Feb. 7, 1967 H. S. ROBERTS 3,302,593

PALLET

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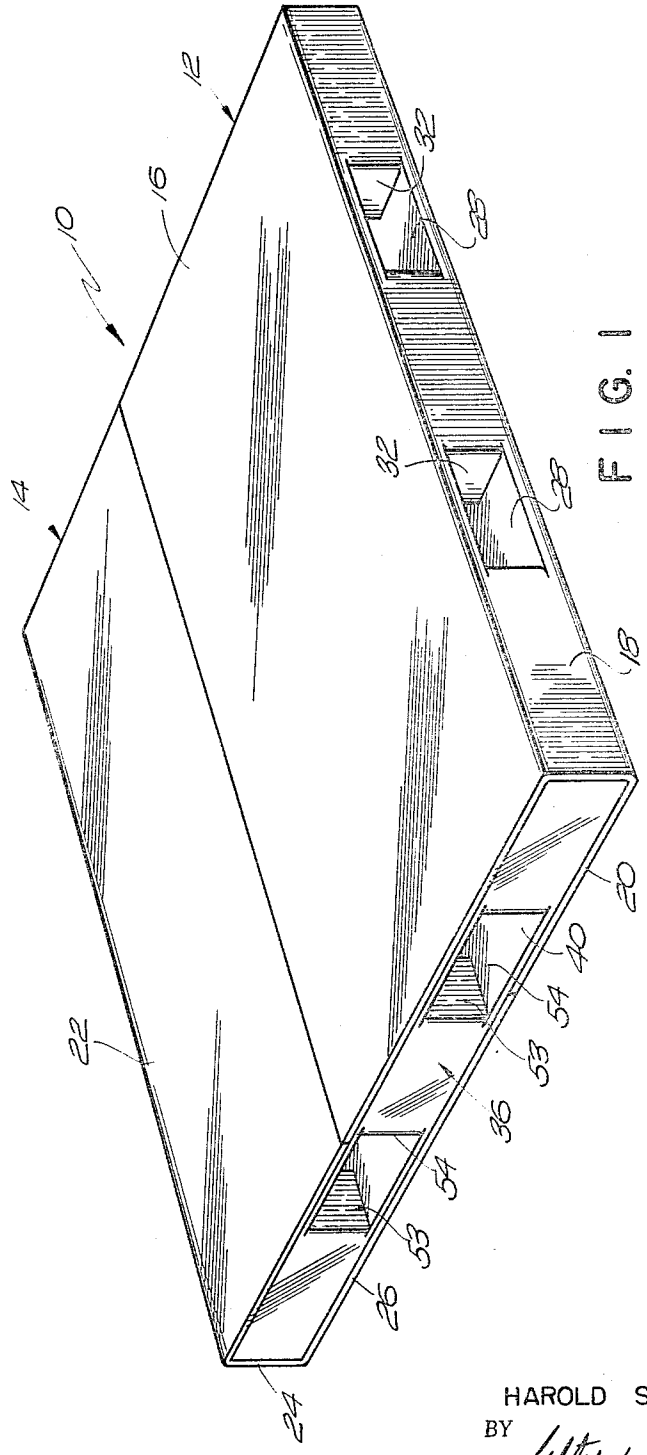



FIG. 1

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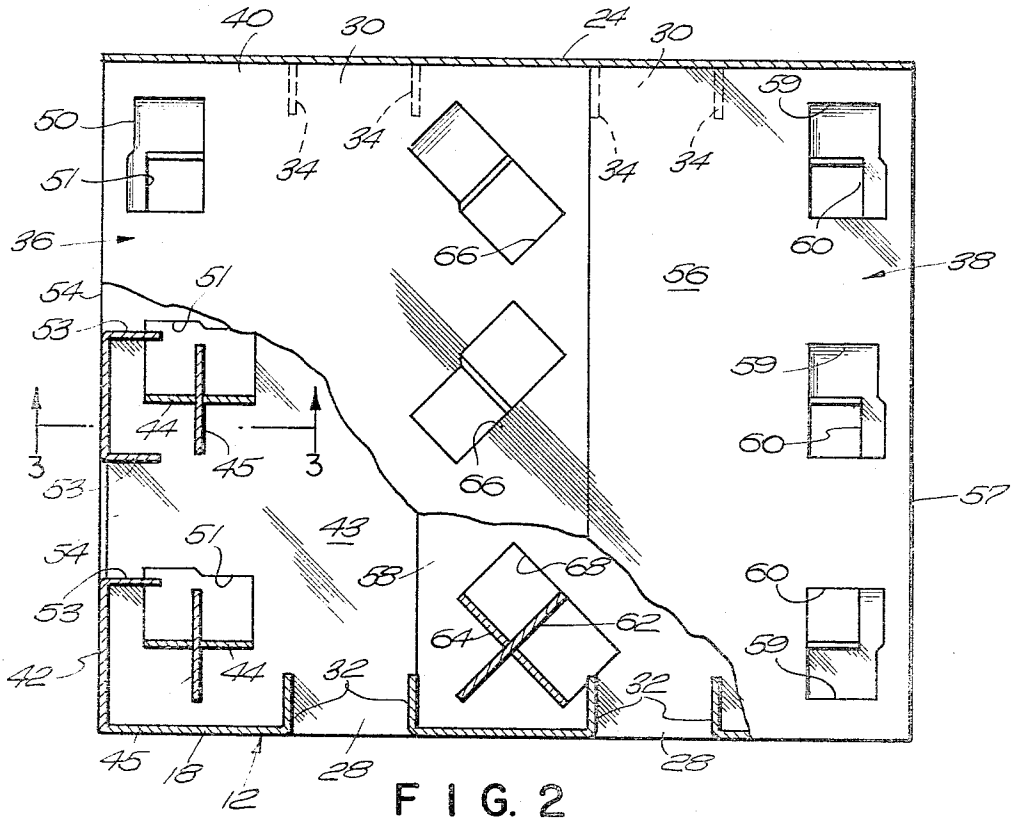



FIG. 2

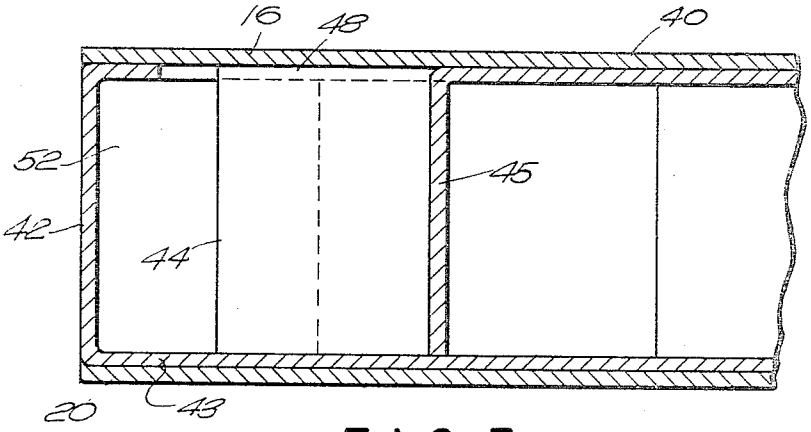



FIG. 3

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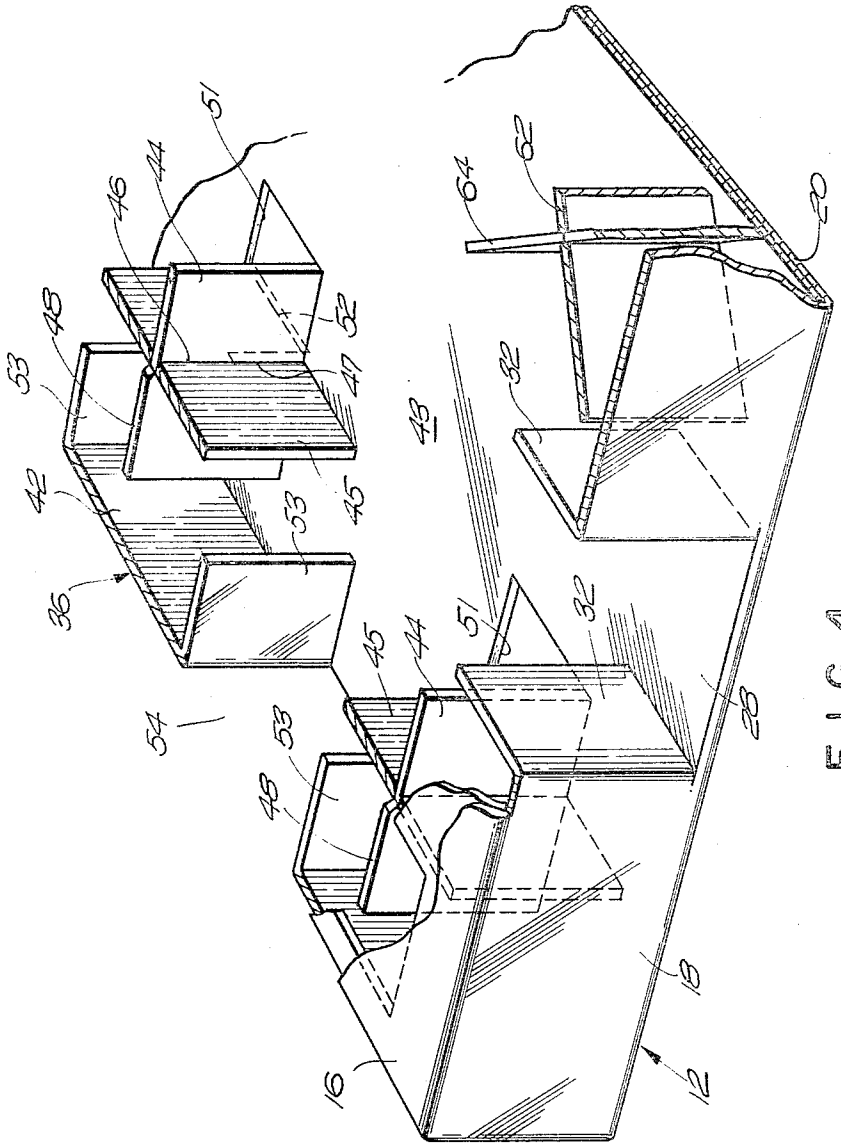



FIG. 4

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3,302,593

# PALLET

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8 Claims. (Cl. 108—56)

The present invention relates to a load-carrying pallet. More particularly, the present invention relates to a pallet that is formed of cardboard materials and that is light in weight and is relatively inexpensive to manufacture.

Load carrying pallets are normally constructed of wood materials, since heretofore wood has been the most inexpensive material available from which pallets can be fabricated. However, wooden pallets are not entirely satisfactory in use and are easily damaged, resulting in relatively shortened periods of use. Furthermore, wooden pallets are subject to normal destruction, such as rotting and breaking of slats, and, in addition, have been found to be relatively heavy, particularly when subjected to moisture. Other longer lasting materials have been utilized in the formation of load carrying pallets but have either been too expensive to use or have not satisfied general characteristics which are required for pallet use.

Accordingly, it is an object of the present invention to provide an inexpensive load carrying pallet that includes members that are constructed essentially of cardboard materials, thereby materially reducing the weight of the pallet.

Another object of the invention is to provide a load carrying pallet formed of cardboard materials that is simple to assemble, light in weight, and inexpensive to manufacture.

Still another object is to provide a pallet formed of cardboard materials that includes a pair of inner members and a pair of outer members, the inner and outer members cooperating to produce a relatively rigid construction that enables the pallet to carry heavy loads thereon.

Still another object is to provide a pallet that is formed from a low-cost material and that includes interlocking inner members that are enveloped by outer members that cooperate with the inner members to define a rigid load carrying construction.

Other objects, features and advantages of the invention will become apparent as the description thereof proceeds when considered in connection with the accompanying illustrative drawings.

In the drawings, which illustrate the best mode presently contemplated for carrying out the present invention:

FIG. 1 is a perspective view of the pallet embodied in the present invention;

FIG. 2 is a sectional view of the pallet with portions of the inner members broken away and shown in section;

FIG. 3 is a sectional view, taken along lines 3—3 in FIG. 2; and

FIG. 4 is an enlarged fragmentary perspective view, with portions broken away and other portions shown in section, of a corner of the pallet.

Referring now to the drawings and particularly to FIG. 1, the load carrying pallet embodied in the present invention is illustrated and is generally indicated at 10. The pallet 10 is defined by an outer assembly that includes a first outer member generally indicated at 12 and a second outer member generally indicated at 14. The

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first outer member 12 includes a horizontal panel 16, to which a side panel 18 is joined and which is located in perpendicular relation with respect thereto. A second horizontal panel 20 is joined to the side panel 18 and is located in spaced parallel relation with respect to the panel 16. As illustrated in FIG. 1, the lower panel 20 is somewhat shorter than the upper panel 16, which causes the panel 16 to overhang the panel 20. The second outer member 14 is constructed similarly to the outer member 12 and includes a first horizontal panel 22 to which a side panel 24 is joined. A second horizontal panel 26 is joined to the side panel 24 and is spaced from the panel 22 in parallel relation thereto. In contradistinction with respect to the first outer member 12, the second outer member 14 is formed such that the upper panel 22 is somewhat shorter than the lower panel 26. Thus, it is seen that when the outer members 14 and 12 of the outer assembly are located in the assembled position thereof, the edges of the upper panels 16 and 22 and the lower panels 20 and 26 are disposed in abutting relation, and the outer assembly then, in effect, forms a symmetrical sleeve wherein the opposed panels 18 and 24 define opposed side walls of the pallet 10.

In order to accommodate the forks of a lift truck, both the side panels 18 and 24 are cut out to define spaced openings 28 and 30, the openings 28 being formed by cutting out flaps 32 and turning them inwardly so that they are disposed substantially at right angles with respect to the panel 18. The openings 30 are similarly formed by turning flaps 34 inwardly until they are disposed substantially at right angles with respect to the panel 24.

Located interiorly of the outer assembly as defined by the outer members 12 and 14 is the inner assembly that is defined by inner members generally indicated at 36 and 38. The inner members 36 and 38 are formed substantially similar in configuration to the outer members 14 and 16 and are adapted to be assembled in interlocking relation. As will be described hereinafter, the interlocked inner members are received within the sleeve defined by the outer members 14 and 16 and cooperate with the outer members to define the pallet components. In the finished assembly of the inner and outer members, the inner members in effect define a supporting inner structure that locates the panels 16, 20 and 22, 26 of the outer members in fixed position.

Referring now to FIGS. 2 and 4, the inner member 36 is shown including an upper horizontal panel 40, a side panel 42 joined to the horizontal panel 40, and a lower horizontal panel 43 joined to the side panel 42 and spaced from the panel 40 in parallel relation with respect thereto. The upper panel 40 is somewhat larger than the lower panel 43 and is disposed in overhanging relation thereto. Cut out from the lower horizontal panel 43 of the inner member 36 are a plurality of flaps 44 that are disposed in a substantially vertical plane, while similarly formed flaps 45 are cut out from the panel 40 and project downwardly in vertical relation. A slot 46 is formed in each of the flaps 44 and provides for receiving a flap 45 that is formed with a similar slot 47 therein. As shown in FIG. 4, the outermost edge of each of the flaps 44 is formed with an offset projecting portion 48 that is adapted to extend through an opening 50 in the panel 40 for engaging the underside of the panels 16 and 22 of the outer members 12 and 14 that are located in overlying relation with respect thereto. As seen in FIGS. 2 and 4, the openings 50 are formed when the

flaps 45 are cut out from the horizontal panel 40 and are pivoted to the vertical position thereof. Similarly formed openings 51 are also formed in the panel 43 when the flaps 44 are moved to the vertical position thereof. It is also understood that each of the flaps 45 is formed with an offset projecting portion 52 that extends through an adjacent opening 51 for engagement with the underside of the panels 20 and 26 of the outer members. The offset projecting portions 48 and 52 thus provide a supporting structure for engaging the outer member panels and thereby insure a rigid construction.

Since the pallet 10 is symmetrically formed and universal in use, the side panel 42 that defines a side wall of the pallet is cut away to define flaps 53. The flaps 53 are bent inwardly to a position that is substantially perpendicular with respect to the bottom panel 43 and in this position define openings 54. It is seen that the openings 54 in the side panel 42 are spaced sufficiently apart for receiving the conventional forks of a lift truck.

The inner member 38 is constructed similarly to the inner member 36 and includes a relatively short horizontal panel 56 to which a side panel 57 is joined in perpendicular relation with respect thereto. Joined to the side panel 57 is a horizontal panel 58 that is located in perpendicular relation to the side panel 57 and that is somewhat longer than the panel 56. The inner member 38 is also formed with interlocking flaps, and, as shown in FIG. 2, these flaps are formed by cutting out the panels 56 and 58 to form openings 59 and 60. The flaps formed from cutting out the panels 56 and 58 are similar to flaps 44 and 45 and are interlocked in the same manner as described above. These latter flaps are also formed with projections that extend through an adjacent opening 59 or 60 to engage the inner surfaces of the panels 16, 20 and 22, 26.

As further shown in FIG. 2, the larger inner panels 40 and 58 overlap to define a central overlapping area. Flaps 62 and 64 are cut out from the panels 40 and 58 in this overlapping area to define openings 66 and 68, the plane of the flaps being inclined with respect to the flaps 44 and 45 formed in the inner member 36 and the corresponding flaps formed in the inner member 38. The flaps 62 and 64 are also slotted for interlocking and cooperate with the other inner member flaps to lock the inner members 36 and 38 together. It is seen that in the assembled position of the pallet, the longitudinal axis of the inner members 36 and 38 extends in perpendicular relation to the longitudinal axis of the assembled outer members 12 and 14. Thus, the parting lines or mating edges of the panels 16, 22 and 20, 26 are at right angles with respect to the mating edges of the panels 40, 56 and 43, 58. This further lends stability to the assembled unit.

The pallet 10 is assembled by interlocking the inner members 36 and 38 and then placing the outer members 12 and 14 therearound in overlying relation. A suitable adhesive is employed for joining the mating edges and surfaces of the inner and outer members and cooperates to further insure a rigid unit. In the assembled position of the pallet, the openings 28 in the panel 18 provide for receiving the forks of a lift truck. Corresponding openings formed in the panel 24 are provided for the same purpose. Similarly, the openings 54 in the side panel 42 and corresponding openings formed in the side panel 57 insure that the pallet has universal use in connection with its load carrying function. The flaps that define the openings for receiving the forks of the lift truck also provide additional supporting elements for the horizontal walls that they engage. Since the panels of the outer and inner members are located in overlapping relation with respect to an opposed panel, rigidity of the unit is further assured.

All of the component parts of the pallet, that is, the outer members 12 and 14 and the inner members 36 and 38, are formed of a cardboard material. By utilizing



cardboard, the inner and outer members are easily worked and assembled in the finished position thereof. Furthermore, the cardboard material is light in weight and relatively inexpensive. Thus, the pallet of the present invention may be utilized until it deteriorates and then can be discarded at a relatively little cost. Because of the fact that the pallet of the present invention is light in weight, it can be used as a shipping pallet and as such decreases the shipping costs involved. If required, the gauge of the cardboard can be varied in accordance with the weight to be carried.

While there is shown and described herein certain specific structure embodying the invention, it will be manifest to those skilled in the art that various modifications and rearrangemens of the parts may be made without departing from the spirit and scope of the underlying inventive concept and that the same is not limited to the paricular forms herein shown and described except insofar as indicated by the scope of the appended claims.

What is claimed is:

1. In a load carrying pallet, an inner assembly including a first inner member and a second inner member that interengages said first inner member, both said inner members including horizontal panels that are located in spaced relation with respect to each other and to which side panels are joined, the horizontal panels of said inner assembly having edges that are disposed in mating relation, the side panels of said inner assembly defining the side walls of said pallet and having openings formed therein for receiving the arms of a fork-lift truck, an outer assembly including outer members that define a sleeve in which said inner assembly is located in telescoping relation, said outer members having opposed side walls that are 90° removed from the side walls of said inner assembly and in which spaced openings are formed for receiving the arms of a fork-lift truck.

2. In a load carrying pallet as set forth in claim 1, said outer assembly including a first outer member and a second outer member that interengages said first outer member, both said outer members including spaced horizontal panels that are interconnected by a side panel, the outer member side panels defining the opposed side walls of said outer assembly, exposed edges of the horizontal panels of said outer members being located in abutting edge-to-edge relation.

3. In a load carrying pallet as set forth in claim 1, each of said inner members having pairs of adjacent flaps cut out of the side panels thereof that are turned inwardly, said flaps thereby defining the openings in the side walls of said inner members.

4. In a load carrying pallet as set forth in claim 2, the openings in the side walls of said outer members being defined by inwardly turned flaps that have been cut out from the outer member side panels.

5. In a load carrying pallet as set forth in claim 1, a plurality of flaps being cut out from the horizontal panels of said inner members and projecting generally in a vertical direction, each of the vertical flaps joined to one horizontal panel being aligned with a vertical flap of the other horizontal panel and being interlocked therewith, wherein said inner members are located in interlocking and engaging relation.

6. In a load carrying pallet as set forth in claim 5, each of the vertical flaps joined to one of said horizontal panels having an offset outer edge that projects through the opening defined by the aligned vertical flap of the other horizontal panel, said offset outer edges engaging the underside of an outer member that is located in overlying relation with respect thereto.

7. In a load carrying pallet as set forth in claim 6, each vertical flap being disposed in a plane that is perpendicular to the plane in which the flap with which it is interlocked is disposed, said flaps having slots formed therein which receive the flap that is located in interlocking relation therewith.

8. In a load carrying pallet as set forth in claim 1, the component parts of said pallet including said inner members and said outer members being formed of a cardboard material.

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