Jan. 31, 1967 R. W. LANDSIEDEL 3,301,200

FOLDING PALLET

Filed Oct. 14, 1965

Fig. 1

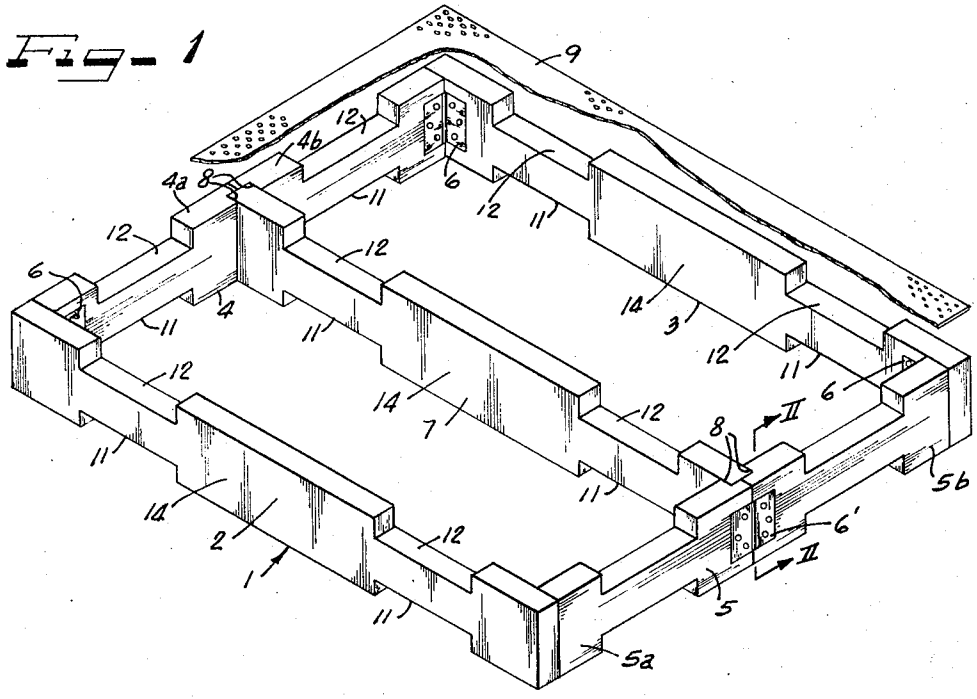
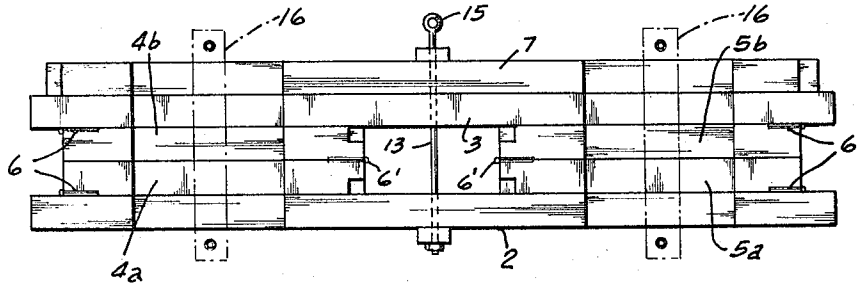


Fig. 3



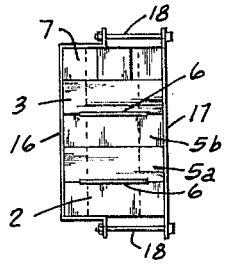
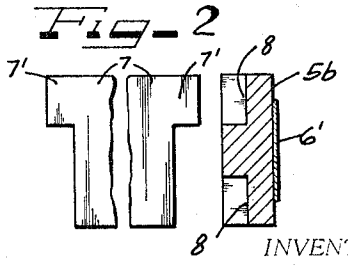


Fig. 4

Fig. 2



INVENTOR.

RAYMOND W. LANDSIEDEL

BY Kill, Sherman, Meroni, Gross & Simpson ATTORNEYS

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FOLDING PALLET

Raymond W. Landsiedel, 4645 Le Claire Ave., Chicago, Ill. 60638

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2 Claims. (Cl. 108—51)

The invention relates generally to a pallet structure and more particularly to a folding pallet which may be set up to support a pallet board and goods thereon or to permit folding into a compact mass for storage and thus is particularly adapted for use in warehouses, trailer trucks and the like.

The invention has among its objects the production of a folding pallet which may be collapsed into a minimum volume, whereby it will take little space when not in use.

A further object is the production of such a pallet which has a minimum of separable pieces, which may be secured together into a unitary folded package.

Another object of the invention is the production of a pallet having such advantageous features which is relatively very simple in construction, inexpensive to manufacture and which may be of rugged construction to provide a maximum usable life.

A further object of the invention is the production of a pallet having such advantages which is so designed that it forms a unitary assembly which will permit engagement of a fork lift, either with the pallet members, whereby the pallet, pallet board and load thereon may be picked up by the fork lift, or if desired, merely the pallet board and the load may be picked up.

Many other objects and advantages of the construction herein shown and described will be obvious to those skilled in the art from the disclosure herein given.

In the drawings, wherein like reference characters indicate like or corresponding parts:

FIG. 1 is a perspective view of a pallet embodying the present invention, illustrated in opened position, and with a cooperable pallet board disposed thereabove, portions of the latter being broken away to show the details of construction of the pallet;

FIG. 2 is a sectional view of the side member 5*b* taken approximately on the line 2—2 of FIG. 1, and the end portions of the brace member 7;

FIG. 3 is a top plan view of the pallet structure with the intermediate brace member and the side members disposed in folded position; and

FIG. 4 is an end elevational view of the folded assembly illustrated in FIG. 3.

The present invention contemplates the production of a pallet structure comprising respective side members suitably connected together to permit folding of the structure, whereby all of the side members are disposed in substantially parallel relation adjacent to one another, with the overall thickness of the folded assembly being substantially equal to the combined thickness of the respective side members, a brace member being provided for maintaining the structure in opened relation.

Referring to FIG. 1, the reference numeral 1 indicates a pallet structure which is of generally rectangular shape, having four side members, two of which side members 2 and 3, are of unitary construction, while the other pair of side members 4 and 5 are constructed in two sections of equal length 4*a* and 4*b*, and 5*a* and 5*b*, arranged to form a rectangle, with the respective side members forming the perimeter thereof.

The side members are hinged at the corners of the rectangle and the sections of the side members 4 and 5 are hinged at their junctures. As will be apparent from a reference to FIGS. 1 and 3, the respective side members may be pivotally connected by hinges 6 disposed at the corners, such hinges being disposed with their pivots substantially at the junctures of the inner walls of the respective side members, while the hinges 6', connecting the abutting ends of the sections of each pair of side members, are disposed with their pivots substantially at the juncture of the outer walls of the respective sections.

It will be apparent that with this construction of the side members and the disposition of the hinge pivots, the sections of the side members 4 and 5 may be pivoted inwardly to dispose such sections in parallel relation between the two sections 2 and 3, as illustrated in FIG. 3. At the same time such disposition of the hinges will tend to resist movement of the side members out of a rectangular relationship, other than with respect to such folding action, so that a relatively rigid structure is provided as long as folding movement of the two sectioned side members is prevented. This may be readily accomplished by the provision of a brace member 7 which extends parallel to the side members 2 and 3 and abuts the side members 4 and 5.

In the construction illustrated, as will be apparent in FIG. 2, the sections 4*a* and 4*b* are cooperably notched in their upper and lower edges at the juncture of the two members as indicated at 8 to form a combined notch of a size to snugly receive the tongue 7' formed on the adjacent end of the brace member 7, and in like manner the sections 5*a* and 5*b* are similarly notched as indicated at 8. The interlocking construction of the brace member 7 and the side members 4 and 5 permit either edge of the pallet to be on the bottom and at the same time insures retention of the brace member 7 in assembled relation, as the projections 7' prevent the brace member from dropping out, as well as permitting it to effectively carry a part of the load on the pallet board. It will be apparent that as the sections 4*a* and 4*b*, and 5*a* and 5*b* cannot pivot outwardly from their positions as illustrated in FIG. 1, the brace member will be adequately retained in operative position and at the same time, the latter will prevent inward movement of the sections of the side members, thereby maintaining the pallet in its opened position and forming a relatively rigid structure.

The pallet described normally will be employed in conjunction with a pallet board 9 which may be of any suitable construction, depending upon the nature of the goods to be supported thereby, as for example, of plywood, masonite, heavy cardboard or similar material, or a metal structure of mesh or expanded metal which is adapted to be supported on the upper edges of the pallet structure. Normally such pallet board will merely rest upon the pallet structure without requiring aligning or fastening means of any kind.

The side members 2–5 and brace member 7 are provided along their lower edges with upwardly extending notches 11, having a length, spacing and vertical height which is such as to permit the reception of a fork lift below a pair of side walls 4 and 5, or the side walls 2, 3 and brace member 7, whereby the pallet structure may be supported on such a fork lift. It is often desirable to pick up with such fork lift only the pallet board and the load disposed thereon, and to facilitate such operation the upper edges of the side members and brace member are provided with corresponding notches 12, whereby the fork lift may be disposed between the pallet structure and the pallet board and thus permitting the fork lift to pick up only the pallet board and the load thereon.

The pallet structure may be made of any suitable material, usually hardwood or the like of suitable width and thickness to support the load for which it is designed, a suitable dimensioning for average use, utilizing 2 x 6 lumber, with the pallet having dimensions of 40 x 48 inches or 42 x 48 inches which are standard sizes. In such constructions, the folded package of side members

and brace members would be dimensioned 58 inches x 10 inches x 6 inches, whereby the folded package is less than a quarter of the bulk of a corresponding pallet which cannot be folded. Likewise, the pallet boards are normally of half inch thickness or less, depending upon the material to be supported thereon and in the event the pallet board is of wood or the like, it may be perforated or otherwise processed to provide for the movement of air therethrough if desirable to provide ventilation for the goods supported on the pallet.

The pallet structure may be maintained in folded relation by suitable means, as for example, a bolt **13** which extends through board **14** in the side members **2** and **3** and brace member **7**, which bolt may be in the form of an eye-bolt having an eye **15** by means of which the folded package may be supported. In some cases it may be desirable to provide retaining straps **16** and **17**, suitably connected by bolts **18**, by means of which the folded package may be retained in operative position and in some cases it may be desirable to form brackets similar to those illustrated in FIG. 4, and in dotted lines in FIG. 3, supporting more than one pallet.

It will be noted from the above description that I have provided a pallet structure of extremely simple construction which may be readily folded to a package of minimum bulk for storage or transportation.

It might be mentioned that in the fabrication of the pallet structure, the hinges will normally be attached to the respective side members by bolts which are suitably countersunk to prevent binding and interference.

Having thus described my invention, it will be apparent that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

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

1. In a folding pallet, the combination of a plurality of elongated side members, each having a height greater than their thickness, arranged to form the perimeter of a rectangle, with a pair of opposite sides of the rectangle

each being formed in two sections of equal length, and the other pair of side members being of unitary construction, hinge means connecting said side members at the corners of the rectangle and at the adjacent ends of the respective pairs of sections, the hinge means at the respective corners being disposed to pivot at the junctions of the inner walls of said side members, and the intermediate hinge means at said section junctions being disposed to pivot at the outer walls thereof, whereby said sections may be pivoted into parallel relation with the other two side members, forming a folded structure having a total width approximately equal to the combined width of two of said sections and the pair of unitary side members, and a detachable brace member extending between the respective sectioned side members, the latter being notched to receive the abutting ends of said brace member, with the brace member being operative to prevent inward movement of said sections to folded positions, said brace member and said side members each having a pair of notches in the bottom edges thereof, spaced to permit reception of a fork lift thereunder on which the pallet may be carried.

2. A pallet as defined in claim **1**, wherein said brace member and said side members are also provided with corresponding notches in their upper edges for the reception of a fork lift below any pallet board supported therein, whereby such a pallet board may be lifted therefrom.

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FRANK B. SHERRY, *Primary Examiner.*

G. O. FINCH, *Assistant Examiner.*