Feb. 7, 1961 T. J. DESBOIS 2,970,797

PALLET

Filed March 2, 1959

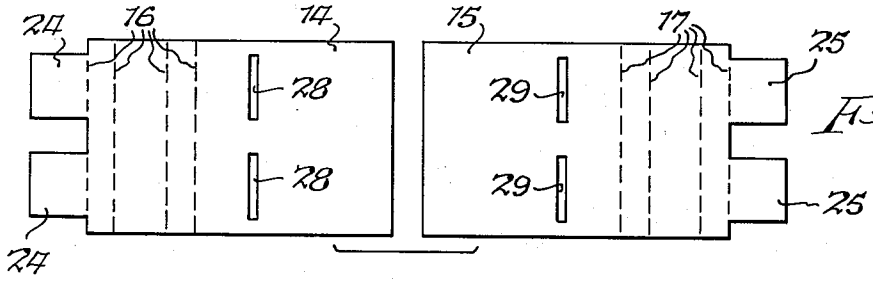


Fig. 1.

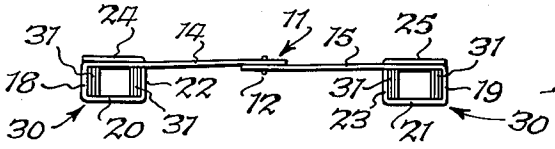


Fig. 2.

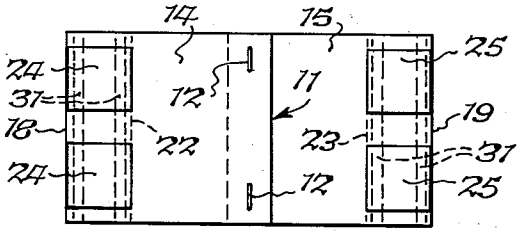


Fig. 3.

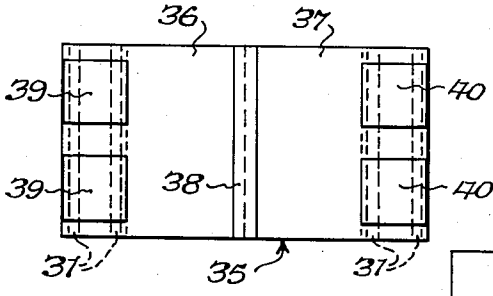


Fig. 4.

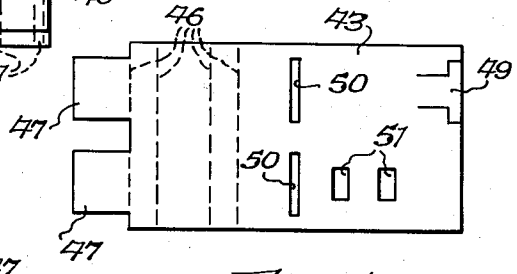


Fig. 5.

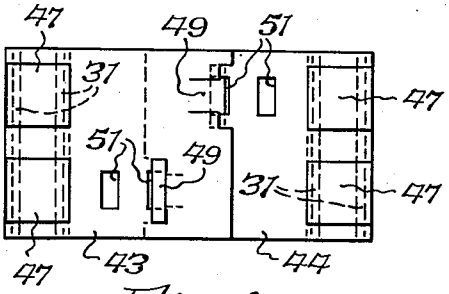


Fig. 6.

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PALLET

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7 Claims. (Cl. 248—120)

This invention is concerned with pallets. It is particularly directed to light-weight, economical pallets adapted for use with fork-lift trucks in storing and carrying sacks, bags, cartons, drums and the like.

The storage and transportation of merchandise on pallets has been extensively employed in recent years. When merchandise can be loaded on pallets, stored and then shipped to a customer without rehandling of the individual packages, great savings are possible. Disadvantages of many types of pallets now used are their excessive weight which adds to shipping charges and their relatively high cost which necessitates their return for reuse with additional expense. A pallet that is used only once is therefore desirable.

It is an object of the present invention to provide pallets of the character described which are of simple light-weight and inexpensive construction.

Another object of the present invention is to provide pallets of the character described which may be conveniently and inexpensively shipped and assembled.

Another object of the present invention is to provide pallets of the character described that are nevertheless strong and durable.

A further object of the invention is to provide pallets of the character described which may be used for storing and shipping bags, cartons, drums and the like.

Other objects and advantages of the present invention will be apparent from the following description taken in conjunction with the accompanying drawings in which:

Figure 1 is a plan view of the main portions of a pallet according to the present invention as cut or stamped from sheets of corrugated board or the like;

Figure 2 is an end view of an assembled pallet;

Figure 3 is a plan view of the assembled pallet shown in Figure 2;

Figure 4 is a plan view of an assembled pallet like that shown in Figure 3 but illustrating a modified construction;

Figure 5 is a plan view of a main portion of another modification; and

Figure 6 is a plan view of a modified pallet formed from two of the sheets illustrated in Figure 5.

In a preferred embodiment as illustrated in Figures 2 and 3, a pallet according to the present invention comprises a rectangular, load-receiving platform 11 formed by joining in overlapping relation, as by staples 12, flat portions of two essentially identical sheets 14 and 15 of corrugated board. The sides of the sheets 14 and 15 are longitudinally scored, as seen at 16 and 17 in Figure 1, so that they may be easily bent to form, respectively, outer side panels 18 and 19, base panels 20 and 21, inner side panels 22 and 23 and longitudinally spaced tongues or flaps 24, 24 and 25, 25. The tongues, when the pallet is assembled and erected as shown in Figures 2 and 3 project through longitudinally spaced slots 28, 28 and 29, 29, respectively, that are punched or cut in the platform forming portions of the sheets 14 and 15, the tongues being bent outwardly to extend on said platform

11 substantially to the adjacent side edges of the latter.

Within the loops 30 formed by the panels and tongues referred to above with the side borders of the platform 11 there are placed longitudinal supporting members 31. As best shown in Figure 2, one of the members 31 is placed against each of the side panels 18, 19, 22 and 23. The members 31 preferably extend the full length of the pallet and are the same height as the inside height of the panels 18 and 19, thereby supporting the load on the platform 11 and maintaining the loops 30 open. It is preferred, as shown, to form the members 31 of strips of corrugated board adhesively joined together. However, any other suitable material such, for example, as fiber board or wood may be employed. When corrugated board is used, it is preferred to have the corrugations run transversely of the strips. Accordingly, when the pallet is loaded, compressive forces are exerted longitudinally of the corrugations in said strips. If desired, the members 31 may be cemented or otherwise secured by any convenient means to the panels 18, 19, 22 and 23, of the pallet.

It will be evident from the foregoing description that pallets according to the invention are very useful and convenient and are easily assembled and erected. The sheets 14 and 15, as mentioned above, are preferably identical and may be easily folded along the score lines 16 and 17 with the tongues or flaps 24 and 25 projecting through the slots 28 and 29, respectively. The unfolded ends of the sheets 14 and 15 are then overlapped and stapled to form the platform 11, the amount of overlapping being determined by the desired width of the pallet. Since the sheets 14 and 15 may be of any desired length, pallets of various sizes may be conveniently produced and the side loops 30 thereof may be spaced properly to receive the fork members of a fork-lift truck. Alternatively, of course, the sheets 14 and 15 may first be stapled together with the desired amount of overlapping and the loops 30 then formed. In either case, after the longitudinal supporting members 31 are placed within the loops 30 the pallet is ready for use.

Pallets according to the present invention may be used for carrying or storing bags, boxes, and drums or similar containers as well as other objects. As noted above, size adjustment of the load receiving platform is possible by varying the amount of overlapping of the sheets 14 and 15. This is particularly important with respect to use of the pallets with bags since proper loading of bags depends upon the pallet being of specific size. Further adjustment of pallet size can, of course, be secured by using sheets 14 and 15 of suitable dimensions. It will be evident that when a pallet according to the present invention is loaded the flaps or tongues 24 and 25 are held flat against the platform portion 11 by the load and the loops 30 are thereby locked against loosening. As pointed out above, the flaps 24 and 25 should be of such length as to reach substantially to the side edges of the platform 11. They, therefore, extend over the outer supporting member 31 in each of the loops 30 so as to provide bridge elements across the laterally spaced supporting members and prevent sagging of the platform 11 adjacent its sides when under load.

In Figure 4 there is shown a modified form of pallet that is similar to the preferred form illustrated in Figures 1–3 except that the platform 35 is formed by bringing the edges of the sheet 36 and 37 together and securing them in abutting position by a strip 38 of tape adhesively attached to the sheets. Like the preferred embodiment the sheets 36 and 37 are scored to permit the bending of their outer portions to form panels and flaps or tongues like those in Figures 1–3. The flaps 39 and 40 pass through slots formed in the platform 35, thereby forming loops to receive the fork of a fork-lift truck and form,

on the platform, bridges across spaced longitudinal supporting members 31, like those shown in Figures 1–3, carried in the loops thus provided. A tape strip similar to the strip 38 may, if desired, also be used along the lower face of the platform 35 over the abutting edges of the sheets 36 and 37.

Figures 5 and 6 illustrate still another modification constructed from modified sheets 43 and 44, the former being shown in unfolded condition in Figure 5. Each sheet has, adjacent one end thereof, score lines 46 to facilitate bending of the sheet to form panels and tongues or flaps 47. At its other end, each of the sheets 43 and 44 is provided with an integral T-shaped tab 49. Intermediate their ends the sheets 43 and 44 are provided (as best shown in Figure 5) with spaced, cut or punched slots 50 adapted to receive the flaps or tongues 47 and also have a plurality of orifices 51. On each sheet the latter (as best shown in Figure 6) are adapted to cooperate with the tab 49 of the other sheet which interlocks therewith to form a complete pallet. The width of the pallet may be adjusted by proper choice of the orifices 50 used. The flaps 47 with the adjacent panels form loops by projecting through the slots 50 and are bent outwardly to form bridges over the laterally spaced longitudinal supporting members 31 within said loops. These supporting members are preferably like the corresponding members in Figures 1–3.

In addition to the modifications described above, numerous other variations and modifications may be employed in the construction of pallets in accordance with the present invention. Thus, for example, instead of using two flaps or tongues at each side of a pallet to form the loops provided for support and entrance of the forks of a fork-lift truck, a single flap may be used at each side or, alternatively, three or more such flaps or tongues may be employed. As pointed out above, these tongues or flaps preferably serve as bridge elements across the longitudinal supporting members 31, thereby giving better distribution of the load on the pallet. Bridge elements may also be provided by auxiliary sheets of corrugated board, fiber board, thin wood, or the like extending longitudinally of the pallet on the pallet platform under the flaps or tongues and bridging the laterally spaced, longitudinal supporting members 31 in the loops. If desired, such elements may supplement the bridging provided by the flaps or tongues. Such auxiliary sheets may, if desired, be cemented or otherwise suitably secured to either the flaps or to the tops of the sheets forming the pallet platform and may be of any desired length. It is important, however, that along each side of the pallet for at least about 60% of the length thereof the longitudinal supporting members be provided with one or more bridging members or elements other than and in addition to the platform of the pallet.

As mentioned above, pallets according to the present invention are preferably constructed of corrugated board. Because of the relative lightness of corrugated board, the weight of the pallets is thereby kept at a minimum. However, fiberboard or other similar materials may be used if desired. Moreover, additional resistance to moisture and/or increased strength may be given the corrugated board or the like by coating or impregnating it with a suitable material. Any desired and convenient method may be employed for such coating or impregnation. Thus, for example, in some uses sufficient resistance to moisture may be given a pallet by merely painting or spraying the upper platform surface and the outer surface of the base panel of each loop with a wax solution in a suitable solvent. In other cases, it may be desired to completely impregnate the material of the pallet by dipping the pallet after assembly, or the sheets forming it before assembly, in a suitable liquid resin or resin solution. Also, of course, if desired the paper or fibrous sheets from which the corrugated board is formed may be previously coated or impregnated with suitable agents.

It will be understood that the essentially identical sheets of corrugated board or the like forming the pallet platform may, if desired, be joined by stitching, by a suitable adhesive or any other appropriate means instead of stapling as described above. Also, if desired, the entire pallet platform may be formed in one piece. The ease with which adjustments of pallets width may be made when using a two-part pallet, however, make the latter preferable. It may be mentioned here that the width of a pallet formed as shown in Figure 4 can be easily reduced by merely trimming the inside edges of the sheets 36 and 37 before taping them. "Essentially identical" as used hereinabove and in the appended claims with reference to the sheets of corrugated board or the like forming the pallets is meant to describe the sheets as being substantially identical so far as the essential portions thereof necessary for forming the pallet are concerned. Obviously, one of the sheets could be markedly different in certain respects from the other without affecting the invention. Thus, for example, the presence of extra flaps, tongues, slots, indicia or other things on one of said sheets where such things do not interfere with the formation of a pallet according to the invention is to be disregarded.

Pallets constructed in accordance with the present invention have been found convenient and economical in use. As pointed out above, they are quickly assembled and erected. Before assembly they occupy a minimum of space. When loaded, these pallets are conveniently lifted and carried by fork-lift trucks and may be stacked or tiered as desired. Because of their light weight, shipping charges on palletized loads are reduced and their inexpensive construction permits them to be discarded after a single use, thus saving the expense of shipping back the heavier permanent type pallets. However, because of their durability they will in many cases be reusable and thus additional savings will be forthcoming. In such cases they may obviously be readily disassembled if desired and stored for reuse.

Since, as pointed out above, the construction of pallets according to the present invention is susceptible to numerous variations and modifications, it is intended that the invention shall not be construed as being limited to the construction illustrated and described. Rather, the invention should be interpreted as broadly as permitted by the appended claims.

I claim:

1. A pallet formed from two essentially identical sheets of corrugated board or the like and adapted for use with fork-lift trucks which comprises a pair of loops adapted to receive the fork of a fork-lift truck, a rectangular, load receiving platform attached to said loops along its side edges, a pair of laterally spaced longitudinal supporting members within each of said loops adapted to support said platform and maintain said loop open, and elements on the upper face of said platform bridging across the said laterally spaced supporting members within each of said loops, said platform being formed by securing said sheets together and each of said loops being formed in part by a flap integral with one of said sheets projecting through said platform to the upper face thereof and extending outwardly on said platform toward the adjacent side edge thereof.

2. A pallet formed from two essentially identical sheets of corrugated board or the like and adapted for use with fork-lift trucks which comprises a rectangular, load-receiving platform, a pair of loops, adapted to receive the fork of a fork-lift truck, extending longitudinally of said platform along each side thereof, a pair of laterally spaced longitudinal supporting members within each of said loops, and elements on the upper face of said platform bridging across the said laterally spaced supporting members within each of said loops, said sheets being

secured together to provide said platform and each of said loops being formed in part by a flap integral with one of said sheets projecting through said platform to the upper surface thereof and extending outwardly on said platform toward the adjacent side edge thereof.

3. A pallet formed from a pair of essentially identical sheets of corrugated board or the like and adapted for use with fork-lift trucks which comprises a rectangular, load-receiving platform, a pair of loops, adapted to receive the fork of a fork-lift truck, extending longitudinally of said platform along each side thereof, and a pair of laterally spaced longitudinal supporting members within each of said loops, said sheets being secured together to provide said platform and each of said loops being formed in part by a flap integral with one of said sheets projecting through said platform to the upper surface thereof and extending outwardly on said platform substantially to the adjacent side edge thereof, thereby to form a bridging element across said supporting members laterally spaced within said loop.

4. A pallet formed from a pair of essentially identical sheets of corrugated board or the like and adapted for use with fork-lift trucks which comprises a rectangular, load-receiving platform, a pair of loops, adapted to receive the fork of a fork-lift truck, extending longitudinally of said platform along each side thereof, and laterally spaced longitudinal supports within each of said loops, said sheets being secured together to provide said platform and each of said loops being formed in part by a flap integral with one of said sheets projecting through said platform to the upper surface thereof and extending outwardly on said platform substantially to the adjacent side edge thereof, thereby to form a bridge across said supporting members laterally spaced within said loop.

5. A pallet formed from two essentially identical sheets of corrugated board or the like and adapted for use with fork-lift trucks which comprises a rectangular, load-receiving platform, a pair of loops, adapted to receive the fork of a fork-lift truck, extending longitudinally of said platform along each side thereof, and a pair of laterally spaced longitudinal supporting members within each of said loops, said sheets being secured together in overlapping relation to provide said platform and each of said loops being formed in part by flaps integral with one of said sheets projecting through said platform to the upper surface thereof and extending outwardly on said platform substantially to the adjacent side edge thereof, said flaps thereby forming bridges across said supporting members laterally spaced within each of said loops.

6. A pallet formed from two essentially identical sheets of corrugated board or the like and adapted for use with fork-lift trucks which comprises a rectangular, load-receiving platform formed by attaching together the ends of said sheets, a pair of loops adapted to receive the fork of a fork-lift truck extending longitudinally of said platform along the sides thereof, and a pair of laterally spaced longitudinal supporting members within each of said loops adapted to support said platform and maintain said loops open, each of said loops being formed in part by a plurality of panels and a flap integral with one of said sheets, said flap projecting through said platform to the upper face thereof and extending outwardly on said platform substantially to the adjacent side edge thereof, thereby to form a bridge element across said supporting members laterally spaced within the said loop associated with said flap.

7. A pallet of corrugated board or the like adapted for use with fork-lift trucks which comprises a rectangular, load-receiving platform formed of a sheet, a pair of loops adapted to receive the fork of a fork-lift truck extending longitudinally of said platform along the sides thereof, and a pair of laterally spaced longitudinal supporting members within each of said loops adapted to support said platform and maintain said loops open, each of said loops being formed in part by a plurality of panels and a flap, said panels and flaps being integral with said sheet, said flaps projecting through said platform to the upper face thereof and extending outwardly on said platform substantially to the respective adjacent side edges thereof, thereby to form bridges across said supporting members within each of said loops.

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