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(54) **PALLET ASSEMBLY**

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(75) Inventor: **Ming-Che Wu**, Putze City (TW)

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Correspondence Address:
NIKOLAI & MERSEREAU, P.A.
900 SECOND AVENUE SOUTH
SUITE 820
MINNEAPOLIS, MN 55402 (US)

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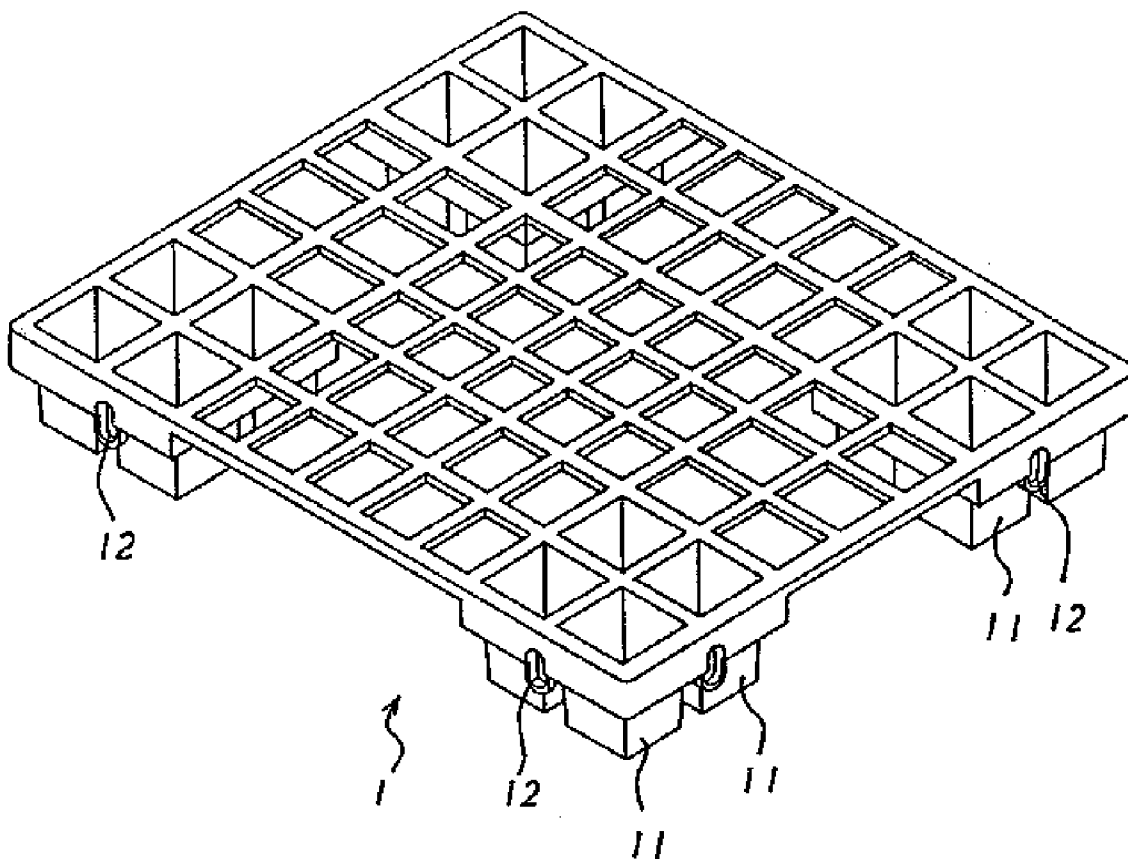
(57) **ABSTRACT**

(73) Assignee: **GLOBAL PLASTIC INDUSTRIES CO., LTD.**, Putze City (TW)

A pallet assembly is composed of multiple pallet pieces and multiple wedging elements. Each pallet piece has four corners with four individual legs and multiples engaging holes defined on sides of the pallet piece. Each leg is rectangular in transversal cross-section and selectively has a mortise or a tenon to detachably and engages with other corresponding leg on an adjacent stacked pallet piece in the pallet assembly. Moreover, each wedging element is clamped between two adjacent juxtaposed pallet pieces to widen the pallet assembly. Thereby, the pallet assembly is versatile in changing sizes, easy to be assembled and dis-assembled, stable in use and convenient in storage.

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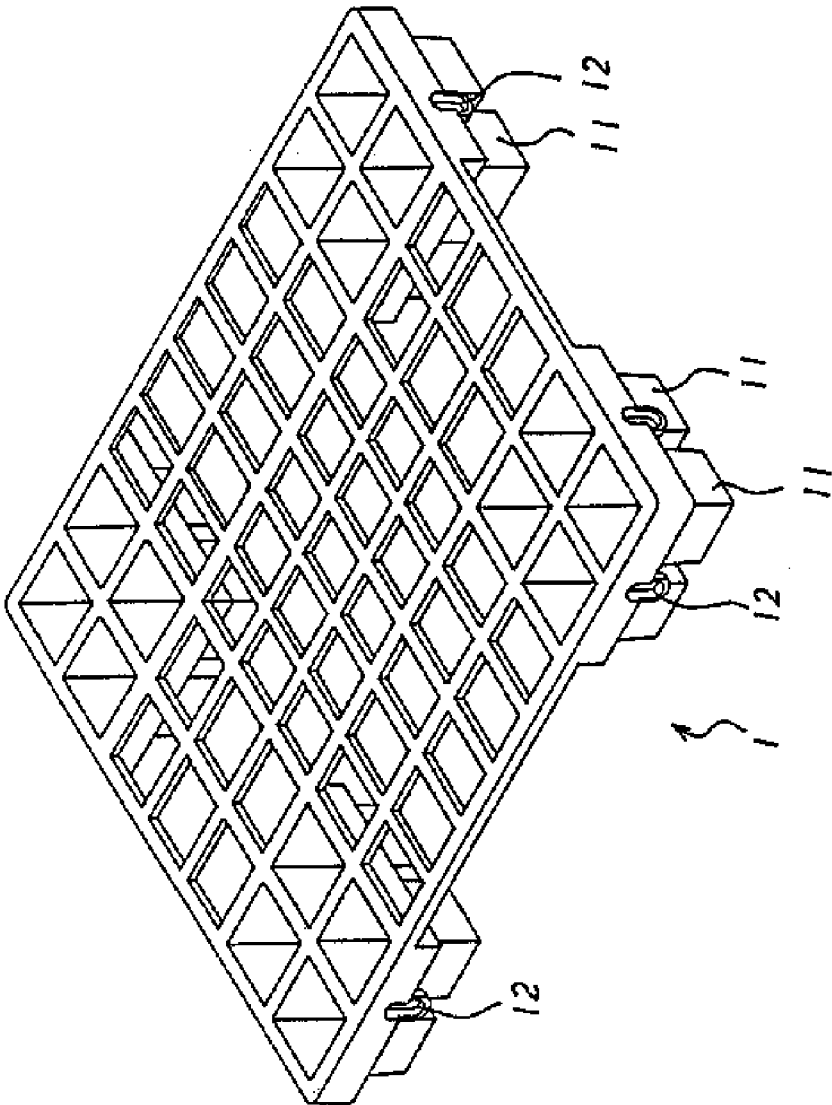


FIG. 1

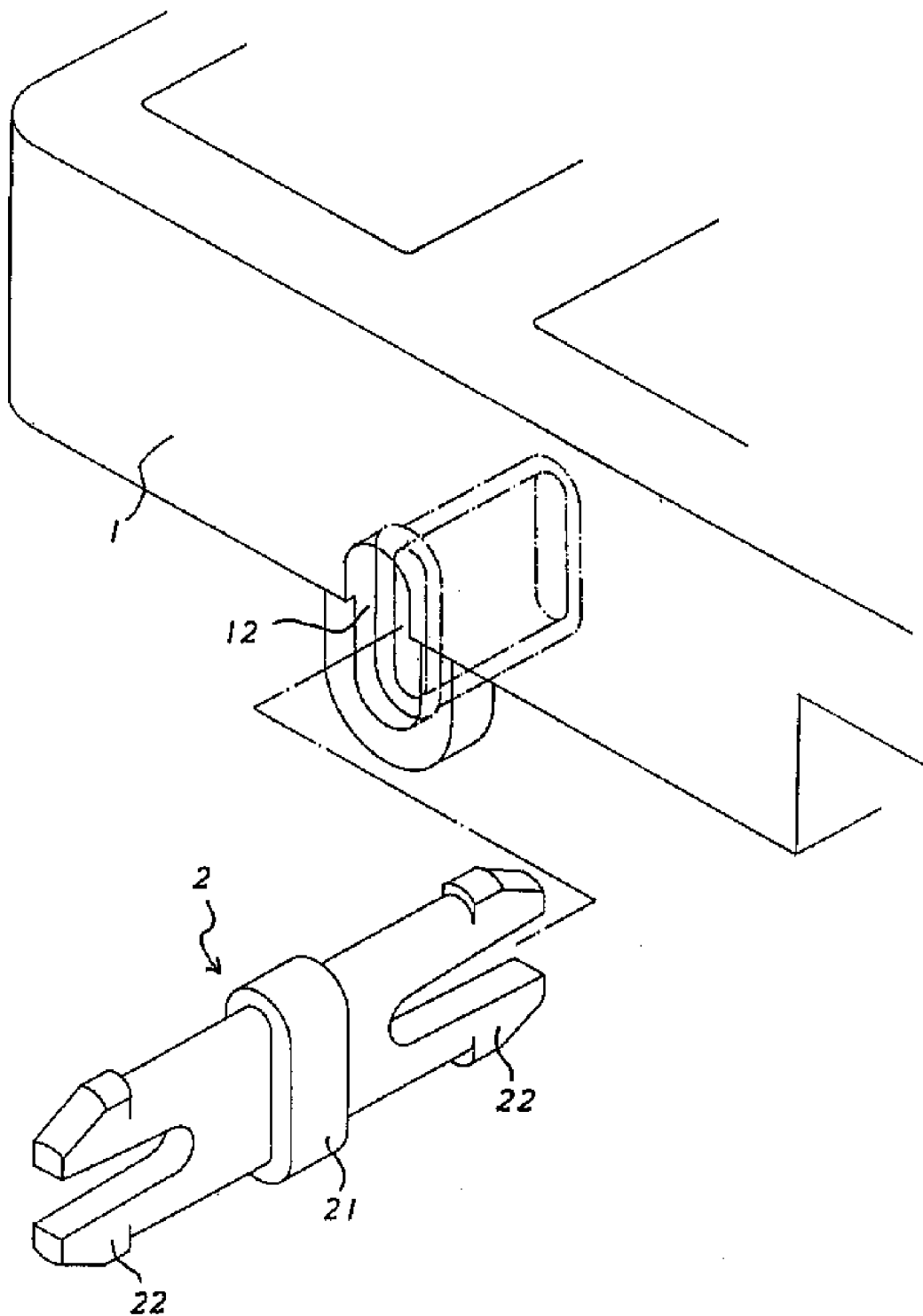


FIG. 2

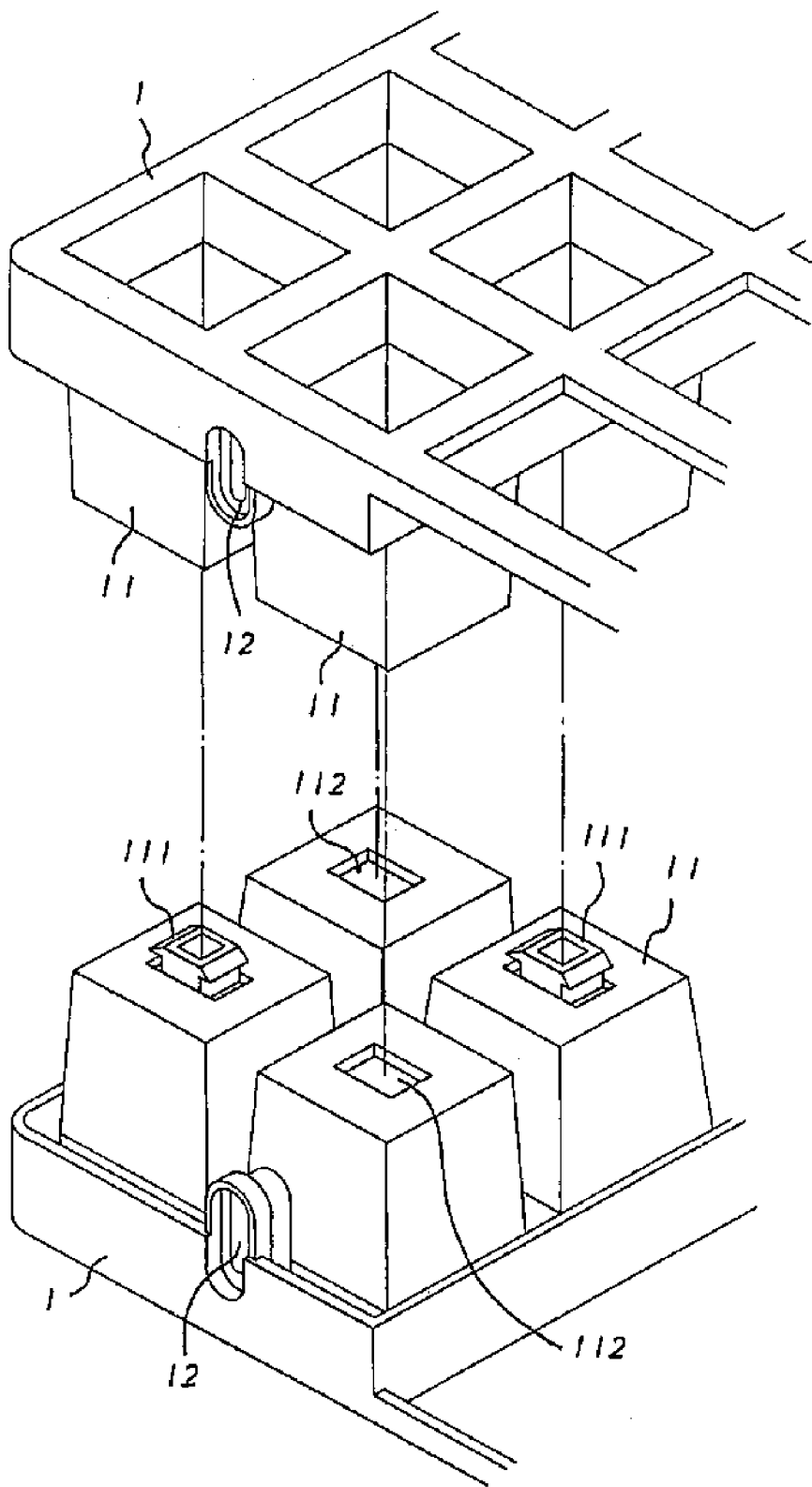


FIG. 3

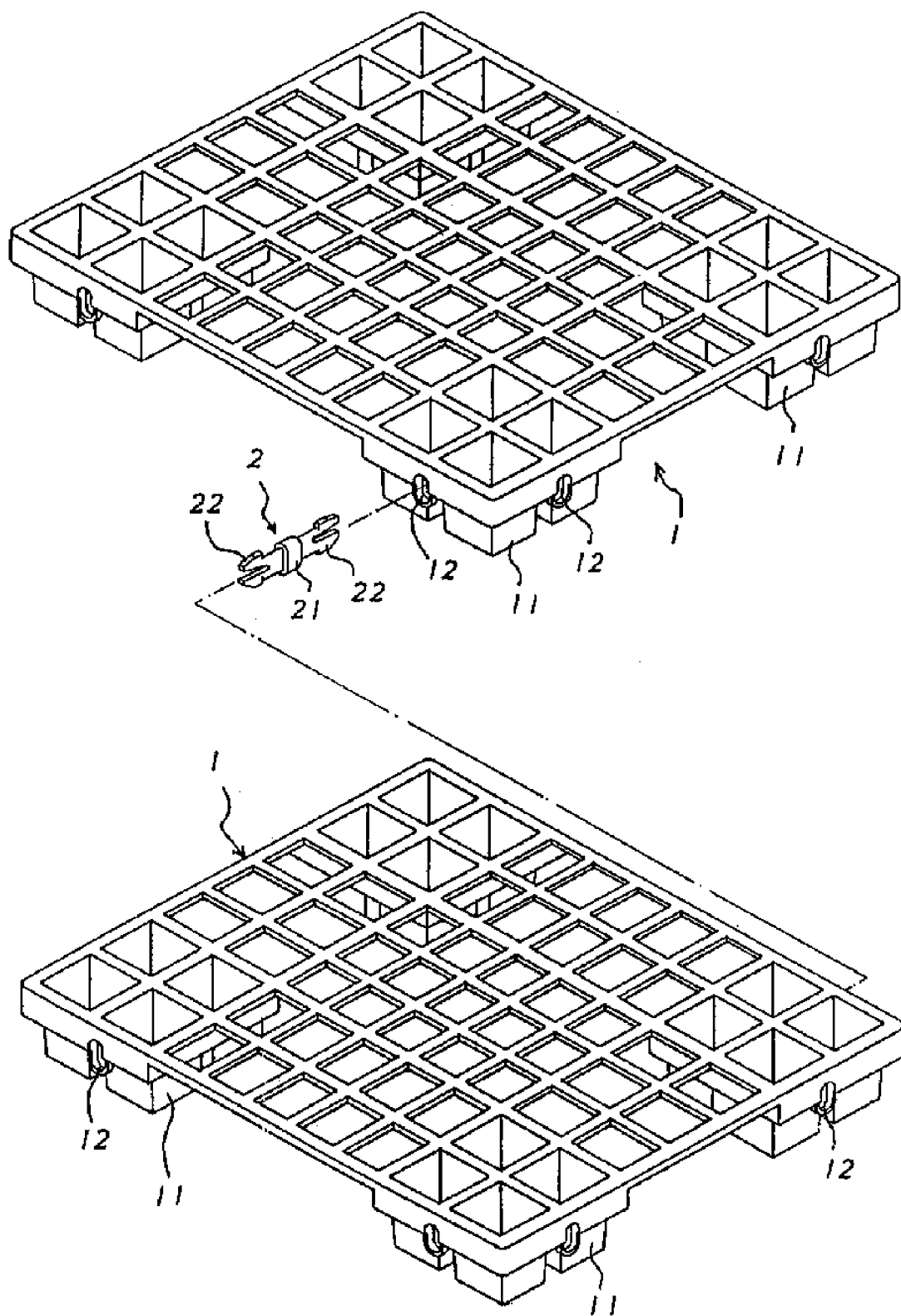


FIG. 4

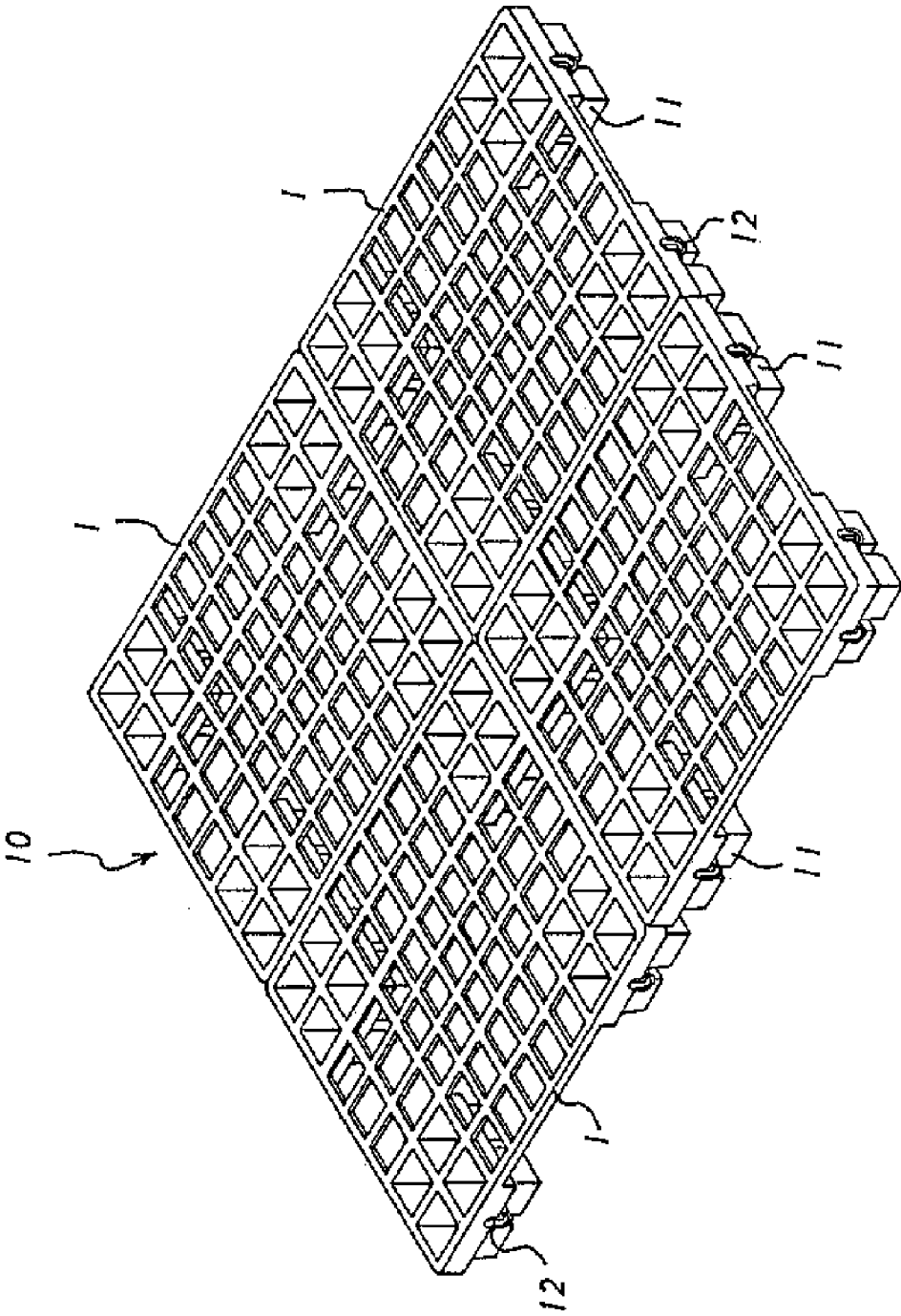


FIG. 5

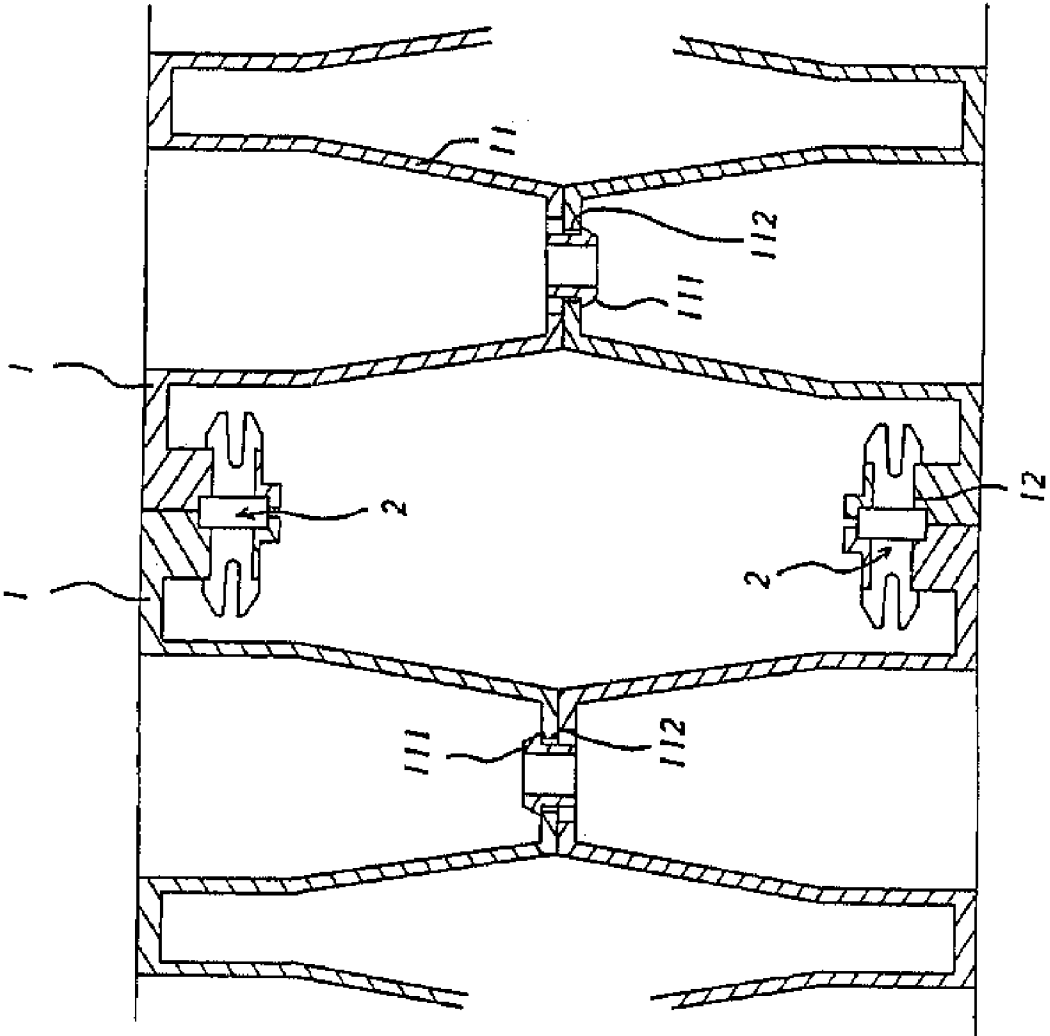


FIG. 6

PALLET ASSEMBLY

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to a pallet assembly, and more particularly to a pallet assembly comprising multiple pallet pieces and multiple wedging elements easily and selectively combined together to make the pallet assembly stable in use, flexible in size and convenient in storage.

[0003] 2. Description of Related Art

[0004] Pallet is used to provide transportation convenience for stacked goods on the pallet by spacing the stacked goods from the ground so that a lift truck can rapidly move the stacked goods with the pallet together, especially when the stacked goods are in huge numbers. For industrial operation, the pallet must be changeable in sizes and easily assembled in practice.

[0005] With regard to structure of a conventional pallet commonly seen in present, the conventional pallet has a one-pieced structure with a regular size after the conventional pallet is manufactured so that area for stacking goods on an individual conventional pallet is unchangeable. Therefore, the individual conventional pallet can not be enlarged to provide more area for stacking more goods. On the contrary, it is impossible to be diminished to correspond with insufficient storage room. Therefore, the conventional one-pieced pallet having the regular size is not flexible in use.

[0006] Additionally, another conventional pallet has a combination structure composed of multiple units that are modified for improvement of manufacturing process not for size variation. Therefore, use efficiency of the conventional pallet having the combination structure is the same with the former one and the same drawback has not been overcome yet.

SUMMARY OF THE INVENTION

[0007] The main objective of the present invention is to provide a pallet assembly that comprises multiple pallet pieces and multiple wedging elements to selectively and conveniently combine together to perform different variations and then to correspond different requirements for use.

[0008] To achieve the foregoing objective, the pallet assembly comprises:

[0009] multiple pallet pieces, each pallet piece being a rectangular board with four sides and four corners and having four legs individually formed at the four corners and multiple engaging holes defined on each of the four sides; and

[0010] multiple wedging elements attached between adjacent two of the multiple pallet pieces, each wedging element having two ends respectively combined to aligned two of the multiple engaging holes on the adjacent two of the multiple pallet pieces.

[0011] Further benefits and advantages of the present invention will become apparent after a careful reading of the detailed description with appropriate reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a perspective view of a pallet piece in the pallet assembly in accordance with the present invention;

[0013] FIG. 2 is an enlarged perspective view showing an engagement of the pallet piece and a wedging element;

[0014] FIG. 3 is an enlarged perspective view showing an engagement of two adjacent pallet pieces stacked in the pallet assembly;

[0015] FIG. 4 is a perspective view showing an engagement of two adjacent pallet pieces juxtaposed in the pallet assembly;

[0016] FIG. 5 is a perspective view of the pallet assembly in accordance with the present invention, wherein the pallet assembly is shaped in a square; and

[0017] FIG. 6 is an enlarged cross-sectional side view showing the engagement of two adjacent stacked pallet pieces in the pallet assembly.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0018] A pallet assembly in accordance with the present invention comprises multiple pallet pieces and wedging elements. Each pallet piece has four corners with legs and multiples engaging holes defined on sides of the pallet piece. Each leg is rectangular in transversal cross-section and selectively has at least one mortise or at least one tenon to detachably and engages with other corresponding leg on an adjacent pallet piece stacked thereto in the pallet assembly. Moreover, each wedging element is clamped between two adjacent juxtaposed pallet pieces to widen the pallet assembly. Thereby, the pallet assembly is versatile in changing sizes, easy to be assembled and disassembled, stable in use, and convenient in storage.

[0019] With reference to FIGS. 1, 2 and 5, a pallet assembly 10 in accordance with the present invention comprises multiple pallet pieces 1 and multiple wedging elements 2.

[0020] Each pallet piece 1 is a rectangular board with four legs 111 respectively formed at four corners and has multiple engaging holes 12 evenly defined on sides of the rectangular board. Each leg 11 on the pallet piece 1 is composed of four blocks each having a distal end and a tenon 111 or a mortise 112 alternatively formed at the distal end (as shown in FIG. 3).

[0021] Each wedging element 2 is a double-headed stick having a middle flange 21 and two resilient forks with enlarged heads 22 that make the wedging element 2 secured on the pallet piece 1 when the resilient forks respectively penetrate two corresponding engaging holes 12 on two adjacent juxtaposed pallet pieces 1. Moreover, the flange 21 keeps the wedging element 2 from entirely passing through the engaging holes and positions the pallets pieces 1 with the enlarged head 22 after combining. Therefore, the combined juxtaposed pallet pieces are kept firm together without separation by simply using the engaging element 2. As shown in FIG. 5, the pallet assembly 10 can be widened to carry more goods thereon.

[0022] By having the structure of the pallet piece 1, the goods enable to be located on a top face of the pallet piece

1 because the pallet piece 1 has multiple legs 11 on a bottom face. Two pallet pieces 1 are juxtaposed closely and combined together by inserting two wedging elements 2 into the corresponding engaging holes 12 at adjacent sides on the two pallet pieces 1 (as shown in FIG. 4) to elongate the pallet assembly. Moreover, four pallet pieces 1 can be arranged into a square to enlarge the pallet assembly 10 and combined by the wedging elements 2 in the same manners to accord with different lift trucks. Selectively, multiple pallet pieces 1 can be arranged into an L-shape to accord to irregular storage space.

[0023] Additionally, the pallet assembly can be varied in height as shown in FIGS. 3 and 6. The legs 11 having mortises and tenons on one pallet piece 1 correspondingly combine other legs 11 on an adjacent pallet piece 1 by matching the mortises and the tenons as shown in FIG. 6. Therefore, the pallet assembly performs a double-sided structure and is heightened (thickened) to become strengthened to stably support heavy stacked goods. When the ground is muddy or uneven, the pallet assembly has the double-sided structure can provide more abutting area (more than three-fourths or two-thirds of the face) on a lower pallet piece to contact and firmly grip the ground so that stability of the pallet assembly is improved.

[0024] According to above description, the pallet assembly in the present invention has the following advantages:

[0025] 1. The pallet pieces 1 are conveniently and flexibly assembled together in different shapes to make the pallet assembly versatile to correspond with different requirements of the stacked goods or storage room.

[0026] 2. When the pallet pieces 1 are combined with legs to legs, the pallet assembly 10 can be strengthened to stably support heavy goods stacked thereon.

[0027] 3. Each pallet piece 1 of the pallet assembly is much smaller than the conventional pallet having the one-piece structure. When the pallet piece downsizes, module cost for manufacturing the pallet piece is significantly

diminished since the size of the module positively relates to the module cost. Moreover, the diminished pallet piece 1 is easy to be transported or stored and flexible in use.

[0028] Although this invention has been described in its preferred form with a certain degree of particularity, it is understood that the present invention of the preferred form has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts any be resorted to without departing from the spirit and scope of the invention.

What is claimed is:

1. A pallet assembly comprising:

multiple pallet pieces, each pallet piece being a rectangular board with four sides and four corners and having four legs respectively formed at the four corners and multiple engaging holes defined on each of the four sides; and

multiple wedging elements attached between adjacent two of the multiple pallet pieces, each wedging element having two ends respectively engaged the engaging holes on the adjacent two of the multiple pallet pieces.

2. The pallet assembly as claimed in claim 1, wherein each leg of the pallet piece is composed of four blocks each having a distal end and a mortise or a tenon alternatively formed at the distal end.

3. The pallet assembly as claimed in claim 1, wherein each wedging element is a double-headed stick and has a middle flange and two resilient forks with enlarged heads to firmly combine with the corresponding engaging holes on the adjacent two of the multiple pallet pieces.

4. The pallet assembly as claimed in claim 2, wherein each wedging element is a double-headed stick and has a middle flange and two resilient forks with enlarged heads to firmly combine with the corresponding engaging holes on the adjacent two of the multiple pallet pieces.

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