United States Patent [19]

Hewson

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[54] **KNOCK DOWN PALLET**

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[52] **U.S. Cl.** **108/56;** 52/668

[51] **Int. Cl.²** **B65D 19/26**

[58] **Field of Search** ..... 108/51–54, 108/56, 58, 55, 57; 52/668, 753 T; 217/18, 29–31; 220/22

[56] **References Cited**

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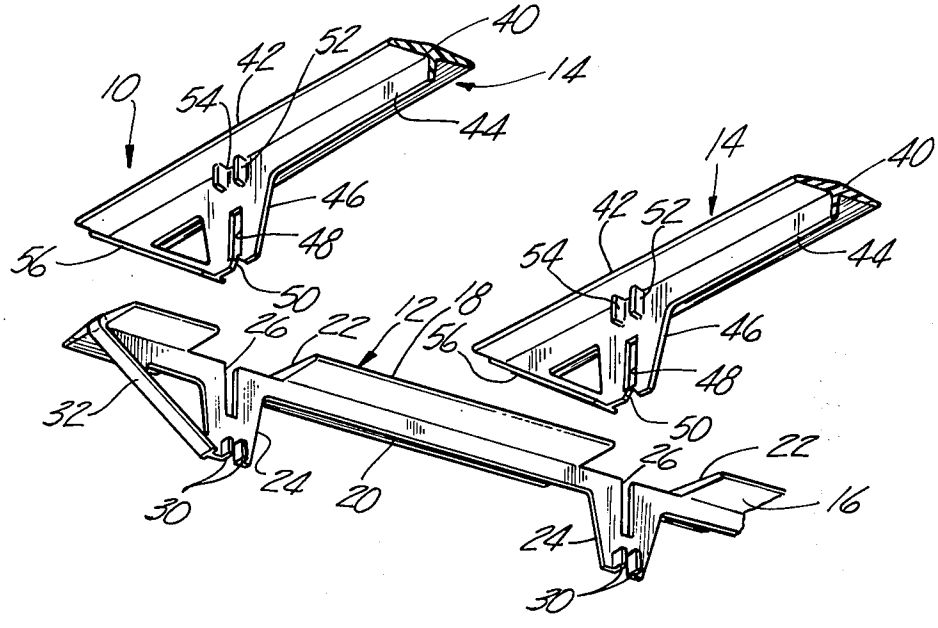
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Attorney, Agent, or Firm—Basile and Weintraub

[57] **ABSTRACT**

A pallet construction fabricated from a plurality of parallel lower beam elements which are interconnected by a second plurality of parallel beam elements. The beam elements are releasably attachable and interchangeable to permit the assembly of a wide variety of pallet sizes.

1 Claim, 7 Drawing Figures



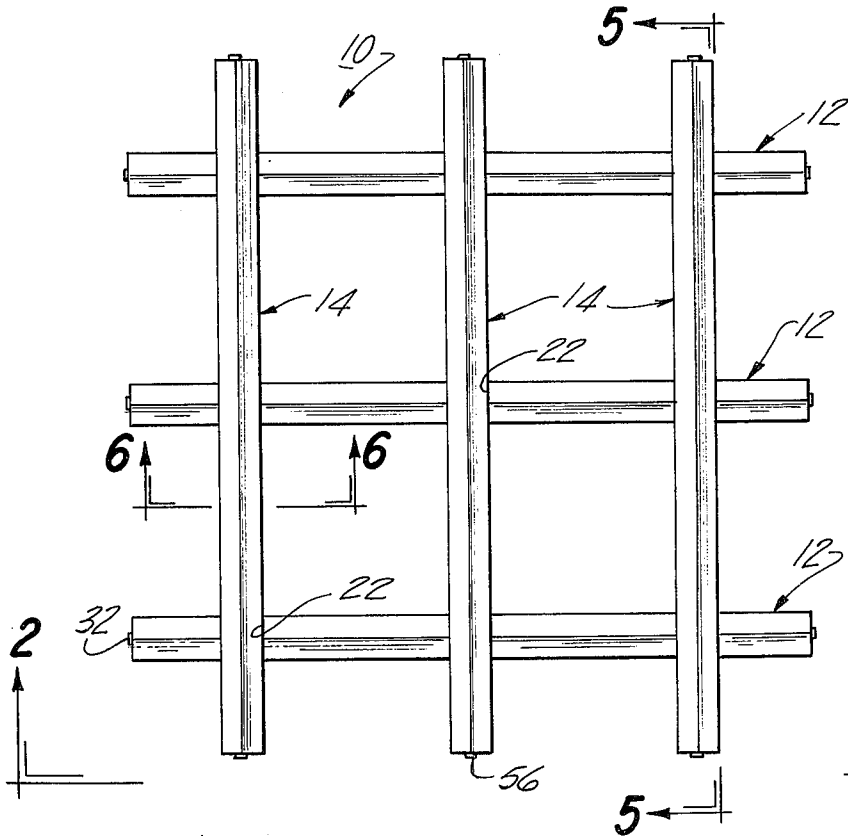


Fig-1

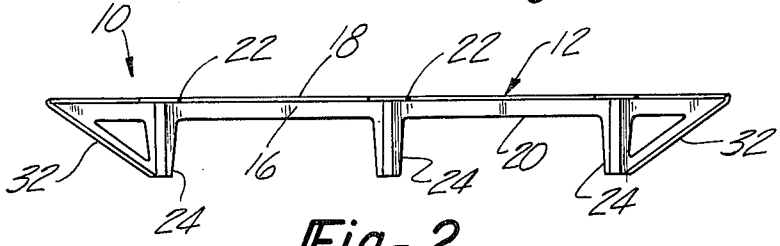


Fig-2

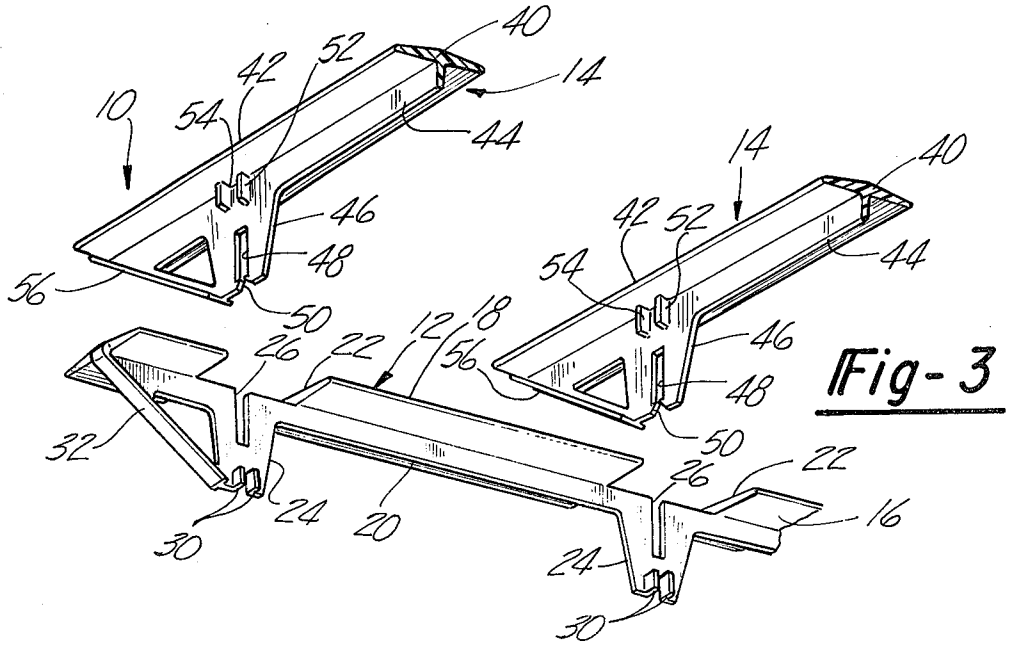


Fig-3

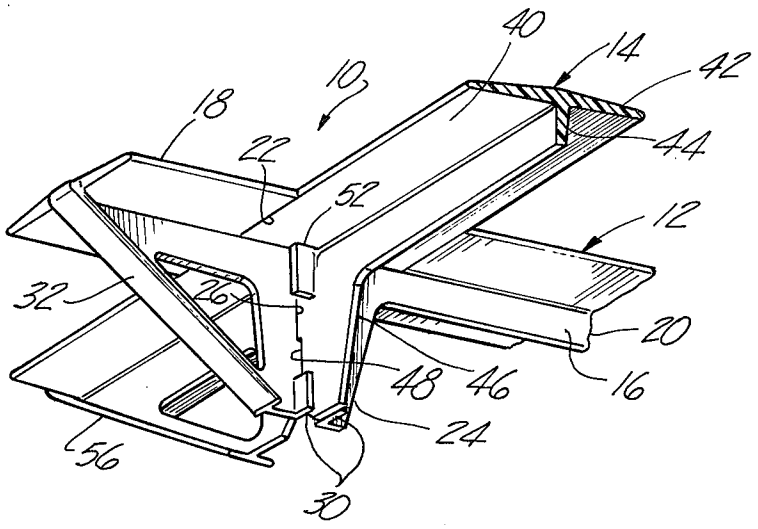


Fig - 4

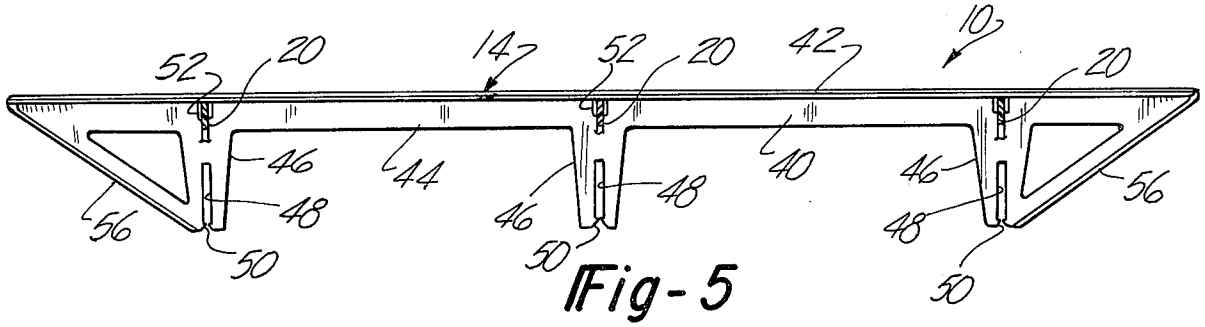


Fig - 5

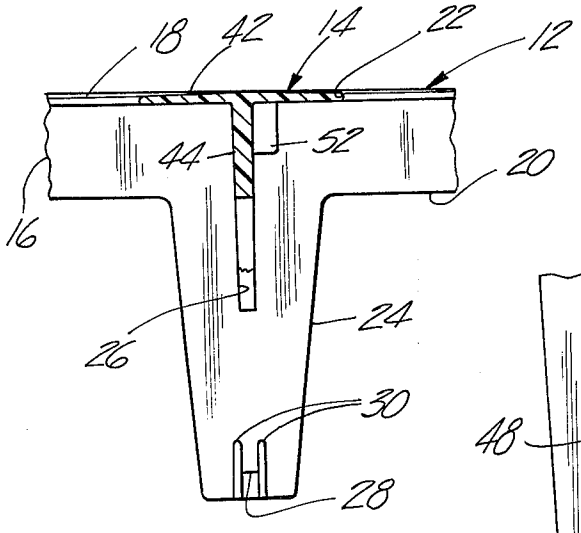


Fig - 6

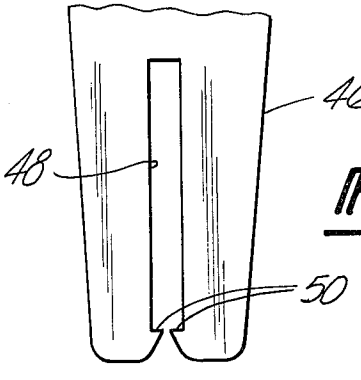


Fig - 7

KNOCK DOWN PALLET

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to pallets and, more particularly, to a knock down pallet fabricated from plastic beam members which may be interconnected to form pallets of varying sizes.

2. Description of the Prior Art

Heretofore, pallets have been constructed from wooden members that are nailed together in a permanent fashion. Such pallets are heavy, difficult to store and transport. Because of the rising price of lumber, such pallets have also become rather expensive to fabricate. For example, a six foot square pallet costs approximately $30.00. It would therefore be desirable to have a pallet which can be assembled and disassembled, as desired, and one which may be assembled into a variety of different sizes, such that the pallet is usable in a wide variety of applications and does not have the disadvantages of storage, transportation and cost of the previously mentioned wooden pallets.

SUMMARY OF THE PRESENT INVENTION

The present invention which will be described subsequently in greater detail comprises a collapsible pallet fabricated from a plurality of transversely disposed members, each of which is provided with means for releasably attaching the members to one another so as to selectively fabricate pallets of different widths and lengths as desired for a particular application and which may be disassembled and stored or transported as desired.

It is therefore an object of the present invention to provide a new and improved pallet which may be assembled and disassembled as desired.

It is also an object of the present invention to provide pallet components which may be assembled and disassembled to fabricate pallets of varying sizes as necessary to accommodate any application and which components are of a simple and inexpensive design, and thus, inexpensive to fabricate.

It is still another object of the present invention to provide a pallet which may be disassembled and which has components which are interchangeable to afford the user the ability to construct a pallet of different sizes and which is provided with means for releasably attaching the various interchangeable components with one another.

Other objects, advantages and applications of the present invention will become apparent to those skilled in the art of pallets when the accompanying description of one example of the best mode contemplated for practicing the invention is read in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

The description herein makes reference to the accompanying drawings wherein like reference numerals refer to like parts throughout the several views and in which:

FIG. 1 is a top plan view of one example of a pallet which is fabricated in accordance with the principles of the present invention;

FIG. 2 is a side elevational view of the pallet as seen from line 2—2 of FIG. 1;

FIG. 3 is a fragmentary, exploded perspective view of the pallet illustrated in FIG. 1;

FIG. 4 is a fragmentary perspective view of the bottom side of the pallet illustrated in FIG. 1;

FIG. 5 is a cross-sectional view of the pallet as taken along line 5—5 of FIG. 1;

FIG. 6 is an enlarged fragmentary cross-sectional view of the pallet taken along line 6—6 of FIG. 1; and

FIG. 7 is an enlarged fragmentary view of one leg of an upper element of the pallet illustrated in FIG. 1.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings and, in particular, to FIG. 1 wherein there is illustrated a pallet **10** constructed in accordance with the principles of the present invention and comprising a plurality of lower pallet components **12** which intersect and are releasably attached to a plurality of upper pallet components **14.**

As can best be seen in FIGS. **3** and **7,** the lower pallet components **12** each comprise an elongated T-shaped member **16** having an upper base support surface **18** and a downwardly disposed flange **20.**

The base surface **18** of the lower pallet component **12** has slots **22** provided at strategic locations along the full length of the surface **18.** The slots **22** are square in shape in that their longitudinal length is equal to the width of the base support surface **18** for a purpose which will be described hereinafter with respect to the description of the upper pallet components **14.** Immediately beneath each slotted section **22,** the pallet component flange **20** has a downwardly extending support leg **24,** the same being centrally positioned with respect to the slotted section **22.** The upper surface of the flange **20** at the slotted section **22** is provided with a leg receiving slot **26** which slot extends downwardly approximately half the length of the support leg **24.**

The lower portion of the support leg **24** has a slotted section **28** (FIG. **6**) extending from the bottom surface of the support leg **24** at its mid-section and aligned with the leg receiving slot **26.** It should be noted that the leg receiving slot **26** and slotted section **28** at the bottom of each of the flange legs **24** have a width which is equal to the width of the flange and legs of the upper pallet components **14** for a reason which will be described hereinafter. The lower portion of each support leg **24** is further provided with spaced positioning flanges **30** which are disposed on opposite sides of the slotted section **28** on the same face of the support leg **24** and are adapted to receive a portion of the legs of the upper pallet components **14** which also will be described in greater detail hereinafter.

An inclined web member **32** is attached to the outer ends of the T-shaped member **16** and the outer side of the outermost support legs **24** on each component **12.** The web members **32** are T-shaped in cross-section having an outer base surface and an inner flange portion which is integral with the associated sections of the leg **24** and flange **20** of the T-shaped member **16.**

In the preferred embodiment the lower pallet component **12** is fabricated from a plastic material and the T-shaped member **16** including the base surface **18,** the flange **20,** the downwardly extending legs **24,** the positioning flanges **30** and the inclined web members **32** are of an integral construction with the slotted section **22** and the support legs **24** being spaced at 12 inch centers. As will be described hereinafter, the length of the lower pallet component **12** may be of any selected length

depending upon the desired applications as will be discussed in greater detail hereinafter.

Referring now to FIGS. 3, 5 and 7, the upper pallet components 14 are each illustrated as comprising an elongated T-shaped member 40 having an upper base support surface 42 and a downwardly disposed flange 44. In a manner similar to the lower pallet component 12, the upper pallet component 14 has downwardly extending support legs 46 which are disposed at strategic locations along the length of each component 14 and preferably at 12 inch centers. Each component support leg 46 is provided with leg receiving slots 48 which, as can best be seen in FIG. 7, terminates at its lower end in a pair of opposing shoulders 50. The legs 46 are so constructed that they are laterally movable with respect to each other such that the lower support leg 24 may be received between the shoulders 50 and into the leg receiving slot 48 as will be described hereinafter.

The flange 44 has a pair of spaced lateral projections 52 which define thereinbetween a space receiving groove 54 which, in turn, is aligned with the slot 48 and of a width equal to the width of the lower pallet component support leg 24.

The opposite ends of each of the upper pallet supports 14 has an inclined web member 56 integrally connected thereto and which terminates in an integral connection with the outermost side of the support leg 46. The web members 56 provide bearing support for the outer edge of the pallet components 14 when it is assembled in the manner illustrated in FIGS. 1 and 4.

In the same manner as aforementioned with respect to the lower pallet component 12, the upper pallet component 14 is of an integral construction and preferably fabricated from a plastic material, that is, the elongated T-shaped member 40 including its support surface 42 and flange 44, the downwardly extending support legs 46 and the inclined web members 56 are all of an integral structure and of any one of a selected number of sizes as will be described.

As can best be seen in FIGS. 3 and 4, the pallet 10 is assembled by positioning an upper pallet component 14 in an axis which is perpendicular to the axis of a lower pallet component 12 and by inserting the support leg 46 of the upper component 14 through the leg receiving slot 26 of the lower support leg 24 and inserting the support leg 24 into the leg receiving slot 48 so that the two component legs interlock as shown in FIG. 4. When the components 12 and 14 are fully engaged as shown in FIG. 4, the opposite sides of the flange 20 of the lower pallet components 12 are received within the groove 54 defined by the spaced flanges 52 so that lateral movement of the flange 20 with respect to the upper pallet component 14 is restrained. Similarly, the lower portion of each leg 46 of the upper pallet component 14 is received within the groove defined by the positioning flanges 30 such that lateral movement between a leg 46 and the lower pallet component 12 is restrained. As aforementioned, the opposing portions of the leg 46 defined by the groove 48 are movable inwardly and outwardly with respect to each other so as to accommodate the passage of the lower support leg 24 into the slot 48 until the shoulders 50 of the upper support legs 46 lockingly engage the slotted section 28 formed at the lower section of the support legs 24 whereby the upper pallet component is releasably attachable to the lower pallet component 12.

As can best be seen in FIG. 6, when the lower and upper pallet components 12 and 14 are connected in the aforementioned manner, the base support surface 42 of the upper pallet component 14 is received within the slotted section 22 of the lower pallet component and the two components form a suitable support surface as shown in FIG. 1.

In the embodiment illustrated in FIG. 1, the lower and upper pallet components 12 and 14 have an overall length of three feet such that the resultant pallet that is formed by assembling the components in the manner aforementioned is a three foot square pallet. It can be appreciated that if upper pallet components of a 6 foot length were utilized, and additional lower pallet components 12 were employed, a six foot by 3 foot pallet could be easily formed, similarly by having pallet components 12 and 14 of different lengths, any number of pallet sizes such as 6 foot and 8 foot squares can be constructed as the pallet components are interchangeable and may be releasably attached to any other component to form a pallet of any desired size.

Although only one example of the present invention has been disclosed, it should be understood by those skilled in the art that other forms may be had, all coming within the spirit of the invention and scope of the appended claims.

What is claimed is as follows:

1. A pallet comprising:

a plurality of first beam elements, each fabricated from a plastic material and of a selected length,

each of said first beam elements having a support surface and outwardly projecting support posts at selected spaced locations along the longitudinal length of each of said first beam elements said support surface having notches therein at positions located above each of said support posts;

a plurality of second beam elements, each fabricated from a plastic material and of a selected length, each of said second beam elements having a support surface and outwardly projecting support posts at selected spaced locations along the longitudinal length of each of said second beam elements, said first and second beam element support posts having mating slotted portions such that the support posts of said first beam elements engage the support posts of said second beam elements;

snap lock means carried at the projecting ends of said support posts of said first and second beam elements for interlocking said first and second beam element support posts;

first vertical flange means integrally formed on said first beam elements and extending laterally of said first beam element support posts to engage said second beam element support posts; and

second vertical flange means integrally formed on said second beam elements and extending laterally of said second beam element support posts to engage said first beam element support posts, said first and second vertical flange means respectively restraining said second and first beam element support posts from lateral movement with respect to one another.

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