

March 13, 1951

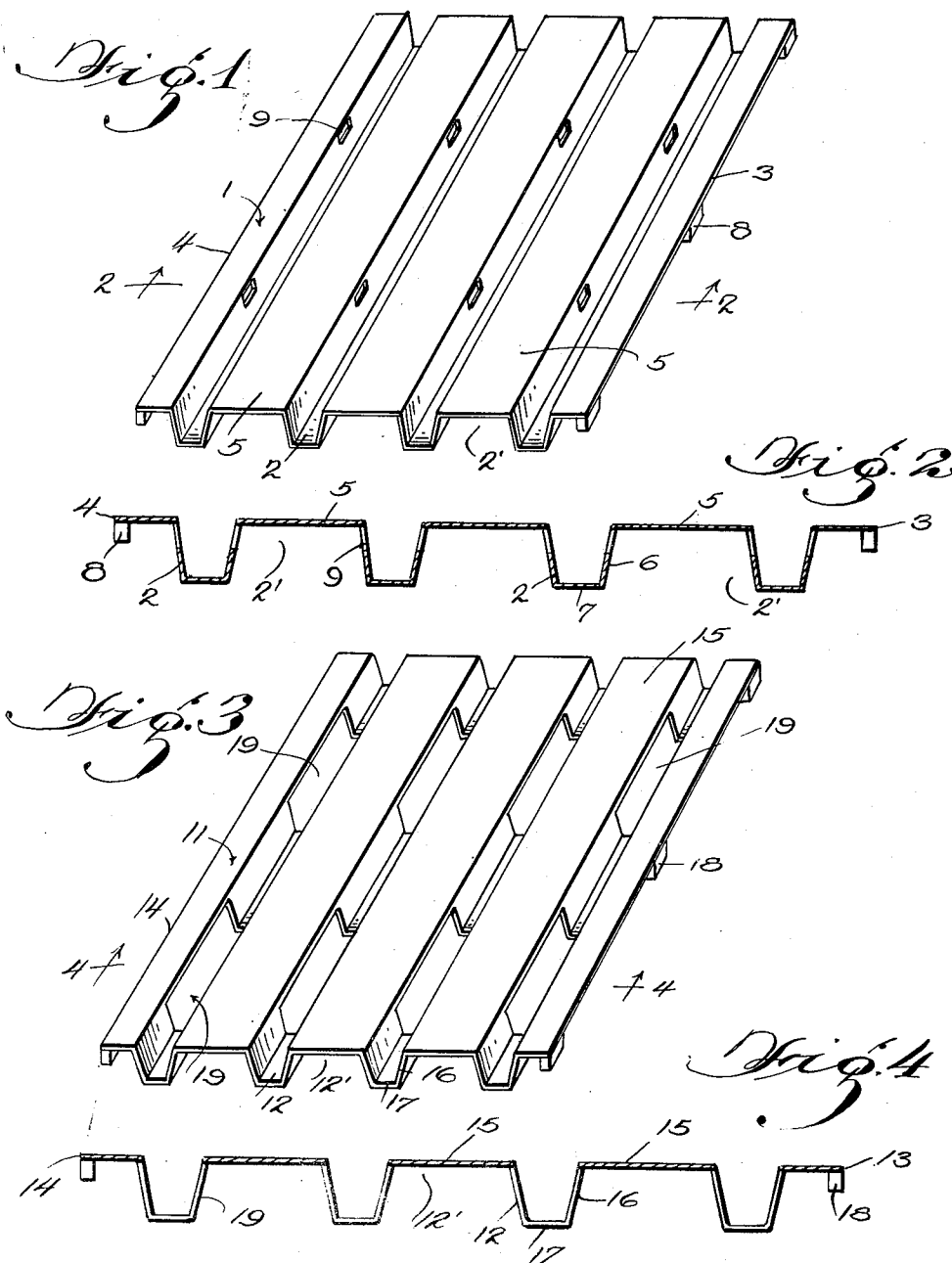
R. VRABCAK

2,544,743

PALLET

Filed Oct. 8, 1946

3 Sheets-Sheet 1



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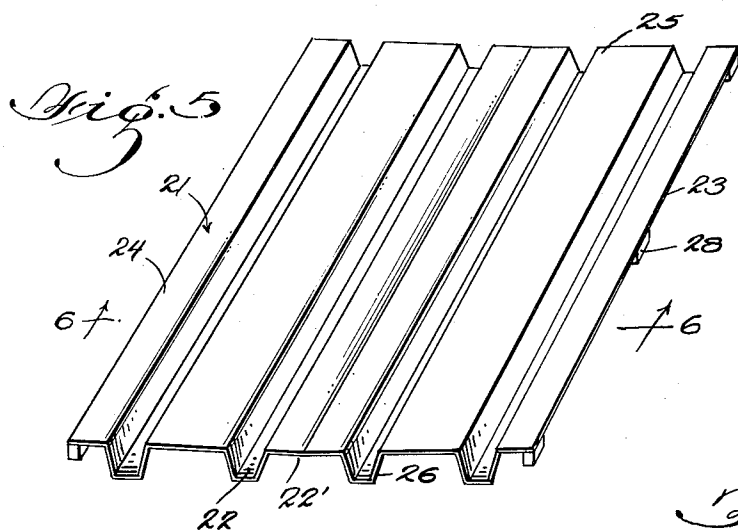
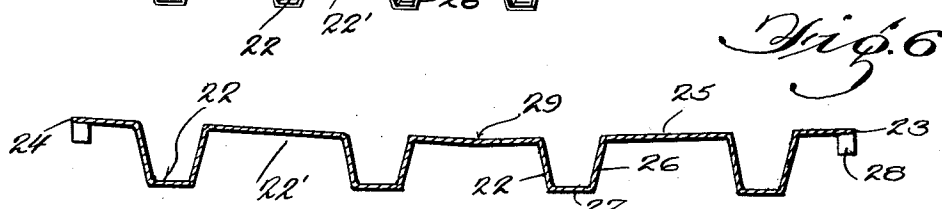
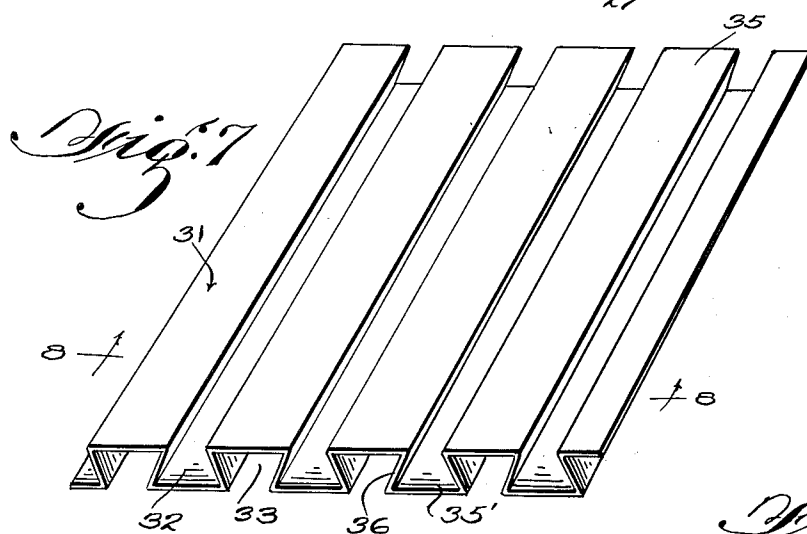
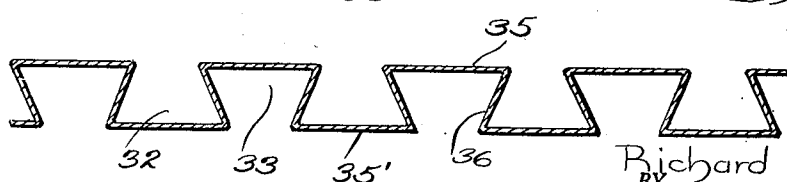
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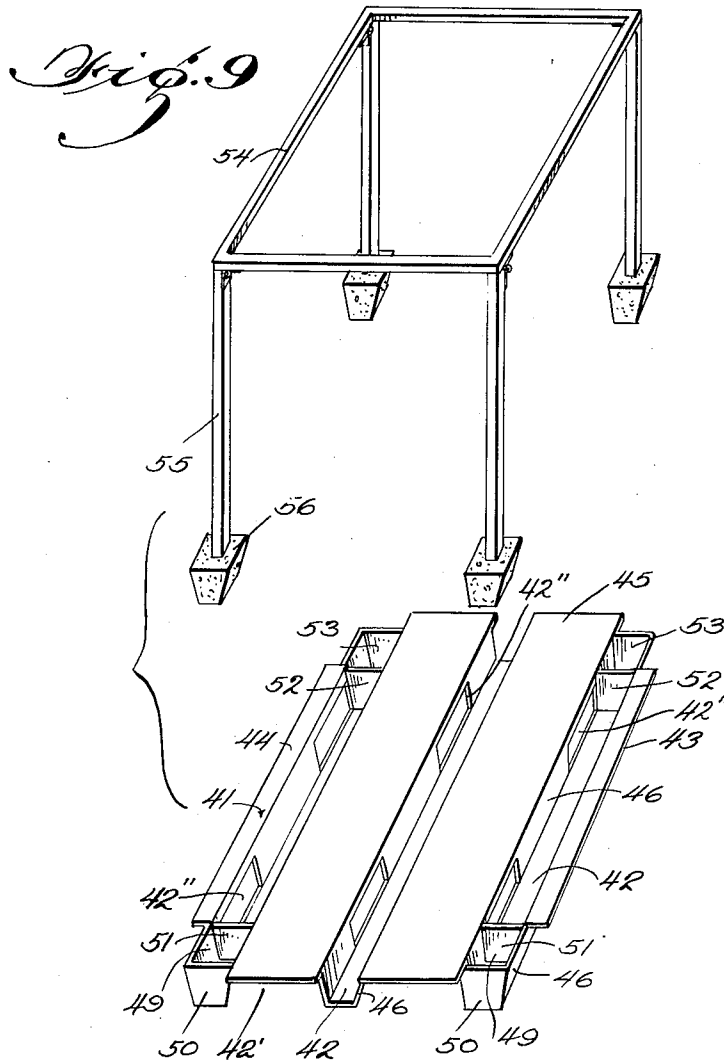
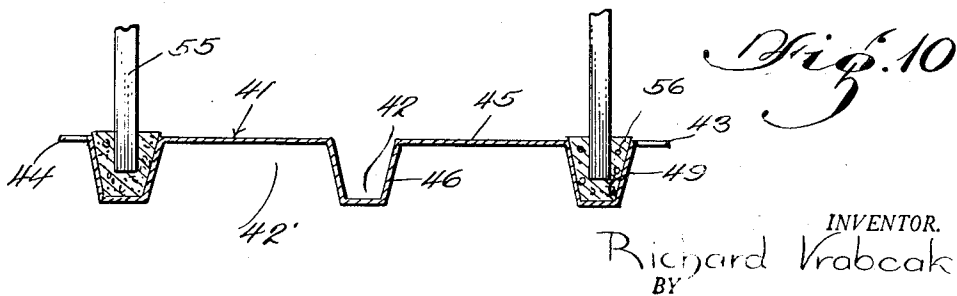
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3 Sheets-Sheet 3



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UNITED STATES PATENT OFFICE

2,544,743

PALLET

Richard Vrabecak, Flushing, N. Y.

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3 Claims. (Cl. 248—120)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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The invention described herein, if patented, may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates to a pallet construction, and more particularly, to a pallet embodying a one-piece lightweight construction.

An object of this invention is to provide a pallet of unitary lightweight construction having a platform with channels formed therein and in which the channels serve as supporting legs and also as reinforcing ribs for the platform.

Another object of this invention is to provide a pallet construction molded or pressed from a single sheet and provided with transverse channels parallel to each other and parallel to an edge of the sheet, and wherein the channels form supporting legs and also reinforcing members to prevent the pallet from flexing.

Still another object of this invention is to provide a pallet of one-piece construction provided with a platform having spaced channels, and in which the spaces between the channels under the platform are designed to receive the fork of a fork-lift truck, and in which transverse cut-outs are provided in the channels to permit insertion of the fork of a fork-lift truck transversely of the channels so that the pallet may be lifted from any side.

Still another object of the invention is to provide a pallet of unitary construction formed from a sheet having channels alternately pressed upwardly and downwardly in a sheet, and in which the downwardly pressed channels form supporting legs for the pallet, and in which the upwardly pressed channels form the platform of the pallet.

It is also an object of this invention to provide a reversible one-piece pallet construction having formed therein alternately, upwardly and downwardly extending channels and in which the channels are of the same dimension and shape whereby the top and bottom of the pallet are interchangeable to form a reversible pallet.

Still another object of this invention is to provide a one-piece pallet construction combined with a superstructure in which the pallet is provided with channels forming supporting legs, and in which pockets are formed in some of the channels coextensive with the width of the channels to receive legs of the superstructure.

Other objects and advantages of the present invention will appear in the following detailed description and particularly will be pointed out in the appended claims, reference being had to the accompanying drawings forming a part of this specification and in which:

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Fig. 1 is a perspective view of one embodiment of the pallet construction of this invention;

Fig. 2 is a sectional view taken on line 2—2 of Fig. 1;

Fig. 3 is a perspective view of another embodiment of this invention wherein transverse cut-outs are provided through the channels;

Fig. 4 is a sectional view taken on line 4—4 of Fig. 3;

Fig. 5 is a perspective view of still another embodiment wherein the platform slopes toward the center;

Fig. 6 is a sectional view taken on line 6—6 of Fig. 5;

Fig. 7 is a perspective view of still a further embodiment showing a reversible pallet construction;

Fig. 8 is a sectional view taken on line 8—8 of Fig. 7;

Fig. 9 is a perspective view of still another embodiment showing a pallet construction combined with a superstructure; and

Fig. 10 is a sectional view of the embodiment of Fig. 9 showing the legs of the superstructure in position.

Referring to Fig. 1 of the drawings, 1 represents the pallet construction in general constituting a unitary platform, molded or pressed from a single sheet of plastic, metal, or other suitable material, such as, pressed paper or combinations of plastic, laminated with pressed paper. As shown in Fig. 1, the pallet is provided with downwardly extending channels 2 parallel to and coextensive with the opposite sides 3 and 4 of the pallet. Four channels are shown at spaced intervals, but it is within the scope of this invention to utilize a lesser or greater number of channels. The portions 5 intermediate the channels constitute a load bearing platform upon which articles may be placed for transportation, loading or storage purposes. Each channel is provided with the downwardly extending sides 6 and with the flat bottom 7.

As shown, the flat bottoms 7 of the several channels are positioned in the same horizontal plane so that these bottoms will rest on the ground or floor or on other flat objects to support the pallet and articles thereon. The side portions 6 of the channels transmit the load from the platform 5 to the ground or floor, and thus serve as legs for the platform 5. At the same time, the side portions 6 of the channels serve as corrugated stiffening members to prevent flexing of the platform 5 under great loads. Along the side edges 3 and 4, there are preferably provided blocks 8 or other suitable means, such

as hooks, secured to the under side of the side edges 3 and 4 to provide a means for attaching a hoist sling to the pallet to permit the pallet to be lifted by means of a hoist. Also, if desired, the side portions 6 of the channels may be provided with slots 9, as shown in Fig. 1, to receive straps, looped through the slots 9, transversely of the channels, to permit strapping of articles supported on the pallet. It is also apparent that fastening straps may pass through the spaces 2' between and parallel to the channels 2, so that strapping in both directions will be feasible. The spaces 2' between the channels 2 are designed to receive the fork of a fork-lift truck so that the pallet may be readily moved, with a load thereon, from one place to another.

The embodiment of Fig. 3 is similar to that of Fig. 1, and the parts 11 to 18, inclusive, perform the same function as the parts 1 to 8, inclusive, in the embodiment of Fig. 1. The embodiment of Fig. 3 is further provided with the cut-outs 19 through the sides 16 and bottoms 17 of the channels 12. These cut-outs are shown in alignment in Fig. 3 and as forming two open passageways beneath the platform 15 and transversely of the channels 12. Thus with this construction, it is possible to insert the fork of a fork-lift truck into the openings 19 and transversely of the channels 12. Thus, this embodiment permits the pallet to be handled by a fork-lift truck from any side, thus, further increasing the adaptability of the pallet.

In the embodiment of Fig. 5, a similar pallet construction is shown, the parts 21 to 28, inclusive, performing the same functions as the parts 1 to 8, inclusive, in the embodiment of Fig. 1. Fig. 5, however, presents a different feature in that the platform 25 is designed to slope downwardly towards the center 29 of the platform, as clearly shown in Fig. 6. This pitch or slope effect is especially designed to accommodate bagged goods and will tend to urge such goods towards the center of the pallet and prevent accidental falling from the pallet.

The embodiment of Fig. 7 is similar to the other embodiments except that the channels are formed and spaced in such a manner as to produce a reversible pallet construction. More specifically, the sheet 31, from which the pallet is formed, is pressed or formed with downwardly extending channels 32 and upwardly extending channels 33. As shown, the channels are of the same size and shape so as to produce an upper platform surface 35 and a lower platform surface 35' of equal size and shape so that the pallet is reversible and requires no turning to render it ready for use. Either the top or bottom surface can be used for the platform. The side portions 36 of the channels are arranged to diverge downwardly in the channels 32 and to diverge upwardly in channels 33. This structure enables the platform area 35, 35' to be greater than the area presented by the channels in the plane of the platform. The slots 9 and projections 8 of the embodiment of Fig. 1 may be applied to the embodiment of Fig. 7, if desired.

The embodiment of Fig. 9 shows a combination of a pallet, similar to the pallets of Figs. 1, 3, and 5, combined with a superstructure designed to support covering material, such as canvas, to protect the articles on the pallet when used outdoors during inclement weather. This pallet is similarly provided with the channels 42 formed or pressed from a sheet 41 and forms the platform 45. The channels 42 preferably have their sides 46 converging downwardly, as shown

in Figs. 9 and 10, and form the spaces 42' between the channels to receive the fork of a fork-lift truck. The walls of the channels may be provided with cut-outs 42'' for the reception of the fork of a fork-lift truck, similar to the form of the invention shown in Figure 3, if desired. The outermost pair of channels 42, adjacent the edges 43 and 44, are provided with the transverse plates 50, 51, 52, and 53 positioned, as shown in Fig. 9, within and adjacent the ends of the outermost channels 42. As shown, these plates are used in pairs and in conjunction with the sides 46 of the channels to form the pockets 49 for a purpose to be described hereinafter. The superstructure comprises the horizontal members 54 forming a rectangular construction, and the vertical legs 55. The several parts of the superstructure are preferably hinged together to permit folding for compactness when not in use. The legs 55, have fixed to their lower ends the blocks 56 which are of such shape and dimensions as to fit into the pockets 49 of the pallet, as fully shown in Fig. 10. The blocks 56 may be made of wood, plastic, or other suitable material. The superstructure may be covered with canvas or other suitable material (not shown) to protect articles stored on the pallet from the weather.

In all of the embodiments described, the platform and channel surfaces may be perforated, if desired, to reduce the weight of the pallet, depending upon the structural strength of the material used in the construction, and also depending on the loads to be carried. Also, if desired, material forming corner or edge guards may be fixed to the outer edges of the pallet to prevent wearing due to friction from the strapping, or injury due to impacts against the edges. Also, reinforcing rods or bars may be included in the platform or in the sides of the channels, where necessary to increase the structural strength of the pallet.

It is apparent that this invention provides several embodiments of a pallet of lightweight one-piece construction which may be readily transported whether the pallets are loaded or empty. It is further apparent that the pallets may be pressed or molded from a single sheet, and may be manufactured at a minimum cost under mass production methods, and when pallets of the same type are used, especially with regard to the pallets of Figs. 1, 3, 5, and 9, the channels of one pallet may be nested into the channels of another pallet, when empty, to conserve storage space in warehouses, shipping trucks, and railroad cars. In the pallets of this invention, it is further to be noted that there are no projecting nails, splinters, and the like, to tear or cut articles supported on the pallet.

While the invention has been described in more or less detail, it is not to be limited thereby, as changes may be made in the form, arrangement and construction of parts, and equivalents may be substituted, without departing from the spirit and scope of the invention as claimed, the forms hereinbefore described being merely preferred embodiments thereof.

I claim:

1. In a pallet of sheet material, the combination of a platform, parallel channels formed in said platform parallel to an edge of said platform, said channels being disposed at and intermediate the platform edges for supporting the same, a superstructure forming a covering frame for said platform and including supporting legs, and pockets formed in some of said channels coexten-

sive with the width of said channels, and receiving said legs.

2. In a pallet construction, the combination of a platform and a covering superstructure therefor, said platform being integrally formed with transversely extending parallel channels for supporting said platform, the outermost pair of channels tapering downwardly and being provided at each end with a pocket having the same depth and width as that of the channel, said superstructure including supporting legs, and said legs having fixed at their lower ends tapered blocks for reception in said pockets.

3. In a pallet of sheet material, the combination of a platform, parallel channels formed in said platform parallel to an edge thereof, said channels being disposed at and intermediate the platform edges, certain of said channels provided with pockets, the walls of said channels formed with cut-outs extending through the vertical

length thereof for the reception of the fork of a fork-lift truck.

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