Nov. 14, 1967 W. G. MARTIN 3,352,312

COLLAPSIBLE CAMPING UNIT

Filed Nov. 16, 1965 4 Sheets-Sheet 1

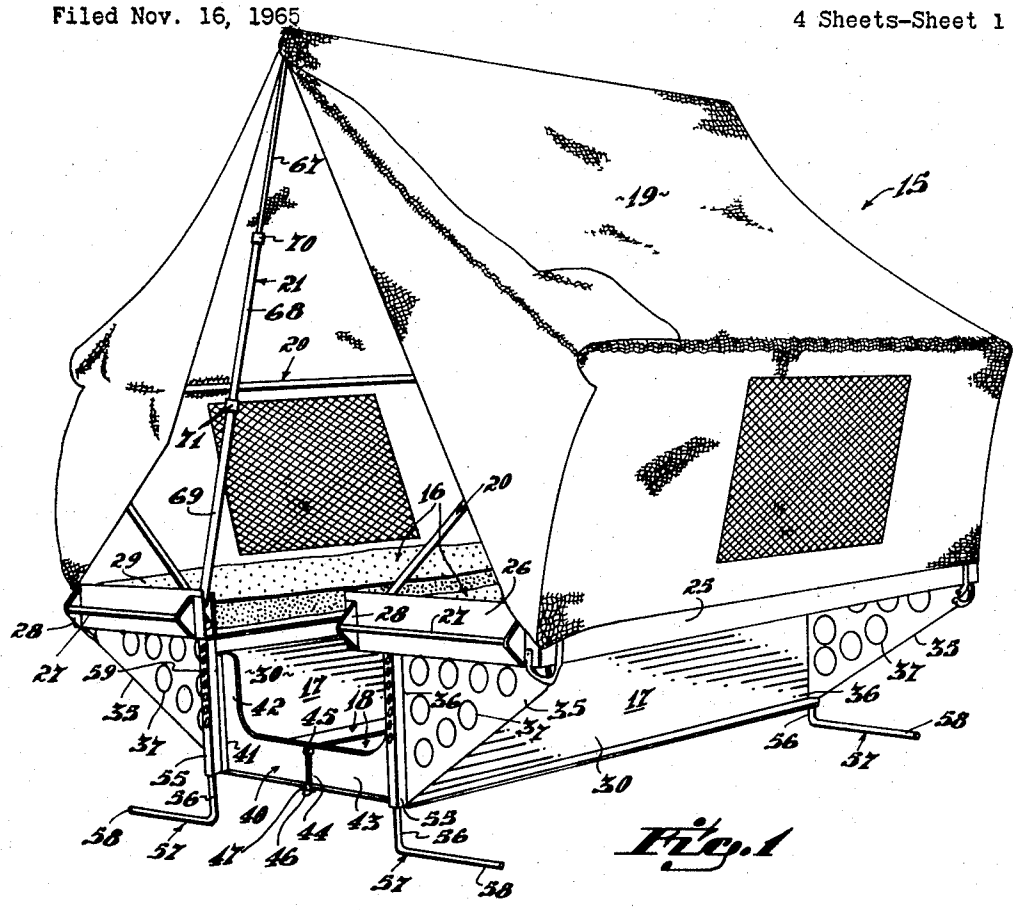


Fig. 1

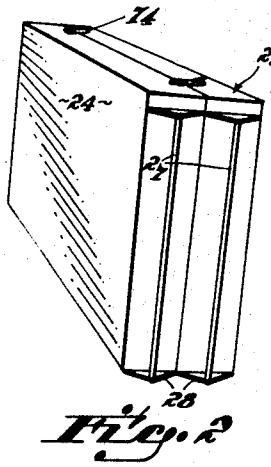


Fig. 2

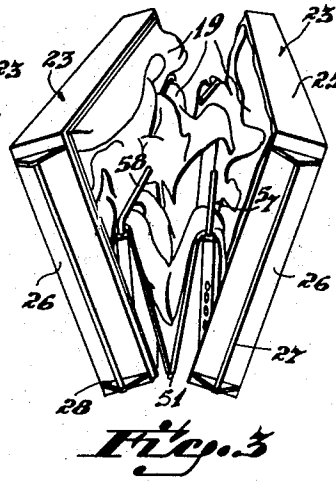


Fig. 3

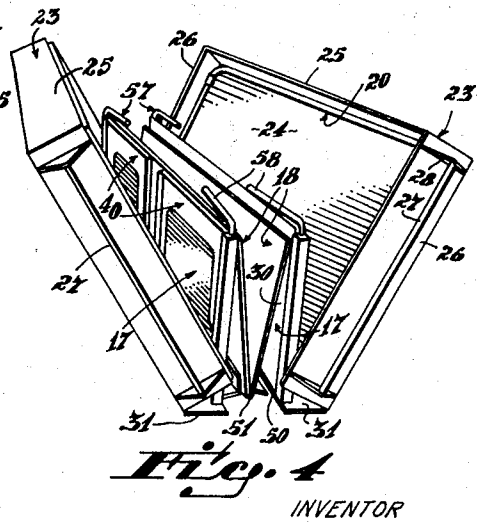


Fig. 4

INVENTOR
William G. Martin
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 14, 1967 W. G. MARTIN 3,352,312

COLLAPSIBLE CAMPING UNIT

Filed Nov. 16, 1965 4 Sheets-Sheet 2

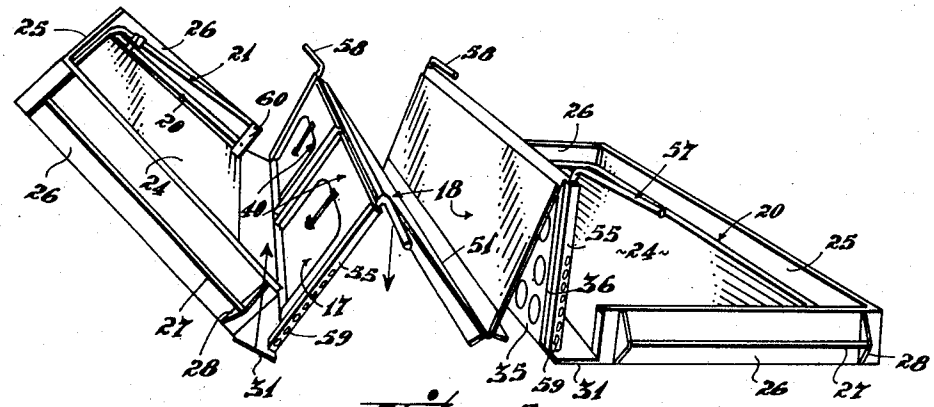


Fig. 5

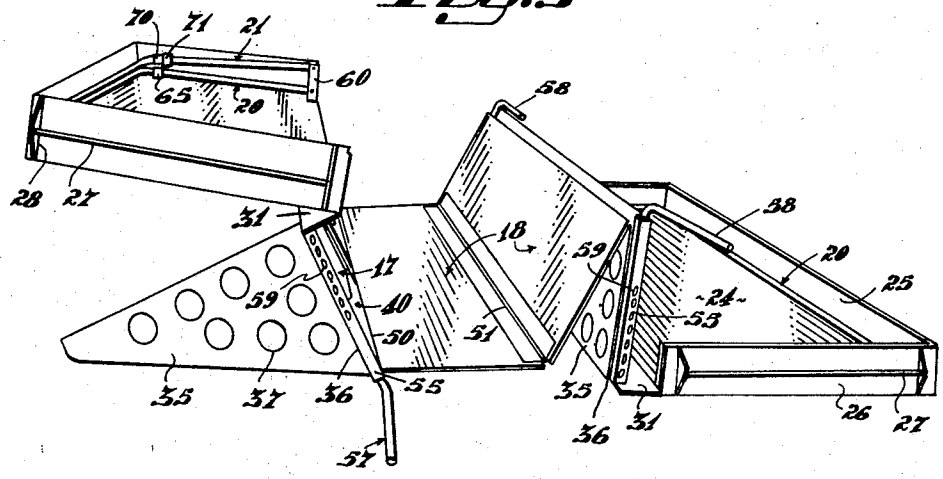


Fig. 6

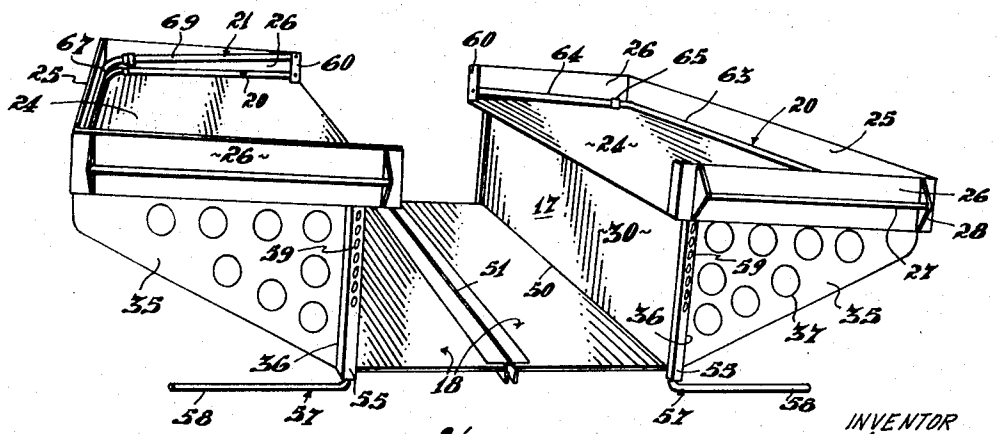


Fig. 7

INVENTOR
William G. Martin
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 14, 1967 W. G. MARTIN 3,352,312

COLLAPSIBLE CAMPING UNIT

Filed Nov. 16, 1965 4 Sheets-Sheet 3

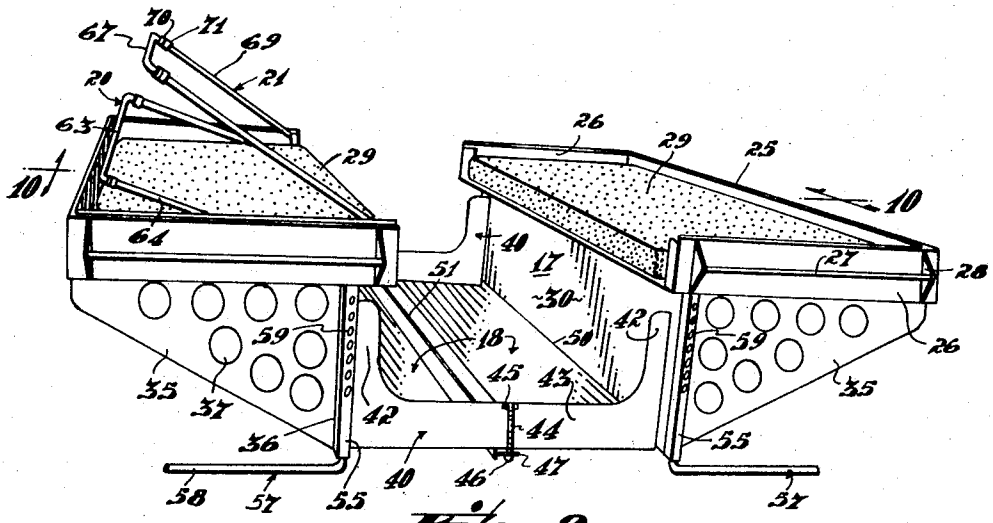


Fig. 8

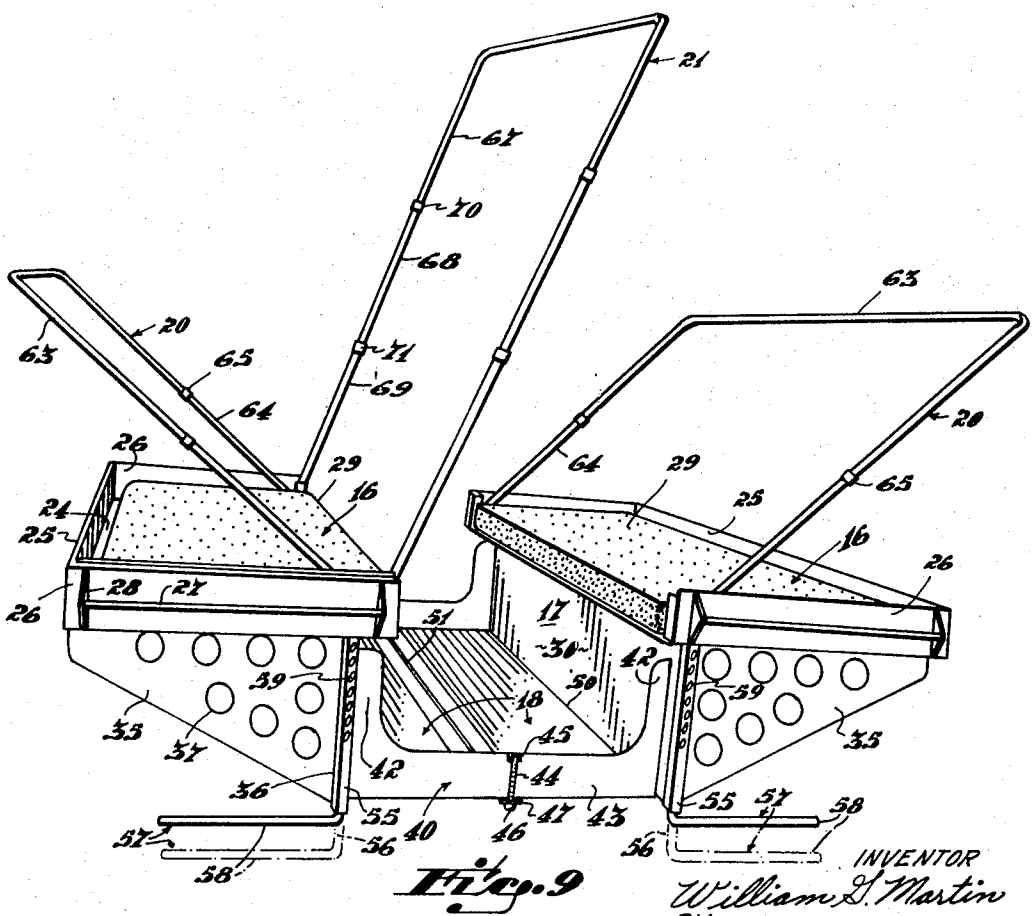


Fig. 9

INVENTOR
William G. Martin
BY
Wood, Herron & Evans
ATTORNEYS

Nov. 14, 1967 W. G. MARTIN 3,352,312

COLLAPSIBLE CAMPING UNIT

Filed Nov. 16, 1965 4 Sheets-Sheet 4

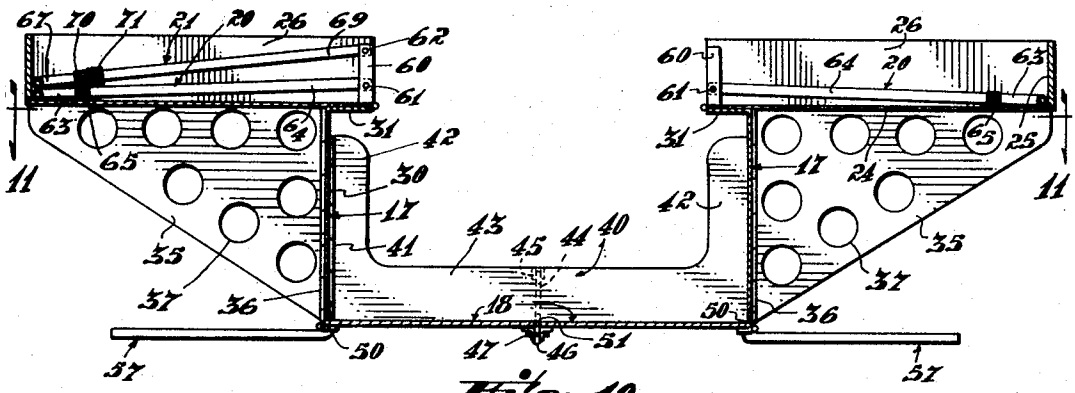


Fig. 10

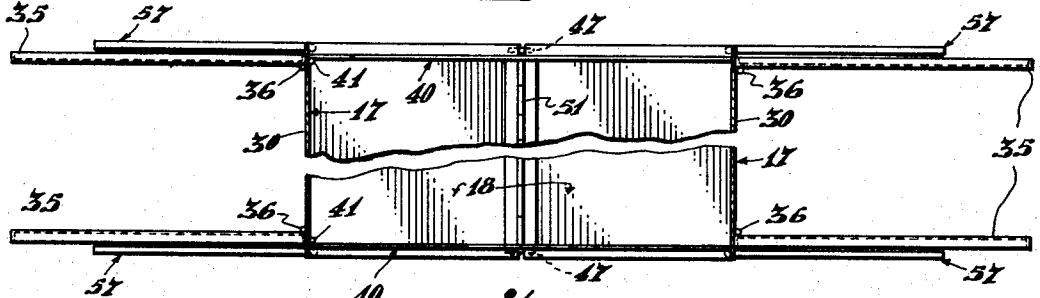


Fig. 11

INVENTOR
William G. Martin
BY
Wood, Herron & Evans
ATTORNEYS

United States Patent Office 3,352,312
Patented Nov. 14, 1967

3,352,312

COLLAPSIBLE CAMPING UNIT

William G. Martin, 7235 Shawnee Run Road, Cincinnati, Ohio 45243

Filed Nov. 16, 1965, Ser. No. 508,059
9 Claims. (Cl. 135—1)

ABSTRACT OF THE DISCLOSURE

A collapsible camping unit having two bunks supported above the ground and a tent structure enclosing said bunks; the bunks, supporting structure and tent structure adapted to be folded into a rectanguar container.

This invention relates to a camping unit containing bunks and tent structure which is adapted to be mounted on top of a car or in the back of a station wagon.

An objective of the invention has been to provide a camping unit which when folded forms a flat, thin, clean package, all elements of which are contained within two casing halves. The unit of the present invention is adapted to be easily unpacked and erected with the bunks supported above ground and a tent structure mounted over the bunks.

The prior art relating to devices of this type is found in part in the wheeled trailer units which are presently in widespread use and in part in the patent literature. Except for the occasional homemade camping unit, the art is barren of any self-contained camping units which are carried on or in an automobile. There are a few such units shown in the patent literature but none has enjoyed any commercial acceptance. The lack of commercial acceptance probably arises out of one or more of the following disadvantages. In adapting the units for collapsing into a convenient package, complexities of structure have been introduced to the extent that the units are so difficult to manufacture that the camper would prefer to travel with a simple tent and separate cots. Further, it has not been possible to enclose all of the necessary components (bunks, canvas, tent poles, and the like) in a single container of reasonable size, and, as a consequence, the parts must either be detachably mounted on the container structure or carried eleswhere in the automobile. The result is the lack of desired simplicity and/or a rather unsightly unit. Where provision has been made for enclosing the unit entirely in a container, the resultant container is so large that it cannot be conveniently handled.

The present invention eliminates the disadvantages of the prior art camping units and provides a unit in which all of the essential components are contained within a casing, these components including a tent and supporting poles, bunks including mattresses, vertical walls for supporting the bunks well above the ground, and a floor between the supported bunks. It has been possible to provide such a self-contained unit through an ingenious interrelationship of six panels or panel like members, the panels being hinged together on five pivotal axes for convenience of manipulation in the erecting and folding operations. Further, bracing and support elements have been pivoted to respective panels in such a way as to admit of compact folding and to admit of easy and rapid swinging into position whereby the unit can be either erected or collapsed and folded in a matter of less than five minutes.

A further objective of the invention has been to provide a camping unit having two casing halves which form bunks when erected, the casing halves being supported on two vertical wall panels and the vertical walls being connected by a pair of hinged floor panels. Braces and

support legs have been provided to strengthen or rigidify the unit and to support it in that condition well above ground.

In attaining this objective, it will be seen that the structure required for the camping unit amounts to little more than what is needed by the camper who carries his components separately, that is, his tent, poles, stakes, bunks, mattresses, and the like. This has been achieved by giving dual functions to several of the structural elements. For example, the casing halves double as bunks and the wall panels form bunk supports as well as enclosure members.

In summary, the invention includes a pair of laterally spaced horizontal casing halves which form bunks, a pair of vertical panels hinged to and depending from the adjacent edges of the casing halves, a pair of horizontal floor panels hinged to the lower edges of the vertical panels and to each other, the floor panels being pivotable to lie againgst the vertical panels, the vertical panels being pivotable to lie against the casing halves, and the casing halves having means to join them together to form a package or container enclosing the panels.

The several features of the invention will become more readily apparent from the following description taken in conjunction with the accompanying drawings in which:

FIG. 1 is a perspective view of the invention showing the unit erected,

FIG. 2 is a perspective view of the unit illustrating its appearance when all of the elements are collapsed and folded within the casing halves,

FIGS. 3–9 are perspective views illustrating sequentially the steps required for erecting the unit, the tent canvas having been eliminated from FIGS. 4–9 for clarity,

FIG. 10 is a cross sectional view taken along lines **10—10** of FIG. 8, and

FIG. 11 is a cross sectional view taken along lines **11—11** of FIG. 10.

A fully erected camping unit constructed in accordance with the present invention is illustrated at **15** in FIG. 1. The unit comprises two bunks **16** supported above the ground by wall panels **17**, the wall panels being spaced from each other by a pair of floor panels **18**. A tent canvas **19** is fastened at its lower edges to the bunks and is supported above the bunks by two U-shaped wall poles **20** and a U-shaped center pole **21** whose bight portion forms the ridge pole for the tent canvas.

As shown in FIGS. 2 and 3, the entire unit is collapsible and is adapted to fold within two casing halves **23** to form a long, thin, flat package which is easily carried on the top of an automobile or on the deck of a station wagon. Each casing half forms a main bunk element and includes a bottom wall **24**, a side wall **25**, and two end walls **26**, handles **27** being attached to the end walls by brackets **28**. To complete the formation of each bunk, a mattress **29** is supported on the bottom wall **24** and remains in that position even when the structure is folded and packaged within the casing halves.

Each vertical wall panel includes a flat web **30** having a laterally projecting flange **31** along the upper edge. The flange **31** is hinged on a horizontal axis to the edge of the bottom wall **24** of its respective casing half. When the casing halves are closed as shown in FIG. 2, the flanges **31** form one side wall of each casing half. When the structure is erected, the flange **31** lies flat in engagement with the undersurface of the bottom wall **24** of the casing half and thereby provides a bearing surface for the support of the bunk structure and occupant.

A pair of lateral braces **35** are pivoted on vertical axes **36** to the wall panels **17** and are adapted to swing flat against the web **30** of the wall panel for storage within the casing halves and to swing laterally outwardly to a posi-

tion underlying the ends of a respective bunk **16** to provide along with the wall panel **17** a support for the bunk. The braces **35** are preferably of a triangular shape and have a substantial amount of their metal removed as indicated by the holes **37** so that the structure can be light in weight without any sacrifice in its strength. No latches are required to hold the braces **35** in engagement with the casing halves for the weight of the bunk on their upper edges holds them in position.

A pair of U-shaped inner braces **40** are pivoted on vertical axes **41** to one of said wall panels **17** on its inside surface, that is, the surface opposite the lateral braces **35**. The braces **40** lie flat against the wall panel **17** when the unit is folded for storage. When the unit is erected, the braces **40** are swung laterally across the space between the two wall panels, the braces having side edges **42** engaging the wall panels and a bottom edge **43** engaging the floor panels, one of the side edges being the vertical pivotal axis **41**. Intermediate the side edges **42**, the brace is clamped to the floor panels by a bolt **44** which is pivoted at its upper end **45** and is threaded at its lower end to carry a wing nut **46** and a clamping bar **47**. The clamping bar **47** engages the underside of the floor panels and, upon tightening of the wing nut **46**, draws the floor panels up against the bottom edge **43** of the brace **40**. When in position, the brace **40** strengthens and rigidifies the entire structure.

Each floor panel is hinged along a horizontal axis **50** to a respective wall panel **17**, the floor panels being hinged to each other as at **51** along a horizontal axis through the center of the structure. The floor panels are substantially the same width as the webs **30** of the wall panels and lie against the outside surface of the wall panels overlying the lateral braces **35** when the structure is folded and encased in the casing halves for storage.

A tubular bracket **55** is fixed to each vertical edge of each wall panel, the bracket **55** slidably receiving a vertical element **56** forming part of an L-shaped support leg **57**. The leg **57** has a horizontal ground engaging element **58**. The tubular bracket has a series of vertically spaced holes **59** into which a pin may be positioned to limit the upward penetration of the leg into the bracket, thereby determining the elevation of the structure above ground. Thus, the camping unit may be supported well above ground and, because of the independent adjustability of each leg **57**, the camping unit can be levelly supported on hilly terrain or even along streams where the bank is of insufficient width to accommodate the camper.

The inside corners of each casing half have plates **60** spaced from the end walls **36**, thereby forming brackets to receive the ends of the U-shaped tent poles. One of the casing halves receives the wall pole **20** whose lower ends are pivoted by a pin **61** between the bracket and end wall **26** at the respective ends of the casing half. The opposite casing half has a U-shaped wall pole **20** similarly pivoted at its ends on pins **61** and a center pole **21** pivoted on pins **62** above the pins **61** at the ends of the casing half. Each of the wall poles has at each end an outer leg **63** telescoping into an inner leg **64**, the legs being adapted to be secured to each other in fixed relation by a clamping nut **65**. The center pole **21** has at each end an outer leg **67** telescoping into an intermediate leg **68** which in turn telescopes into an inner leg **69**, the legs being adapted to be fixed with respect to each other with clamping nuts **70** and **71**.

The tent canvas is shaped to be mounted on the center and two wall poles and is fastened to the bight portion of these poles by suitable straps. The lower edges of the tent canvas are secured by snap fasteners to the walls of the respective casing halves.

In the operation of the invention, the sequence of steps employed to erect the camping unit are subject to considerable variation depending upon the choice of the users. The sequence described below is set forth to illustrate one way in which the camping unit is erected and to illustrate the operative relationship of the elements.

As shown in FIG. 2, the casing halves are closed with the camper structure enclosed within the casing halves, the halves being joined together by toggle locks **74**. The toggle locks are unfastened and the casing halves spread apart as shown in FIGS. 3 and 4. FIG. 3 illustrates the unit with the tent canvas and mattresses contained within the unit. In the remaining illustrations, the tent canvas is removed for clarity. As shown in FIGS. 3 and 4, the horizontal ground engaging elements **58** of the legs **57** have been swung inwardly to their storage position so as to be enclosed between casing halves.

In the sequence illustrated in FIGS. 3, 4, and 5, the casing halves are spread apart and one of them is laid upon the ground. In these views, it can be seen that the six generally planar elements, namely, the casing halves **23**, the wall panels **17**, and the floor panels **18** are serially joined together on five horizontal axes and are accordion folded in the stored condition.

With the unit in the condition shown in FIG. 5, the left wall panel is inverted from the position of FIG. 5 to that of FIG. 6, the pivot axes along each edge being swung in the direction of the arrows of FIG. 5. This movement brings the attached floor panel **18** down to a horizontal position and raises the casing half **23** into its elevated bunk-forming position. The ground engaging elements **58** and the braces **35** are swung to their lateral support positions in which the braces **35** support the bottom of the casing half and in which the ground elements support the vertical wall panel **17** and with it the bracing and casing half. The operation is repeated for the right side of the unit so that the unit attains the condition shown in FIG. 7. At this stage, it may be found desirable to erect the tent canvas and its support poles in order to get the canvas out of the way of the inner braces **40**. The erection of the tent canvas is illustrated in FIGS. 8 and 9 taken in conjunction with FIG. 1 wherein it can be seen that the tent poles are pivoted upwardly on their pins **61** and **62**. With the clamping nuts loosened, the telescoping members of the respective supports are extended until the canvas is spread as illustrated in FIG. 1, whereupon the clamping nuts are tightened.

The braces **40** are swung from their position lying against one of the vertical walls **17** across the floor panels **18** to bring the side edges **42** into engagement with the respective wall panels **17**. The bolt **44** on each brace **40** is swung downwardly and with the clamping bar **47** in engagement with the undersurface of the floor panels at their common pivoted axis, the wing nut **46** is tightened to clamp the floor panels against the bottom edge **43** of the brace **40**.

Nothing more is required to bring the unit in condition for use. However, if the terrain on which the unit is erected is not completely level or if it is desired to raise the unit, it may be found desirable to extend one or more of the legs **57** with respect to the bracket **55** in which it is mounted, the legs being maintained in a selected position by the introduction of a retaining pin into a selected hole **59**.

To return the unit to a collapsed, folded, and stored condition as illustrated in FIG. 2, the sequence of steps is merely reversed.

I claim:

1. A camping unit adapted to be folded into a casing, said unit when erected comprising,

a pair of laterally spaced horizontal casing halves,

a pair of vertical panels hinged to and depending from the adjacent edges of said casing halves,

a pair of horizontal floor panels hinged to the lower edges of said vertical panels and to each other,

a tent and means mounted on said casing halves for supporting said tent over said casing halves,

said floor panels being pivotable to lie against said vertical panels, said vertical panels being pivotable to lie against said casing halves, and

means for joining said casing halves together to enclose said panels, tent, and tent supporting means when said unit is collapsed.

2. A camping unit adapted to be folded into a casing, said unit when erected comprising,

a pair of laterally spaced horizontal casing halves,

a pair of vertical panels hinged to and depending from the adjacent edges of said casing halves,

a pair of horizontal floor panels hinged to the lower edges of said vertical panels and to each other,

said floor panels being pivotable to lie against said vertical panels, said vertical panels being pivotable to lie against said casing halves, and

means for joining said casing halves together to enclose said panels when said unit is collapsed.

3. A camping unit according to claim 2 in which each casing half comprises a bottom wall, an outside wall and two end walls, and in which each said vertical panel has a laterally projecting flange whose edge is hinged to said bottom wall, thereby forming the hinged connection of said vertical panel to said casing half, said flange forming a side wall of said casing when said casing halves are joined together.

4. A camping unit according to claim 2 further comprising a mattress disposed in each casing half and forming a bunk with each casing half.

5. A camping unit according to claim 2 further comprising an L-shaped support leg mounted at each vertical edge of said vertical panels, said leg having a vertical element pivoted to said panel and a horizontal ground engaging element, said ground engaging element projecting laterally outwardly and adapted to swing into the plane of said vertical panel when said panel is folded within said casing.

6. A camping unit according to claim 2 further comprising a pair of bunk braces pivoted on a vertical axis at the ends of each said vertical panel, said braces being

pivotal to a laterally outward position underlying and engaging the undersurface of a respective casing half and being pivotal to lie against said vertical wall when said vertical wall is folded within said casing half.

7. A camping unit according to claim 2 further comprising a U-shaped brace at each end of said unit, each said brace having a lower edge extending across said floor panels and vertical edges in engagement with said vertical panels, one of said vertical edges being hinged to one of said vertical panels to permit said brace to be swung against said vertical panel.

8. A camping unit according to claim 7 further comprising means on said brace for holding said floor panels up against the lower edge of said brace.

9. A camping unit according to claim 2 further comprising a U-shaped tent support having its ends pivoted to one of said casing halves, the bight portion of said tent support forming a ridge pole for a tent, a U-shaped side wall support pivoted to each casing half, and a tent canvas mounted on said casing halves and configurated to be held in erected condition by said supports, said supports and canvas being adapted to be collapsed and disposed within said casing halves when said casing halves are joined together.

References Cited

UNITED STATES PATENTS

2,071,644	2/1937	McBrady	190—2
2,640,999	6/1953	Sheppard	135—4
2,658,212	11/1953	Green	135—4
2,804,083	8/1957	Wieber	135—4
2,930,051	3/1960	Kampmeier	135—1 X

FOREIGN PATENTS

861,064	2/1961	Great Britain.

EARL J. WITMER, *Primary Examiner.*

PETER M. CAUN, *Examiner.*