The present invention provides a novel robust, reusable, modular shipping container for protecting large, fragile, odd-shaped, or high-value cargo (e.g., telecommunications cabinets, appliances, and furniture) from damage during shipment. The shipping container minimizes the possibility of shipping damage due to improper handling, tip-overs, lateral collisions, or vibration. The shipping container comprises a pallet base, a lower frame section, an upper frame section, and a top cover.
REUSABLE MODULAR CONTAINMENT DEVICE FOR PROTECTING CARGO DURING SHIPMENT

CLAIM OF BENEFIT

This application claims benefit to Joseph David Cline, U.S. Provisional Patent Application No. 61/904,180 filed 14 Nov. 2013 for a Protective Device for High Value Cargo During Shipment, which is fully incorporated herein by reference.

TECHNICAL FIELD OF THE INVENTION

The present invention relates to a modular, reusable, containment device for protecting cargo during shipment. The device is suitable for shipping large, fragile, or high-value items such as telecommunications cabinets, appliances, and furniture.

BACKGROUND

Telecommunications cabinets handle voice and data communications. The cabinets can range in size from approximately a 4'x4'x4' cube to a commonly-sized 4'x4'x8' tall cabinet. Housed within are all the routers, switchgear, and other electronics necessary to connect office buildings with the outside world. The electronic components housed within telecommunications cabinets are very expensive, and require a great degree of skill to assemble and correctly wire into place.

Assembling telecommunications cabinets in the field would be difficult, time-consuming, and lacking in quality control. By assembling the units at a single location (e.g., a manufacturing facility), far greater control can be maintained over the quality of assembly.

There is, however, a significant drawback to assembling the cabinets at a central location and then shipping them to another destination for use: the assembled telecommunications cabinets are highly susceptible to damage in transit. Telecommunications cabinets are designed and engineered to be stationary units, not as rugged mobile devices. This requires that a great deal of care be taken when shipping the complete telecommunications boxes.

The traditional method for shipping telecommunications cabinets is to (1) place them on a typical wooden skid pallet, (2) attach cardboard, honeycomb, plastic wrap, or other typical shipping materials to the outside of the cabinet, and (3) send the packaged telecommunications box into the stream of commercial logistics until it reaches its final destination. The telecommunications cabinets are generally bolted or strapped to the pallet.

The palletized telecommunications cabinet may travel by truck, train, boat, or plane. Often, it travels by a variety of methods, and may be switched numerous times from one vehicle to another as it travels from its point of origin to its final destination. In the process, the palletized telecommunications cabinet can be handled many times, and at each point it is susceptible to damage.

Material-handling equipment, such as forklifts, can cause damage to telecommunications boxes. For example, if a forklift operator inadvertently misaligns the forks, he could accidentally damage the telecommunications cabinet on the pallet being moved, or the telecommunications cabinet on an adjacent pallet. In addition, the risk of tip over is prevalent with top-heavy, palletized telecommunications cabinets, particularly when being moved up and down ramps. Finally, vibration and the effects of lateral impacts on the palletized telecommunications cabinets in transit can damage the internal electronics. A related concern is that the materials typically used for shipping telecommunications cabinets are simply discarded as trash once the unit reaches its destination, rather than being recycled.

For at least these reasons, a more secure method of shipping and protecting large, high value, fragile items such as telecommunications cabinets, appliances, grandfather clocks, and furniture is needed. All these items can be securely and safely shipped using the containment device of the present invention.

SUMMARY OF THE INVENTION

The present invention provides a novel robust, reusable, modular shipping container for protecting large, fragile, odd-shaped, or high-value cargo (e.g., telecommunications cabinets, appliances and furniture) from damage during shipment. The shipping container minimizes the possibility of shipping damage due to improper handling, tip-overs, lateral collisions, or vibration. The shipping container comprises: a pallet base, a lower frame section, an upper frame section, and a top cover.

In one embodiment, the pallet base comprises a floor mounted above a sub-frame.

In another embodiment, the pallet base has the approximate dimensions of a typical shipping pallet.

In another embodiment, the sub-frame comprises rectangular “picture-frame” front and rear sections suitable for insertion of forklift forks.

In another embodiment, the sub-frame front and rear sections each have one or more vertical support members connecting the horizontal top and bottom members.

In another embodiment, the front and rear sections are identical.

In another embodiment, the floor includes recessed cavities into which foam, or other vibration and shock damping material, placed.

In another embodiment, the cavities contain foam, or other vibration and shock damping material.

In another embodiment, the base pallet base is constructed of one or more structural materials selected from steel, aluminum, wood, plastic, and composite.

In another embodiment, the pallet base is constructed of steel.

In another embodiment, the shipping device further comprises a ramp.

In another embodiment, the ramp is wide enough to support a hand-truck.

In another embodiment, the ramp is connected to the pallet base by one or more bingies, such that it can be lowered for loading and unloading cargo, and stowed in an upright position for shipment.

In another embodiment, the hinges are connected to the front side of the pallet base.

In another embodiment, the ramp slides in and out of the pallet base.

In another embodiment, the ramp is detachable from the pallet base.

In another embodiment, the ramp is constructed of one or more structural materials selected from steel, aluminum, composite, wood, and plastic.
In another embodiment, the ramp is constructed of steel.

In another embodiment, the lower frame section comprises left, right and back sides connected to the pallet base.

In another embodiment, the lower frame section comprises left and right sides attached to the pallet base.

In another embodiment, the left and right sides area identical.

In another embodiment, the lower frame section comprises left and right sides attached to the pallet, wherein one or more bracing members connects the back portions of the two sides.

In another embodiment, the left and right sides are permanently attached to the pallet base.

In another embodiment, the modular left and right sides are attached to the pallet base using mating connectors.

In another embodiment, the lower frame section comprises rectangular “picture-frame” left and right sides with horizontal upper and lower members and vertical side members.

In another embodiment, rectangular left and right sides each comprise one or more horizontal, vertical or diagonal bracing members.

In another embodiment, the rectangular left and right sides comprise a flat plate tilling the interior.

In another embodiment, the left and right side plates comprise one or more mating connectors to couple with one or more mating connectors of the upper frame section.

In another embodiment, the top cover is attached to the lower frame section using mating connectors.

In another embodiment, the upper frame section comprises front, back, left and right sides.

In another embodiment, the upper frame section comprises front and back sides.

In another embodiment, the upper frame section comprises rectangular “picture-frame” front and back sides with horizontal upper and lower members and vertical side members.

In another embodiment, the rectangular left and right sides each comprise one or more horizontal, vertical or diagonal bracing members.

In another embodiment, the horizontal member of the front side is a strike plate for the upper portion of the ramp.

In another embodiment, the rectangular front and back sides comprise a flat plate filing the interior.

In another embodiment, the top cover is attached to the top of the upper frame section using mating connectors.

In another embodiment, the top cover is has a rectangular “picture-frame” shape.

In another embodiment, the top cover comprises one or more bracing members.

In another embodiment, the top cover comprises a flat plate filling the interior.

In another embodiment, the pallet base and top cover each have one or more points of attachment for securing straps.

It will be appreciated that Applicant envisions all logical combination of the above embodiments (together with additional aspects described below) are further embodiments and aspects of the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

The following drawings and description thereof are meant to exemplify one or more specific embodiments of the invention, and are not intended to limit the scope of the invention in any way.

FIG. 1—A perspective view of the shipping container of the present invention in an assembled version with the ramp in the down position.

FIG. 2—A perspective view of the shipping container showing the modular components, with the ramp in the down position.

FIG. 3—A perspective view of the lower frame section connected to the pallet base, with the ramp in the down position.

FIG. 4—A perspective view of the lower frame section and pallet base, with the ramp in the down position and the base pad members in place.

FIG. 5—A perspective view of the shipping container with the upper frame section attached to the lower frame section, and the ramp in the stowed position.

FIG. 6—A perspective view of the shipping container with lower frame section, a unit of cargo loaded onto the pallet base, and the ramp in the down position.

FIG. 7—A perspective view of the shipping container with a unit of cargo loaded onto the pallet base, the upper frame section attached to the lower frame section, and the ramp in the down position.

FIG. 8—A perspective view of the shipping container with a unit of cargo loaded onto the pallet base, the upper frame section attached to the lower frame section, the top cover attached to the upper frame section, and the ramp in the down position.

FIG. 9—A perspective view of the shipping container with a unit of cargo loaded onto the pallet base and covered with the blanket assembly, the upper frame section attached to the lower frame section, the top cover attached to the upper frame section, and the ramp in the down position.

FIG. 10 is a perspective view of the upper frame section front side of the shipping container.

FIG. 11 is an overhead view of the top cover of the shipping container.

FIG. 12 is a sectional perspective view of the blanket assembly.

DETAILED DESCRIPTION

The modular, reusable, shipping container of the present invention is shown in the figures as comprising: a pallet base 100, a lower frame section 300, an upper frame section 400, and a top cover 500.

The pallet base is constructed of one or more structural materials such as steel, aluminum, wood, plastic or a composite. For many applications, steel provides a good combination of strength, weight, and low cost. The pallet base includes a floor allowing for the use of hand trucks, or appliance-type dollies, to load and unload the cargo while protecting the bottom of the cargo. The floor can include recessed cavities into which foam, or other vibration and shock dampening materials, can be placed. These materials insulate the cargo from the pallet base and absorb any vibrations or shock induced into the shipping container.

The cargo typically rests on vibration and shock-dampening material. The material supports the cargo above the floor and leaves a small space, approximately ⅛" to 1".

It will be appreciated that Applicant envisions all logical combination of the above embodiments (together with additional aspects described below) are further embodiments and aspects of the present invention.
between the bottom of the cargo and the floor. This gap provides room for the cargo to float on the vibration and shock dampening material. An additional benefit of the gap is that it allows a standard appliance dolly to be shipped into it to facilitate removal of the cargo from the shipping container once the cargo has reached its final destination.

The shipping container of the present invention can further comprise a ramp, e.g., a folding ramp that can be moved between a substantially horizontal down position (for unloading cargo with an appliance dolly or hand truck), and a substantially vertical stowed (i.e., stowed) position for transit. The folding ramp can be attached to the pallet base using hinges, and constructed of a suitable material (e.g., steel, aluminum, composite material, wood, or plastic) to provide a desirable combination of strength, weight, and cost for a particular application. Reinforced steel provides sufficient strength, acceptable weight, and low cost for many applications.

When the folding ramp is in the vertical stowed position, it can be secured with safety retainer mechanisms, such as safety cables or safety chains. An additional benefit of this folding ramp is that when in the stowed position, it provides additional protection against damage from forklifts or other material-handling devices by acting as a protective wall on the front side of the shipping container. Other embodiments of the present invention include a ramp which slides in and out of the pallet base, and a ramp which can be completely detached from the pallet base. When the ramp is in the open position, the ramp allows a user of the shipping container to load material onto the shipping container base with a commonly used hand truck, or appliance style dolly. When the ramp is in the stowed, or folded position, it provides additional protection to the cargo contained within the shipping container.

A lower frame section, comprising left and right sides, and optionally a back side, connects to the pallet base and extends generally upward. These sides provide skeletal-like protection for the lower portion of the shipping container, a means for supporting the upper frame sides, and a means for supporting, and hearing the weight of stacked pallets when the shipping container is used in the half-height position. Incorporated into the tops of the lower frame sides are mating connectors, which allow the upper frame sides to be attached to the lower frame sides. The frame sections are preferably made from a plurality of rectangular steel tubes dispersed in a parallel array.

The upper frame sides can be attached to the lower frame sides by engaging female mating connector of the upper frame sides with male connectors of the lower frame sides (or vice versa). The upper frame sides can be identical, and include strike plates to further protect the cargo from accidental damage. The strike plates provide additional retention of the ramp to prevent it from unfolding and from forklifts inadvertently poking into the cargo. The strike plates can be at the same approximate height that a second level of pallets in a standard two-pallet stack for shipping would be. The upper portions of the upper frame sides can comprise mating connectors that allow the upper frame side to be attached thereto with compatible mating connectors (e.g., male/female connectors).

A protective blanket can optionally be placed between the cargo and the inner surfaces of shipping container for additional protection. The protective blanket can comprise a plurality of padded features. Space filling material, such as foam pads or, packing air bags, or other typical dunnage materials and items can also be inserted between the protective blanket wrapped cargo and the inner surfaces of the shipping container. For example, air bags can be placed between the cargo and the inner surfaces of the container at various locations to further eliminate any gaps between the container and the cargo. Packing air bags are available in an almost unlimited variety of sizes, shapes, and strengths from a variety of sources such as alibaba.com, Inflatable Packaging, Inc., and others.

A strap mechanism can be used to tighten the unit together. For example, a plurality of ratcheting, nylon straps can be used to bind the unit. The ratcheting portion of each of the ratcheting straps can be fixed to the pallet base, and the hook end of the ratcheting strap attached to the top frame side. Once the plurality of straps has been fully tightened, the outer portion of the shipping container frame can be wrapped with a layer of stretch wrap, or with products such as “shrink-wrap”. The stretch wrap provides protection against external moisture, provides a surface upon which shipping labels, and tags, can be affixed to the shipping container, and a visual reference to aid in the detection of cargo damage inflicted during the shipping process.

In certain applications, the upper frame sides can be removed and the shipping container used as in half-height configuration. The upper frame sides can be stored within the lower frame sides, and the top frame side attached to the upper portions of the lower frame sides. In this configuration, the top frame side becomes the top of a half-height shipping container.

An additional benefit of the modular design of the shipping container is that it can protect a telecommunications cabinet during the assembly process. The shipping container, containing the unpopulated telecommunications cabinet, is simply moved to the first stage of the populating process. If multiple stages of assembly are required, the cabinet can be moved on the shipping container throughout the assembly process. Once assembly is complete, a protective blanket can be placed over the cabinet and the ramp secured in the stowed position with safety retainer devices. The upper frame sides can be attached; and ratcheting straps tightened. After the shipping container is wrapped with a layer of stretch wrap film, the unit is ready for shipment.

Specific Embodiment of Invention

One specific embodiment of the shipping container of the present invention is illustrated in FIGS. 1-12. A perspective view of this embodiment in assembled form is shown in FIG. 1, with a pallet base 100, lower frame section 300, upper frame section 400, and top cover 500, and ramp 200 shown. FIG. 2 provides a perspective view of the shipping container showing disconnected modular frame components, and the ramp in an open position. In this embodiment, the lower frame section is integrated into the pallet base.

Turning now to FIG. 2, one will see the transport device 10 in an exploded view. The base portion 100, lower frame portion 300, upper frame 400, and top frame portion 500 are shown in a disassembled orientation. The ramp assembly 200 is shown in the unfolded, or open position.

FIG. 3 shows a perspective view of the transport device base 100 with the ramp member 210 of the ramp assembly 200 in an unfolded position. The base portion 100 comprises a base pallet assembly 110 which serves as the main platform for the entire transport device assembly 10.
The base pallet assembly 110 is constructed of a steel frame 112 portion further comprising a plurality of vertical support members 114. The vertical support members 114 are located in such a way as to provide pockets 116, containing ample space and clearance and guidance for fork-lift forks, or other material handling equipment. The vertical frame members 114 are fixedly connected to the base pallet frame assembly 112 and to the lower bottom portion of the lower frame vertical support members 302.

[0097] A plurality of lower frame vertical support members 302 extend upwardly from the base of the pallet frame member 112 forming an outer perimeter for the lower transport device base assembly 100. In a preferred embodiment of the present invention, lower frame vertical support members 302 extend upwardly from each of the corners of the transport device base 100. The four vertical support members 302 of the preferred embodiment form a front right lower vertical support member 303, a rear right lower vertical support member 304, a left rear vertical support member 307, and a left front vertical support member 306.

[0080] A plurality of cross braces fixedly connecting the right front lower support member 303 and the right rear lower support member 304. In a preferred embodiment of the present invention the cross braces include a right to frame upper base member 320, a right lower frame mid cross brace 322, and a right lower frame upper cross brace 323. Each of the cross braces 320, 322, 323 are fixedly attached to the perpendicular orientation to the right rear vertical support member 304 and the right front lower vertical support member 305.

[0081] Fixedly connecting the left front lower vertical support member 305 and the left rear lower vertical support member 306 are a plurality of cross braces and in a preferred embodiment of the present invention comprise a left lower frame upper base member 310, a right lower frame mid cross brace 312, and a right lower frame upper cross brace 313. Each of the cross braces are fixedly attached in a perpendicular orientation to the left rear vertical support member 305 and the right front lower vertical support member 305.

[0082] Fixedly connecting the left rear lower vertical support member 306 to the right rear vertical support member 304 are a plurality of cross braces. The rear lower frame 320 is fixedly connected to the lower portion of the left rear lower vertical support member 306 at a first end 322, and fixedly connected to the lower portion of the right rear 304 vertical support member at a second end 344. In a preferred embodiment, a second rear lower frame mid brace 340 is also fixedly connected to both the left rear lower vertical support member 306 at a first end 342, and fixedly connected to the lower portion of the right rear vertical support member at a second end 344.

[0083] Fixedly connecting the left front lower vertical support member 305 to the right front vertical support member 3035 is a front lower frame 350. The front lower frame 350 has a first end 352 and a second end 354. The first end 352 of the front lower frame member 350 is fixedly attached to the lower portion of the lower portion of the right front vertical support member 303 in a perpendicular orientation. The second end 354 is fixedly connected to the lower portion of the left front vertical support member 305.

[0084] Fixedly attached to the top portion of the front lower frame member 350 and extending to the top portion of the rear lower frame member 330 is the base floor 120. Fixedly attached to the bottom portion of the front lower frame member 350 and extending to the lower portion of the rear lower frame member is the pad compartment floor 132.

[0085] The base floor comprises a left side 121, a right side 122, a front side 123, a back side 124, a top side 125, and a bottom side 126. The top side 125 of the floor 120 faces in a generally upward direction and provides a surface capable of supporting a hand truck or dolly, when such device is used for the loading and unloading of cargo from the transport device.

[0086] The left side 121 and right side 122 of the base floor 120 form part of the outer perimeter of each of the base pad compartments 130.

[0087] The base pad compartment 130 is bounded by the front lower frame member 350, the rear lower frame member 330, the left lower frame 310, the right lower frame 320, and a base pad compartment floor 132.

[0088] The base pad compartment 130 is capable of holding a base pad 140. Turning now to FIG. 4, you will see a plurality of base pad members 140 positioned into their respective base pad compartments 130.

[0089] Turning now to FIG. 5, you will see the transport device system 10 with the ramp member 210 of the ramp assembly 200 in the upright, or stowed position. Note that the front upper frame strike plate 412 of the front upper frame 410 retains the ramp member 210 of the ramp assembly 210 when the ramp member 210 is in the folded, or upright position.

[0090] Additional ramp retention is provided by ramp safety retainers 240. The ramp safety retainers 240 prevent the ramp member 210 of the ramp assembly 200 from accidentally unfolding when the front upper frame member 410 is removed from the lower frame 300.

[0091] In a preferred embodiment of the present invention, the upper frame strike plate 412 and rear upper frame strike plate 422 are wider than other frame members such as the upper mid braces 414 and 424 in order to provide additional protection to the cargo 800 from potential damage to fork strikes and other material handling equipment issues.

[0092] FIG. 6 is a perspective view of the transport device system 10 with a unit of cargo 800 placed within the lower portion of the transport device system 10 and on top of the plurality of base pads 140.

[0093] Additional components of the ramp assembly 200 can be seen in FIG. 3b. The ramp assembly 200 of a preferred embodiment of the present invention comprises a foldable ramp member 210 and a hinge member 230. The ramp member 210 is hingedly coupled to the transport device base floor 120 by the ramp assembly hinge 230. The hinge assembly 230 allows the ramp member 210 to be moved from an open to a closed position as seen in FIGS. 3a, 3b to allow for easier loading of material onto and off of the transport device base.

[0094] The ramp member 210 further comprises an upper facing 212 and a lower facing 214 portion. The upper facing 212 may further comprise a non-skid surface, or other suitable surface to increase the suitability of the ramp member 212 for use. In a preferred embodiment of the present invention, the ramp member 210 and floor member of the transport device base 120 are constructed of diamond plated aluminum. The bottom side of the ramp member 210 may further comprise a plurality of support members 220 which provide additional support to the ramp member 210.

[0095] FIG. 5 shows a plurality of base pad members 140 positioned in their respective base pad compartments 130.

[0096] FIG. 5 shows the shipping container with the upper frame section 400 attached to the lower frame section 300.
The upper frame section 400 comprises two rectangular frame sides: a front side 410 and a back side 420. The front side 410 has a strike plate 412 which retains the ramp 200 when it’s folded in the upright position. Additional ramp retention is provided by safety retainers 240, which prevent the ramp 200 from accidentally unfolding when the front upper frame front side 410 is removed from the lower frame section 300. Preferably, the upper frame strike plate 412 and rear upper frame strike plate 422 are wider than other frame members, such as the upper mid braces 414 and 424, to provide additional protection to the cargo 800.

[0097] Turning now to FIG. 7, you will see an assembled transport device assembly 10 with a cargo member 800 contained. A transport device blanket assembly 600 is in place over the cargo 800 protecting the cargo from the upper frame 400, and lower frame 300 members of the transport device assembly 10 members of the transport device assembly 10.

[0098] FIG. 8 provides a perspective view of the shipping container with a unit of cargo 800 placed within the lower frame section 300 on top of the plurality of base pads 140, with the ramp 200 in the down position. FIG. 7 shows the unit in FIG. 6 with the addition of the upper frame section 400 in place. FIG. 8 shows the unit in FIG. 7 with the addition of the top cover 500 in place.

[0099] Turning now to FIG. 9, you will see an internal perspective view of an embodiment of the blanket assembly 600 of the present invention. Blanket assembly 600 comprises an outer facing surface 610 and an inner, cargo facing service 620. The blanket assembly 600 further comprises a plurality of pocket like structures 630 incorporated into the blanket assembly 600 which provide containment for a plurality of blanket pad members 640. The blanket pad pockets 630 can be strategically located in various places on the blanket assembly 600 in order to provide the optimal protection for the cargo 800 contained within the blanket 600 and within the complete block cage assembly 10. The blanket pad material may be selected from commonly used cargo padding materials such as foam, air bags, peanuts, paper, or other commonly used cargo padding materials.

[0100] FIG. 9 shows the unit in FIG. 8 with blanket assembly 600 covering the cargo 800.

[0101] Turning now to FIG. 10, you will see a perspective view of a typical upper frame member of a preferred embodiment of the present invention. The upper portion of the front 410 and rear 420 upper frame members contain protruding mating features 460 that allow the top frame member 500—to be attached to the front 410 and rear 420 frame members of the upper frame 400. The top frame member 500 comprises a plurality of receiver members 520 which mate with the plurality of protruding mating features 460 to connect with the upper frame of the transport device.

[0102] The lower portion of the upper frame member 300 frame uprights 418, 419, 420, and 422 further comprise a female mating receptacle 450 capable of receiving the male upper male attachment posts 390 of the lower frame assembly 300.

[0103] Turning now to FIG. 10, you will see a perspective view of a typical upper frame member of a preferred embodiment of the present invention.

[0104] FIG. 10, you will see a perspective view of the upper frame front side 410, comprising male mating features 460 for coupling to top cover 500. Rectangular upper frame front side 410 comprises upper 416 and lower 412 horizontal support members, side vertical support members 418 and 419, and a horizontal bracing member 414 connecting side members 418 and 419. All the connections can be permanent or coupled using mating features. Upper frame back side 420 is of the same design, and is interchangeable.

[0105] In a preferred embodiment of the present invention, the front upper frame 410 and rear upper frame 420 are interchangeable.

[0106] Turning now to FIG. 11, you will see a close up perspective view of the top frame portion assembly of the transport device system 10. The top frame assembly 500 comprises a right top frame member 502, a left top frame member 504, a front top frame member 506, a rear top frame member, and a plurality of top frame cross braces 530. In a preferred embodiment of the present invention, the Left top frame member 504, the right top frame member 502, the front top frame member 506, and rear to frame member 508 are arranged in a 4 sided type of arrangement and fixedly connected to each other. The top frame cross members 530 are arranged in a perpendicular like arrangement relative to the front top frame member 506 and rear top frame member 508, and parallel to the left top frame member 504, and right top frame member 502 and are fixedly connected to the front top frame member 506 and rear top frame member 508.

[0107] Fixedly connected to the left top frame member 504 and right top frame member 506 are a plurality of top frame strap connection members 520. Turning back to FIG. 9 you will see an assembled transport device assembly 10 with a cargo member 800 contained within. A transport device blanket assembly 600 is in place over the cargo 800 protecting the cargo from the upper frame 400, and lower frame 300 members of the transport device assembly 10 members of the transport device assembly 10.

[0108] Turning now to FIG. 11, you will see a rectangular top cover 500 comprising receiver members 520 which connect with mating features 460 of the upper frame section. Top cover 500 comprises a right support member 502, a left support member 504, a front support member 506, a rear support member 508, and a plurality braces 530 connecting front support member 506 with rear support member 508. All the connections can be permanent or coupled using mating features. Top frame further comprises a plurality of top frame strap connection members 520.

[0109] FIG. 12 shows an internal perspective view of the optional blanket assembly 600 of the present invention. Blanket assembly 600 comprises an outer facing surface 610 and an inner, cargo facing surface 620. The blanket assembly 600 further comprises a plurality of pocket like structures 630 incorporated into the blanket assembly 600 which provide containment for a plurality of blanket pad members 640. The blanket pad pockets 630 can be strategically located in various places on the blanket assembly 600 to provide the optimal protection for the cargo 800. The blanket pad material may be selected from commonly used cargo padding materials such as foam, air bags, peanuts, paper, or other commonly used cargo padding materials.

1. A sturdy, reusable, modular, shipping container for protecting large, fragile, odd-shaped, or high-value cargo from damage during shipment, comprising: a pallet base, a lower frame section, an upper frame section, and a top cover, the pallet base, lower frame section, upper frame section and top cover defining a protective outer cage having an exterior in which the cargo is disposed.
2. The shipping container of claim 1, wherein the pallet base comprises a sub-frame and a floor overlying the sub-frame.

3. The shipping container of claim 2, wherein the sub-frame comprises rectangular "picture-frame" front and rear sections.

4. The shipping container of claim 3, wherein the sub-frame front and rear sections each have one or more vertical support members for connecting with horizontal top and bottom members.

5. The shipping container of claim 2, wherein the floor includes recessed cavities into which foam, or other vibration and shock dampening material, are placed.

6. The shipping container of claim 1, further comprising a ramp for accommodating a wheeled material handling device for facilitating the placement of the cargo on, and removal of the cargo from, the pallet base.

7. The shipping container of claim 6, wherein the ramp is connected to the pallet base by one or more hinges, such that it can be lowered for loading and unloading cargo, and stowed in an upright position for shipment.

8. The shipping container of claim 6, wherein the ramp is slideable between a storage position with the pallet base and a use position exterior of the pallet base.

9. The shipping container of claim 6, wherein the ramp is slideable between a storage position within the pallet base and a use position exterior of the pallet base.

10. The shipping container of claim 1, wherein the lower frame section comprises at least first and second side members connected to the pallet base.

11. The shipping container of claim 1, wherein the lower frame section comprises left and right sides attached to the pallet, and one or more bracing members connect the back portions of the two sides.

12. The shipping container of claim 11, wherein the sides are modular sides attached to the pallet base using mating connectors.

13. The shipping container of claim 1, wherein the lower frame section comprises rectangular "picture-frame" first and second sides with horizontal upper and lower members and vertical side members.

14. The shipping container of claim 13, wherein the first and second sides include at least one frame member disposed in either a horizontal, vertical or diagonal orientation.

15. The shipping container of claim 13, wherein the rectangular first and second sides comprise a flat plate filling the interior.

16. The shipping container of claim 1, wherein the first left and second right sides having one or more mating connectors to couple with one or more mating connectors of the upper frame section, and where the top cover is attached to the lower frame section using mating connectors.

17. The shipping container of claim 1, wherein the left and side plates have one or more mating connectors to couple with one or more mating connectors of the pallet base.

18. The shipping container of claim 1, wherein the upper frame section comprises first, second, and third sides.

19. The shipping container of claim 1, wherein the upper frame section comprises rectangular "picture-frame" first and second sides with horizontal upper members and horizontal lower members and vertical side members.

20. The shipping container of claim 19, wherein the first and second sides each include at least one bracing member and of a horizontal, vertical or diagonal orientation.

21. The shipping container of claim 19, wherein the lower horizontal member of the front side is a strike plate for the upper portion of the ramp.

22. The shipping container of claim 19, wherein the top cover is attached to the upper frame section using mating connectors.

23. The shipping container of claim 1, wherein the top comprises at least one or more bracing members.

24. The shipping container of claim 23, wherein the rectangular top cover comprises a flat plate extending between a pair of opposed side members.

25. The shipping container of claim 1, wherein the pallet base and top cover each have one or more points of attachment for securing straps.

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