April 13, 1965 I. ENTEL 3,177,823

STACKING TYPE PALLET

Filed May 20, 1964

Fig.1

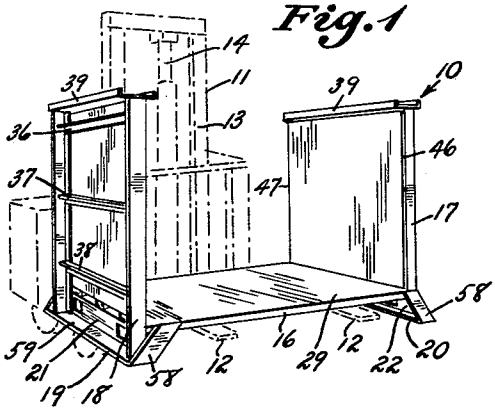


Fig.4

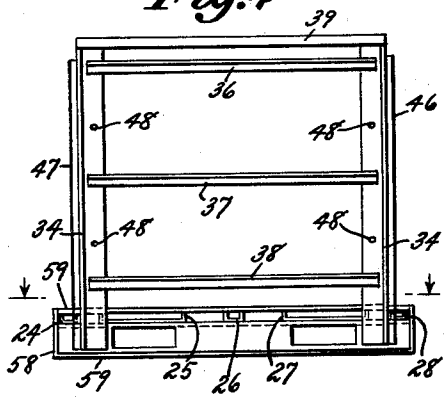


Fig.2

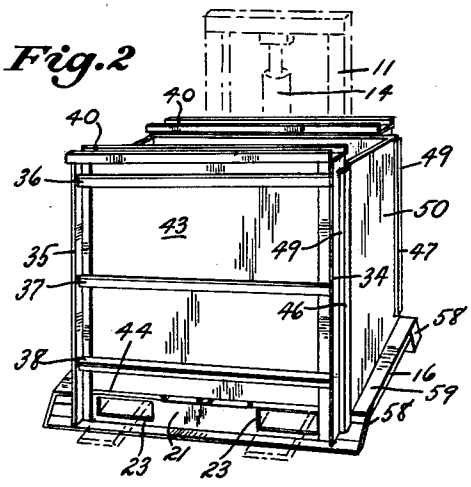


Fig.5

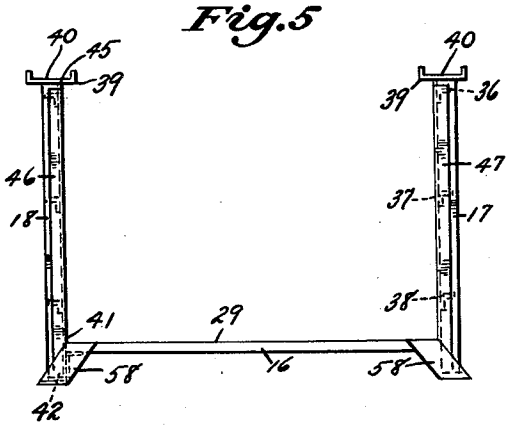


Fig.3

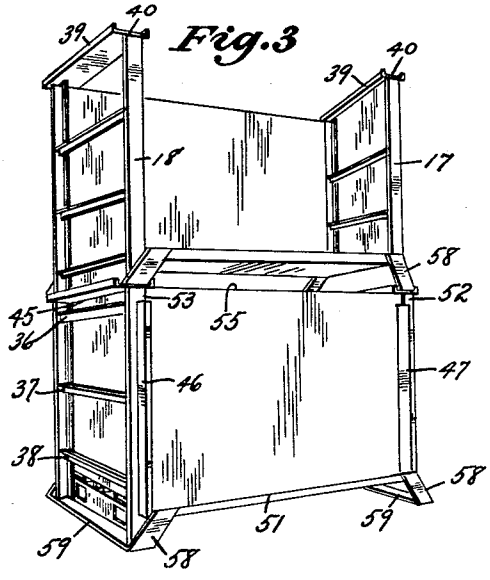
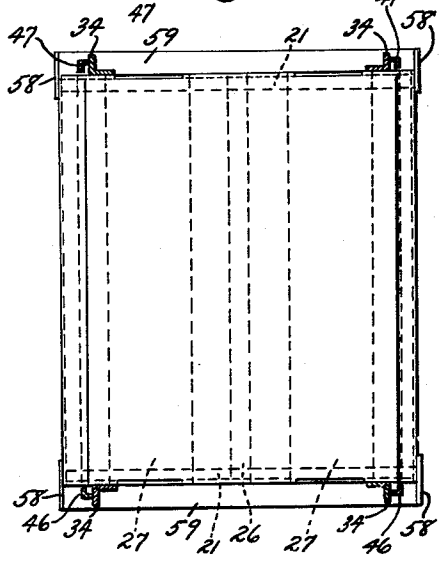


Fig.6



United States Patent Office 3,177,823 Patented Apr. 13, 1965

3,177,823

STACKING TYPE PALLET

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Filed May 20, 1964, Ser. No. 368,829
3 Claims. (Cl. 108—53)

This invention relates generally to the field of stacking-type pallets adapted to be handled by fork lift trucks and similar transporting devices, and more particularly to an improved form thereof which may be engaged from any one of four sides with equal facility. Devices of this general type are well-known in the art, and the invention lies in specific constructional details which permit a number of advantages.

It is among the principal objects of the present invention to provide an improved stacking-type pallet or skid which may be lifted from any of four sides to speed fork lift operation with complete safety to personnel and content.

Another object of the invention lies in the provision of an improved stacking-type pallet which may be employed as a storage container and which may replace cartons and other makeshift receptacles which require a great deal more floor space.

Yet another object of the invention lies in the provision of an improved pallet of the class described which includes reinforced side walls to permit stacking three or four high, depending upon storage or shipping requirements.

A feature of the invention lies in the fact that all sharp edges have been substantially eliminated, thereby permitting the use of the device for storage of relatively fragile articles of any shape or configuration.

Another feature of the invention lies in the fact that the cost of manufacture of the device may be of a reasonably low order, thereby permitting consequent wide sale, distribution and use.

These objects and features, as well as other incidental ends and advantages, will more fully appear in the course of the following disclosure, and be pointed out in the appended claims.

In the drawing, to which reference will be made in the specification, similar reference characters have been employed to designate corresponding parts throughout the several views.

FIGURE 1 is a view in perspective of an embodiment of the invention.

FIGURE 2 is another view in perspective of the embodiment, as might be seen from the left-hand portion of FIGURE 1.

FIGURE 3 is a view in perspective similar to that seen in FIGURE 1, but showing a pair of devices in stacked relation.

FIGURE 4 is a side elevational view.

FIGURE 5 is a view in elevation as seen from the right-hand portion of FIGURE 4.

FIGURE 6 is a horizontal sectional view as seen from the plane 6—6 in FIGURE 4.

In accordance with the invention, the device, generally indicated by reference character **10**, may be employed in conjunction with a conventional fork lift truck **11** having a pair of elevating members **12** mounted on a vertical frame **13** and movable in a vertical plane by means of hydraulic jack means **14**. As will more fully appear, the device **10** may be engaged from any one of four sides with equal facility.

The device **10** comprises broadly: a horizontal frame element **16**; first and second vertical frame elements **17** and **18**, respectively; and first and second base rail elements **19** and **20**.

The horizontal frame element **16** includes first and second longitudinally disposed frame members **21** and **22**, respectively, each having a pair of rectangular openings **23** which are spaced apart from each other a distance substantially equal to the distance between the elevating members **12** of the fork lift truck **11**. Interconnecting the frame members **21** and **22** are first, second, third, fourth and fifth lateral frame members **24**, **25**, **26**, **27** and **28**, respectively. Overlying the frame members **24–28** is a metal flooring suitably welded to each, and to the first and second frame members **21** and **22**.

The first and second vertical frame elements **17** and **18** are substantially similar, each including first and second vertical channel-shaped members **34** and **35**, respectively, the same being interconnected by first, second and third transverse members **36**, **37** and **38**, again preferably by welding.

Disposed above the first transverse member **36** and welded to the upper ends of the vertical members **34** and **35** is a rail member **39** of generally U-shaped cross section and defining an upwardly-facing recess **40**.

As best seen in FIGURE 5 the vertical members **34** and **35** each include a lower intermediate area **41** which is welded to the longitudinal frame members **21** and **22**, and a lower end **42** which is welded to the first or second base rail elements **19** or **20**. Where desired, the vertical frame elements **17** and **18** are provided with wooden side walls **43**, each being bounded by a bottom edge **44**, an upper edge **45**, and side edges **46** and **47** which preferably extend outwardly of the vertical members **34** and **35**. These are secured to the vertical members **34** and **35** by screw means **48**. Welded to an outer surface of the members **34–35** are track members **49** of channel-shaped cross section each of which support a slidably engaged wooden end member **50**. It will be understood that although only one of said end members **50** is illustrated, where it is desired to form a complete enclosure, the opposite end may be provided with a similar end member (not shown). Each end member **50** is bounded by a bottom edge **51** which rests upon the flooring **29**, side edges **52** and **53** engageable within a track member **49**, and a top edge **55** which lies in a common plane with the upper edges **45** of the side walls **43**.

The first and second base rail elements **19** and **20** are similar, each including a pair of angularly disposed end members **58** welded to the longitudinal frame members **21** and **22**, respectively, and interconnected with the opposite ends of longitudinal rail members **59** which are of width corresponding to the recess **40** in the rails **39**.

Referring to FIGURE 6, it will be observed that the second and fourth lateral frame members **25** and **27** are of considerably greater width than the first, third and fifth members **24**, **26** and **28**, respectively, and that this width is substantially equal to the width of the openings **23**. Where the device **10** is engaged as seen in FIGURE 1 such that the elevating members **12** enter beneath the horizontal frame element **16** in a longitudinal direction, all of the lateral frame members **24–28** contribute to supporting the load, since all are engaged at the moment of lift. Where, however, the device **10** is engaged as seen in FIGURE 2 in the drawing, wherein the elevating members **12** penetrate the openings **23**, the load is substantially borne by the second and fourth frame members **25** and **27**, thereby shielding the flooring **29** from any direct contact with the elevating members **12**. Thus, it is possible to approach the device **10** with a fork lift truck **11** in any desired direction, with equal facility.

Referring to FIGURE 3, depending upon the weight of the load (not shown), a plurality of devices **10** may be placed in stacked relation by fitting the rail members **59** into the upwardly facing recess **40** of the rails **39** of a device **10** disposed therebeneath. This engagement prohibits any transverse motion, by virtue of said engage-

ment, and longitudinal motion is limited by the static friction developed therebetween.

I wish it to be understood that I do not consider the invention limited to the precise details of structure shown and set forth in this specification, for obvious modifications will occur to those skilled in the art to which the invention pertains.

I claim:

1. In a stacking-type pallet, including a horizontal frame element and a pair of vertical frame elements fixed to said horizontal frame element, the improvement comprising: a pair of base rail elements of elongated configuration and interconnected to said horizontal and vertical frame elements, said base rail elements forming means for supporting said pallet upon a horizontally disposed surface such that said horizontal frame element is in spaced relation with respect thereto; said vertical frame elements each having an elongated rail-receiving member upon the upper edge thereof, said rail-receiving members each having a recess corresponding in configuration and location to a rail element disposed directly therebeneath, thereby to receive the base rail element of a second pallet positioned thereupon in stacked relation.

2. In a stacking-type pallet, including a horizontal frame element and a pair of vertical frame elements fixed to said horizontal frame element, the improvement comprising: a pair of base rail elements of elongated configuration and interconnected to said horizontal and vertical frame elements, said base rail elements forming means for supporting said pallet upon a horizontally disposed surface such that said horizontal frame element is in spaced relation with respect thereto; said vertical frame elements each having an elongated rail-receiving member upon the upper edge thereof, said rail-receiving members each having a recess corresponding in configuration and location to a rail element disposed directly therebeneath, thereby to receive the base rail element of a

second pallet positioned thereupon in stacked relation; said rail elements extending below the level of said horizontal frame element and defining openings therebetween for the introduction of fork lifting means.

3. In a stacking-type pallet, including a horizontal frame element and a pair of vertical frame elements fixed to said horizontal frame element, the improvement comprising: a pair of base rail elements of elongated configuration and interconnected to said horizontal and vertical frame elements, said base rail elements forming means for supporting said pallet upon a horizontally disposed surface such that said horizontal frame element is in spaced relation with respect thereto; said vertical frame elements each having an elongated rail-receiving member upon the upper edge thereof, said rail-receiving members each having a recess corresponding in configuration and location to a rail element disposed directly therebeneath, thereby to receive the base rail element of a second pallet positioned thereupon in stacked relation; said rail elements extending below the level of said horizontal frame element and defining openings therebetween for the introduction of fork lifting means; said horizontal frame elements including elongated brace members having a planar lower surface substantially aligned with said openings.

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