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PALLET

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Fig. 1.

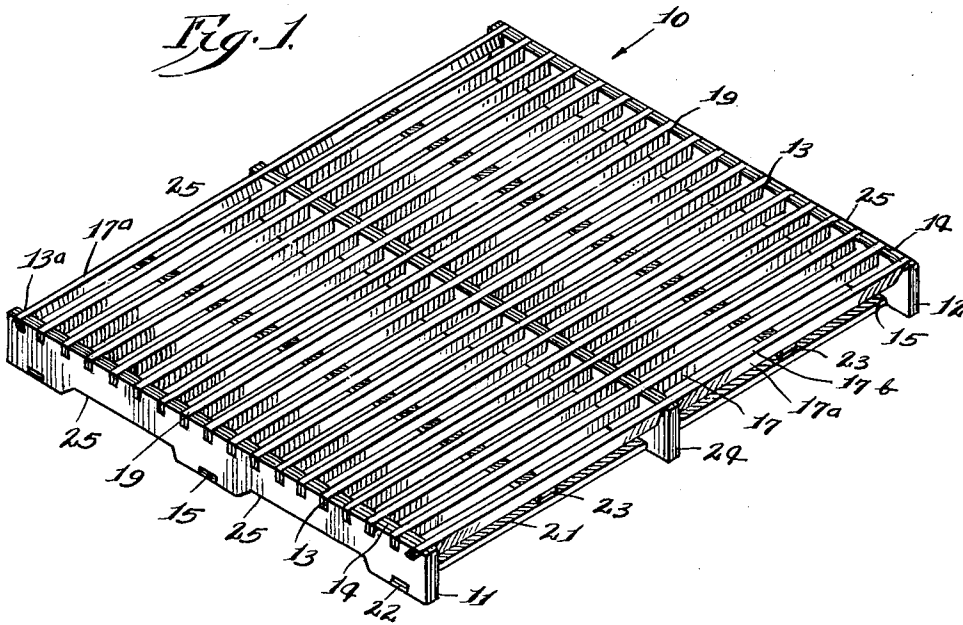


Fig. 2.

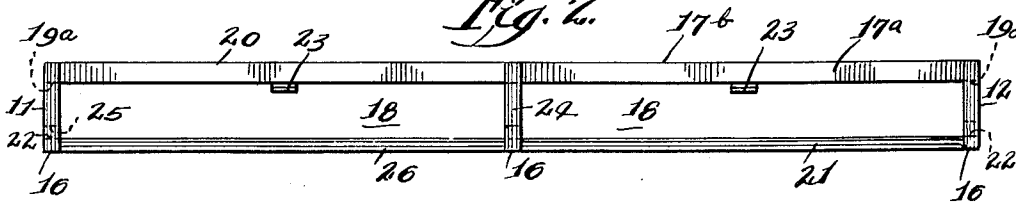
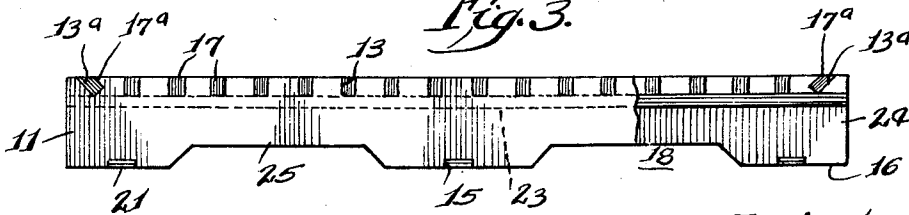


Fig. 3.



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3,058,709
PALLET

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This invention relates to pallets and in particular to pallets arranged for use with fork truck moving means.

The conventional wooden pallets adapted for co-operation with the fork of a lift truck have a number of disadvantages such as their relatively low strength-to-weight ratio. Further, such pallets are conventionally assembled with metallic securing means such as steel nails having a tendency to rust stain and which may become exposed and cause damage to associated elements. Still further, such steel securing means may comprise serious hazards where sparking must be avoided. Yet another disadvantage is that the existing pallets have limited accommodation for association of the fork of a lift truck therewith.

It is a principal feature, therefore, of the instant invention to provide a new and improved pallet eliminating the above discussed disadvantages.

Another feature is the provision of such a pallet having simple and economical construction.

A further feature is the provision of such a pallet including a pair of horizontally spaced parallel upright end walls each having a plurality of rectangular, vertically elongate slots at its upper edge and opening toward the opposite end wall, and a plurality of rectangular, horizontal elongate slots at its lower edge and opening toward the opposite end wall, a plurality of top deck boards each extending transversely across the space between the end walls and having opposite ends complementarily fitting and secured in corresponding opposite top slots of the end walls, and a plurality of bottom deck boards each extending transversely across the space between the end walls and having opposite ends complementarily fitting and secured in corresponding opposite bottom slots of the end walls, the top deck boards being spaced substantially above the bottom deck boards for insertion of the fork arms of a lift truck therebetween.

Still another feature is the provision of such a pallet having an improved arrangement for prevention of damage thereto by improperly inserted fork arms.

Other features and advantages of the invention will be apparent from the following description taken in connection with the accompanying drawing wherein:

FIG. 1 is an isometric view of a pallet embodying the invention;

FIG. 2 is a front elevation thereof; and

FIG. 3 is a side elevation thereof with a portion of one end wall broken away.

In the exemplary embodiment of the invention as disclosed in the drawing, a pallet generally designated 10 is shown to comprise a pair of horizontally spaced, parallel upright end walls 11 and 12 each having a plurality of rectangular, vertically elongate slots 13 and opposite, outermost, inclined elongate slots 13a in the upper edge 14 thereof. The slots open toward the opposite end wall, and in the illustrated embodiment, extend fully through the thickness of the end walls. The end walls further include a plurality of rectangular, horizontally elongate slots 15 in the lower edge 16 thereof. Slots 15 open toward the opposite end wall and in the illustrated embodiment of the invention extend fully through the thickness of the end wall.

The top support structure of the pallet is defined by a plurality of top deck boards 17 each extending trans-

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versely across the space 18 between end walls 11 and 12. The opposite ends 19 of the top deck boards 17 complementarily fit and are secured in corresponding opposite top slots 13 of the end walls. The outermost top deck boards 17a are bevelled at their top edge 17b, and the opposite ends 19a thereof complementarily fit and are secured in corresponding opposite top slots 13a of the end walls. The top deck boards extend parallel to each other and are spaced apart to form a grid defining a planar support surface 20 on which a load may be carried. Thus, it is normally unnecessary to provide a top panel to form the upper support surface, although one may be provided if desired. As the top deck boards have a height substantially greater than their thickness (e.g. 1" x 3/8"), they effectively comprise a plurality of lightweight beams capable of supporting heavy loads.

Pallet 10 further includes a plurality of bottom deck boards 21 each extending transversely across the bottom of space 18 between end walls 11 and 12 and having opposite ends 22 complementarily fitting and secured in corresponding bottom slots 15 of the end walls. The bottom deck boards extend parallel to each other and are widely spaced; in the illustrated embodiment, three bottom deck boards are provided, one at each end of the end walls and one at the mid-portion thereof. The bottom deck boards together with the lower edge 16 of each end wall thusly define a planar lower support surface 26 for carrying the pallet on an inferior support such as a floor or another load.

The top deck boards 17 and 17a are spaced substantially above the bottom deck boards 21 for facilitated insertion of the fork of a lift truck (not shown) therebetween. To preclude a striking of the sides of the top deck boards 17 by the tip of the truck fork as it is being inserted, a pair of guide bars 23 is secured to the bottom of the top deck boards 17 to extend parallel to the end walls 11 and 12 and between the oppositely outermost top deck boards. The centerline spacing of the guide bars is preferably comparable to the centerline spacing of the fork arms so that, as the fork arms are inserted through space 18, they may be effectively centered relative to the guide bars. As the outermost top deck boards 17a are slanted downwardly and inwardly of the pallet, should the fork arms be inadvertently inserted too high so as to strike a board 17a rather than pass into space 18, the fork arms will merely slide against the slanted surface of the board 17a effectively precluding damage to the pallet. When the operator finds that he has thusly inserted the fork arms too high, he may merely withdraw the arms, lower them, and reinsert them at the proper level to pass freely into space 18.

The ends of the deck boards are preferably adhesively secured in the slots of the end walls as by gluing, thereby eliminating the disadvantages in the use of ferrous securing means. The entire pallet 10 may be formed of a relatively inexpensive material such as scrap plywood which is approximately one-half as expensive as regular plywood. A pallet 10 formed of plywood has been found to have a weight of approximately twenty pounds as compared with a corresponding hardwood pallet having a weight of approximately ninety pounds and arranged to carry the same load. Alternatively, the pallet may be economically formed as a one-piece plastic molding.

In the illustrated embodiment, the pallet is provided with a reinforcing wall 24 generally similar to end walls 11 and 12 and extending parallel to the end walls at the mid-portion of the deck boards to divide space 18 into two laterally related halves. As with the end walls, the deck boards may be adhesively secured to the reinforcing wall as by gluing.

To permit insertion of the fork arms across space 18

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in a direction parallel to the longitudinal extent of the deck boards, each of the end walls and the reinforcing wall is provided with a pair of shallow, downwardly opening recesses 25 having their mid-portions spaced apart a distance substantially equal to the centerline spacing of the fork arms of a lift truck. Thus, a four-way entry of the fork arms through space 18 is permitted, substantially facilitating a transfer operation.

In use, the load, such as a plurality of filled cartons, is placed on the upper support surface 20 defined by the upper edges of the top deck boards and the walls. The load may then be transferred by bringing a lift truck alongside one of the four sides of the pallet and inserting the fork arms into space 18 to extend substantially thereacross. Where the fork arms are inserted transversely to the deck boards, the guide bars and the slanted outermost top deck boards assure a proper insertion, precluding damage to the top deck boards by the ends of the fork arms. The fork arms are then raised to lift the load carried on the support surface 20, permitting the pallet and load thereon to be transferred as desired. Where the fork arms are inserted through space 18 by passing them through recesses 25, the raising of the fork arms, after they are fully inserted, causes them to abut the end walls 11 and 12, and the reinforcing wall 24 if one is used, at the top of the recesses, thereby permitting the pallet and load thereon to be transferred as desired. When setting the pallet end load down, the planar support surface 26 defined by the bottom deck boards 21 and the lower edges 16 of the walls may rest on any suitable horizontally extending means such as a floor or the top of another load. The fork arms may then be lowered sufficiently to disengage from the pallet and permit a ready withdrawal thereof.

While we have shown and described certain embodiments of our invention, it is to be understood that it is capable of many modifications. Changes, therefore, in the construction and arrangement may be made without departing from the spirit and scope of the invention as defined in the appended claims.

We claim:

1. A pallet comprising: a pair of horizontally spaced, parallel upright end walls each having a plurality of rec-

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tangular vertical slots and a pair of outwardly outermost slots, said slots being spaced longitudinally of said end walls in its upper edge and opening toward the opposite end wall, said outermost slots being inclined downwardly and inwardly; a plurality of top deck boards each extending transversely across the space between the end walls and having opposite ends complementarily fitting and secured in corresponding opposite ones of said vertical slots of the end walls; and a pair of outermost deck boards each extending transversely across the space between the end walls and having opposite ends complementarily fitting and secured in corresponding opposite ones of said outermost slots of the end walls.

2. The pallet of claim 1 wherein the top surface of each of said outermost deck boards is bevelled to extend in the plane of the top surfaces of the vertical deck boards.

3. The pallet of claim 1 wherein said vertical slots and deck boards are closely spaced and provide a supporting means in the plane of the top thereof substantially fully across the space between the end walls.

4. The pallet of claim 1 further including a pair of guides secured to the bottom of the top deck boards and extending parallel to said end walls between the oppositely outermost top deck boards, said guides being spaced apart corresponding to the spacing between the pair of fork arms of a conventional lift truck thereby precluding striking of the fork arms against the top deck boards during insertion of the fork arms into said space.

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