, not shown, on the bunk floor **56**, may support the collapsed side and end panels in a substantially horizontal position; otherwise said panels may be supported directly on said floor.

A stable roof panel **75**, dimensioned to suitably cover the zone defined by said erected stable side and end panels, is hingedly connected to said roof at the adjacent downwardly extended roof flange **30**, by means of longitudinal hinge **76**, see FIG. **7**, operative to swing from an initial position under and adjacent the trailer roof **31** as indicated by dotted lines **77**, through the end opening, and to a final position to overlay the upper edges of said erected side and end panels as indicated by arrow **78**. Any suitable releaseable means can be provided for securing said roof panel in its initial position at the underside of the trailer roof **31**, such as rotatable latch bar means generally indicated at **79**, see FIG. **7**. Also any suitable releaseable means can be provided for securing said roof panel in its final position to the erected end panel, such as slidable latch means generally indicated at **81**, see FIGS. **9** and **10**, said latch means being associated with latch receiving recesses in said end panel as indicated at **82**, see FIG. **10**.

Said roof panel means includes downwardly extending flanges **83**, **84** and **85** along the two side edges and end edge thereof respectively, see FIG. **9** and **7**.

A pair of elongated cleats **86** and **87** are mounted on the underside of roof panel **75**, spaced inwardly from and disposed along the side edge flanges thereof, respectively, see FIG. **9**. The slots or channels formed between said cleats and said roof side flanges are adapted to receive therein the upper edge portions of side panels **68** and **69**, respectively, for releaseable securement therein when said panels are functionally erected.

The vertical end edges of the side panels **68** and **69**, erected, are also provided with inwardly extending flanges **88** and **89**, respectively, see FIGS. **9** and **10**, to provide abutment stop means for end panel **73**, when said end panel is disposed erected and cooperatively secured by the latch means **81**. Roof end flange **85** also functions as abutment stop means for end panel **73**.

Operation: When one desires to erect the trailer from its collapsed and compact position as shown in FIG. **1**, one initially turns the rotary crank means **43**, see FIG. **8**, to start the raising of the trailer roof **31** and the associated side panels **28** and **29**, such as shown in FIGS. **2** and **8**.

Continued turning of the crank **43** eventually raises the trailer roof and associated sides to the fully erected position shown in FIG. **3**.

In the event one is dealing with the slidable bunk floor construction, one then grasps the floor means **56** and pulls said floor means and associated stable side and end panels thereon from a dotted position **56''** in the trailer to a position outwardly of the trailer, as indicated by arrow **90**, the floor means being slidably movable and supported on guide rails **62** and **63** slidably mounted in guideways **65** and **66**, see FIGS. **4**, **11** and **9**.

To erect the foldout bunk shell, one merely turns the rotatable latch **79**, see FIGS. **7** and **4**, to release the stable roof panel **75** from its stored roof position, as shown by dotted lines **77**, through the end opening of the trailer, and to an elevated position as shown by arrow **78**, and holds same elevated while erecting the side panels as follows.

To erect the stable side panels of the foldout bunk shelter, one merely pivotally raises stable side panel **68** to a vertical position as shown in FIGS. **5**, **7** and **9**, engaging the top end portion of said side panel in the slot or channel formed between cleat **86** and roof flange **83**.

To erect the other side panel, one pivotally raises such hard panel **69** to a vertical position as shown in FIGS. **6** and **9**, engaging the top end portion of said side panel in the slot or channel formed between cleat **87** and roof flange **84**.

Finally, the end stable panel **73** is pivotally raised, from within the trailer, to a vertical position abutting with side panel and roof flanges **88, 89** and **85**, respectively, and finally engaged in said erected position by means of slidable latch means **81**, see FIGS. **6** and **10**.

The corresponding foldout shelter means on the other end of the trailer is similarly unfolded, raised, and erected; and both foldout shelters are thus ready for occupation.

To fold, collapse, and store said foldout bunk shelters back into the trailer, one merely reverses the aforesaid erection operation.

One may provide a removable brace means **92** as shown in FIG. **11**, to provide greater stability and security to the pulled out floor means.

In the event one is dealing with the pivotally hinged bunk floor construction, see FIGS. **3** and **7**, wherein the floor is pivotally hinged as at **60**, and supported on cleats **60'** mounted on the trailer box sides **24** and **25**, by any means, one reaches into the trailer and grasps the free inner edge of the floor and movably pivots the floor upwardly and outwardly, from its initial dotted line position **56'** within the trailer to a final position outwardly of the trailer as indicated by arrow **102**. A removable brace means **101** interconnecting the floor **56** and the trailer wall **27** is provided to hold the floor in a stabilized horizontal position.

In erecting this pivotal construction, the roof panel **75** is likewise first released from its stored position **77**, swung outwardly, and manually held elevated while the side panels are being erected.

To provide pitch for the roof panel, it is preferred that said hard side panels have upper edges that decline from a high point at their inner ends adjacent said trailer to a relatively low point at their outer ends adjacent said stable end panel.

The modification shown in FIG. **14** illustrates a bunk shelter having stable foldable side panels generally indicated at **93** and **94**, foldable at their geometrical median lines by means of hinges **95** and **96**.

Said foldable side panels, pivotally interconnect the movable floor **56** with the roof **75** by means of longitudinally extending hinges such as indicated at **97** and **98**, respectively, in lieu of the roof being hingedly attached to the trailer roof as hereinbefore described. Thus, in this modified construction, the bunk shelter roof rides up and down with the attached foldable side panels.

The end panel **99** is hingedly mounted on the floor and is pivotally erectable to an upright position and secured as is end panel **73** hereinbefore described.

In this modification, the roof and connected foldable side panels are raised manually, and the end panel then erected and secured to hold the bunk shelter, erected and assembled, as hereinbefore provided.

This modification can have the floor thereof slidably supported on guideway and slidable rail means, or pivotally hinged, as hereinbefore described.

Some characteristic features of this invention are the provision of a foldout bunk shelter made of stable and impervious panels; the provision of a foldout bunk shelter having a pitched roof and foldable stable sidewalls foldable along median lines thereof; the provision of a foldout bunk shelter movable pivotally from a position within to a position without the trailer; and the provision of a foldout bunk shelter slidably supported for movement outwardly of the trailer, and wherein such support means terminates outwardly in cantilever support means.

Ovbiously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood, that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

What is claimed and desired to be protected by Letters Patent of the United States is:

1. In a camper trailer having a wall opening, a box base, and roof means, the combination of a collapsible, stable panel, foldout bunk shelter in said trailer movably associated with said opening, comprising,

a. a movable rectangular floor means initially horizontally disposed in said trailer at the lower edge portion of said opening,

b. support means movably mounting said floor means on said box base, for conveying said floor means from said initial position in said trailer, through said opening, to a substantially horizontal final position outwardly of said opening with the inner edge of said floor means disposed adjacent the lower edge portion of said opening,

c. a pair of substantially rectangular, rigid, similar, stable side panel means, oppositely disposed, having corresponding edges disposed along and adjacent the opposite side edges of said floor means, respectively,

d. first hinge means hingedly connecting said stable side panel means to said floor means at said corresponding edges and said opposite side edges, respectively, said side panel means being movable from a collapsed position overlaying said floor means to a vertical erected position, respectively,

e. a substantially rectangular stable end panel means having an edge thereof disposed along and adjacent the outer end edge of said floor means,

f. second hinge means hingedly connecting said stable end panel means to said floor means at said end panel edge and said floor outer end edge, respectively, said end panel mean being movable from a collapsed position overlaying said floor means to a vertical erected position,

g. a substantially rectangular stable roof panel means to cover the zone defined by said erected side and end panel means and overlay the upper edge of said erected side and end panel means,

h. third hinge means hingedly connecting said stable roof panel, at an edge thereof, to said trailer roof means operative to swing from an initial position under and adjacent said trailer roof, through said opening to a final position outwardly of said opening and overlaying the upper edges of said erected side and end panel means,

i. first releasable means for securing said stable roof panel means in its said initial position,

j. second releaseable means for securing said stable roof panel means, in its said final position, to said erected side and end panel means.

2. The apparatus of claim **1** wherein the support means is slidable support means.

3. The apparatus of claim **1** wherein the support means is pivotal support means.

4. The apparatus of claim **1** wherein the stable side panels, when vertically disposed, have upper edges sloping downwardly from a high point at their ends adjacent said trailer to a low point at their ends adjacent said stable end panel means.

5. The apparatus of claim **4** wherein the foldable stable side panel means are foldable along their median lines.

6. In a camper trailer having a wall opening and a box base, the combination of a collapsible, stable panel foldout bunk shelter in said trailer movably associated with said opening, comprising,

a. movable rectangular floor means initially horizontally disposed in said trailer at the lower edge portion of said opening,

b. support means movably mounting said floor means on said body base, for conveying said floor means from said initial position in said trailer through said opening to substantially horizontal final position outwardly of said opening with the inner edge of said floor means disposed adjacent the lower edge portion of said opening, said support means being adapted to reconvey said floor means to its said initial position in said trailer,

c. a pair of similar, foldable, stable side panel means, oppositely disposed, having corresponding lower edges disposed along and adjacent the opposite side edges of said floor means, respectively,

d. first hinge means hingedly connecting said side panel means to said floor means, at said corresponding edges and said opposite side edges, respectively, said side panel means being movable from a position overlaying said floor means to a vertical erected position,

e. stable end panel means having a lower edge thereof disposed along and adjacent the outer edge of said floor means,

f. second hinge means hingedly connecting said end panel means to said floor means at said end panel lower edge and said outer end floor edge respectively, said end panel means being movable from a position overlaying said floor means to a vertical erected position,

g. stable roof panel means disposed over and adjacent the upper edges of said side panel means,

h. third hinge means hingedly connecting said stable roof panel means, at its side edges, to the upper edges of said side panel means, respectively, said roof means being movable from a collapsed position overlaying said floor to an elevated erected position along with said erectable side panel means, and

i. releaseable means for securing said erected stable end panel means to said erected stable roof panel means.

7. The apparatus of claim **6** wherein the support means is slidable support means.

8. The apparatus of claim **10** wherein the support means is pivotal support means.

9. The apparatus of claim **6** wherein the foldable stable side panel means, when vertically disposed, have upper edges sloping downwardly from a high point at their ends adjacent said trailer to a low point at their ends adjacent said end panel means.

10. The apparatus of claim **9** wherein the foldable stable side panel means are foldable along their median lines.

11. The apparatus of claim **7** wherein the slidable support means support the floor means, in its final outward position, in cantilever fashion.

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