March 28, 1939. W. J. POWELL 2,152,086

PALLET CONSTRUCTION

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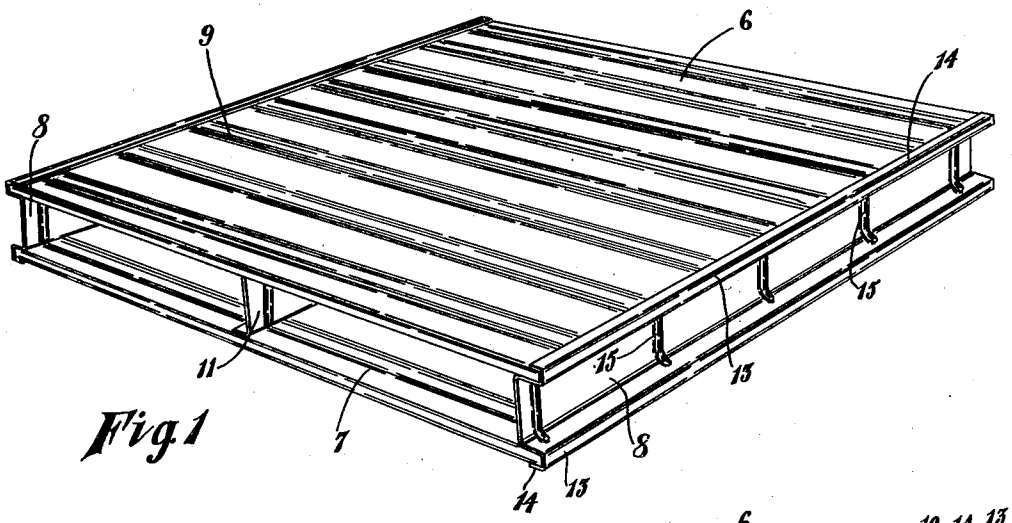



Fig. 1

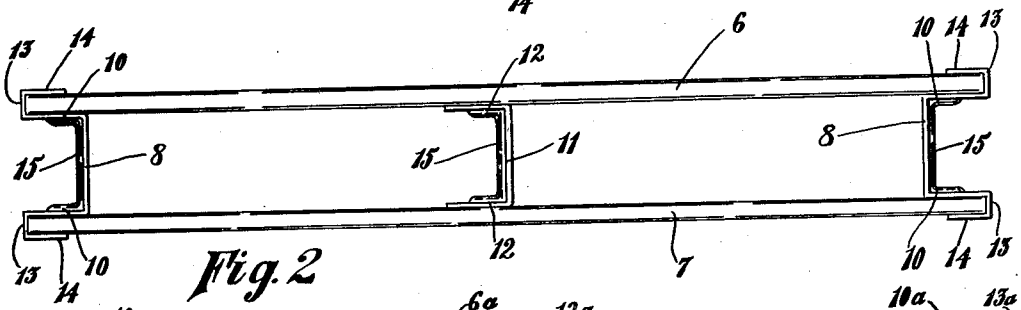



Fig. 2

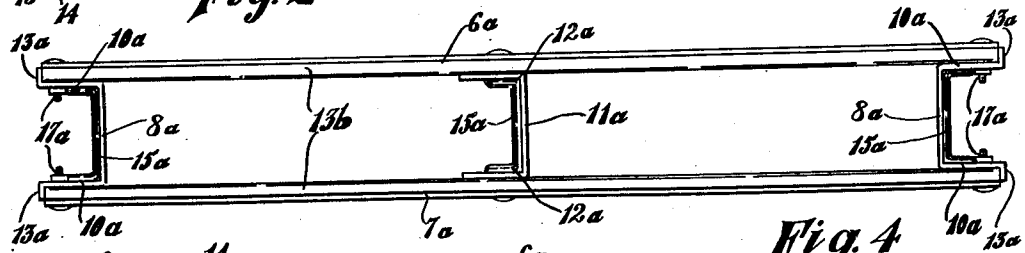



Fig. 4

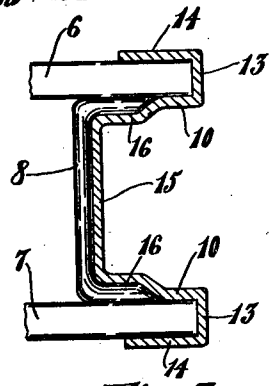



Fig. 3

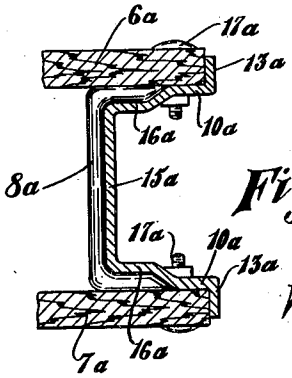



Fig. 5

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## PALLET CONSTRUCTION

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6 Claims. (Cl. 248—120)

The invention relates generally to material handling platforms, and more particularly to platforms known as pallets adapted for being piled or stacked on top of material for storage and the like.

Such pallets are adapted to be used with hand or power operated fork lift trucks for storing, handling and transporting materials in loose form or in boxes, bags, crates, bales, bundles and the like.

The ordinary pallets in common use are constructed substantially entirely of wood, and they present sharp or rough edges and corners tending constantly to cause injuries to workmen handling the pallets. Moreover, these wooden pallets have to be made relatively thick and heavy in order to provide the required compression strength for supporting heavy compression loads, as well as lateral shock loads, and are therefore awkward and cumbersome to handle. Such wooden pallets deteriorate very rapidly due to wear, warpage and breakage, thereby requiring frequent repairs and large maintenance expense, and also increasing the hazard of injury to workmen from splinters and rough corners and edges.

It is therefore an object of the present invention to provide a lightweight and strong pallet construction adapted to be easily handled by hand or by fork lift trucks or by crane slings.

Another object is to provide an improved pallet construction requiring a minimum of repairs and maintenance expense.

Another object is to provide an improved pallet construction which substantially eliminates injury to workmen due to sharp corners and splinters.

Another object is to provide an improved pallet having recessed side members with integral flange portions for protecting the ends of the top and bottom deck members, and adapted for use with crane slings.

A further object is to provide an improved pallet construction with recessed side members having means providing the side members with increased strength and for protecting their ends when a crane sling is used.

These and other objects are attained by the improvements comprising the present invention, a preferred embodiment of which is shown by way of example in the accompanying drawing, and hereinafter described and claimed.

In general terms, the invention includes recessed metal side members having integral flange portions for covering the ends of the deck members supported thereby, and said side members having spaced ribs extending vertically through the side member web portions and angularly into the flange portions for strengthening the side members and protecting the ends thereof.

In the drawing forming part hereof

Figure 1 is a perspective view of one form of pallet constructed according to the present improvements;

Fig. 2 is an end view thereof;

Fig. 3 is an enlarged fragmentary sectional view through one of the recessed side members of the pallet shown in Figs. 1 and 2;

Fig. 4 is an end view of another form of pallet having slightly different side members adapted to be used with wooden deck members; and

Fig. 5 is an enlarged fragmentary sectional view through one of the side members of the pallet shown in Fig. 4.

Similar numerals refer to similar parts throughout the several views of the drawing.

The pallet shown in Figs. 1, 2 and 3 preferably includes top and bottom deck members 6 and 7 supported on laterally spaced side members 8. The deck members 6 and 7 are shown as sheet metal deck members having relatively deep corrugations 9 for carrying heavy loads, although the depth or number of the corrugations may be varied, or the deck members may be constructed of metal or wooden slats of various forms, without departing from the scope of the present invention.

The side members 8 are preferably recessed or channel shaped in cross section with their legs or flange 10 directed outwardly.

A longitudinally extending channel 11 is provided between the side channels 8 preferably spaced midway between said channels, and has angular legs 12 for supporting the deck members intermediate the side channels, the web of channel 11 serving to center the fork of a fork lift truck to insure equal distribution of the load on the truck.

The side channels 8 are preferably provided with integral angular top and bottom flange portions 13 extending vertically from the legs 10 and abutting the side edges of the decks 6 and 7. The flange portions 13 preferably have integral inturned portions 14 overlapping the side edges or extremities of the decks. Accordingly each side channel 8 includes integral top and bottom inwardly open channel portions for receiving and binding the edges of the decks.

The edges of the decks 6 and 7 may be welded or otherwise secured to both the legs 10 and the overlapping flange portions 14 if desired so as to

constitute an extremely rigid and durable pallet construction.

As shown, the side channels 8 and the intermediate channel 11 are provided at longitudinal intervals with transverse ribs 15 extending vertically preferably throughout the height of the webs. In the side channels 8 the ribs 15 extend continuously into the legs 10 in a horizontal or angular direction, the portions 16 of the ribs 15 terminating at points intermediate the webs and the flange portions 13. Similarly, in intermediate channel 11, the ribs 15 extend continuously into the legs 12 and terminate intermediate the ends of the legs and the web.

By providing these ribs in the channels, an extremely strong pallet is provided so that the channels may be constructed of light gauge material. Moreover, the increased strength and rigidity imparted by the ribs provides increased stability and ruggedness to resist weave or distortion in operation.

The ribs 15 are preferably located so that the end ribs are relatively near to the end edges of the side channels 8, and when a crane sling is used to lift or transport the improved pallet, the ribs, particularly at the fillet or intersection between the rib portions 15 and 16, provide reinforced bearing points for contacting the crane sling.

By locating the ends ribs near to the end edges of the channels the major portion of the stress transmitted by the sling will be applied on the fillets of the end ribs, thus relieving the stress applied to the end of the channel tending to distort or damage the same.

The flange portions 13 and the inturned flange portions 14 preferably have their corners slightly rounded and provide means for substantially eliminating all sharp edges which might cause injury to workmen, and the exposed portions of the deck members 6 and 7 at the ends of the pallet are likewise slightly rounded, so that no sharp edges are presented. Moreover, since the pallet is constructed entirely of metal there is no danger of causing splinters in handling.

The form of pallet shown in Figs. 4 and 5 includes top and bottom deck members 6*a* and 7*a* which may be wooden slats as indicated in Fig. 5, having their edges at the ends of the pallet protected by metal angles 13*b*.

The side channels 8*a* have outwardly directed legs 10*a* and integral angular top and bottom flange portions 13*a* abutting the extremities of the deck members 6*a* and 7*a*.

Preferably a longitudinally extending channel 11*a* is provided midway between the channels 8*a* and has angular legs 12*a* for supporting the deck members, the web of the channel 11*a* serving to center the fork of a fork lift truck to equally distribute the load carried by the pallet.

The deck members may be secured to the legs of the channels 8*a* and 11*a* by bolts indicated at 17*a* passing through the extremities of the deck members. The channels 8*a* and 11*a* are provided at longitudinal intervals with ribs 15*a* similarly to the channels 8 and 11.

As best shown in Fig. 5, the ribs 15*a* extend vertically or transversely of the channel web and continuously into the legs 10*a* in a horizontal or angular direction, and the leg portions 16*a* of the ribs terminate intermediate the webs 15*a* and flange portions 13*a*, and substantially at the bolts 17*a*.

The recessed or outwardly open side channels of the present construction provide for ease of handling by hand or crane slings and the intermediate channel facilitates handling by fork lift trucks.

The improved pallet construction embodying the ribs in the longitudinal channels provides a lightweight and strong pallet having maximum resistance to weave and distortion, and is particularly adapted to resist stress imparted by crane slings.

I claim:

1. Pallet construction including longitudinally extending one-piece side channels having upright webs and outwardly directed legs, top and bottom deck members supported on said side channels, said side channels having ribs formed therein at longitudinal intervals, and said ribs extending vertically in the channel webs and continuously into the legs in a horizontal direction.

2. Pallet construction including longitudinally extending one-piece side channels having upright webs and outwardly directed legs, top and bottom deck members supported on said side channels, said channels having ribs formed therein at longitudinal intervals, and said ribs being formed to extend continuously in and from the channel webs into the channel legs in a direction angular to said webs.

3. Pallet construction including longitudinally extending one-piece side channels having outwardly directed legs, a longitudinally extending one-piece channel intermediate said side channels, top and bottom deck members supported on said channels, and said side members and said intermediate channel having vertically extending ribs formed therein at longitudinal intervals.

4. Pallet construction including longitudinally extending one-piece side channels having outwardly directed legs, top and bottom deck members supported on said side channels, and said side channels having vertically extending ribs formed therein at longitudinal intervals.

5. Pallet construction including longitudinally extending one-piece side channels having upright webs and outwardly directed legs, top and bottom deck members supported on said side channels, said channel legs having integral angular flange portions abutting the extremities of the deck members and integral inturned flange portions overlapping the extremities of said deck members, said channel webs having vertically extending ribs formed therein at longitudinal intervals, and said ribs extending continuously into the channel legs in a horizontal direction.

6. Pallet construction including longitudinally extending one-piece side channels having upright webs and outwardly directed legs, a longitudinally extending one-piece channel intermediate said side channels and having an upright web and legs angular thereto, top and bottom deck members supported on said channels, said side channel legs having integral angular flange portions abutting the extremities of said top and bottom deck members and integral inturned flange portions overlapping said extremities, the webs of said side and intermediate channels having transversely extending ribs formed therein at longitudinal intervals, and said ribs extending continuously and angularly into the channel legs to form fillets between the rib portions in the web and legs.

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