United States Patent

Lauffer

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[45] **Oct. 10, 1972**

[54] SUPPORTING PAD FOR A PALLET

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[73] Assignee: **Owens-Illinois, Inc.**

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[52] **U.S. Cl.** .....**248/188.8,** 108/51, 161/160, 220/9 F, 229/14 C, 248/350

[51] **Int. Cl.** **B65d 19/44**

[58] **Field of Search** ....156/79, 197, 205, 210; 161/7, 161/68, 69, 121, 123, 133–137, 159, 160, 161, 190, 247; 108/53, 51; 220/63 R, 9 F; 248/22, 350, 188.8; 206/46 FC; 229/14 C

[56] **References Cited**

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[57] **ABSTRACT**

A pad for supporting a pallet, the pad comprising a container-like shell, a compression-resistant composite material disposed within the shell, which is comprised of a rigid paperboard embedded into a foamed urethane plastic, the material filling at least a portion of the shell and coextensive with the depth of the shell, providing a pallet support.

1 Claim, 2 Drawing Figures

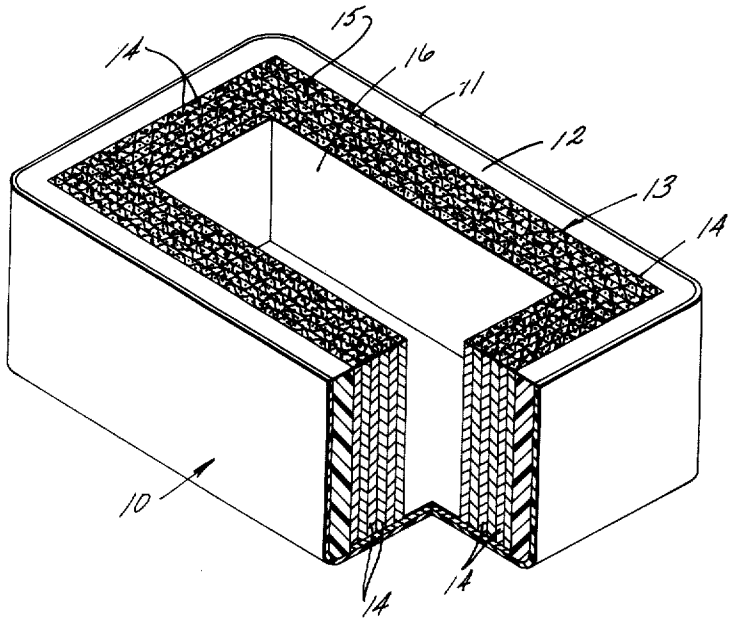

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FIG. 1.

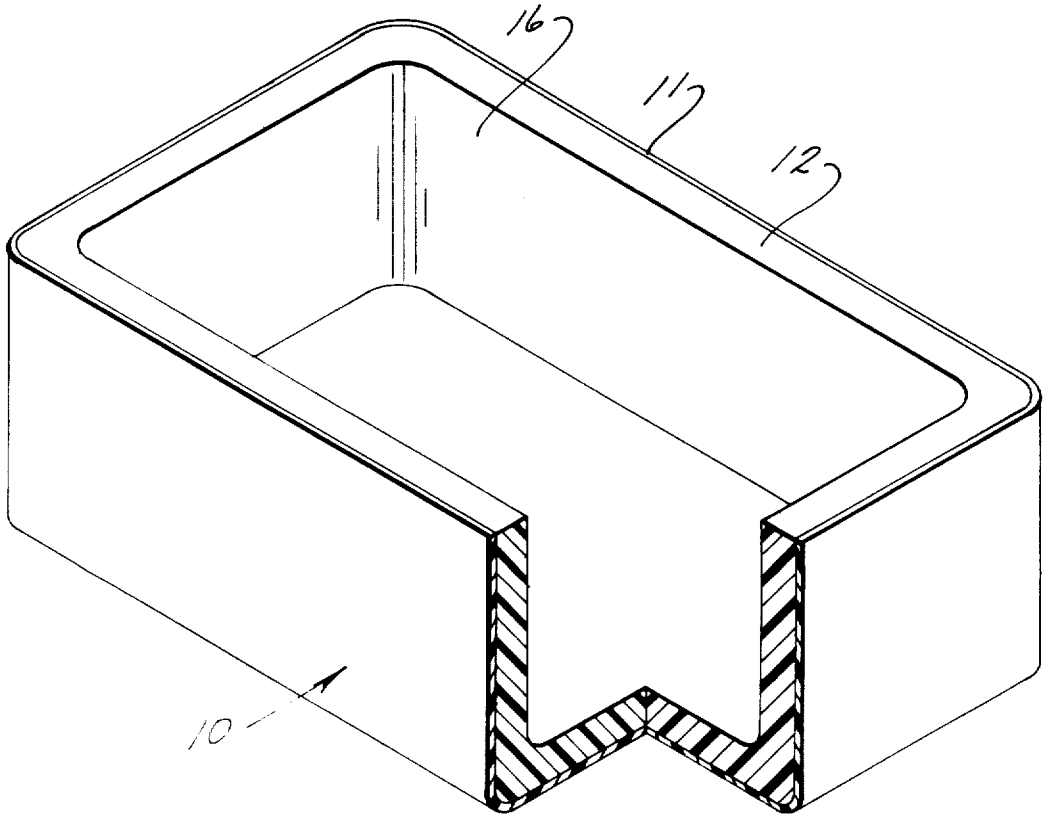

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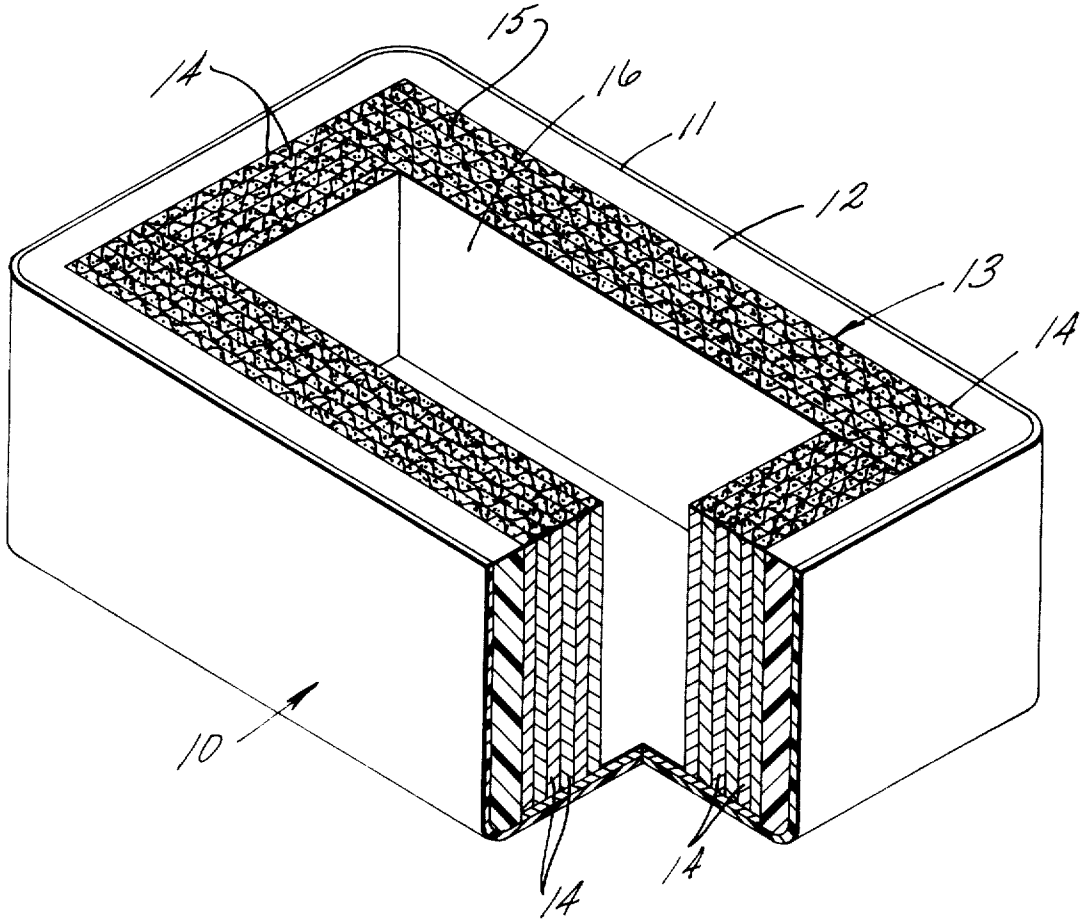
FIG 2



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SUPPORTING PAD FOR A PALLET

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention is a pad structure for a load-carrying unit such as a pallet. The invention is a pad structure formed with two parts — an outer plastic container-like shell, and a filling material which is compression-resistant. The filling material is a paperboard embedded in a foamed polyurethane plastic which at least partially fills portions of the shell to the depth of the shell. The pad may be separate or integrally formed with the pallet, and a plurality of pads are used in supporting a pallet.

2. Description of the Prior Art

The invention is an improved pad structure for a load-carrying unit such as a pallet. Pallets are supported in spaced relationship from a floor or other supporting surface, permitting the entry of the lifts of a fork lift. Prior art pallets have been supported on skids, blocks, and various appendages of the pallet structure.

A pallet support is disclosed in U.S. Pat. No. 3,495,756, issued Feb. 1970.

SUMMARY OF THE INVENTION

The invention is a support for a pallet; the support has a shell of a high-density plastic formed in any desired configuration, and a composite material within the shell, the composite acting as a compression-resistant material which supports a loaded pallet.

An object of the invention is to provide an easily-formed, light-weight pallet support having a waterproof outer shell made of a polyethylene material and a weight-bearing compression-resistant material comprising a foamed polyurethane and a plurality of corrugated paperboard sheets positioned within the shell. The pad of this invention comprises an easily-formed shell, a compression-resistant material within the shell, which has a very high weight-bearing capacity in comparison with its density, is easily formed into any desired shell configuration, and may be formed integrally with the pallet structure, if desired.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a pad of this invention, partially sectioned.

FIG. 2 is a perspective view of this invention, showing the compression-resistant composite with a partial section of the pad.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

This invention is an improved pad for supporting pallets. This preferred form of the invention is indicated by reference numerals **10** in FIG. 1. The pad **10** is comprised of a container-like shell **11** formed from a high-density plastic and a compression-resistant composite **13**, placed within the shell **11**. Shell **11** has shell liner **12**, aligned with and in contact with portions of the inner surface of the shell, and the liner **12** partially fills the shell. A portion, or all of the space **16** remaining within the shell is filled with the compression-resistant composite **13**.

The compression-resistant composite **13** is comprised of a plurality of rigid pieces of materials such as a paperboard **14** and a foam urethane plastic **15** and extending the depth of the shell. The space **16** within the pad is at least partially filled with the compression-resistant composite **13**.

The container-like shell **11** is formed from a high-density, heat and pressure-deformable polyethylene plastic. The shell **11** may be formed integrally with a major structure of a pallet or may be formed as a separate entity and attached to the pallet.

The shell **11**, shell liner **12**, and the rigid compression-resistant composite **13** provide a pad **10** having high compression-resistance per unit of square area of bottom area of the pad.

The shell structure can be formed as an integral part of a pallet enclosure such as the pallet described in copending application, Ser. No. 74,006, filed 9–21–70, by H. L. Arcocha, P. W. Dullabaun, and Fred E. Lauffer, the inventors herein. The shell may be made a part of the pallet by other suitable means such as adhering the top of the compression-resistant composite **13** to the pallet, using a surplus of foam in the shell **11**.

In another embodiment, a center space **16** is formed by placing therein the rigid material **14** so as to fill only a portion of the shell along its inner walls. The remainder of the shell space is filled with a polyurethane foam if desired.

In another embodiment of this invention, shell **11** has inner walls lined with a polyurethane foam shell liner **15**, extending the depth of the walls.

The remaining space **16** may be filled with a rigid material and foamed urethane only if the compression-resistance need be increased.

The term "urethane" as used herein covers a commercially available product which is applied to the rigid material by a commercial applicator.

A urethane is a product of a chemical reaction between an isocyanate (R-N-C-O-) and an alcohol (R-OH). The term "polyurethane" refers to molecular polymer products with repeating urethane linkage (-R°NH°$CO_{CF}^{R'}$-); and hence, other such reaction products are comprehended within the term "urethane."

The term "polyurethane" is commercially applied to such other hybrids reaction products as well as to long-chain polymers composed only of isocyanates and hydroxyl reaction products.

The term "plastic," as used herein, comprehends within the definition such reaction products as well as other foamable plastic materials which are compression-resistant when hardened.

What is claimed is:

1. A pad for supporting a pallet, said pad comprising:
   a. a container-like shell, formed of a high-density polyethylene plastic;
   b. a polyurethane shell liner which is aligned with and in contact with the inner surface of the shell;
   c. a compression-resistant composite, comprising foamed polyurethane plastic within the shell liner and a plurality of corrugated paperboard shells embedded within the foamed plastic;
   d. the polyurethane foam filling the shell liner coextensive with the depth thereof, the shell liner and the corrugated paperboard sheets in a side-by-side relationship.

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