

March 1, 1949.

F. H. STONER

2,463,214

PALLET

Filed Nov. 5, 1945

2 Sheets-Sheet 1

FIG. 1

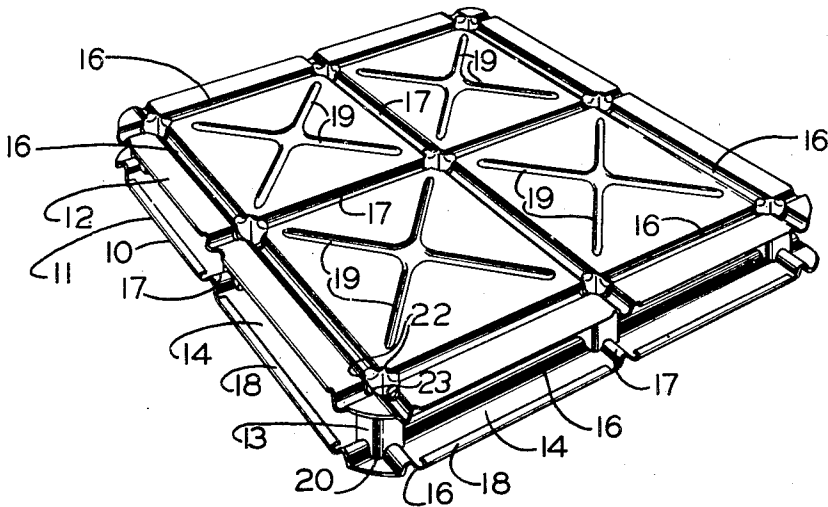
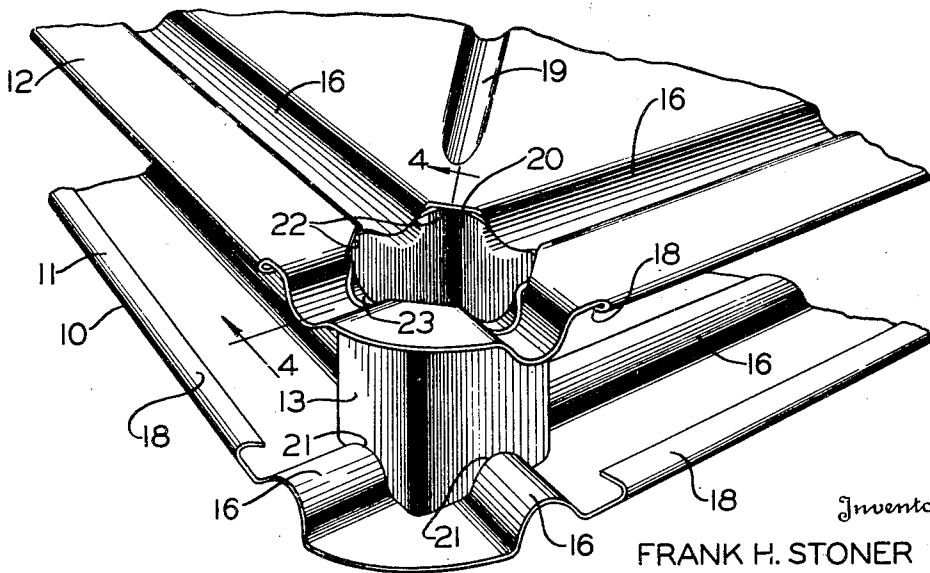


FIG. 2



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2 Sheets-Sheet 2

FIG. 3

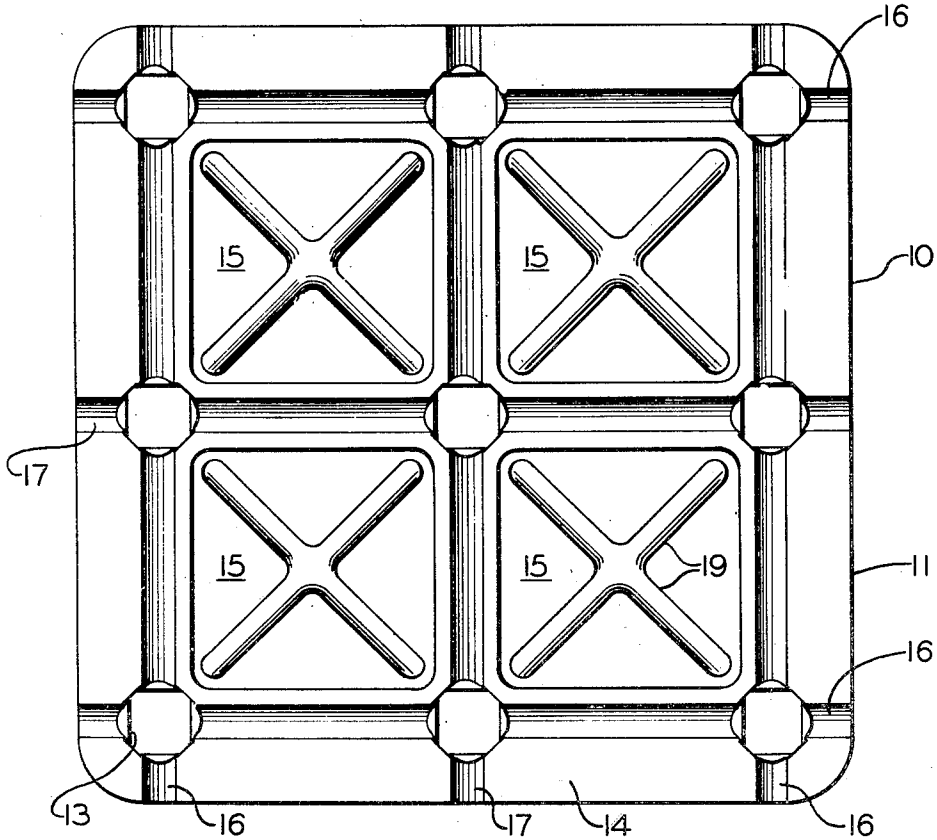
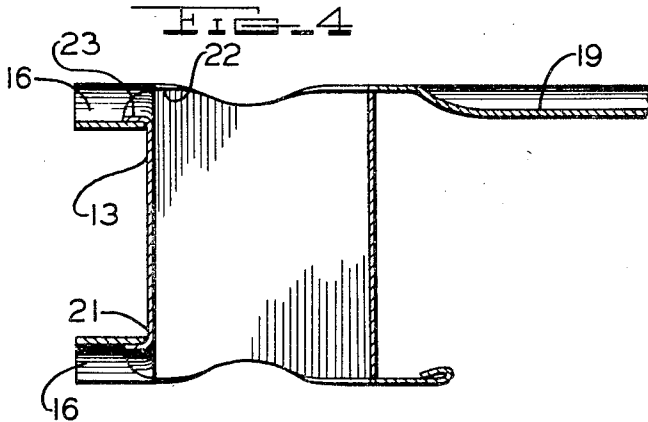


FIG. 4



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UNITED STATES PATENT OFFICE

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PALLET

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7 Claims. (Cl. 248—120)

1

This invention relates generally to material handling equipment and refers more particularly to improvements in load supporting pallets.

One of the objects of this invention is to provide an inexpensive, light weight pallet capable of withstanding extremely high unit loads and constructed to enable entry of the truck fork from any one of a number of directions. Thus, the pallet may be set down from one direction and picked up from another, so that removal of unit loads need not be a reversal of the placement process. This feature enables obtaining a greater flexibility of stowage arrangements and provides for reducing the aisle space required for manipulating the loads.

Another object of this invention is to provide a pallet having a base and having a platform supported from the base by vertical columns sufficient in number to adequately support high unit loads and spaced to provide entry slots at all sides of the pallet for receiving a truck fork.

A further object of this invention is to provide a pallet of the above general type wherein the platform as well as the base are formed of metal stampings and wherein the columns are in the form of metal tubes having the opposite ends respectively interlocked with the base and platform in such a manner that the load on the platform is supported by the columns.

The foregoing as well as other objects will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings wherein:

Figure 1 is a perspective view of a pallet constructed in accordance with this invention;

Figure 2 is a fragmentary perspective view of the pallet shown in Figure 1;

Figure 3 is a bottom plan view of the pallet shown in Figure 1; and

Figure 4 is a cross sectional view taken on the line 4—4 of Figure 2.

In the several figures of the drawings the reference character 10 indicates a pallet comprising a pair of plates 11 and 12 secured in lateral spaced relationship by means of a plurality of columns 13. The plates are preferably in the form of sheet metal stampings and the columns are in the form of metal tubes. The tubes or columns may either be seamless or may be formed by bending or otherwise forming sheet metal strips to the specified cross sectional contour and by welding, brazing or otherwise securing the free edges of the strips together. The columns 13 are spaced from each other in a manner to provide entrant slots 14 at each of the sides of the pallet for receiving

2

the usual fork on the truck or transporter, not shown herein. This arrangement greatly increases maneuverability in confined spaces and provides greater flexibility of stowage arrangements.

The plate 11 forms the base of the pallet and is provided with openings 15 of sufficient size to enable the usual supporting rollers on the free ends of the fork to be lowered into engagement with the flooring on which the pallet is supported. The plate 12 forms the platform for the pallet and is the same as the plate 11 with the exception of the openings 15. The unit load is carried by the platform and is transmitted to the support or the base through the vertical columns 13. Although the columns are spaced to provide entrant openings 14 for receiving the truck fork, nevertheless, they are arranged to support high unit loads on the platform without buckling the latter.

Each plate has a substantially semi-circular reinforcing rib 16 adjacent each of the four edges thereof and these ribs extend for the full length of said edges. A pair of additional semi-circular reinforcing ribs 17 are formed in each plate and the ribs of each pair intersect at the central portions of the plates 11 and 12, respectively. The ends of the ribs 17 on each plate respectively intersect the ribs 16 on the latter intermediate the ends of the ribs 16. The plates are assembled so that the ribs on the base plate 11 project upwardly and the ribs on the platform 12 project downwardly. The marginal edges of the two plates are reinforced by flanges 18 formed on the plates between the extremities of the ribs and folded over the respective plates. The portions of the platform 12 confined by the ribs 16 and 17 may be reinforced by transversely extending ribs 19, if desired.

A load supporting column 13 is positioned between the plates at each intersection of the ribs 16 with each other and with the ribs 17, as well as at the intersection between the ribs 17. In the present instance, the columns are square in cross section and the opposite ends thereof, respectively, have an interlocking connection with the plates. The connection between opposite ends of the columns and the respective plates is such that the latter are securely held in assembled relationship without the aid of separate fastener elements and without the necessity of welding or brazing the parts.

In detail, an octagonally-shaped opening 20 is formed in each plate at the intersection of the ribs 16 and at the intersection of the ribs 17 with

each other and with the ribs 16. In other words, the openings 20 interrupt the ribs at the zones of intersection thereof so that strictly speaking the ribs do not actually intersect one another. However, the median lines of adjacent ribs do intersect at the centers of the respective openings and, therefore, in the interests of simplicity in describing the product, the ribs are referred to as intersecting one another.

In any event, diametrically opposed sides 21 of each octagonally-shaped opening 20 are formed by adjacent ends of a pair of ribs and the distance between the sides 21 is such as to receive one end of a tubular column therebetween. The adjoining sides 22 of the opening 20 extend diagonally across the corners of the column 13 at the outer ends of the latter and are crimped over the corners. As a result, the plates are held in proper vertical spaced relationship and the load on the platform 13 is supported by the columns. The portions of the sides 21 of the columns registering with the ribs form tongues 23 which are crimped over the base portions of the ribs and serve to hold the plates in abutting engagement with the corner portions of the columns 13. The above arrangement permits simultaneously securing opposite ends of the columns to the respective plates by a simple press operation and insures a permanent connection between the several parts without the use of welding, brazing or separate fastener elements. Furthermore, by extending the side portions 21 of the polygonally-shaped openings 20 across the corners of the columns at the outer ends of the latter, stresses resulting from unit loads on the platform are taken by the columns in a manner to avoid any possibility of breaking, loosening or otherwise interfering with the effectiveness of the interlocking connections between the columns and plates.

What I claim as my invention is:

1. A pallet comprising a base plate, a platform spaced vertically from the base plate, spacers between the base plate and platform including tubular load supporting columns having spaced portions at the upper end abutting the underside of the platform and having tongues intermediate said spaced portions extending through openings in the platform and crimped over the top surface of the latter.

2. A pallet comprising laterally spaced plates, spacers between the plates including load supporting columns having spaced portions at opposite ends respectively abutting the inner surfaces of the plates and having tongues intermediate the spaced portions respectively extending through openings in said plates and crimped over the outer surfaces of the latter.

3. A pallet comprising laterally spaced plates, spacers between the plates including tubular load supporting columns polygonal in cross section and having the corner portions at opposite ends of the columns respectively abutting the inner surfaces of the plates, and tongues on opposite ends of the columns between the corner portions respectively projecting through openings

in the plates and crimped over the outer sides of the plates.

4. A pallet comprising a load supporting platform having downwardly projecting semi-circular ribs extending at right angles to each other, a tubular load supporting column polygonal in cross section and having corner portions abutting the lower surface of the platform between the ribs, and tongues on the column between the corner portions projecting through the platform and respectively crimped over the base portions of the ribs.

5. A pallet comprising laterally spaced plates, each plate having substantially semi-circular ribs extending at right angles to each other, the ribs on one plate projecting toward the ribs on the other plate, spacers between the plates including tubular load supporting columns square in cross section and having the corner portions at opposite ends respectively abutting the inner surfaces of the plates between the ribs, and tongues on opposite ends of the columns between the corner portions respectively projecting through the plates and crimped over the base portions of the ribs.

6. A pallet comprising laterally spaced plates having registering openings therethrough and having hollow inwardly projecting ribs intersecting the sides of the openings in spaced relation to each other, and spacers between the plates in alignment with the registering openings including hollow columns having portions at opposite ends respectively abutting the inner surfaces of the plates between the ribs and having the portions registering with the ends of the ribs intersecting the openings crimped over the outer surfaces of the base portions of the ribs.

7. A pallet comprising laterally spaced plates having registering openings therethrough and having hollow inwardly projecting ribs intersecting diametrically opposite sides of the openings with the ribs in each plate spaced approximately 90° from each other, and spacers between the plates including tubular load supporting columns respectively positioned in substantial alignment with the registering openings in the plates, said columns having portions at opposite ends respectively abutting the inner surfaces of the plates between the ribs and having the portions registering with the ends of the ribs intersecting said openings crimped over the outer surfaces of the base portions of the ribs.

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