United States Patent

Radtke

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[45] **Sept. 19, 1972**

[54] **MOBILE OUTDOOR DISPLAY UNIT**

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[21] Appl. No.: **141,710**

[52] **U.S. Cl.** **296/21,** 296/26, 52/69

[51] **Int. Cl.** **B60p 3/02**

[58] **Field of Search**.....296/23 R, 26, 21, 27; 52/69

[56] **References Cited**

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Primary Examiner—Philip Goodman

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[57] **ABSTRACT**

A mobile display unit is provided which can be expanded on location to provide a shelter for the display of merchandise, the unit being so constructed that, when in the expanded condition, it is capable of protecting the merchandise from environmental weather conditions and from access by unauthorized persons.

7 Claims, 6 Drawing Figures

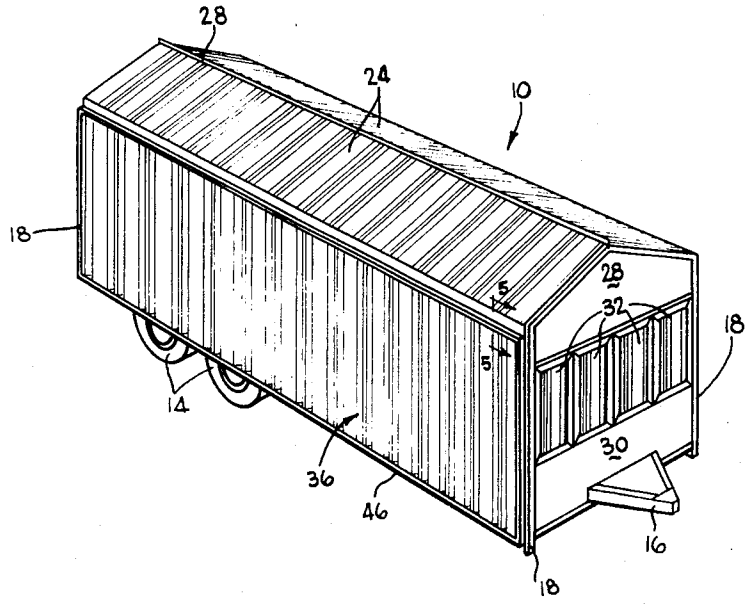


FIG.1

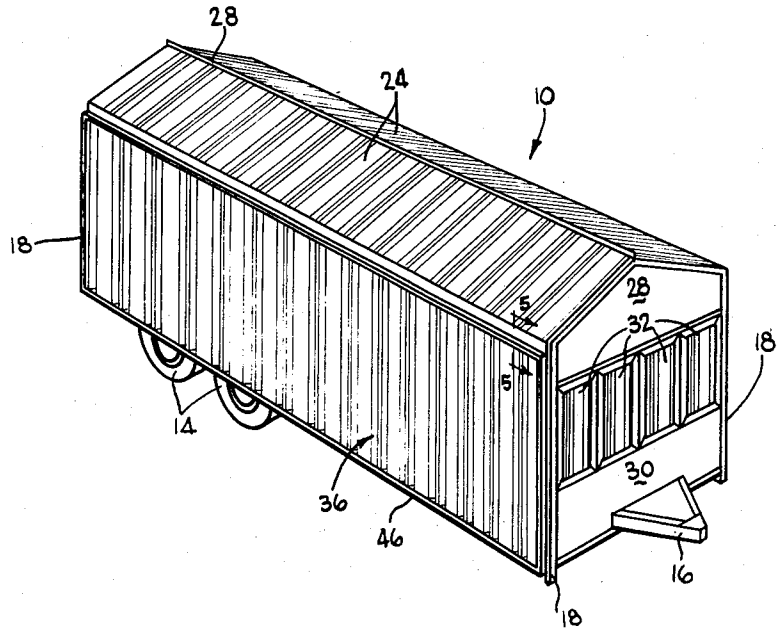
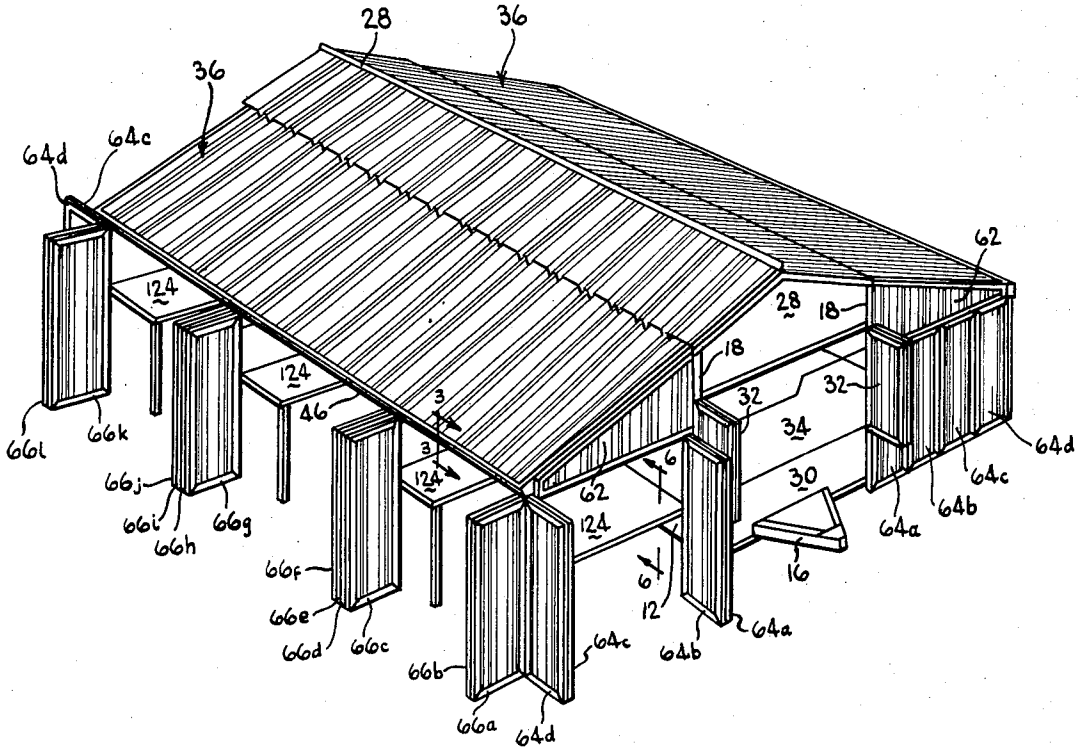


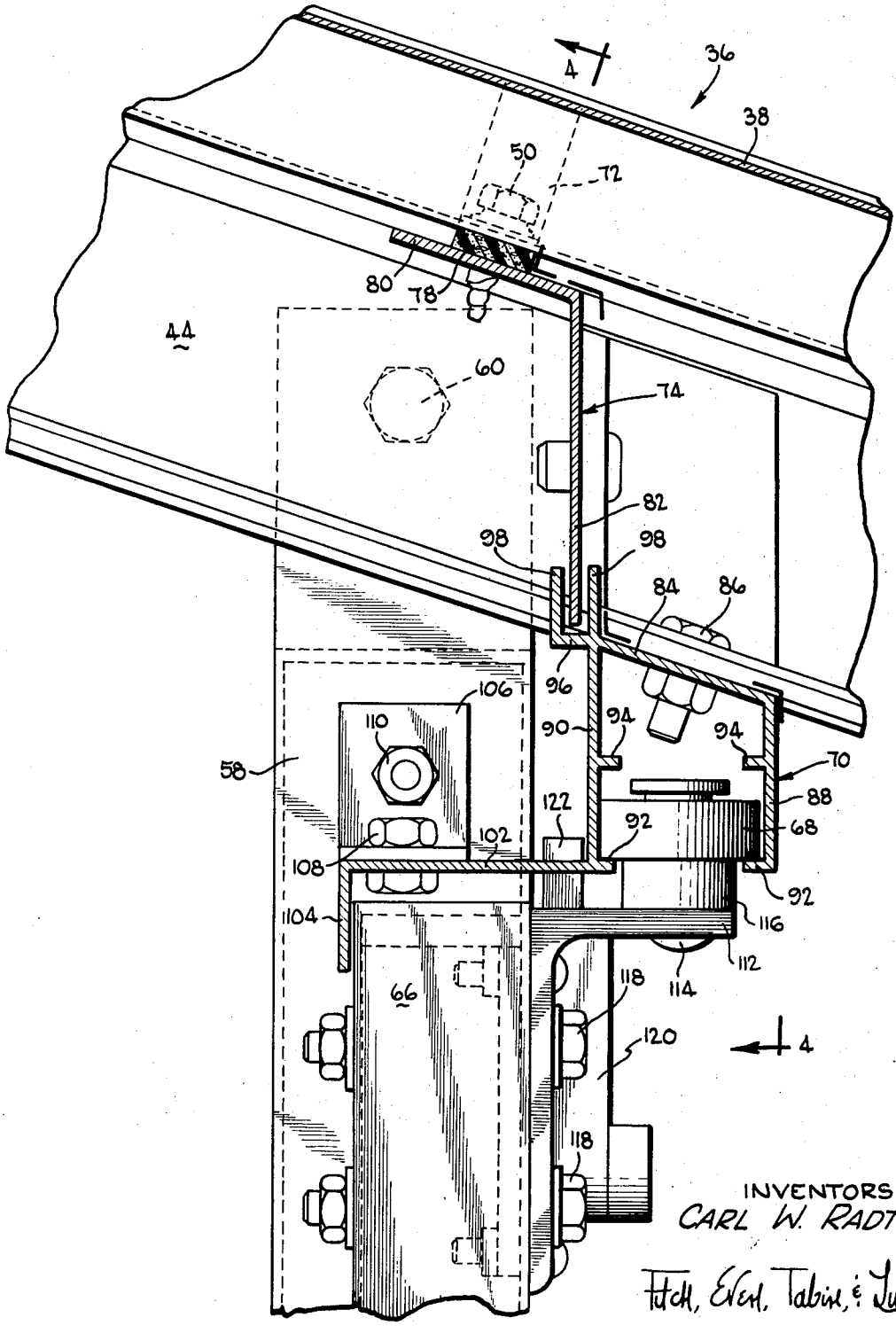
FIG.2



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FIG.3



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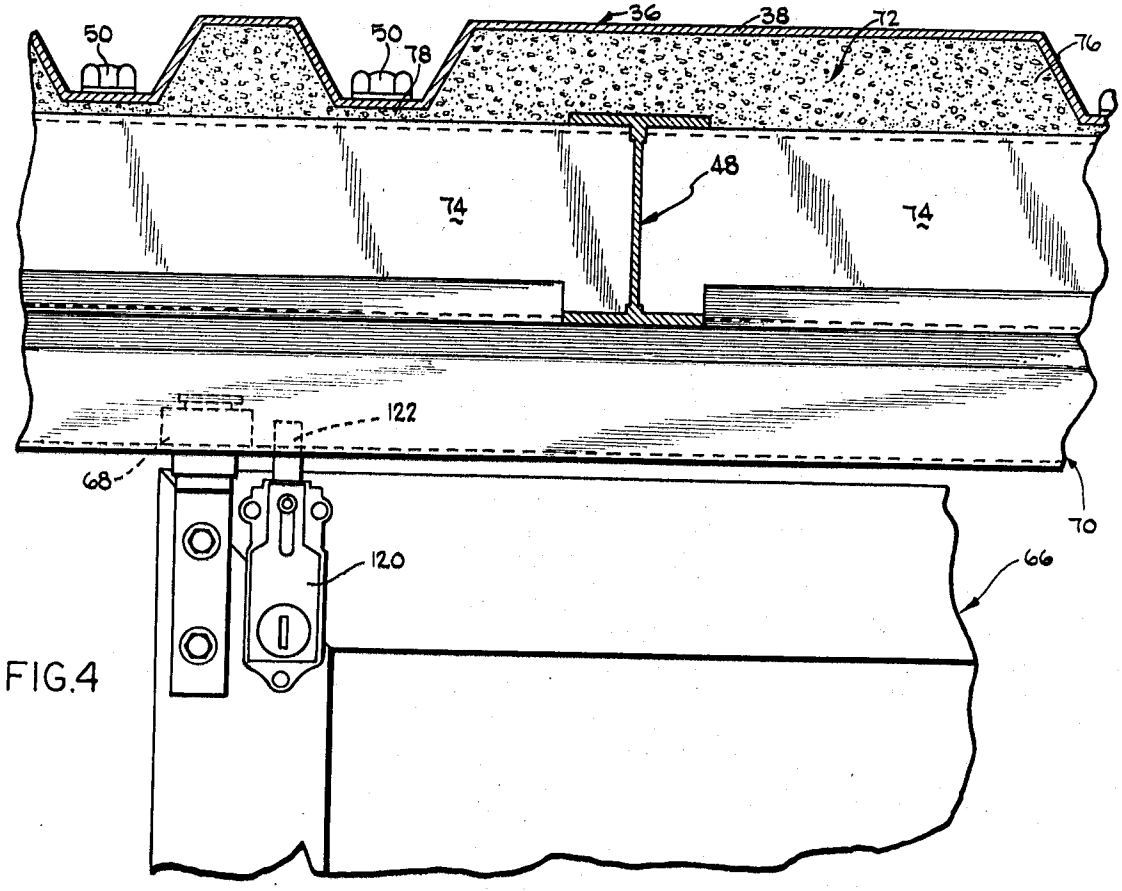


FIG.4

FIG.5

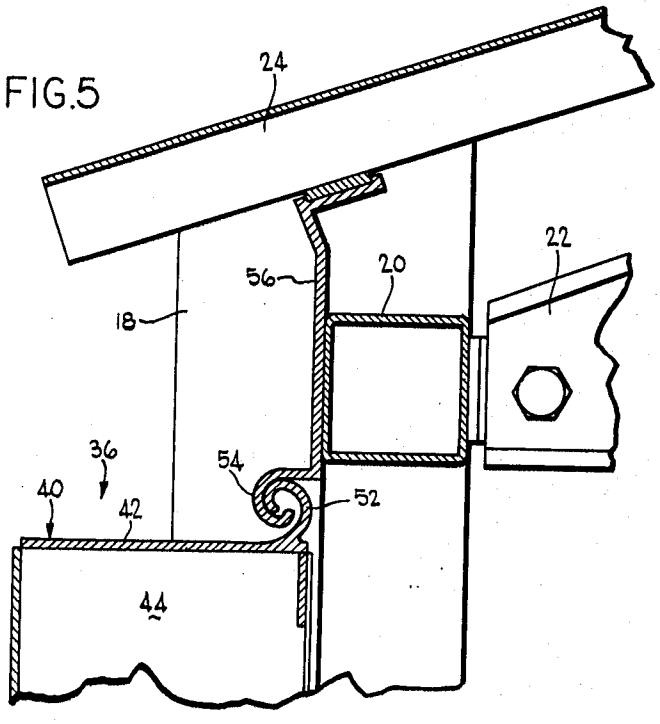
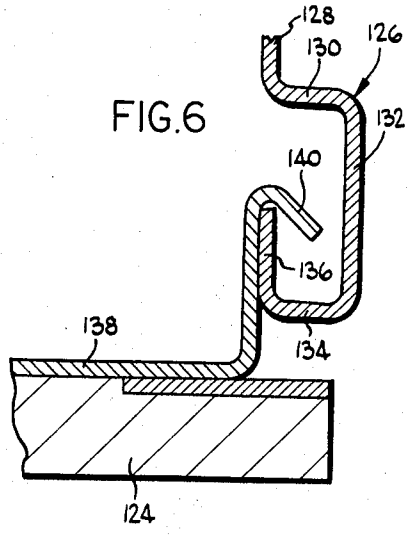


FIG.6



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MOBILE OUTDOOR DISPLAY UNIT

The present invention relates to outdoor shelters adapted to be used for the display and sale of merchandise and, more particularly, to shelters which are collapsible and transportable so as to be readily moved to and set up at different locations.

In the merchandising of certain products, where a shelter of some form is desirable for the convenience of customers, it is not practical to erect a permanent or even a temporary building solely for that purpose. This is particularly true in the merchandising of seasonal products such as flowers, fruits and vegetables. It is also true for merchandise which is marketed most efficiently, from an economic standpoint, only periodically as opposed to continuously at any given location. Thus, certain merchandise such as flowers and plants may be most effectively marketed during warm weather in some areas only on weekends and holidays. It is ideal under such circumstances to set up a marketing facility at a large open area which provides ample parking but to remove such facility after the periods of peak activity.

Accordingly, it is advantageous to market such merchandise from a mobile unit which can be moved from one location to another and which includes ample interior storage space to transport the merchandise to and from each location. Preferably, the unit is adapted to be opened or expanded on location to increase its available display area and to render it similar in appearance and function to a permanent stationary shelter. In addition, the unit should be capable of protecting the merchandise and customers from inclement weather in the event that such becomes necessary.

It is the principal object of the present invention to provide an improved portable shelter for the display of merchandise.

Another object of the invention is to provide an improved portable shelter which can be expanded at location to provide a shelter for the display of merchandise.

A further object of the invention is to provide an improved portable shelter for the display of merchandise, which shelter is capable of protecting merchandise and customers from inclement weather.

These and other objects and advantages of the invention will become apparent with reference to the following description and the accompanying drawings.

In the drawings:

FIG. 1 is a perspective view of a mobile unit capable of being expanded on location to provide a shelter for the display of merchandise;

FIG. 2 is a perspective view of the unit of FIG. 1 in a partially expanded condition showing various of the display surfaces available for merchandise;

FIG. 3 is an enlarged fragmentary sectional elevational view taken along line 3—3 of FIG. 2;

FIG. 4 is a fragmentary sectional elevational view taken along line 4—4 of FIG. 3;

FIG. 5 is an enlarged fragmentary sectional elevational view taken along line 5—5 of FIG. 1; and

FIG. 6 is an enlarged fragmentary sectional elevational view taken along line 6—6 of FIG. 2.

Referring now to FIGS. 1 and 2, there is illustrated a mobile expandable display unit **10** comprising a bed **12** supported by tandem wheels **14** and provided with a tongue **16** projecting forwardly from one end to facilitate attachment of the unit to a trailer tractor or the like (not shown). Extending upwardly from the four corners of the bed, and preferably intermediate the corners along the sides of the bed, are support posts **18** which are interconnected along the sides of the unit by tubes **20** (FIG. 5), these tubes being interconnected at various points along their length and at their ends by tie beams **22**. The unit **10** is provided with a gable roof, preferably in the form of corrugated panels **24** supported by rafters (not shown) extending from the tubes **20** and connected to a ridge pole **26**.

The ends of the unit are closed by an upper wall section **28** (FIGS. 1 and 2), a lower wall section **30**, and an intermediate wall section defined by four panels **32** which are hinged together to permit folding to open positions shown in FIG. 2 to provide an open window at each end of the unit to service customers or merely for ventilation. A display or service shelf or bench **34** is provided adjacent each such window.

Each of the sides of the unit is adapted to be closed by a single wall panel **36** which includes corrugated sheets **38** preferably formed of a glass fiber reenforced plastic supported by a panel framework **40**. The panel framework **40** includes an upper edge wall **42**, side members **44**, and a lower edge member **46**. In addition, the framework includes horizontally and vertically disposed reenforcing braces which are in the form of I-beams **48** (FIG. 4). The corrugated sheets **38** are secured to various elements of the frame **40** by suitable fasteners **50**.

Each wall panel **36** is hingedly attached adjacent its upper edge to the main frame of the mobile unit **10** so as to enable it to be swung outwardly and upwardly until its corrugated sheets **38** are in generally coplanar relation to the roof panels **24**, as shown in FIG. 2, thus providing a canopy and appreciably expanding the sides of the unit laterally from the arrangement in FIG. 1. In this regard, the upper edge wall **42** of each panel **36** (FIG. 5) is preferably an extruded member formed to provide an upstanding curl **52** which is received within a knuckle **54** defined by an extruded, longitudinally extending hinge plate **56** secured to each tube **20**.

The resulting hinge not only supports the wall panel **36**, but provides a weather-tight interconnection between the panel and main frame at the upper end of the wall panel, making supplementary closures or seals at this point unnecessary.

In opening or expanding the unit **10**, as seen in FIG. 1, each of the side wall panels **36** are swung outwardly and supported in the position shown in FIG. 2 by ground engaging posts **58** secured at their upper ends to the side members **44** of the panels by bolts **60** adjacent the outer ends of the panels opposite the hinge (FIG. 3). The posts **58** are preferably adjustable in length to enable them to be accommodated to various surface conditions surrounding the unit. A pair of additional posts (not shown) are also provided along the lower or outer edge of the wall panel, preferably spaced to divide the lower edge into three spans of equal length.

After the wall panel **36** has been swung upwardly and outwardly and are supported by the posts **58**, triangular roof side panels **62** are bolted in place to add further structural support to the canopy defined by the wall

panels and to close the upper portion of the end areas beneath the canopy against wind and inclement weather conditions. Beneath each roof side panel **62** is supported a set of end wall panels **64**, four such panels being shown in each set in FIG. **2**, and being designated by the numeral **64***a*, **64***b*, **64***c*, and **64***d*. Each of the panels **64***a* is hingedly attached along one of its vertical edges to a corner supported post **18** of the main frame of the unit, and each panel **64***b* is hinged to an opposite vertical edge of a panel **64***a*. Each panel **64***d* is hingedly attached along one of its vertical edges to a canopy support post **58**, and each panel **64***c* is hingedly attached to an opposite edge of the panel **64***d*. The panels **64***b* and **64***c* are not attached to each other. Thus, the panels **64** can be swung to the positions shown at the left-hand side of FIG. **2** to provide an open, airy shelter, or can be closed as in the right-hand side of FIG. **2** in the event of inclement weather, or to safeguard the merchandise overnight. When in the closed position, the panels may be locked to the lower edge of the roof side panels from within the canopied enclosure.

The side portions of the unit beneath the lower outer edge of the wall panels **36** are adapted to be closed by hinged folding doors **66**, designated by the numerals **66***a* through **66***l* in FIG. **2**, which can be swung back to permit full access to the merchandise displayed beneath the wall panels when desired. The doors **66** are attached to the under or inner side of the wall panels **36** in such a manner that they are stable when open, even when subjected to windy weather conditions, and so that any space beneath the corrugated sheets **38** within the panel itself is closed and sealed from the weather.

The doors **66** are provided in sets or pairs, the doors of each pair being hingedly interconnected to each other along adjacent vertical edges, and one door of each pair being hingedly connected along one of its vertical edges to one of the support posts **58**. In addition, one door of each pair, i.e., that door not hingedly attached to a post **58**, is provided with a roller **68** adjacent its upper edge which rides in a track defined by a transom **70**. A filler strip **72** and closure plates **74** are provided to secure the resulting shelter against the weather.

More specifically, and with reference to FIGS. **3** and **4**, the transom **70** is secured to the inner or under side of the braces **48** which extend between the upper and lower edge walls **42** and **46**, respectively, of the wall panel **36**. It will be appreciated that the wall panel **36** is relatively open within the outer periphery of the frame **40** except for the braces **48**. Accordingly, to close the otherwise existing gap between the transom **70** and the corrugated sheets **38** of the wall panel **36**, the filler strip **72** is provided. This strip extends the length of the wall panel **36** intermediate the side members **44** and, in a preferred embodiment, is formed of a polyurethane foam sheet approximately 1 inch thick. It is cut to conform to the contour of the under surface of the corrugated sheets **38**, as seen best in FIG. **4**. Thus, the filler includes risers **76** to fill the voids formed by the corrugations, and relatively thin webs **78** intermediate the risers. The filler is secured in place by fasteners **50** extending through the web **78**.

Secured to the underside of the filler **72**, also by means of the fasteners **50**, are the closure plates **74**, seen best in FIGS. **3** and **4**. The closure plates are bent to provide an upper mounting portion **80** and a depending flange **82**. The mounting portion is adapted to be disposed in face-to-face contact with the underside of the filler **72**, and the mounting portion **80** and the flange **82** are arranged at an obtuse angle to each other such that when the wall panel **36** is disposed in its elevated canopy-defining position, as seen in FIGS. **2** and **3**, the flange **82** is vertically disposed. The closure plates extend between the braces **48** running between the upper edge wall **42** and the lower edge member **46** and are notched at each end to accommodate the flanges and webs of the braces **48** (FIG. **4**).

The transom **70** extends the length of the wall panel **36** between the side members **44** and is of irregular shape in transverse cross section (FIG. **3**). It is therefore preferably extruded. It includes generally an inclined top wall **84** secured to the flanges of the braces **48** by fasteners **86**, and a pair of horizontally spaced skirts **88** and **90** which define the side walls of a track for the roller **68**. Each skirt is provided with an inwardly turned flange **92** at its lower edge to define a shoulder upon which the rollers ride. The skirts are also provided with inwardly directed ribs **94** which provide strength and also serve to contain the rollers against upward movement.

Secured to the top wall **84** at the junction of the top wall and the skirt **90** is a channel defined by a horizontally extending base **96** and vertically upstanding, relatively closely spaced side walls **98**. The channel is adapted to receive the lower edges of the flanges **82** of the closure plates **74** so as to therefore provide a complete seal between the corrugated sheets **38** of the wall panel **36** and the transom **70**, in conjunction with the filler **72**. The channel is notched, as at **100** in FIG. **4**, to accommodate the lower flanges of the braces **48**.

Extending horizontally from the lower edge of the skirt **90** of the transom **70**, and constituting, in effect, an extension of the flange **92** of that skirt, is a horizontal plate **102**, and depending from the rearward edge of this plate **102** is a door stop strip **104** against which the doors abut when in the closed position, as seen in FIG. **3**, to define the closed position. Brackets **106** are secured to the horizontal plate **102** by bolts **108** and to the post **58** by bolts **110** to thereby unite the wall panel **36**, transom **70**, and posts **58** and rigidify the entire structure.

The rollers **68** which ride in the track defined by the transom **70** are carried at the upper ends of inverted L-shaped brackets **112** by roller pins **114**, a spacer **116** being provided intermediate each bracket and its roller. The brackets **112** are secured by bolts **118** to the door of each hingedly interconnected pair which is not hinged to a post **58**. A lock **120** is provided adjacent each roller bracket **112** and includes a lock bolt **122** which is adapted to enter a suitable hole provided in the horizontal plate **102** of the transom to lock each set of doors **66** in place. Preferably, the skirt **88** of the transom is provided with suitable notches (not shown) to permit entry of the rollers into the track defined by transom **70**.

It will therefore be seen that the doors **66** are mounted for easy folding movement on the underside of the wall panel **36** by means of the transom **70**, when the wall panel is in the elevated or canopy-defining position, and that the transom, together with the filler

72 and closure plates 74, seal the interior of the canopy closure thus formed against wind, rain, etc., providing essentially a weather-tight shelter. Suitable means such as braces (not shown) are preferably provided to secure the doors in the open position shown in FIG. 2 to prevent their being displaced by wind or accidental contact, although the rollers 68 within the track defined by the transom will greatly minimize the possibility of such displacement.

To provide additional displace surfaces for the unit 10, platforms 124 are secured to the bed 12 and project laterally therefrom from each side edge. In addition, stairs (not shown) are also secured to the side edges of the bed to enable persons to climb onto the bed to gain access to other benches which, it is contemplated, will be arranged on the bed.

In this regard, a rail 126 is secured to the bed 12 along each side thereof and the platforms 124, as well as the stairs, are detachably mounted on the rail in the manner shown in FIG. 6. More specifically, the rail 126 includes a vertical portion 128 by means of which the rail is attached to the edge of the bed, a horizontally disposed upper portion 130 which fits beneath the edge portion of the bed, a vertically disposed back wall 132, a horizontally disposed bottom wall 134 parallel to and located beneath the upper portion 130, and a flange 136 which extends vertically upwardly from the edge of the bottom wall 134 but terminates short of the top portion 130 to provide a gap therebetween through which a bracket 138 secured to the platform or stairs may be inserted. The bracket extends horizontally along the upper surface of the platform, then upwardly adjacent the rearward edge thereof, and is provided with a hook 140 which is adapted to fit into the gap of the rail and to overlie and be hung upon the upper edge of the flange 136. In this manner, the platform and stairs can be easily and conveniently attached to or detached from the bed 12, as desired.

In setting up the unit 10, which arrives at a desired location, as shown in FIG. 1, the panels 32 at the ends of the unit are removed and the wall panels 36 swung upwardly and outwardly. The posts 58 are attached by means of the bolts 60 to maintain the panels 36 in such position. The transom 70 is then attached to the underside of the wall panels 36 and to the posts 58, and the folding doors 66 are hingedly attached to the posts 58 and to each other with the rollers 68 disposed to the track defined by the transom. The roof side panels 62 and the end panels 64 are then mounted, as previously described, and the platforms 124 and stairs attached to the bed 12. Suitable additional platforms may be set up on the bed, if desired.

The resulting unit provides substantial display surfaces, all of which are located beneath the roof 24 or the canopy provided by the side wall panel 36. End panels 32 and 64, and folding doors 66 may be closed or put in place in the event of inclement weather to provide a substantially fully enclosed shelter except for an access portal, which can be provided by leaving two of the panels 66c unsecured. The panels and doors can all be secured and locked in place overnight if the unit is to remain at the same location.

While one specific structural embodiment of a mobile display unit has been shown and described, it should be apparent that various modifications may be made therein without departing from the scope of the invention.

Various of the features of the invention are set forth in the following claims.

What is claimed is:

1. A mobile display unit comprising

A. a bed having side and end edges,

B. wheels mounted on said bed adapted for supporting travel,

C. a main frame mounted on said bed supportinf a roof overhanging said bed,

D. means at each end of said bed supported by said main frame defining unit end walls,

E. a wall panel disposed along each of opposite sides of said main frame,

1. each of said wall panels comprising a panel framework and sheet material covering the outer surface of said panel framework,

2. each of said wall panels being hinged to said main frame for swinging movement about a generally horizontal axis between a generally vertical position in which it defines a side wall of the unit and a position in which it is swung outwardly and upwardly to define a canopy extending laterally from said main frame,

F. support posts secured to and extending downwardly from said canopy to ground-engaging positions to maintain said wall panel in said canopy defining position,

G. means extending downwardly from said canopy to adjacent the ground beneath said canopy adjacent each of said canopy to close the space covered by said canopy at each end thereof,

H. a transom secured to said panel framework beneath and spaced from said wall panel sheet material when said wall panel is disposed in said canopy-defining position,

1. said transom defining a track to receive rollers,

I. a plurality of folding doors disposed along the side edge of each of said wall panels when said wall panels are in said canopy-defining position,

1. at least some of said folding doors being hingedly mounted on said support posts,

2. other of said folding doors being hingedly attached to said some of said folding doors and having a roller mounted adjacent their upper ends in engagement with said transom track,

J. and means providing a seal between said transom and the adjacent surfaces of said wall panel sheet material to minimize the passage of wind and moisture intermediate said transom and said adjacent surfaces of said wall panel sheet material.

2. A mobile display unit in accordance with claim 1, wherein a rail is secured to said bed along each side edge thereof, wherein a plurality of elongated platforms are provided, wherein a bracket is secured adjacent one end of each platform for releasable interlocking engagement with said rail to support said one end of said platform along said rail in an elevated position, and wherein means are provided adjacent the opposite end of each of said platforms for supporting said opposite end in an elevated position.

3. A mobile display unit in accordance with claim 1, wherein said wall panel is hinged to said main frame for swinging movement about a horizontal axis disposed beneath said roof.

4. A mobile display unit in accordance with claim 1, wherein said roof overlaps the upper edge portion of each of said wall panels when said wall panels are in said canopy-defining positions.

5. A mobile display unit accordance with claim 1, wherein said wall panel is hinged to said main frame by interlocking self-sealing hinge members which overlap to prevent precipitation from passing intermediate said wall panel and said main frame.

6. A mobile display unit in accordance with claim 1, wherein said sheet material covering said panel framework is corrugated.

7. A mobile display unit in accordance with claim 6, wherein a filler is provided within said wall panel to fill the voids created by said corrugations, wherein a closure plate extends downwardly from said filler, and wherein a channel is provided in the upper surface of said transom to receive the lower edge portion of said closure plate.

* * * * *

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,692,350 Dated September 19, 1972

Inventor(s) Carl W. Radtke

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Column 6, lines 9 and 10, (Claim 1), change "for supporting travel" to --for highway travel--;

Column 6, line 10, (Claim 1), correct the spelling of "supporting";

Column 6, line 33, (Claim 1), change "adjacent each of said canopy" to --adjacent each end of said canopy--

Column 7, line 5 (Claim 5), change "unit accordance" to --unit in accordance--.

Signed and sealed this 13th day of February 1973.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

FORM PO-1050 (10-69)

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