

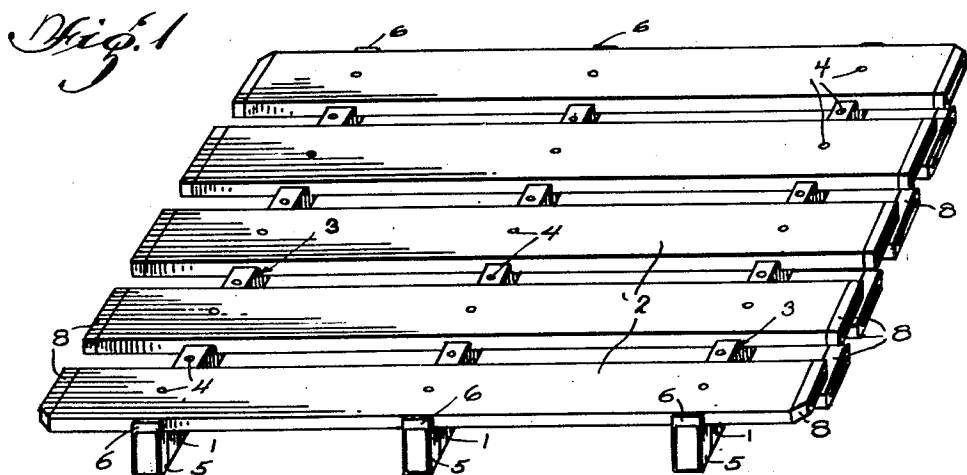
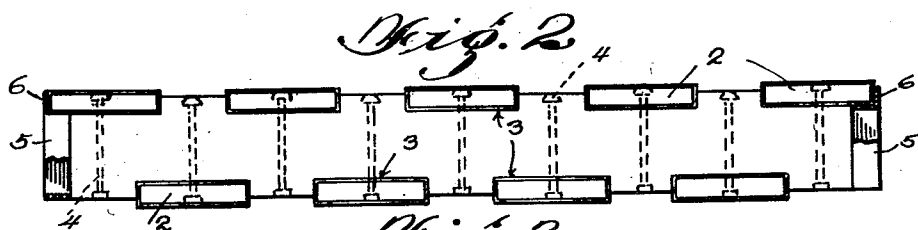
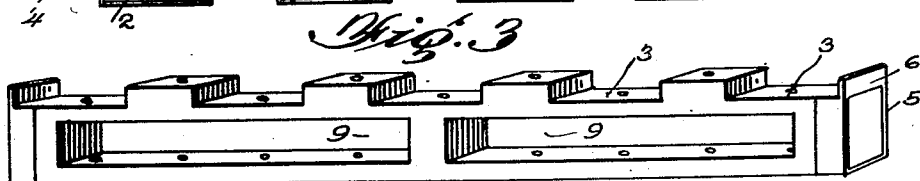
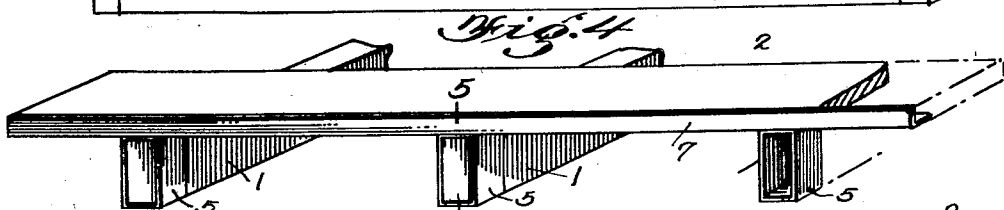
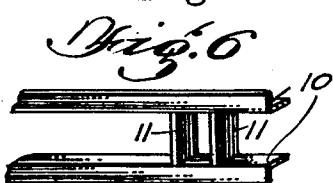
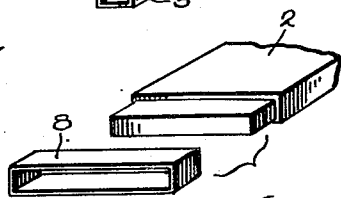
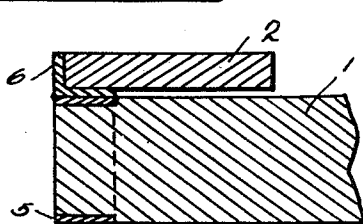
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H. LEHRMAN

2,450,432

PALLET

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INVENTOR.
Harry Lehrman
BY
William F. Deumond
ATTORNEY

UNITED STATES PATENT OFFICE

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PALLET

Harry Lehrman, Brooklyn, N. Y.

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5 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.

The present invention relates to pallets or small wooden platforms used for stacking and warehousing freight and providing a convenient means, in conjunction with lift trucks, for transferring freight from place to place.

These devices are usually formed of a number of cross-pieces or stringers to which are attached upper and lower series of base members and load-supporting members, constituting surfaces upon which the freight may be loaded; either surface being employed as a support for the goods. Considerable difficulty has been encountered with earlier pallets, due in part to "wracking" or folding up of the pallet because of inadequate strength at the joints between the load-supporting members and stringers, and also due to the splitting of these elements by repeated pounding from the ends of the lift forks, and other causes. Consequently, where great amounts of freight are handled, it has been necessary not only to maintain a large number of workmen for repair purposes, but also to have a large reserve of pallets for use in lieu of those which have become useless or temporarily so.

It is a primary object of the present invention, therefore, to produce a pallet having an exceptionally high resistance to wracking by improving the joints between the planks constituting the upper and lower surfaces of the pallet and the cross-pieces or stringers.

It is a further object of the invention to construct a pallet having a high degree of resistance to injury by the lifting forks and yet which is not unduly heavy.

A still further object of the invention resides in the provision of a pallet having the above characteristics and which is capable of receiving the lift forks in any one of its four edges.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawings, in which,

Figure 1 is a perspective view of the novel pallet.

Figure 2 is an end view thereof.

Figure 3 is a perspective view of one of the stringers.

Figure 4 is a fragmentary perspective view of a modified construction of stringer collar and protective flange.

Figure 5 is a sectional view taken on line 5—5 of Figure 4.

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Figures 6 and 7 are detail views of modified forms of collars and protective devices, and

Figure 8 is a perspective view of one of the collars used in protecting the plank ends.

Referring to the drawings in greater detail, the numeral 1 indicates a plurality of stringers of wood, metal or the like suitably spaced and arranged in parallel relationship to provide a pallet of the desired dimensions, three of these stringers being shown in the present instance. To the upper and lower faces of these stringers are secured series of wooden planks 2 constituting load-supporting members and base members.

As mentioned above, the pallets of the prior art have had a major defect in that they had a tendency to "wrack" or fold up during use. This defect has been overcome in the present arrangement by providing a series of transverse notches 3 on the upper and lower faces of each of the stringers 1, and in order that the stringers may not be unduly weakened, the notches in the upper and lower series are staggered as indicated in Figure 2. In the present instance, five notches are provided in the upper faces of the cleats and four in the lower faces, to receive an equal number of the planks 2. Bolts 4 extending through the stringers are employed for firmly locking the planks within their respective grooves.

For the purpose of protecting the ends of the stringers against splitting, chipping and the like, by pounding of the lift forks, each end is provided with a metal collar 5, which is tightly fitted thereto. It will be noted that the outer grooves on the face of the stringer to which five of the planks are secured, extend to the ends of the stringer so that these end grooves are provided with only one end wall. The other end wall necessary to complete these grooves is formed by a metal flange 6 which may constitute an integral part of the collars 5.

The flanges 6, in addition to completing the end notches of the stringers, also serve as a protection for the edges of the end planks of the particular series. Additional protection for the outer edges of the end planks may be provided by the modified construction shown in Figure 4, in which a continuous flange 7 extends throughout the length of the plank and is secured to the three collars on the adjacent ends of the stringers 1. An additional means for protecting the planks against splitting or chipping comprises metal rings or collars 8 which encircle and tightly bind the ends of the several planks 2.

It is often desirable that the lift forks of the conveying machine enter the space between the

upper and lower planks of a pallet at either the sides or ends thereof. Accordingly, the stringers 1 may be provided with one or more elongated openings 9 for the purpose of receiving the lift forks when the pallets are so positioned as to best receive them from that particular direction.

In Figure 6 is shown a slightly modified means for shielding the load-supporting members and stringers in a standard reversible pallet. In such pallets the upper and lower planks are arranged in vertical alignment, and accordingly upper and lower flange members 10 are provided. These members 10 are shown as connected by collars for engaging the ends of the stringers 1. These collars may take the form of spaced vertical webs 11 welded to the flange members 10 or rectangular collars such as shown in Figures 1 to 5 inclusive may be employed.

In the modified construction shown in Figure 7 the rectangular collar of Figure 1 is modified to the extent that an additional flange is provided. These flanges are indicated by the numeral 12 and serve to complete the end grooves and protect the edges of the end planks when arranged in vertical alignment in lieu of the staggered relation shown in Figures 1 and 2.

The purpose and function of the various novel features of the construction have been described in connection with the description of the structural details and need not be repeated. It should be emphasized, however, that the present construction is designed to eliminate "wracking" or folding of pallets by providing fifty-four resistance points at the juncture of the planks and stringers; that the possibility of splitting the planks and stringers is reduced to a minimum by the use of the collars and protective flanges, and that the construction is such as to permit the entrance of the lifting forks in any one of the four edges of the pallet.

In accordance with the patent statutes I have described what I now consider to be the preferred forms of the invention but it is obvious that minor changes may be made in the structural details without departing from the spirit of the invention and it is intended that all such changes be included within the scope of the appended claims.

What is claimed is:

1. A pallet comprising a plurality of wooden stringers formed with transverse notches in at least one face thereof, the notches at the ends of the series extending to the ends of the stringers, metal collars encircling and binding the ends of the stringers, a flange extending from each collar to form one wall of the notch at the respective end of the stringer, a series of planks extending transversely of the stringers and seated in the series of notches, and means for securing the planks within the notches.

2. A pallet comprising a plurality of wooden

stringers formed with a series of transverse notches in opposite faces thereof, the notches in one series being staggered with respect to the notches in the other series, the notches at the ends of one series extending to the ends of the stringers, a series of planks extending transversely of the stringers and seated in the notches, means for securing the planks in the notches, metal collars surrounding and binding the ends of the stringers, and flanges extending from one side of the collars for completing the sides of the end notches in one series and for protecting the side edges of the planks in such notches.

3. A pallet comprising a plurality of wooden stringers formed with a series of transverse notches in at least one face thereof, the notches at each end of each series extending to the end of the stringer, metal collars encircling and binding each end of each stringer, planks extending transversely of the stringers and secured in the notches, and a metal flange encompassing substantially the entire outer edge of each of the end planks of the series, said metal flange being secured to the collars.

4. A pallet comprising a plurality of spaced wooden stringers formed with a series of transverse notches in at least one face thereof, metal collars encircling and binding the respective ends of the stringers, a series of wooden planks extending transversely of the stringers and seated in said notches, said notches having a depth corresponding substantially to the thickness of the planks, means for securing the planks in the notches, said stringers provided with one or more elongated openings along the median line thereof.

5. A pallet comprising a plurality of wooden stringers each formed with a series of spaced transverse notches on its upper and lower faces, the notches at the ends of each series extending to the ends of the stringers, and protective members for the stringers and planks, said members including collars for encircling the ends of the stringers and flanges secured to the collars and enveloping the outer edges of the planks at the end of each series.

HARRY LEHRMAN.

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