ABSTRACT

A shipping carton with a ramp system which is integrated into the packaging in a unique way which facilitates positioning of the ramp system for use while also facilitating storage of the ramp system during shipment of the product enclosed within the packaging.
Fig. 1
INTEGRATED FOAM/WOOD RAMP SYSTEM FOR PRODUCTS WITH CASTERS

FIELD AND BACKGROUND OF INVENTION

[0001] This invention relates to packaging used to ship products and to the combination of ramps, cushions, and a shipped product.

[0002] A problem is presented when it is necessary to remove a product such as a heavy computer system from a shipping pallet without lifting the system. This problem has been attacked in the past with ramping systems which usually include a single large wood ramp made out of plywood. Another common ramp design is to use two solid wood ramps (or other materials such as steel or plastic) for each caster that contain built in caster guides to keep the casters from falling off the ramps when moving the system down the ramps. These methods can be expensive and drive complexity into the ship package design since the packaging designer must find a place to store the ramps in or on the package during shipment and a method to secure the ramp when used if the ramp is to be shipped with the product. If the ramp must be secured then extensive instructions are required that must be followed in order for the ramp to be used properly.

[0003] Products of the types described are frequently provided with supporting casters to facilitate movement of the system during use. Such products are here referred to as castered products. Handling castered products in packaging and shipment also requires a separate method to support the weight imposed through the casters under any bottom cushion provided (typically, foam cushioning material) since the load bearing area of the casters is small. In most cases a packaging designer must put a dense material under the casters to spread the load bearing weight between the casters and the foam cushioning.

SUMMARY OF THE INVENTION

[0004] It is a purpose of this invention to solve the identified problems by providing an easy to use ramp system that is intuitive and cost effective. This purpose is pursued by providing a ramp system which is integrated into the packaging in a unique way which facilitates positioning of the ramp system for use while also facilitating storage of the ramp system during shipment of the product enclosed within the packaging. Use of the ramp system of this invention is intuitive for a person unpacking a shipped product.

BRIEF DESCRIPTION OF DRAWINGS

[0005] Some of the purposes of the invention having been stated, others will appear as the description proceeds, when taken in connection with the accompanying drawings, in which:

[0006] FIG. 1 is a schematic perspective view of the elements of this invention, showing the shipping carton as arranged for packaging of a product and with the product and a portion of the packaging exploded upwardly.

[0007] FIG. 2 is a schematic perspective view similar to FIG. 1 and showing the elements of the present invention as arranged for unloading of a product and with the product and a portion of the packaging exploded upwardly.

[0008] FIG. 3 is a section view through a portion of the elements shown in FIGS. 1 and 2.

DETAILED DESCRIPTION OF INVENTION

[0009] While the present invention will be described more fully hereininafter with reference to the accompanying drawings, in which a preferred embodiment of the present invention is shown, it is to be understood at the outset of the description which follows that persons of skill in the appropriate arts may modify the invention here described while still achieving the favorable results of the invention. Accordingly, the description which follows is to be understood as being a broad, teaching disclosure directed to persons of skill in the appropriate arts, and not as limiting upon the present invention.

[0010] The present invention is a packaging configuration which in its simplest form is a container indicated at 10 in FIG. 1 and having at least four side walls 11 (two being visible) and a base encircled by said side walls and generally indicated at 12. The elements of the invention are illustrated in FIG. 1 in an exploded view, as if the container is lifted from the base in order to reveal the elements. It will be understood that, in shipment, the side walls 11 are secured to the base 12 to enclose a castered product 13.

[0011] The invention incorporates at least one product unloading ramp member, each having a portion hingedly connected to the base and extending therefrom to lie alongside one of said side walls while said base is encircled by said side walls. The ramp member extends outwardly from the base 12 while said side walls 11 are withdrawn from the base (FIG. 2) and facilitates unloading of any contained product.

[0012] Preferably, and as shown, the packaging configuration includes a plurality of ramp members, here shown as two members 14a and 14b. Each of the ramp members is formed by a structural member 16a, 16b, which preferably is formed of plywood sheet or similar material such as oriented strand board (OSB), reinforced plastic sheeting, or the like. The structural members 16a, 16b define a product supporting surface, the upper surface as shown, for bearing the weight of the product contained within the packaging. In a two ramp configuration, the ramps are spaced apart and arrayed parallel on to the other, as will be intuitively understood. More than two members may be provided where appropriate to the product contained, as where necessary to support a large weight or a multiplicity of casters as described more fully hereinafter.

[0013] The structural members 16a, 16b are engaged by corresponding cushioning members 18a, 18b here also described as caster guides. In the illustrated embodiment, the caster guides are made out of foam and serve several purposes. First, the members 18a, 18b guide casters present on a packaged product and keep them on the ramp as the product is moved down the ramp during unloading (FIG. 2). Second, they support the outboard hinged portion of the structural member during use, which allows the use of thinner and less material per ramp, reducing costs. Third, they provide protection against bumps and shock reaching the product on the side where the ramps are located during shipment (FIG. 1).

[0014] The present invention contemplates that the base 12 of the apparatus 10 may be received for shipment on a
pallet of conventional construction. The base 12 preferably has a tray and at least one bottom cushion. Two bottom cushions 20a, 20b are shown. The bottom cushions, similarly to the caster guides, are made out of foam and serve several purposes. First, the cushions 20a, 20b receive and support a packaged product. Second, they support the inboard hinged portion of the structural member during use, which allows the use of thinner and less material per ramp, reducing costs. Third, they provide protection against bumps and shock reaching the product from below during shipment.

[0015] Preferably and as shown, the structural member portion of the ramp member is of elongate form and hinged in the middle. Approximately one half of the length of the structural member is located under the contained product such that any casters provided rest on the structural member during shipment. This helps spread the weight of the product over the bottom cushions without adding extra packaging materials. The material on the opposite side of the hinge keeps the caster guide in place during shipment and drops down into ramping position for ease of use when the top portion of the carton is removed.

[0016] Each caster guide performs two functions. First, it provides shock protection for the packaged product on the side it is placed against during shipment. Preferably, the guide is a standard cushioning material (such as molded expanded polypropylene) and compresses when the product is dropped to reduce the G forces. The second function of the caster guide is to contain and support the structural member or hinged ramp. The hinged ramp preferably is made out of plywood and contains a plastic hinge. The combination of the cushioning material and structural member allows for a more cost-effective and simplistic package system for casted products.

[0017] As will be understood form the discussion above, the packaging system of this invention has each element of the package designed to perform several functions. The structural member 16a, 16b is designed to fit inside a cavity in the bottom cushion 20a, 20b. A protrusion such as a wood block is preferably provided on the bottom side of the structural member to fit into an open cavity in the bottom of the bottom cushion and keep the structural member in position when loading and unloading the castered product. In unloading, the castered product is rolled down the ramps provided.

[0018] In the drawings and specifications there has been set forth a preferred embodiment of the invention and, although specific terms are used, the description thus given uses terminology in a generic and descriptive sense only and not for purposes of limitation.

What is claimed is:

1. Apparatus comprising:
   a container having at least four side walls and a base encircled by said side walls; and
   at least one product unloading ramp member having a portion hingedly connected to said base and extending therefrom to lie alongside one of said side walls while said base is encircled by said side walls; said ramp member extending outwardly from said base while said side walls are withdrawn from said base and facilitating unloading from said apparatus of any contained product.

2. Apparatus according to claim 1 comprising a pair of said ramp members spaced one from the other and extending parallel one to the other.

3. Apparatus according to claim 3 wherein each of said ramp members comprises a structural member defining a product contacting surface and a cushioning member disposed adjacent said structural member and positioned to contact a floor surface when said ramp member is extended outwardly from said base.

4. Apparatus according to claim 3 wherein each said cushioning member has guide portions partially enclosing the adjacent one of said structural members and defining with said structural member a guiding channel which further facilitates unloading from said apparatus of any contained product.

5. Apparatus according to claim 1 wherein said ramp member comprises a structural member defining a product contacting surface and a cushioning member disposed adjacent said structural member and positioned to contact a floor surface when said ramp member is extended outwardly from said base.

6. Apparatus according to claim 5 wherein said cushioning member has guide portions partially enclosing said structural member and defining with said structural member a guiding channel which further facilitates unloading from said apparatus of any contained product.

7. Apparatus comprising:
   a bottom tray;
   a bottom cushion disposed in said bottom tray and cushioning any product received thereon;
   an external carton having at least four side walls and disposed to encircle said bottom tray;
   an elongate structural member having a first portion disposed on said bottom cushion and a second portion extending therefrom to lie alongside one of said side walls; and
   a side cushion disposed adjacent said second portion of said structural member and cushioning any product disposed within said side walls;
   said structural member and said side cushion together defining a ramp member and being positioned to contact a floor surface when said carton is removed from said tray and said ramp member is extended outwardly from said tray to facilitate unloading from said apparatus of any contained product.

8. Apparatus according to claim 7 comprising a plurality of pairs of said structural member and said side cushion, said pairs being spaced one from another and extending parallel one to another.

9. Apparatus according to claim 8 wherein each said side cushion has guide portions partially enclosing the cooperating one of said structural members and defining as a portion of said ramp member a guiding channel which further facilitates unloading from said apparatus of any contained product.

10. Apparatus according to claim 7 wherein said side cushion has guide portions partially enclosing said structural member and defining with said structural member a guiding
channel which further facilitates unloading from said apparatus of any contained product.

11. Apparatus comprising:

   a bottom tray;
   a bottom cushion disposed in said bottom tray and cushioning any product supported thereon;
   an external carton having at least four side walls and disposed to encircle said bottom tray;
   an elongate structural member having a first portion disposed on said bottom cushion and a second portion extending therefrom to lie alongside one of said side walls;
   a shipped product resting on said first portion of said structural member and disposed within said external carton; and
   a side cushion disposed adjacent said second portion of said structural member and cushioning said product;

said structural member and said side cushion together defining a ramp member and being positioned to contact a floor surface when said carton is removed from said tray and said ramp member is extended outwardly from said tray to facilitate unloading from said apparatus of said product.

12. Apparatus according to claim 11 comprising a plurality of pairs of said structural member and said side cushion, said pairs being spaced one from another and extending parallel one to another.

13. Apparatus according to claim 12 wherein each said side cushion has guide portions partially enclosing the cooperating one of said structural members and defining as a portion of said ramp member a guiding channel which further facilitates unloading of said product.

14. Apparatus according to claim 11 wherein said side cushion has guide portions partially enclosing said structural member and defining with said structural member a guiding channel which further facilitates unloading of said product.

15. Apparatus according to claim 11 further comprising casters mounted on said product and engaging said structural member to facilitate rolling said product from a position on said tray.