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[54] **COLLAPSIBLE PALLET WITH PIVOTAL END SUPPORTS**
10 Claims, 4 Drawing Figs.
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108/56, 220/1.5, 248/119 R, 294/67 DA
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220/1.5, 24.3; 105/369; 214/10.5, 38.42;
294/67.4, 67.4 A, 67.4 B, 67.4 C; 108/51, 53, 56,
58

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ABSTRACT: A stackable collapsible pallet, suitable for carrying automobiles, having at least one end structure being pivotable outwardly and inwardly to positions substantially in parallel with the base, and substantially triangular supports pivotably attached to the end structures to rigidly secure said end structures in an upright position. The end structures and supports are removable for use of the base as an ordinary pallet.

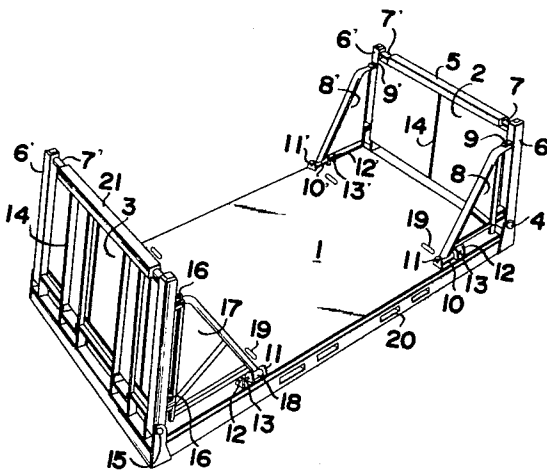


FIG. 1

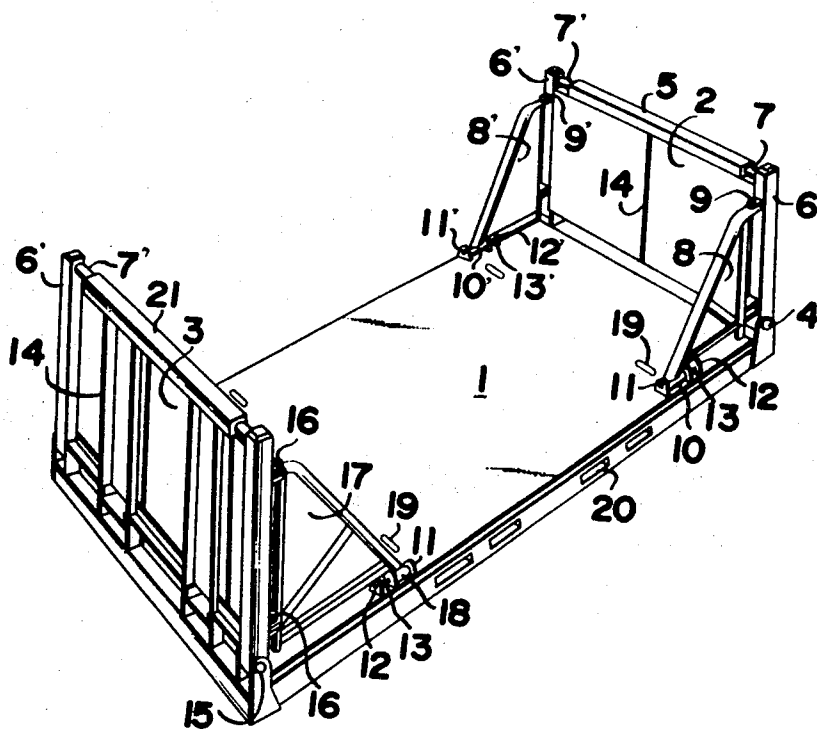
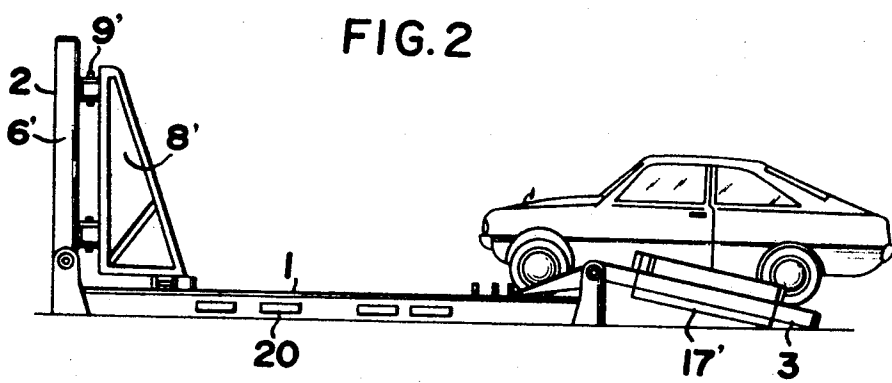


FIG. 2



SHEET 2 OF 2

FIG. 3

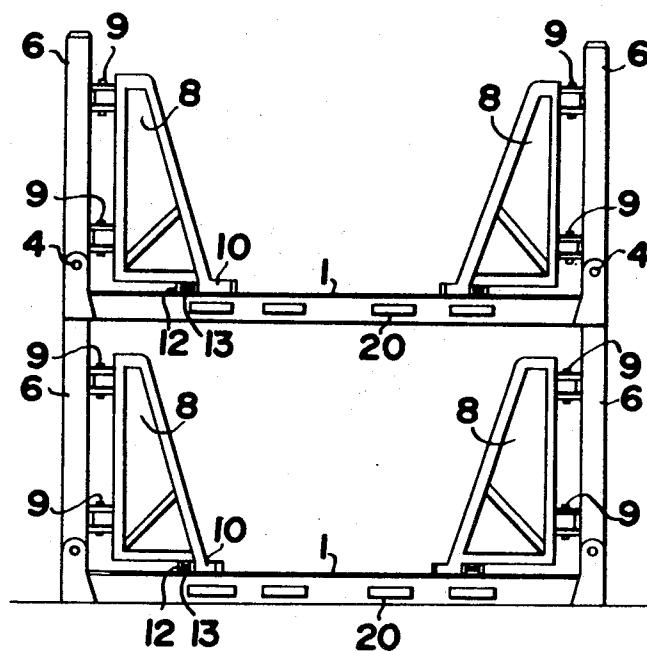
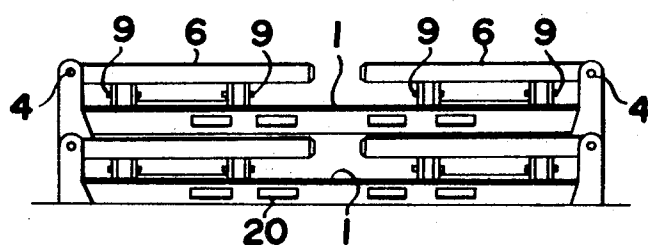


FIG. 4



COLLAPSIBLE PALLET WITH PIVOTAL END SUPPORTS

The present invention relates to collapsible pallets in general and in particular, to such pallets which are suitable for carrying automobiles.

The invention provides a collapsible pallet comprising a base having two ends and two sides, a respective end structure pivotally mounted across each end of the base, the end structures both being pivotable inwardly to lie over the base when the pallet is collapsed, and at least one of the end structures being pivotable outwardly at least to a position substantially parallel with the base, and releasable supports pivotally connected to the end structures for holding the end structures upright relative to the base when the pallet is erected, the end structures being free to pivot when the supports are released.

An embodiment of the present invention will now be described, by way of example, with reference to the accompanying drawings in which:

FIG. 1 is a perspective view of one embodiment of the present invention;

FIG. 2 is a side view of the pallet of FIG. 1 as an automobile is being loaded;

FIG. 3 is a side view of two such pallets stacked on top of one another when erected; and

FIG. 4 is a side view of two such pallets stacked together when collapsed.

In the drawings, a base 1 is similar to ordinary pallets, being made of steel frames and the upper side being arbitrarily provided with movable rings 19 for lashing down an automobile. On the side of the frame are provided a number of forklift access pockets 20. End structures 2 and 3 are provided at both ends of the base. End 2 is fixed with a pivot pin 4 in such a way as to allow said wall to swing inwardly through 90°.

On both the ends of an upper beam 5 between square pillars 6, 6' forming part of the end 2 are inserted rotatable hoisting rings 7, 7'. Supports 8, 8' are pivoted on both sides of end structure 2 in such a way that they can swing inwardly through 90° on pivots 9, 9' which are provided on support pillars 6, 6'. Sleeves 10, 10' are provided at the lower free ends of supports 8, 8' so that the supports can be fixed to lugs 11, 11' provided projectedly on the upper surface of the base 1, by means of bolts 13, 13'.

End structure 3 is similarly constructed, but in this case the supports 17, are free to swing both inwardly and outwardly through a total angle of approximately 180°, on pivots such as at 16, and that they are provided with a plurality of reinforcing pieces. The end structure 3 is arranged to pivot 90° or more both inwardly and outwardly about the pivot 15 so that it swings through a total angle of 180° or so. The free end of each support 17 can be secured with bolts 13 to lugs 11, 12 by way of sleeve 18 provided at the lower free end thereof.

In actual use, the pallet is erected as is shown in FIG. 1. Forklift pockets 20 are utilized for carrying pallets with a forklift truck and rings 7, 7' are used for slinging the pallet on wire ropes when it is being hoisted by cranes and the like. When an automobile is to be placed on the pallet, the single support 17 is opened outward by undoing bolt 13, and then the end structure 3 is opened outwardly until it is approximately parallel with the floor 1 as shown in FIG. 2. The automobile is moved on to the pallet using the end 3 as a ramp, and fixed firmly to lashing rings 19 on top of the base 1. Then the end structure 3 and support 17 are brought back to their original positions and

secured by bolt 13.

It is also possible to stack such pallets in two or more layers as shown in FIG. 3 by inserting the ends of support pillars 6, 6' into cavities in the base of the pallets. By pulling out bolts 13, 13' supports 8, 8', 17, 17' and ends 2 and 3 can be folded inwardly to collapse the pallets for storage, in which condition they take very little storage space.

It is possible to remove the supports and end structures, if not required, and use the base as an ordinary pallet.

In the foregoing description, an embodiment of the present invention where only one of the end structures swings through 180° has been described. However, both of the end structures as well as all the supports can be made so that they swing through 180° or so.

What we claim is:

1. A collapsible pallet comprising:

a base having two ends and two sides;

a respective end structure pivotally mounted across each end of the base, the end structures both being pivotable inwardly to lie over the base when the pallet is collapsed, and at least one of the end structures being pivotably outwardly at least to a position substantially parallel with the base; and

releasable supports pivotally connected to at least one side of each end structure and releasably engageable with the base for holding the end structures upright relative to the base when the pallet is erected, the supports on both end structures being swingable through substantially a right angle inwardly, and a support on at least one end structure being additionally swingable outwardly, the end structures being free to pivot relative to the base when the supports are released.

2. A pallet according to claim 1, in which both end structures are outwardly pivotable to similar positions.

3. A pallet according to claim 1 wherein said outwardly swingable support is outwardly swingable through substantially a right angle.

4. A pallet according to claim 3, in which all of the supports are swingable outwardly through substantially a right angle.

5. A pallet according to claim 1 wherein lashing points are provided on the base, access means for lifting forks are provided at at least one side of the base, the supports are adapted to be secured by bolts to the base to erect the pallet, the sides of each end structure are comprised of respective square pillars joined by a beam at their free ends, and hoisting rings are provided where the upper beam joins the pillars.

6. A pallet according to claim 1, wherein at least one of the outwardly pivotable end structures is adapted to form a loading ramp for a vehicle.

7. A pallet according to claim 1 adapted for stacking with other similar pallets, wherein the end structures clear the upper surface of the contents in each stacked pallet.

8. A pallet according to claim 1 including two supports pivotally connected to each end structure.

9. A pallet according to claim 1, wherein said releasable supports include bolting means for releasably engaging same with said base.

10. A pallet according to claim 1, wherein said releasable supports are substantially a right triangle, the vertical side thereof being pivotally coupled to the respective end structure.

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