A transportable merchandise display system comprising a plurality of vertically hinged display wall elements which are supported by on the bed of a truck, trailer or other vehicle. For transport, the wall elements are carried in a collapsed configuration occupying little space. The system is deployed for display by opening the wall elements into an expanded configuration to selectively form either a three-sided display enclosure or flat display panel. Roof elements hinged to each wall element swing upwardly with pneumatic struts to form a three-sided enclosure which is protected from above. Alternatively, the wall elements may be swung fully open to form a vertical display wall, with the roof elements forming a protective horizontal awning-like cover. In one embodiment, the system is carried within an enclosed truck body on a sliding base which extends rearward in cantilever fashion for supporting the display structure in open configuration.
TRANSPORTABLE FOLDING DISPLAY RACK

FIELD OF THE INVENTION

[0001] The present invention relates generally to rack structures for the storage and display of merchandise. More particularly, the invention relates to a display rack which can be easily collapsed into a much reduced form which permits it to be conveniently transported in the back of a panel truck or on a small trailer.

BACKGROUND OF THE INVENTION

[0002] In the past, the problem of providing a foldable display rack structure has been approached in several different ways, but none have successfully solved the problem of providing a display rack which can be conveniently carried in a vehicle or trailer to a display location, and then opened up into a large and substantial display rack capable of holding and displaying a wide variety of merchandise in a store-like retail environment.

[0003] Examples of prior art collapsible or foldable display racks include the following.

[0004] Ng, Pub. No. US 2004/0238469 (Dec. 2, 2004), discloses a simple vertical shelf-like frame in which the shelf members fold upwardly and the sides support members fold inwardly to reduce the rack to a tall, narrow structure which is apparently moved about by hand.

[0005] Virsen, U.S. Pat. No. 4,288,937 (Sep. 15, 1981), discloses a screen-type display structure with hinged panels and foldable cantilevered overhead lights, all supported by a coat rack-like base. No means of providing load-carrying shelves is shown or suggested.

[0006] Dueck, Pub. No. US 2003/0141263 A1 (Jul. 31, 2003), discloses a combination bicycle storage and display rack arranged for hanging from a building ceiling, and including a linkage which allows a bicycle to be moved between a first raised or stored position and a second lowered or accessible position.

[0007] Tourlamain, Pub. No. US 2006/0138067 A1 (Jun. 29, 2006), discloses a folding rack for receiving and transporting goods and other objects, in which the side frame parts are pivoted to raise and lower, thereby raising and deploying a flexible grid or matrix into position to accept and store various articles.

[0008] Feddeler, U.S. Pat. No. 5,460,280 (Oct. 24, 1995), discloses a storage basket hinged from a ceiling structure such as in a garage. In the lowered position it defines one or more mesh baskets for retaining and storing various articles.

[0009] Donovan, U.S. Pat. No. 4,030,219 (Jun. 21, 1977), discloses a portable display apparatus comprising a plurality of rectangular skeletal frames, each having a hinge allowing it to fold in a vertical direction for storage. Means for integrating the structure with transport means is not shown or suggested.

[0010] Close, U.S. Pat. No. 5,224,677 (Jul. 6, 1993) and U.S. Pat. No. 5,058,846 (Oct. 22, 1991), disclose pull-down display and storage devices having a movable display portion which swings out and down from a fixed support, with springs or dampener control means serving to balance the movement of the display portion between the limits of its movement.

[0011] Loew, U.S. Pat. No. 5,860,537 (Jan. 19, 1999), discloses a display unit which is pivotally mounted to a storage unit, in which the display wall element is movable between a first display position and a second locked position.

[0012] Mason, U.S. Pat. No. 6,752,281 B1 (Jun. 22, 2004), discloses a multi-sided display device with a plurality of stacked rectangular display structures, all mounted on a wheeled base. The device is movable between open and closed positions, but does not significantly collapse for space-saving storage.


OBJECTS OF THE PRESENT INVENTION

[0014] It is a principal object of the present invention to provide an openable merchandise display system or rack which may be transported in collapsed form to the location of intended use, and then opened to form a semi-enclosed merchandise display structure capable of accommodating customers and sales personnel, or alternatively to form a vertical display wall which opens towards a public area.

[0015] A related object is to provide such a merchandise display system which is transportable in the back of a conventional panel truck, or on a small trailer, from which it may be pulled out and set up by one person without the need of special tools.

[0016] A further object is to provide such a system incorporating roof or awning panels which are supported by pneumatic struts whereby the panels may be easily opened and retained in position without the need for securing pins, bolts or other fasteners.

[0017] Another object of the invention is to provide such a system having cantilevered openable side panels including adjustable support members supporting and stabilizing the cantilevered side panels at their outermost ends.

[0018] These and other objects of the invention will become evident to one skilled in the art by reference to the following summary and detailed description of the invention.

SUMMARY OF THE INVENTION

[0019] A transportable merchandise display system is disclosed, consisting of a plurality of vertical hinged display wall elements which are supported in a collapsed configuration, or transport mode, on a compact rectangular base. The base is mounted and retained on the bed of a panel truck, trailer or other transport vehicle. When collapsed together in transport mode, the vertical elements are aligned in a compact configuration which may be conveniently transported by the vehicle to a desired display location to be opened into a display for merchandise or the like.

[0020] At the display location, the display system slides or rolls out from the vehicle bed toward an open side or end of the vehicle. When thus positioned, the vertical hinged wall elements are opened outward into an open or display position, forming a three-sided display enclosure. Alternatively, the wall elements may be opened fully to form a monolithic vertical display wall open to a public area.

[0021] Stabilizing means such as jacks or telescoping supports may be provided which are extendable to meet the ground to support and strengthen the outermost cantilevered elements.
After the vertical display wall elements have been opened, roof or awning elements are rotated upward on horizontal hinges to partially enclose the assembled structure. Each of the vertical hinged wall elements forming the three-sided display enclosure is provided with shelves, hooks, or other attachment devices for the display of merchandise. Because the vertical display wall elements open and close on vertical hinge axes, a merchandise display may be assembled and put in place prior to collapsing the system into transport mode, whereby the display will be ready for immediate use upon being opened up at the display location.

BRIEF DESCRIPTION OF THE DRAWINGS

The preferred embodiment is herein described in detail with references to the drawings, where appropriate, wherein:

FIG. 1 is a perspective view of a conventional panel truck 10 or other suitable vehicle having a bed on which is mounted a base 11 which carries and supports the display system 12 of the present invention;

FIG. 2 is a perspective view showing the base 11 in extended position relative to the truck 10 with the display system 12, comprising a plurality of hinged display wall elements 13, withdrawn further to the rear of the vehicle in an initial first step in the opening sequence;

FIG. 3 is a perspective view showing the system further extended and opened into display position, forming a three-sided display enclosure, with the array of hinged vertical display wall elements 13 supported at their outer extremities by stabilizing means;

FIG. 4 is a perspective view similar to FIG. 3 showing the system further extended and opened into an alternate display position, forming a completely open display panel, with the outer hinged vertical display wall elements 13 being supported by stabilizing means 14;

FIG. 5 is a perspective view similar to FIG. 3 showing the deployment of roof elements 15, one of which is horizontally hinged along an upper edge of each vertical display wall element 13, with the roof elements in a position to form a roof over the three-sided display enclosure;

FIG. 6 is a vertical view of the truck 10 showing the system within (in phantom lines) in collapsed or transport mode, as in FIG. 1;

FIG. 6A is a vertical view of the truck 10 of FIG. 6 showing the system withdrawn but unopened, as in FIG. 2;

FIG. 6B is a vertical view of the truck 10 of FIG. 6 showing the system opened into a three-sided enclosure, as in FIG. 3;

FIG. 6C is a vertical view of the truck 10 of FIG. 6 showing the system opened into an alternate display position, forming a completely open four-element display panel, as in FIG. 4;

FIG. 7 is a detail elevational view of the hinge and support means for a roof element as deployed in the configuration of FIG. 5; and

FIG. 8 is a detail side elevation of the hinge and support means of FIG. 7 showing the roof element as it deploys into sheltering position (phantom lines).

DETAILED DESCRIPTION OF THE INVENTION

Referring to FIG. 1, there is shown a panel truck 10 which is one of several forms of vehicle suitable for transporting and deploying the display apparatus and system of the present invention. Seen through open rear doors of the truck 10, carried by on the truck bed, is a base 11. As shown in FIG. 2, the base 11 is slidably mounted to the truck bed so that it can be withdrawn to the rear, drawing the display system 12 along with it. Such a sliding vehicle base is well known, and commercially available under the BedSlide™ name from IFW, Inc., 578 Mason Way, Medford, Oreg., USA 97501.

In addition, the system 12 itself is slidably mounted on the base 11, using a similar sliding attachment means, so that it can be positioned fully to the rear of the truck 10 and base 11 as shown in FIGS. 6B and 6C.

Again referring to FIG. 2, the system 12 of the illustrated embodiment can be seen to be comprised of four vertical display wall elements 13, each connected to another by a vertical hinge (not shown) along one edge for rotational movement on a horizontal plane of rotation.

The sequence of opening the display system is best shown in FIGS. 6, 6A, 6B and 6C. FIG. 6 shows the system in transport mode within the truck 10 or other carrier vehicle. FIG. 6A shows the system partially withdrawn, but not ready to be opened fully. FIG. 6B shows the system fully withdrawn and opened into a first alternative display position, being a three-sided enclosure. FIG. 6C shows the system fully withdrawn as in FIG. 6B, but with the system fully opened into a second alternative display position, being an open front display wall.

According to a principal feature of the invention, each of the hinged vertical display wall elements carries a roof element (see FIGS. 5, 7 and 8), each of which is retained for transport in a folded position against its associated vertical display wall element. For use, each roof element is opened upward on its horizontal hinge 16 (FIG. 7) and retained by a suitable support 17 which in the illustrated embodiment is a pneumatic strut. When fully deployed in the three-sided enclosure position (FIG. 5) the display structure constitutes, in effect, a three-walled roofed enclosure which is relatively protected from adverse weather.

When deployed in a second alternative position (FIG. 6C) the display structure provides a continuous vertical wall of display space, protected from sun and rain by the overhanging roof elements which form a protective awning or cover.

The foregoing are only illustrative examples of the preferred embodiment of the invention. Other embodiments will be apparent to those skilled in the art which employ the advantages and claimed features of the invention. For instance, a reduced scale embodiment of the invention would be desirable for use with a car or station wagon not having the internal space of a panel truck or trailer. Such an embodiment might employ only three, or even two, vertical display wall elements, but would still embody the inventive features of the invention with in the spirit and scope of the following claims.

1 claim:

1. A multi-sided display apparatus capable of being contracted and collapsed into a transport mode for transport on a vehicle bed to a display location, and capable of being opened and expanded into a display mode for use at a display location, comprising:
   a. a horizontal base, said base being received and supported by said vehicle bed when in said transport mode;
   b. translation means for moving said base outwardly from said vehicle bed into a display mode;
   c. a plurality of vertical support elements each being supported by said base external to said vehicle, and each of
said vertical support elements being hinged along at least one vertical edge to an adjoining vertical support element for opening movement into a display position wherein said adjoining vertical support elements form a substantially continuous vertical display surface facing away from said vehicle;

d. stabilizing means for supporting and holding said adjoining vertical support means in said display position.

2. The display apparatus of claim 1 further including translation means for moving said base outwardly from said vehicle bed into a display mode external to said vehicle, and for supporting said base while in said display mode.

3. The display apparatus of claims 1 or 2 including
   a. a plurality of roof elements, each being hinged along a horizontal edge to the upper edge of a vertical support element for vertical opening movement into a sheltering position; and
   b. retention means for retaining each roof element in sheltering position relative to its associated vertical support element.

4. The display apparatus of claims 1 or 2 comprising at least three similar vertical support elements, hinged to one another along vertical axes, such that when opened into display position said elements form a three-sided semi-enclosed display structure facing externally to said vehicle.

5. The display apparatus of claims 1 or 2 in which each vertical support element includes merchandise display means for displaying merchandise externally to said vehicle when in display position.

6. The display apparatus of claims 1 or 2 in which said stabilizing means comprises an individually adjustable jack slidably attached to each outermost vertical support element.

7. The display apparatus of claims 1 or 2 in which said vehicle is an enclosed truck for transporting said apparatus to a display location.

8. The display apparatus of claims 1 or 2 in which said vehicle is a trailer adapted for towing by another vehicle to a display location.

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