United States Patent

Giasi

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[54] **PALLET**

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[52] **U.S. Cl.** **108/51**, 108/56

[51] **Int. Cl.** **B65d 19/00**

[58] **Field of Search** 108/51, 52, 56

[56] **References Cited**

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Assistant Examiner—Garry Moore
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[57] **ABSTRACT**

An improved low cost pallet is provided by means of a honeycomb core member to which is hingedly secured two honeycomb support members. The pallet may be shipped in a flat condition, and, when ready for use, the support members are positioned underneath the core member along two spacedly opposed side edges thereof.

The honeycomb core member is covered with a facing sheet as well as a backing sheet which, in part, forms the hinge means that secure the support members to the core member. Strips of tape may be used to cover a small portion of the facing sheet along the junctures of the core member and the support members. Adhesive means may be provided on the backing sheet so that, in the folded-under condition, the support members adhere to the backing sheet.

8 Claims, 7 Drawing Figures

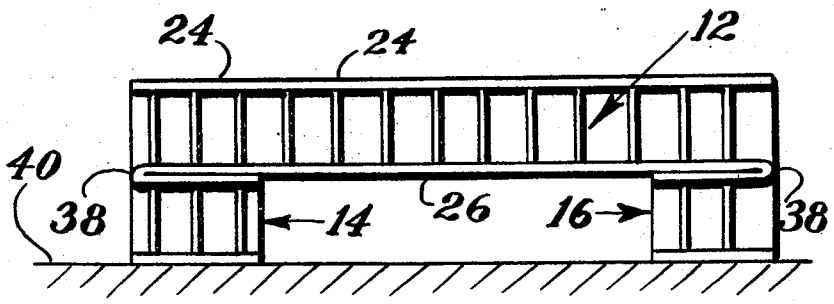


FIG. 1

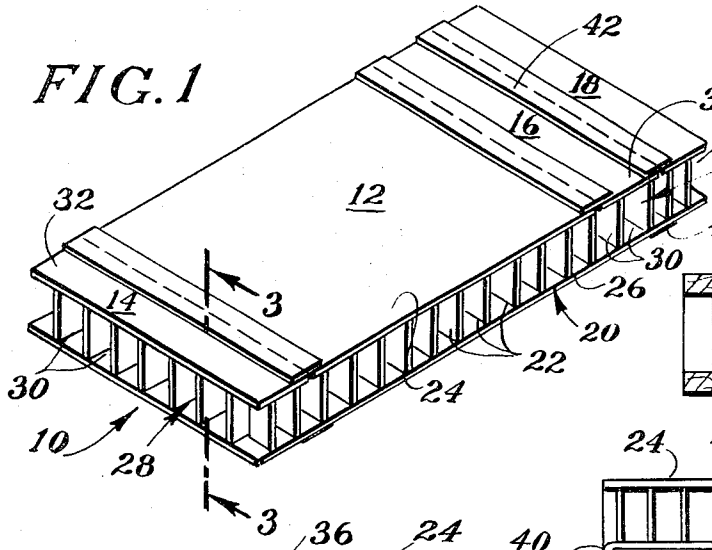
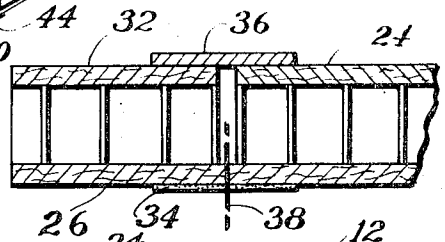


FIG. 3



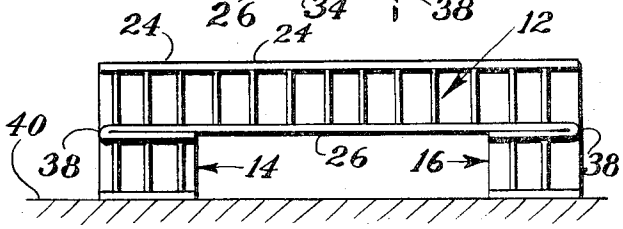


FIG. 5

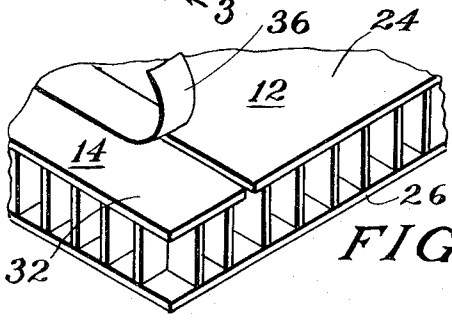


FIG. 4

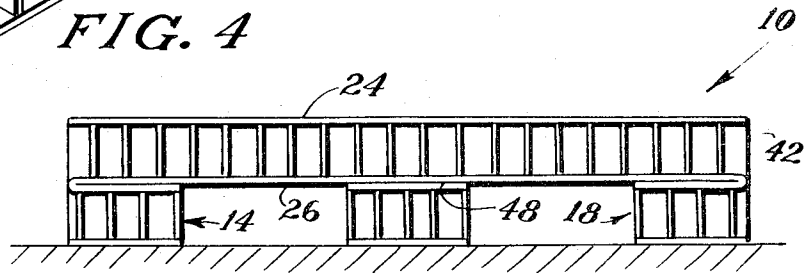


FIG. 6

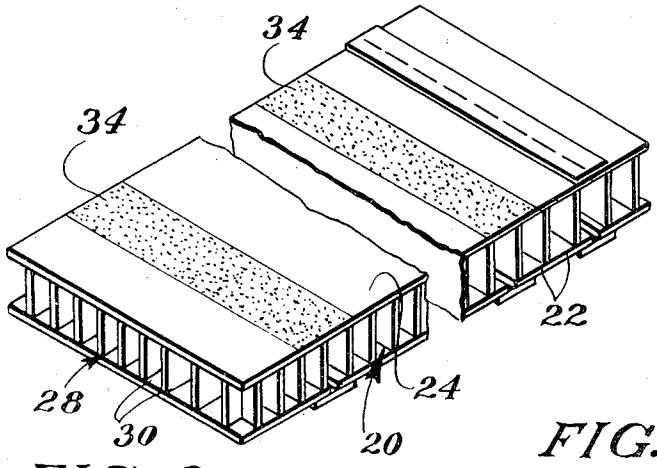


FIG. 2

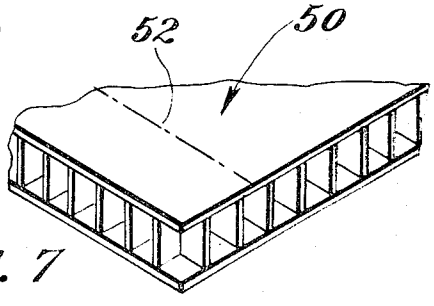


FIG. 7

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PALLET

The aforementioned abstract is neither intended to define the invention of the application which, of course, is measured by the claims, nor is it intended to be limiting as to the scope of the invention in any way.

BACKGROUND OF THE INVENTION

1. Field of the Invention:

This invention relates generally to shipping and storage pallets and more particularly to a low cost disposable pallet.

2. Description of the Prior Art

Pallets, of the type to which the present invention is directed, are used in industry for the purpose of storing merchandise thereon in spaced relation to a floor and also for transporting the merchandise from one place to another by means of a forklift truck. Pallets are generally comprised of a wooden platform on which are provided at least two spaced apart legs the heights of which are relatively short compared to the pallet surface area and which space the pallet support area from the ground level. The purpose of the legs are twofold. That is, (1) the pallet legs maintain the merchandise placed thereon in elevated condition relative to the floor; and (2) the pallet legs permit the arms of a forklift truck to be placed thereunder so that the pallet and the contents thereon may be transported from one place to another.

As mentioned above, the prior art pallets are generally made of wooden slats that are secured together, in any suitable manner, to define a flat support surface of generally rectangular or square area. The legs are usually formed of wooden studs or beams that are rigidly secured to the underside of the platform in spaced, parallel relationship to each other. It will be evident that the prior art pallets are costly to construct and are, of necessity, heavy. When unused pallets are stored, they are stacked one on top of the other. Because of the thickness of the legs only a very few pallets will form a column of substantial height. Because the pallets are so heavy, it is impractical to store more than a few, one on top of the other. Further, because of their rigid construction, the prior art pallets usually lasted for a considerable length of time. In spite of their limitations, the prior art pallets are very valuable in that they protect the merchandise thereon during transit.

SUMMARY OF THE INVENTION

The present invention is directed to a low cost, disposable pallet that includes all of the attributes of the prior art mentioned above, but which obviates the shortcomings therein. In its broadest aspect, the present invention provides a fibrous, paper like honeycomb core member on which is provided facing sheet means and backing sheet means. Fibrous, paper like support members, having a honeycomb construction, are secured to the lateral side edges of the core member by means of the backing sheet.

In one embodiment of the invention, the facing sheet means is precut at the juncture of the core member and the side support members and the cut is covered by a removable tape. In another, alternative embodiment of the invention, the facing sheet means is not precut completely but either a line is formed thereon indicating where it is to be cut by the ultimate user, or a series of perforations are provided coincidentally with the juncture of the core member and the side support members to facilitate subsequent cutting by the ultimate user.

Regardless of the embodiment, the present invention is set up merely by folding the side support members underneath the central core member with the backing sheet meanS acting as an integral hinge. It is preferred that adhesive areas be provided on the backing sheet means so that when the side support members are folded under they will adhere to the central core member.

As an alternative embodiment, an additional support member, also formed with a fibrous paper-like honeycomb core and having facing and backing sheets means, is provided. The additional support member may be secured to either one of the first two mentioned side support members by means of strips of tape that cover the junctures of both the facing sheet and the backing sheet. This last mentioned embodiment is desirable when the pallet is of relatively large size and the additional elements are used as a central support member intermediate the spaced side support members. Of course, adhesive means may also be used to secure the central support member in place.

The present invention, as mentioned above, provides all of the advantages of the prior art. In addition, the present invention has several distinct advantages over previous construction. One important advantages is the relatively lower cost of manufacture of the fibrous, paper-like pallet comprising the present invention. Further, the present invention may be shipped flat with the support members placed in position only when the pallet is actually going to be used. Because of its paper-like construction, the present invention provides a pallet of light weight but high rigidity due to the honeycomb construction. It will be evident that the present invention may be more quickly discarded and thus need not be returned to the point of shipment at some considerable expense when it is no longer used. Conventional water and fungus repellents may be added to the present invention as well as fire retardant compounds for purposes of safety.

Accordingly, it is a primary object of the present invention to provide an improved shipping and storage pallet.

Another important object of the present invention is to provide an improved shipping and storage pallet that is light in weight and relatively low in cost.

An important object of the present invention is to provide an improved light-weight, low-cost pallet that may be shipped and stored in a flat condition.

Still another object of the present invention is to provide a light-weight, low-cost pallet that may be discarded after only a few uses.

A particular object of the present invention is to provide an improved pallet having a fibrous, paper-like honeycomb core and integral side support members of like material, the side support members being folded under and secured to the underside of the central portion of the pallet only when the pallet is being made ready for use.

These and other objects, features and advantages of the invention will, in part be pointed out with particularity, and will, in part become obvious from the following more detailed description of the invention taken in

conjunction with the accompanying drawing which forms an integral part thereof.

BRIEF DESCRIPTION OF THE DRAWING

In the various figures of the drawing, like reference characters designate like parts. In the drawing:

FIG. 1 is a perspective view of one embodiment of the present invention;

FIG. 2 is a fragmentary perspective view of the reverse side of the pallet shown in FIG. 1;

FIG. 3 is a fragmentary, sectional elevational view taken on an enlarged scale along line 3—3 of FIG. 1;

FIG. 4 is a fragmentary, perspective view of the structure shown in FIG. 1 illustrating a feature of the present invention;

FIG. 5 is an elevational view illustrating the pallet shown in FIG. 1 in the set-up condition;

FIG. 6 is a view similar to FIG. 5 showing an alternative embodiment of the present inve-tion; and

FIG. 7 is a fragmentary, perspective view illustrating an alternative embodiment of the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, there is shown in FIG. 1 an improved pallet **10** comprising the present invention. The pallet **10** comprises a central core member **12** and side support members **14** and **16**. Although an additional side support member **18** is shown in the FIG. 1 embodiment, primarily for convenience of illustration, it will be understood that this last mentioned element **18** is used in conjunction with the embodiment shown in FIG. **6** and will be described in connection therewith.

The central core member **12** is comprised of a honeycomb body **20** having a plurality of cells **22** formed therein in a conventional manner. A facing sheet **24** is secured to one surface of the honeycomb **20** and a backing sheet **26** is secured to the other surface thereof.

Both of the side support members **14** and **16** are also formed of a fibrous, paper-like honeycomb **28** comprised of a plurality of cells **30**. One surface of each of the honeycombs **28** is covered by facinG sheets **32** shile the other surface of the honeycombs **28** are covered by extensions of the same backing sheet **26** that also covers the honeycomb **20**. The backing sheet **26** in this embodiment is continuous whereas the opposite surface of the pallet **10** is covered by a central facing sheet **24** and two separate side facing sheets **32**.

As shown in FIG. **2**, the backing sheet **24** is provided with discrete areas covered by adhesive means **34** that are located in the vicinity of the juncture of the central core honeycomb **20** and the two side support honeycombs **28**.

Finally, as shown in FIG. **3**, the confronting edges of the facing sheets means **24** and **32** are covered by removable tapes **36**.

The manner in which the present invention is set up is shown in FIGS. **4** and **5**. Referring first to FIG. **4**, it will be seen that the tape strips **36** are peeled back to expose the confronting edges of the facing sheet means **24** and **32**. Then, using the portion of the backing sheet **26** directly below the juncture of the facing sheets **24** and **32** as a hinge, the side support members **14** and **16** are folded underneath the central core member **12**. The hinge is shown schematically as a dot and dash line in FIG. **3** and is designated by the reference character **38**. Because there is adhesive **34** on the backing sheet **26**, the side support members **14** and **16** will adhere to the central core member **12** proximate the side edges thereof as shown in FIG. **5** and will pace the core member **12** upwardly from a support surface **40**.

If the pallet is going to be very wide, it is preferable that an intermediate and completely removable support member be provided. This is shown in FIGS. **1** and **6**. The separable support member **18** is secured to the support member **16** by means of strips of tape **42** and **44** on the upper and lower surfaces respectively of the pallet **10**. The additional side support member **18** is also fabricated from a fibrous paper-like material and has a honeycomb core **46**. When the additional side support member **18** is used, as shown in FIG. **6**, an adhesive area **48** is applied to the backing sheet **24** intermediate the side edges thereof. All other construction is the same as shown in FIG. **1**, the only difference between the two embodiments being the utilization of a central support member for large size pallets.

FIG. **7** illustrates an alternative embodiment of the present invention. Instead of providing separate facing sheets **24** and **32** for the core member **12** and the side support members **14** and **16**, respectively, as shown in FIG. **1**, one continuous facing sheet **50** is provided and either a line is imprinted thereon indicating where the sheet **50** is to be cut or a line of perforations **52** are formed therein to facilitate the cutting of the sheet **50** at the required location. Once the sheet **50** is cut , the side support members **14** and **16** may be folded under the core member **12** as described in the previous embodiment. It should be noted that in this last mentioned embodiment, the covering tape is not required to hold the side support member to the core member since the sheet **50** is continuous except for the line of perforations **52** therein.

From the foregoing, it will be evident that an improved low cost pallet for shipping and storage purposes has been provided. The use of a fibrous, paper-like material for the core and the support members as well as for the facing and backing sheets minimizes the costs of manufacture of the pallet and makes the pallet inexpensive enough to be disposed of after only a few uses. Additional expenses of shipping the pallets back to the point of origin need no longer be incurred. While the pallet of this invention is extremely light weight, the honeycomb construction provides rigidity comparable to the prior art devices. The pallet may be shipped in a flattened condition thus minimizing shipping and storage space and may be set up without special tools and skills merely by stripping back the tape or cutting along an indicated line and then folding the sides underneath the central section so that the central section will be spaced from a support surface. A central support member for large size pallets may be readily provided merely by adding an additional, fully separable, side support section to the original pallet.

There has been disclosed heretofore the best embodiment of the invention presently contemplated. However, it is to be understood that various changes and modifications may be made thereto without departing from the spirit of the invention.

What I claim as new and desire to secure by Letters Patent is:

1. An improved, low cost pallet comprising:
a. a honeycomb core member;
b. at least one honeycomb support member positioned along each of the two opposed side edges of said core member;
c. facing sheet means covering said core member and said support members;
d. backing sheet means covering said core member and said support members; and
e. hinge means formed integrally with said backing sheet means coincidentally with the confronting side edges of said core member and said support members whereby said support members may be folded underneath said core member to thereby space said core member from a support surface.

2. The pallet in accordance with claim 1 wherein said facing sheet means is split along a line coincidental with the confronting side edges of said core member and said support members.

3. The pallet in accordance with claim 2 further including a strip of removable tape at least partially covering said split in said facing sheet means.

4. The pallet in accordance with claim 1 further including a line on said facing sheet means coincidental with said confronting side edges of said core member and said support members, said facing sheet means being adapted to be cut along said line.

5. The pallet in accordance with claim 1 further including a line of perforations on said facing sheet means coincidental with the confronting side edges of said core member and said support members, said facing sheet means being adapted to be cut along said line of perforations.

6. The pallet in accordance with claim 1 further including an adhesively coated area on said backing sheet means adjacent said hinge means whereby said support members will adhere to said backing sheet means in the folded under position.

7. The pallet in accordance with claim 1 further including an additional honeycomb support member, facing and backing sheet means covering said additional support member, tape means for removably securing said additional support member to said pallet and adhesive means for securing said additional support member to said backing sheet at a location intermediate said first two support members.

8. The pallet in accordance with claim 1 wherein said core member and said support members are made of a fibrous, paper-like material.

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