

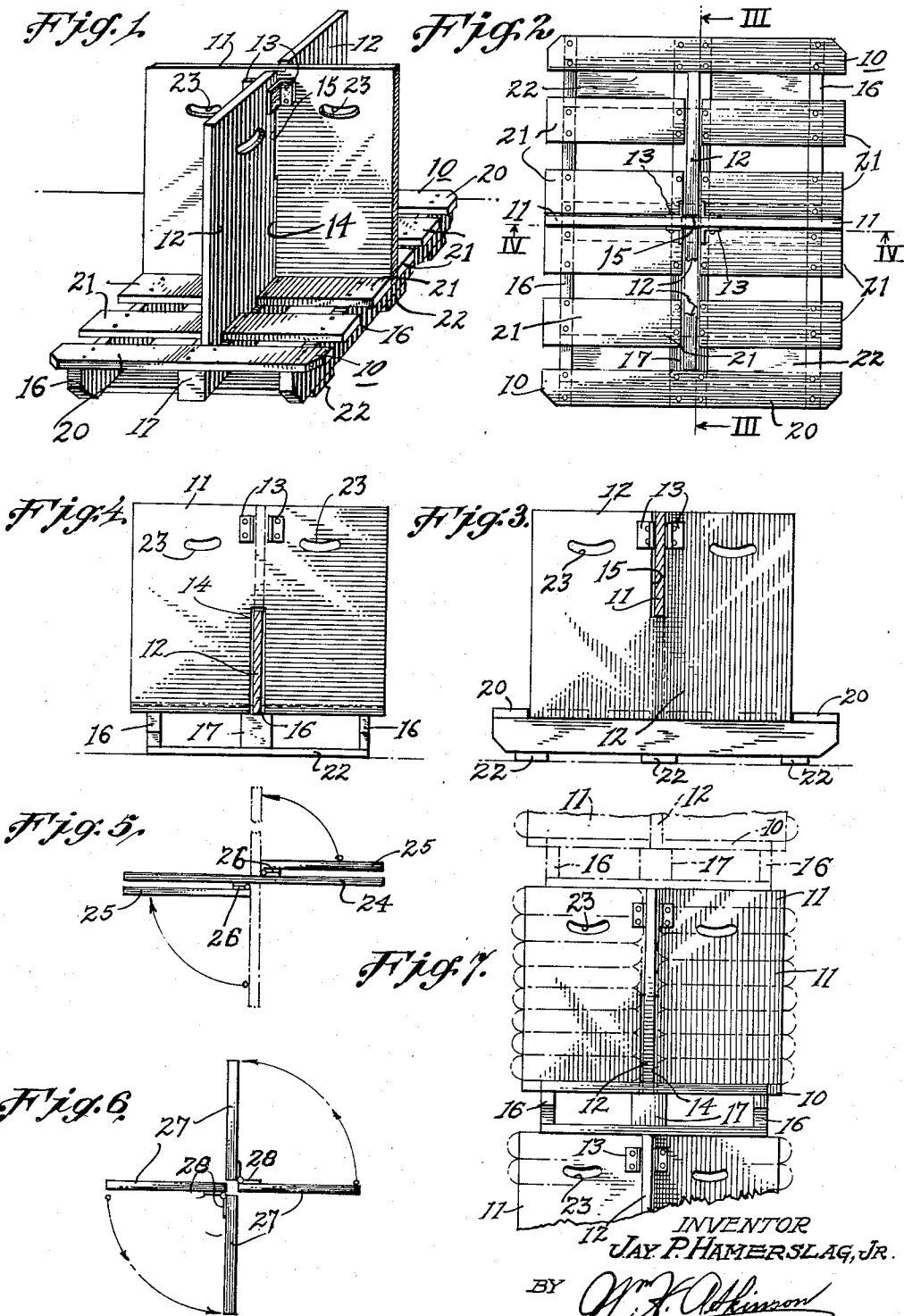
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PALLET AND SPACER

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PALLET AND SPACER

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My present invention relates to article handling apparatus and more particularly to a spacing device for use with pallets such as are used in warehouses with a fork-type lift-truck for handling segregated piles of merchandise.

An object of my invention is to provide a new and novel means which may be employed with pallets of conventional form to facilitate a stacking thereof when loaded.

A further object of the invention is to provide a pallet spacing and supporting means which when employed with a plurality of pallets will permit a stacking thereof without subjecting the articles carried thereby to the load carried by successively superimposed loaded pallets.

In the handling of warehoused small packaged commodities with power-driven equipment it is the custom to use pallets upon which the commodity or articles may be piled and moved from one point to another as a unit. These pallets provide an elevated platform beneath which the forks of a fork-lift truck may easily pass and when picked up the pallet with the load placed thereupon may be moved from one location to another. A limitation found in the use of such pallets is that the articles carried thereby cannot be stacked any higher than the capacity of an individual pallet. Therefore where a stacking of the articles in higher tiers is desired in the warehouse, the articles must be removed from the pallets. This often makes the use of pallets impractical, and it is therefore an object of my invention to provide a novel pallet and spacing member which will permit the stacking of two or more pallets one above the other without a removal of the loads therefrom.

Another object of the invention is to provide a pallet-spacing device which may be collapsed when not in use and stored with the pallets with a minimum of storage space requirements.

Other objects and advantages of the invention will be in part evident to those skilled in the art and in part pointed out hereinafter in connection with the accompanying illustrative drawing in which:

Figure 1 is a perspective view showing the invention as associated with a single pallet,

Figure 2 is a plan view of the device as shown in Figure 1,

Figure 3 is a sectional view taken along line III—III of Figure 2, looking in direction of the arrows,

Figure 4 is a sectional view of the device taken along the line IV—IV of Figure 2, looking in direction of arrows,

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Figures 5 and 6 show modified forms of the invention, and

Figure 7 shows my invention in use in the stacking of a plurality of loaded pallets.

In large warehouses where articles of commerce, such as packaged commodities, automobile tires, and the like, are received in carload lots for storage or reshipment to local points it is the custom to provide pallets upon which conveniently segregated amounts of the commodity or articles may be handled with a fork-lift truck. In some instances the load upon any one pallet may be transferred from the freight car to a truck for final delivery to a local dealer, but in the majority of cases these loaded pallets are placed in the warehouse with the loads thereupon for shipment at some future date. Therefore, to permit this it is necessary that the warehouse have considerable floor space and be equipped with a larger number of pallets for movement of the transient warehoused materials.

Another drawback in the use of pallets in this manner is that the pallets are not adapted, when loaded, to rest upon any other than a perfectly level surface, and they, therefore, must be unloaded if the commodity is to be stacked in the warehouse. To overcome this objectionable feature I have, by my invention, provided an improved pallet and spacing means in which intersecting panel-like members are used as a support for another super-imposed and loaded pallet in a vertical tier without subjecting the articles carried by the under pallet to the weight carried by the pallet above. A further novel feature of my invention resides in the fact that the pallet-supporting spacers may be knocked down and stored with the unemployed pallets with a minimum of space requirement.

For a fuller understanding of the invention, reference is now made to Figure 1 of the drawing for a brief description of a preferred embodiment thereof. In this figure of the drawing there is shown a pallet, designated by the numeral 10, upon which two vertically disposed plywood panel-like members, 11 and 12, are mounted. These panel members, 11 and 12, are here shown as slotted centrally from opposite sides so that they may be interlocked and assembled in right-angled relation with each other. The panel member 11 also carries spaced angle iron brackets 13 that will serve to retain and reinforce the upper portion of panel member 12 adjacent to its central slot. The slots in the panel members 11 and 12, designated by numerals 14 and 15, extend substantially half way, respectively, from the lower and upper edges thereof, and as a result

these panel members 11 and 12 may be conveniently set up in the manner shown and/or separated from each other by a simple slotwise movement thereof. When separated in this fashion the panel members 11 and 12 may be placed side by side against a wall or laid flatwise upon the pallet 10 when not in use, and thus stored away with other idle pallets in a minimum of storage space.

As here shown, the pallet 10 differs from a conventional pallet in that in addition to having two side runners 16 it also has a central and parallel runner 17 that cooperates with the panel-like member 11, as will hereinafter appear. The side runners 16 and the central runner 17 are connected together at each of their ends by a platform plank 20 and intermediate ends of these runners there are shorter platform planks 21 which are spaced apart at their inner ends so as to provide a slot or space into which the lower edge of the panel-like member 12 may be disposed. For like reason the innermost two of the platform planks 21 are spaced closely together to provide a narrow space or slot into which the lower edge of the panel-like member 11 may be disposed. In this manner the panel-like members 11 and 12 are retained against any lateral displacement and substantially centrally upon pallet 10.

In addition to these features, the pallet 10 is also here shown as having three bottom planks 22 that extend parallel with the planks 20 and 21, but inwardly from the ends of the pallet, where they will engage with the upper edges of the panel members 11 and 12 when placed thereupon. The panel members 11 and 12 are also provided with spaced hand holes 23 by means of which they may be grasped when being set up or removed from the pallet 10. When removed from the pallet and separated from each other it will be seen these panel-like members 11 and 12 will require a minimum of storage space and in any event considerably less space than would be required for the storage of an empty pallet having a built-up pallet-supporting frame, as has been proposed by others.

While the above description has been limited to the showing of Figure 1 it is also equally applicable to Figures 2, 3 and 4 of the drawing, which latter figures illustrate the device of Figure 1 from different points of view. While the arrangement above described is the preferred form it is conceivable that the invention may take other forms; for example, as shown in Figure 5 of the drawing, the intersecting panel feature provided by the panel members 11 and 12 may be also obtained with all of the above advantages by the employment of three separate panel-like members, one of which here designated by the numeral 24, may be used with two half-panel members 25 which are hingedly mounted upon opposite sides thereof by means of hinges 26. In this arrangement it will be seen that the half-panel portions 25 are mounted to swing outwardly into right angled relation with the panel-like member 24 and when in the latter position they will provide an intersecting panel-like arrangement which may be positioned upon the pallet 10 and used in the manner described in connection with Figure 1 of the drawing.

In Figure 6 of the drawing, there is shown another form which the invention may take. In this arrangement the intersecting vertical panel feature is provided for by four half-panel members 27 that are substantially identical. These panel members 27 are hingedly connected to-

gether in pairs by means of hinges 28 which will permit the half-panel members 27 to be swung into right-angle relation with each other so that they may be inserted in the recesses or spaces provided in the pallet 10, as described above in connection with Figure 1.

At this point it will be seen that when equipped with the intersecting panel arrangement, as shown in Figure 1, or the intersecting panel arrangements, such as would result from the use of the devices illustrated in Figures 5 and 6, the pallet 10 will be divided into four substantially equal compartments into which packaged commodities to be transported may be placed. When the pallet 10 is thus used, it will make no difference whether or not the individual compartments are completely filled to the upper limits provided by the height of the intersecting panel-forming members. This is because the panel-forming members will, in either event, provide a substantially level support upon which a second loaded pallet may be stacked as shown in Figure 7 of the drawing. In this showing it will be noted that the planks 22 of the pallet 10 are adapted and arranged to rest upon the upper edges of the panel-like members 11 and 12, and as a result a stacking of the loaded pallets 10 one above the other may be continued in this manner, up to the limit of the weight-carrying capacity of the panel-forming members and without regard to the character of the articles carried by the individual pallets.

The pallets 10 are here shown as carrying automobile tire casings. This is a use for which the invention is particularly suited as it has been found that when tire casings are stacked in tiers of more than ten or twelve casings in height the under casings tend to collapse; whereas, with the arrangement here described any number of loaded pallets can be stacked in tiers. Another advantage is that the tire casings can be tiered in this manner irrespective of the size or types of casing being carried by any one or more of the pallets. In fact, it has been found that where several of these pallets are stacked in tiers in the manner suggested, individual casings may be removed from any one of the pallets without disturbing the remainder of the tier thus formed. As hereinabove indicated, the panel-like members 11 and 12 and the corresponding panel member 24, and the half-panel members 25 and 27, as shown in Figures 5 and 6 of the drawing, may be constructed of heavy-duty plywood, but it is to be understood that these panel members may be formed of sheet metal or prefabricated in any other desired manner. The plywood construction, however, has been found very satisfactory as it provides a comparatively strong unit which is inexpensive, light in weight and easy to handle.

While I have, for the sake of clearness and in order to disclose the invention so that the same can be readily understood, described and illustrated specific devices and arrangements, I desire to have it understood that this invention is not limited to the specific means disclosed, but may be embodied in other ways that will suggest themselves to persons skilled in the art. It is believed that this invention is new and all such changes as come within the scope of the appended claims are to be considered as part of this invention.

Having thus described my invention, what I claim and desire to secure by Letters Patent is:

1. A pallet supporting and spacing device of the character described, comprising a pair of substantially similar panel members each having a

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slot of a width corresponding to the thickness of said panel members extending centrally into one edge thereof, said panel members being adapted for assembly in two vertical planes extending at right angles to each other by positioning the co-extending portions thereof at the ends of the slots in said panel members into the slots of said panel members, and spaced cleat-forming members upon each side of said panel members adapted and arranged to engage with the portions of said panel members at the sides of said slots to thereby prevent a flexing of the slot divided portions of said panel members when assembled and in use.

2. In a tier forming device by which a plurality of loaded pallets may be stacked in tiers independently of the loads carried thereby, the combination of a pallet having two spaced parallel runners upon which a planking is secured, a third runner disposed centrally between and extending parallel with said pair of spaced runners, a plank extending transversely across the ends of said runners for securing same in spaced relation, additional planking extending transversely of said runners disposed between said first planks and formed by shorter lengths that are secured in spaced relationship at their ends to provide a panel accommodating recess along said third runner, a panel-like member having a length equal to the spacing between the planks at the ends of said runners, said panel also having a vertical

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notch formed centrally therein and extending half way thereacross, a second panel of corresponding height having a width corresponding to the length of said planks and also having a vertically extending notch cut centrally therein adapted to interlock with the notch of said first panel and hold said panels vertical and in right angled relation with each other, and panel engaging members at the under side of said runners arranged and adapted to engage similarly arranged panel members upon another pallet when placed thereupon to form a tier.

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