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MATERIAL HANDLING PALLETS

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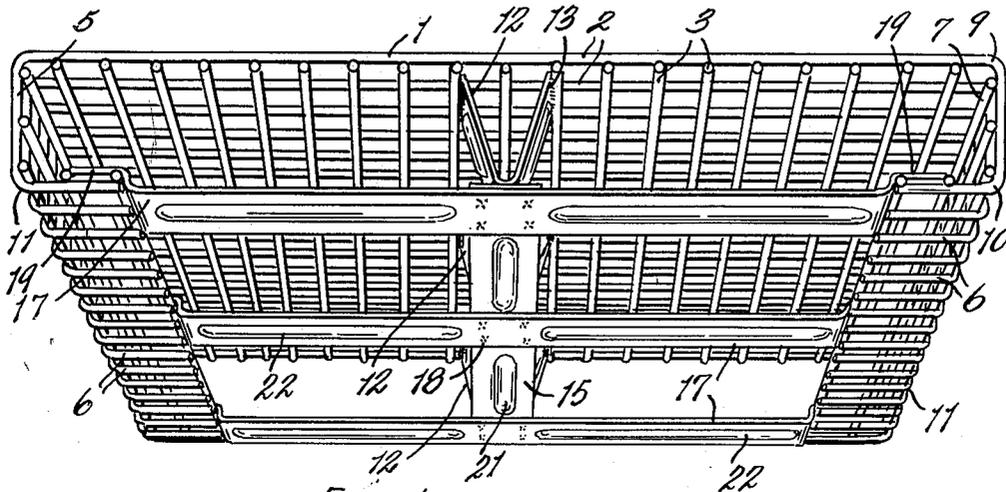


FIG. 1

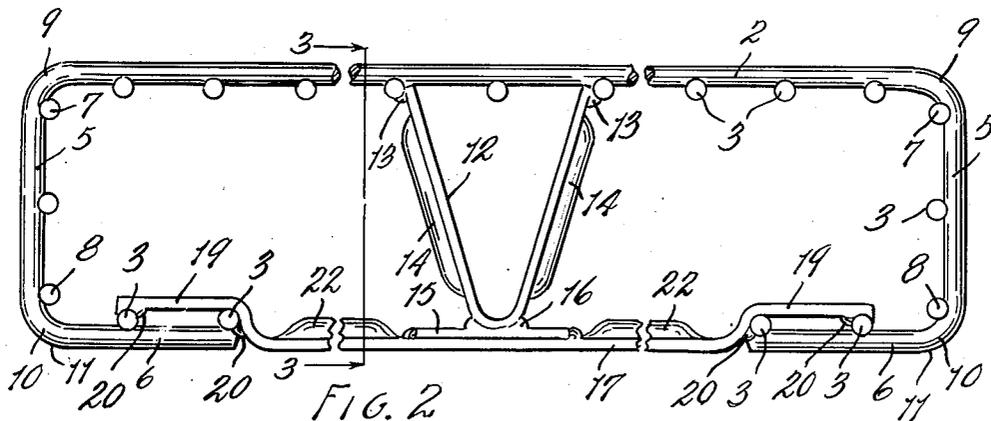


FIG. 2

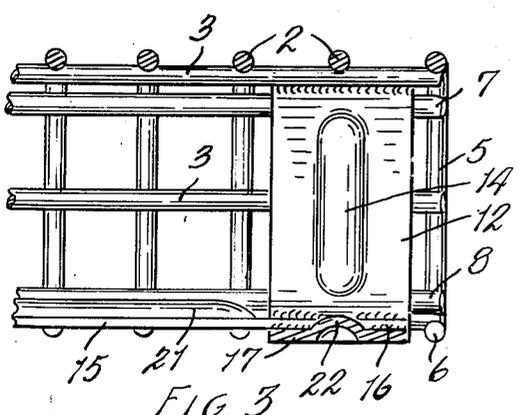


FIG. 3

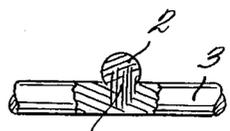


FIG. 4

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MATERIAL HANDLING PALLETS

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This invention relates to improvements in material handling pallets.

The main objects of this invention are:

First, to provide a pallet or skid which is well adapted for lifting trucks and which while relatively light in weight is capable of supporting and carrying relatively heavy loads.

Second, to provide a pallet or skid of this character which while adapted for handling by lifting trucks may be dragged or slid along on a floor or platform without injury thereto.

Third, to provide a pallet or skid of this character which is fabricated entirely of metal and one in which all of the assembled parts are fixedly connected into an integral structure and are mutually bracing and supporting.

Fourth, to provide a pallet or skid which is very rigid and capable of carrying heavy loads and at the same time one in which there is a large amount of clearance for the forks of a fork lift truck to enter below the deck and effectively engage the same.

Fifth, to provide a structure having these advantages in which the parts may be very economically formed and assembled, the assembled structure having a base which is suitable for resting on a load on a similar pallet providing a stable support for the pallet and without injury to the load, such as bags, cartons, or the like.

Further objects and advantages pertaining to details and economies of the invention will definitely appear from the description to follow. The invention is pointed out in the claims.

A preferred embodiment of the apparatus for carrying out the method of the invention is clearly illustrated in the accompanying drawing, in which:

Fig. 1 is a bottom perspective view of a pallet or skid embodying my invention, certain of the welds being indicated conventionally.

Fig. 2 is an enlarged fragmentary side elevation.

Fig. 3 is a fragmentary view in vertical section on a line 3—3 of Fig. 2.

Fig. 4 is a fragmentary view partially in section illustrating one of the welds connecting the longitudinal and transverse bars of the structure.

In the embodiment of my invention illustrated the grid like top or deck, designated generally by the numeral 1, comprises a plurality of spaced parallel outer longitudinal bars 2 and a plurality of spaced parallel inner bars 3 disposed transversely of the outer bars, the longitudinal and transverse bars being fixedly connected at their crossing points by electric welds indicated at 4. It will be understood that all of the bars are fixedly secured to each other at their crossing points.

The end portions of the longitudinal bars are bent downwardly to provide end leg members 5, the lower ends of these end leg members being bent inwardly to provide end base portions 6. It will be noted that there are transverse bars 7 and 8 adjacent the bends 9 and 10 in

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the longitudinal bars, these transverse bars effectively supporting the longitudinal bars at these points. It will also be noted that the bends or angles 11 joining the end base members 6 with the end leg members 5 are rounded facilitating the sliding of the pallet or skid on a floor or platform. The bars 2 and 3 are desirably of light gage rod or heavy gage wire.

I provide a plurality of transversely spaced V-shaped central legs 12 the upper ends of which are welded to a spaced pair of transverse members as indicated at 13. These central leg members are formed of sheet stock and the leg portions are preferably ribbed at 14. The transverse base member 15 is fixedly secured, as by the welds 16, to the bight portions of the central leg members. Longitudinal base members 17 also formed of sheet metal stock are disposed in transversely spaced relation below the transverse base member 15 and welded thereto as indicated at 18.

The end portions 19 of the longitudinal base members are upwardly offset to overlap transverse bars 3 of the end base portions 6 and are welded thereto as indicated at 20. The bottoms of these longitudinal base members are substantially in the plane of the bottoms of the end base members 6. The transverse base member 15 is desirably provided with reinforcing ribs 21 while the longitudinal members have reinforcing ribs 22. These sheet metal base members thus formed and mounted may be of quite light gage stock and at the same time, the structure is strong and rigid.

The lifting prongs or forks of a lifting truck may be engaged from the sides of the pallet. While the structure is very rigid and capable of carrying heavy loads it is relatively light and economical to produce. The combined deck and leg members and their bases may be formed in the flat and then bent to provide the end leg members and the end base members. The end leg members are effectively reinforced against wracking stresses and they are reinforced to resist collapsing stresses by means of the longitudinal base members and the central legs and transverse base members. It will be noted that all the parts coact to brace and support each other.

The structure of my invention has very decided advantages from the manufacturing angle. The combined deck and leg members and base members are formed in the flat and easily shaped by simple press forming operations. The center legs and base members are formed as a sub-assembly and then welded to the deck and end leg members.

Another advantage is that a relatively large amount of clearance is provided for the forks of a lift truck which is of importance in the smaller sized pallets as the lift trucks and their forks are more or less standardized. For example, the standard hand lift truck is about 27½" wide between the outer edges of the two forks and in overall fork dimensions. The applicant's structure permits the effective use of such standard lift trucks on a 30" pallet. In addition, it will be noted that there is a very substantial amount of base surfaces which is important where pallets of this character loaded with relatively soft packages are stacked. This is highly important as it permits the packing without injury to the load on the lower pallets.

While I use the terms longitudinal bars and transverse bars it will be understood that this is for the purpose of brevity rather than a matter of dimensions.

I have illustrated and described my invention in a highly practical embodiment thereof. I have not attempted to illustrate or describe other embodiments or adaptations which I contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A pallet comprising, a series of spaced parallel outer longitudinal bars, a plurality of spaced parallel inner bars disposed transversely of said outer bars, said outer and inner bars being welded together at their crossing points providing a grid like deck for supporting articles thereabove, the outer bars being bent downwardly adjacent their ends providing end legs for supporting the deck, said outer bars adjacent the lower ends of the leg portions thereof being bent inwardly to provide inturned end base members, a plurality of spaced parallel inner bars disposed transversely of said outer bars and welded thereto in the leg and inturned base portions thereof to provide a grid-like structure in said legs and inturned end base members, transversely spaced V-shaped central legs having their upper ends welded to certain of the transverse bars in the deck, a transverse base member fixedly secured to the bight portions of said central legs, and transversely spaced longitudinal base members disposed below said transverse base member and welded thereto and in vertical alignment with the said central legs, the ends of said longitudinal base members having upwardly offset end portions disposed upon and welded to a plurality of the transverse bars of said end base members of said end legs.

2. A pallet comprising, a series of spaced parallel outer longitudinal bars, a plurality of spaced parallel inner bars disposed transversely of said outer bars, said outer and inner bars being welded together at their crossing points providing a grid like deck for supporting articles thereabove, the outer bars being bent downwardly adjacent their ends providing end legs for supporting the deck, said outer bars adjacent the lower ends of the leg portions thereof being bent inwardly to provide inturned end base members, a plurality of spaced parallel inner bars disposed transversely of said outer bars and welded thereto in the leg and inturned base portions thereof to provide a grid-like structure in said legs and inturned end base members, and longitudinal base members having upwardly offset end portions disposed upon and welded to a plurality of the transverse bars of said end base members of said end legs.

3. A pallet comprising, a series of spaced parallel outer longitudinal bars, a plurality of spaced parallel inner bars disposed transversely of said outer bars, said outer and inner bars being welded together at their crossing points providing a grid like deck for supporting articles thereabove, the outer bars being bent downwardly adjacent their ends providing end legs for supporting the deck, said outer bars adjacent the lower ends of the leg portions thereof being bent inwardly to provide inturned end base members, a plurality of spaced parallel bars disposed transversely of said outer bars and fixedly secured thereto in the leg and inturned base portions thereof to provide a grid-like structure in said legs and inturned end base members, and longitudinal base members having end portions disposed upon and welded to transverse bars of said end base members of said end legs.

4. A pallet comprising, a plurality of spaced parallel outer bars, a plurality of spaced parallel inner bars disposed transversely of said outer bars and fixedly secured thereto providing a grid like deck for supporting articles thereabove, the outer bars being angled downwardly adjacent their ends providing end legs integral with the deck for supporting the deck, said outer bars adjacent the lower ends of the leg portions thereof being bent inwardly to provide inturned end base members, a plurality of spaced parallel bars disposed transversely of

said outer bars and fixedly secured thereto in the leg and inturned base portions thereof to provide a grid-like structure in said legs and inturned end base members, central legs having their upper ends fixedly secured to the deck, a transverse base member fixedly secured to the said central legs, and longitudinal base members disposed below said transverse base member and secured thereto, the ends of said longitudinal base members being secured to said end base members of said end legs.

5. In a pallet, a series of spaced parallel outer bars, a plurality of spaced parallel inner bars disposed transversely of said outer bars and fixedly secured thereto providing a grid like deck for supporting articles thereabove, the outer bars being angled downwardly adjacent their ends providing end legs integral with the deck for supporting the deck, said outer bars adjacent the lower ends of the leg portions thereof being bent inwardly to provide inturned end base members, a plurality of spaced parallel bars disposed transversely of said outer bars and fixedly secured thereto in the leg and inturned base portions thereof to provide a grid-like structure in said legs and inturned end base members, and members fixedly connecting the end base members at one end of the deck to the end base members at the opposite end of the deck.

6. A pallet comprising, a series of spaced parallel outer bars, a plurality of spaced parallel inner bars disposed transversely of said outer bars and fixedly secured thereto providing a grid like deck for supporting articles thereabove, the outer bars being angled downwardly adjacent their ends providing end legs integral with the deck for supporting the deck, said outer bars adjacent the lower ends of the leg portions thereof being bent inwardly to provide inturned end base members, a plurality of spaced parallel bars disposed transversely of said outer bars and fixedly secured thereto in the leg and inturned base portions thereof to provide a grid-like structure in said legs and inturned end base members, and longitudinal base members having upwardly offset ends disposed upon and secured to a plurality of the transverse bars of said end base members of said end legs, the bends in said outer bars being curved providing rounded nose portions facilitating endwise sliding of the structure.

7. A pallet comprising, a plurality of longitudinal bars, and a plurality of bars disposed transversely of said longitudinal bars in crossing relation and fixedly secured thereto providing a grid like deck for supporting articles thereabove, the ends of said longitudinal bars being bent downwardly and thence inwardly providing end legs and end base portions for supporting the deck, a plurality of spaced parallel bars disposed transversely of and fixedly secured to said longitudinal bars in the leg and base portions thereof to provide a grid-like structure in said leg and base portions and longitudinal base members fixedly secured to the base portions of said end legs.

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