March 6, 1945. A. L. LEWIS ET AL 2,371,106

PORTABLE PLATFORM

Filed June 2, 1943 2 Sheets-Sheet 1

Fig.1.

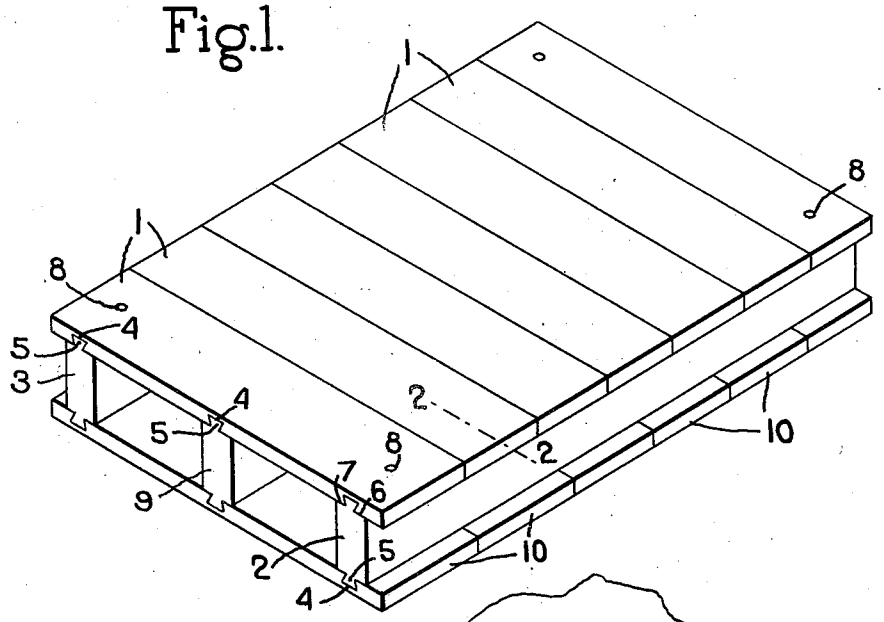
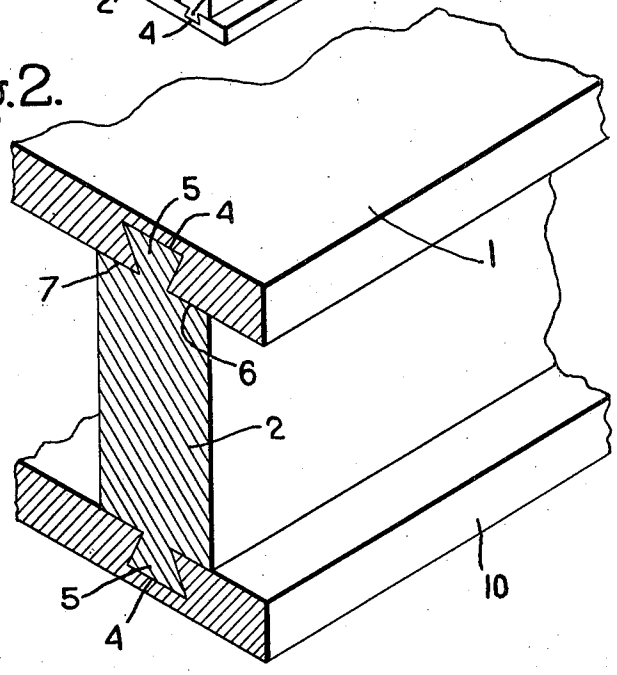


Fig.2.



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Fig. 3.

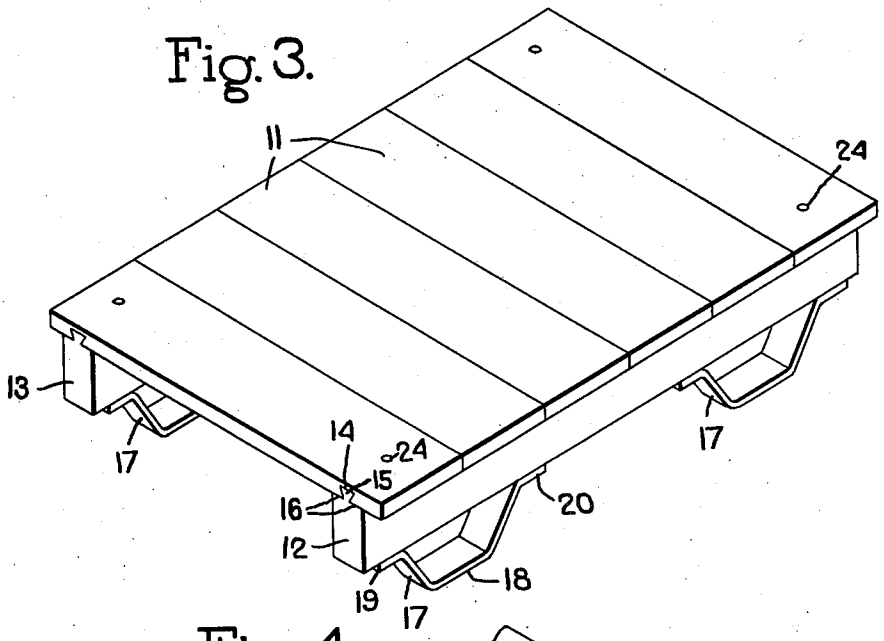
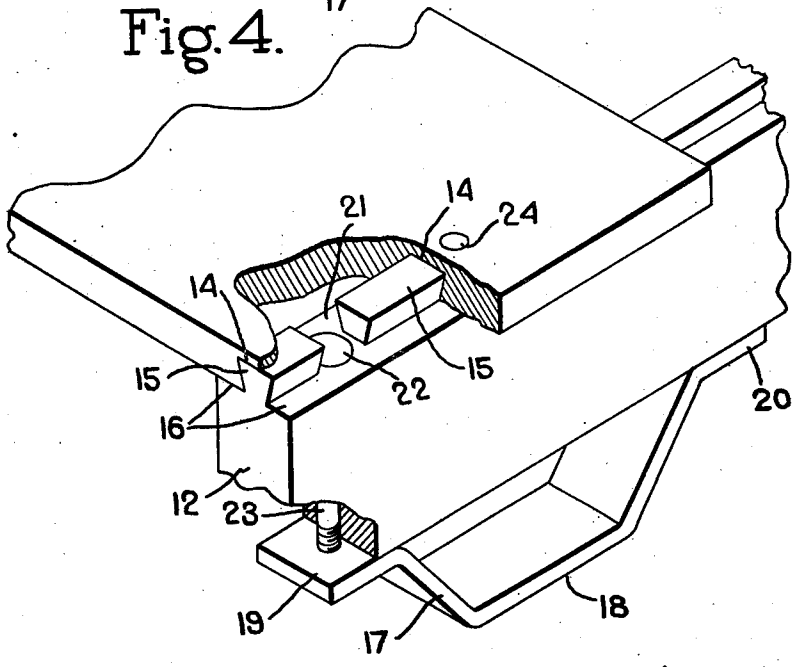


Fig. 4.



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UNITED STATES PATENT OFFICE

2,371,106

PORTABLE PLATFORM

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Application June 2, 1943, Serial No. 489,394

5 Claims. (Cl. 248—120)

This invention relates to improvements in portable platforms comprising floorboards mounted at their ends upon girders to provide a platform upon which articles to be transported may be deposited and having means for so spacing the floorboards from the ground or the floor of a building that vertically movable members of a lifting truck or other transporting means may be introduced beneath the platform and the platform thereby raised and transported to a destination and upon lowering of the elevating members deposited upon a suitable support. Platforms of this character, which are supported upon legs, are usually referred to in the art as "skids," while platforms having means underlying and connecting the end girders adapted to rest upon the ground or floor of the building are referred to in the art as "pallets." The invention will be described herein as particularly embodied in skids or pallets but it is to be understood that the invention may be embodied in other platform constructions to which it is applicable.

Pallets or skids as heretofore constructed have comprised floorboards mounted upon suitably spaced girders and connected thereto by metallic bolts, screws or metallic channels, angle bars, or the like.

In view of the shortage of metal due to war conditions the principal object of the present invention is to provide a portable skid or pallet composed wholly or mainly of non-metallic materials, preferably wood or plastic material, which is readily available and in respect to which no Government restriction has been imposed.

A further object of the invention is to provide interlocking means for connecting the boards of the pallet or skid to the girders to form an integrated construction of the same material.

More specifically the object of the invention is to provide a pallet or skid in which the boards forming the platform are connected to suitably spaced girders by interlocking tenon and mortise joints which will tightly clamp the flat faces of the floorboards upon the flat shoulders of the girders in such manner as to resist racking strains which may be applied to the device when in use.

In usual pallet and skid constructions in which the boards are secured to the girders by nails or bolts the racking strains to which the devices are subjected loosen the fastening members so that they eventually project above the surface or surfaces of the boards and are likely to score articles which are slidingly deposited upon them.

Another object of the invention is to provide a pallet or skid with means for securing the boards to the girders thereof in such manner that the smooth surface of the platform upon which the articles are deposited may be maintained throughout the life of the device.

A further object of the invention is to provide a pallet or skid construction which can be made of thinner or lighter material and consequently of less weight and more easily manipulated than devices of this character heretofore manufactured.

These and other objects and features of the invention will more fully appear from the following description and the accompanying drawings and will be particularly pointed out in the claims.

Illustrative embodiments of the invention are shown in the accompanying drawings, in which,

Fig. 1 is a perspective view of a double-faced pallet embodying the invention;

Fig. 2 is an enlarged detail view partially in perspective and partially in vertical section on line 2—2 Fig. 1;

Fig. 3 is a perspective view of a portable skid embodying the invention; and,

Fig. 4 is an enlarged detail view of a corner portion of the skid shown in Fig. 3, portions of the end floorboard and of the girder being broken away to show more clearly the construction of parts hidden from view in Fig. 3.

One of the main features of the invention, as above stated, comprises means for uniting the transverse boards of a pallet or skid to the girders which will avoid the use of metal and which will provide a rigid joint connection capable of withstanding the racking strains to which the pallet or skid are subjected.

In the construction shown in the drawings the pallet comprises a plurality of transverse floorboards 1 of suitable thickness and which desirably abut at their adjacent edges to which end girders 2 and 3 are suitably connected by interlocking members, preferably of the same material.

The floorboards and girders desirably are wooden boards, laminated wooden boards, or wholly or in part of suitable rigid or plastic material which may be homogeneous or laminated. In the construction illustrated the boards 1 have flat under surfaces and are provided adjacent their respective ends with longitudinally alined undercut preferably dovetail mortises 4 which extend transversely of the grain of the wood if the floorboards are of wood. The girders 2 and 3 desirably are of wood and provided with undercut

preferably dovetail tenons 5 which extend longitudinally of the girders intermediate and preferably centrally of the sides thereof. The end girders 2 and 3 desirably are of general rectangular cross section of greater depth than thickness and are provided with flat shoulders 6 and 7 at the base of the tenons 5 adapted to engage and support the boards. The tenons and mortises are so constructed that when the tenons of the girders are inserted into the mortises they will clamp the lower flat faces of the floorboards tightly upon the shoulders of the girders.

Suitable means may be provided for preventing displacement of the floorboards longitudinally of the girders in case of any shrinkage of the wood. This may be accomplished by gluing or otherwise adhesively securing the walls of the tenons to those of the mortises or by wooden, or other non-metallic driving pins 8 through the outermost floorboards into the girders.

In the construction illustrated in Fig. 1 a double-faced pallet is shown which is provided preferably centrally of its width with an intermediate girder 9 which is provided with longitudinally extending dovetail tenons 5 which are seated in a complementary mortise in the floor boards. In this construction lower boards or baseboards 10 are similarly connected to the girders 2, 3, and 9, by complementary mortise and tenon joints 4, 5, similar to those of the side girders 2 and 3. The central girder 9 is provided to prevent the central portion of the platform from sagging when loaded with heavy objects and is so positioned with respect to the side girders 2 and 3 as to permit the introduction of the fingers of a pallet stacker or other pallet transporting device.

Certain types of pallet stackers and pallet trucks are provided with rollers which are adapted to be forced downwardly between the baseboards of the pallet and it will be understood that certain of the floorboards intermediate of the end floorboards may be spaced apart or floorboards omitted to permit the rollers of such stackers to extend through the spaces therebetween.

By reason of the construction above described thinner floorboards and thinner baseboards may be employed than in usual constructions and the continuous interlocking joints between the floorboards and the girders together with the engagement of the flat under surfaces of the floorboards with the shoulders of the girders provides a more rigid construction than those of pallets heretofore constructed in which the boards are secured to the girders at intervals by fasteners, such as nails or screws. Furthermore the surfaces of the boards remain smooth during the entire life of the pallet uninterrupted by the projection therefrom of fastening elements.

Another form of the invention is illustrated in Figs. 3 and 4 which comprises a skid having transverse floorboards 11 which may be placed edge to edge or connected by rabbeted joints and which are connected to side girders 12 and 13 by an interlocking joint of the character described preferably comprising alined dovetail mortises 14 at a suitable distance from the ends of the floorboards and complementary dovetail tenons 15 extending upwardly from the shoulders 16 of the girders 12 and 13.

In this construction the lower edges of the girders 12 and 13 are flat and are supported upon U-shaped legs 17 having horizontal foot portions 18 and upwardly and outwardly inclined walls provided at their upper ends with horizontal flanges 19 and 20 adapted to engage the flat under faces of the girders 12 and 13. In this construction the tenons 15 are cut away to provide recesses 21 and holes for bolts are bored vertically through the girders 12 and 13 at the bases of said recesses and preferably are countersunk to receive the heads 22 of bolts 23 which extend through the flanges 19 and 20 and are provided with suitable nuts (not shown).

Desirably wooden pins 24 are driven through the end floorboards of the girders to prevent the possibility of longitudinal slippage of the floorboards upon the girders.

In this construction the heads 22 of the bolts are so countersunk in the girders as to permit the floorboards to be assembled upon the girders by interengaging the tenons of the girders with the mortises of the floorboards and sliding the floorboards lengthwise of the girders into proper position without engagement of the heads of the bolts.

By reason of the construction above described the skid may be readily disassembled or "knocked down" for shipment thereby economizing the space required for transportation or storage. Upon reaching its destination the skid can be readily reassembled by non-skilled labor.

In this construction, as in that previously described, the floorboards and girders are more rigidly connected together than in previous constructions and the use of metal fastenings is avoided.

If it is desirable to assemble the skid permanently instead of a knockdown assembly the recesses 21 in the tenons 15 may be omitted and the bolts 23, which secure the flanges 19 and 20 of the legs to the girders, pass through the transverse floorboards, thence preferably through the tenons 15 and the girder and flanges 19 and 20. If thus assembled the labor cost of recessing the tenons 15 will be avoided.

It will be understood that the particular embodiment of the invention which is shown and described herein is of an illustrative character and is not restrictive and that various changes in form, construction and arrangement of parts may be made within the spirit and scope of the following claims.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is:

1. A portable platform comprising a plurality of suitably spaced straight non-metallic girders of rectangular cross section having the upper and lower sides thereof provided intermediate of their respective widths with outwardly extending dovetail tenons and presenting flat shoulders at the bases of said tenons, a plurality of upper and a plurality of lower transverse boards having flat surfaces provided with alined dovetail mortises complementary to and respectively fitting the upper and lower tenons of the respective girders and clamping the floor boards tightly upon the contiguous shoulders of said girders, thereby providing a construction which will effectively resist racking strains to which the skid may be subjected.

2. A portable platform comprising a plurality of suitably spaced straight non-metallic girders of rectangular cross section having the upper and lower sides thereof provided intermediate of their respective widths with outwardly extending dovetail tenons and presenting flat shoulders at the bases of said tenons, a plurality of upper and a plurality of lower transverse boards having

flat surfaces provided with alined dovetail mortises complementary to and respectively fitting the upper and lower tenons of the respective girders and clamping the floor boards tightly upon the contiguous shoulders of said girders, thereby providing a construction which will effectively resist racking strains to which the skid may be subjected, and means for preventing displacement of said boards longitudinally of said girders.

3. A double-faced portable platform comprising a plurality of suitably spaced side and intermediate straight vertical wooden girders of rectangular cross section and of greater depth than thickness having the upper and lower sides thereof provided intermediate of their width with outwardly extending dovetail tenons and presenting flat shoulders at the bases of said tenons, a plurality of upper and a plurality of lower transverse boards having flat surfaces provided with alined dovetail mortises complementary to and respectively fitting the upper and lower dovetail tenons of the respective girders and clamping the floorboards tightly upon the contiguous shoulders of said girders, thereby providing a construction which will effectively resist racking strains to which the platform may be subjected.

4. A double-faced portable platform comprising a plurality of suitably spaced side and intermediate straight vertical wooden girders of rectangular cross section and of greater depth than thickness having the upper and lower sides thereof provided intermediate of their width with outwardly extending dovetail tenons and presenting flat shoulders at the bases of said tenons, a plurality of upper and a plurality of lower transverse boards having flat surfaces provided with alined dovetail mortises complementary to and respectively fitting the upper and lower dovetail tenons of the respective girders and clamping the floorboards tightly upon the contiguous shoulders of said girders, thereby providing a construction which will effectively resist racking strains to which the platform may be subjected, and wooden pins extending through the outermost floorboards into said girders preventing longitudinal movement of the boards upon the girders.

5. A portable skid comprising a floor composed of a plurality of associated transverse boards of non-metallic material having flat under surfaces provided with suitably spaced alined undercut mortises mounted upon similarly spaced nonmetallic girders having flat sides provided intermediate of the width thereof with outwardly extending undercut tenons complementary to and tightly fitting within the mortises of the boards and clamping the boards firmly upon the flat surfaces of the girders thereby providing a construction which will effectively resist racking strains to which the device may be subjected when in use, U-shaped legs of rigid material having end flanges underlying and engaging end portions of the respective girders, and bolts extending through said flanges and girders, the tenons of the girders being recessed and the heads of the bolts countersunk in the girder beneath the recesses in the tenons.

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