

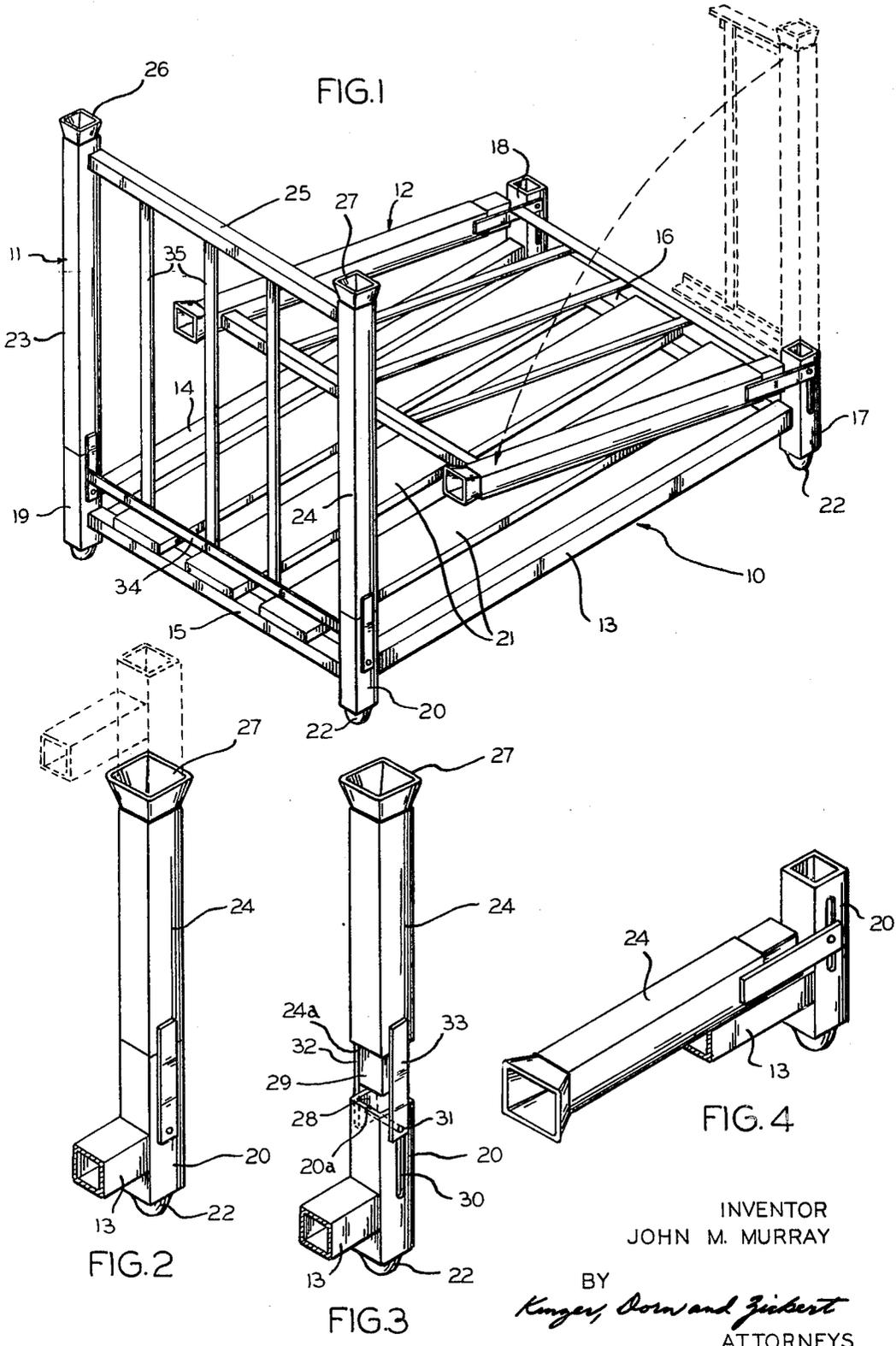
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PORTABLE STORAGE RACK OR PALLET

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3,499,398

**PORTABLE STORAGE RACK OR PALLET**

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3 Claims

**ABSTRACT OF THE DISCLOSURE**

A portable storage rack or pallet having foldable end frames used in the shipment and/or conveying of articles, and more particularly to a storage rack or pallet including a platform with foldable end frames hingedly connected thereto, and still more particularly to a storage rack or pallet having end frames movable between upright and folded positions to facilitate shipping of the frames after useage.

The portable storage rack or pallet of the present invention includes a base or platform having legs supporting same above the floor, and opposed foldable end frames associated with the legs and movable between an upright locked position and a down-folded position. The end frames are moved to the upright locked position when using the rack for the storage or movement of the articles, whereby the end frames serve to contain articles therebetween and also to enable the stacking of other racks thereon in superposed relation. Following the shipment of a rack with articles thereon to a destination, and unloading of the articles from the rack, the end frames may be folded to their down position to provide a more compact arrangement for return shipment to the original place of use for re-use from that point. The end frames are hingedly mounted so that they are always attached to the base or platform.

Heretofore, storage racks or pallets of the type that enable stacking one upon another have included platforms with end frames or posts that are completely separable therefrom. Difficulty has been encountered in returning the racks to an original point of departure for re-use in that the posts or end frames are not always returned with the platforms or bases, thereby rendering the platforms or bases non-useable, for it is necessary to have the end frames to enable stacking of the racks, one upon the other.

The present invention overcomes the above difficulties in that the end frames are always attached to the base or platform so that upon being shipped back to an original point of departure, the racks are always re-useable for stacking, since the end frames must accompany the bases.

Accordingly, it is an object of the present invention to provide a new or improved portable storage rack or pallet having end frames hingedly arranged and foldable.

Another object of this invention is in the provision of a portable rack or pallet including a base having opposed end frames hingedly mounted thereon for movement between an upright locked position and a down-folded position, wherein the racks are employed in the shipment or articles when the end frames are in upright position and are shipped for further useage when in down-folded position.

Other objects, features and advantages of the invention will be apparent from the following detailed disclosure, taken in conjunction with the accompanying sheet of drawing, wherein like reference numerals refer to like parts, in which:

FIG. 1 is a perspective view of a portable storage rack or pallet according to the present invention, and illustrating one end frame in upright locked position in solid

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lines, one end frame in partially folded position in solid lines, and a fragmentary end frame in phantom as in erected upright position.

FIG. 2 is a perspective view of a single leg and post unit, wherein the post is shown in upright locked position relative to the leg.

FIG. 3 is a view similar to FIG. 2, but illustrating the post in retracted position from the leg so that it may be folded relative to the leg; and

FIG. 4 is a view similar to FIGS. 2 and 3, but showing the post in folded position relative to the leg.

Referring now to the drawings, and particularly to FIG. 1, the portable storage rack or pallet of the present invention generally includes a platform or base 10 and opposed foldable end frames 11 and 12.

The base 10 is rectangular in shape and includes parallel spaced and opposed side rails 13 and 14, parallel spaced and opposed end rails 15 and 16, and leg members 17, 18, 19 and 20. The side and end rails are preferably of a square steel tubing, and likewise the leg members are preferably of the square steel tubing. Each leg member is at a corner of the rectangular base and arranged to have secured thereto in any suitable fashion, such as by welding, one side rail and one end rail. The side and end rails are in substantially coplanar arrangement, although the side rails may be spaced slightly above the end rails.

Any suitable decking may be provided on the side and end rails to close as desired the open area between the side and end rails. Illustrated are slat means 21 that extend between the end rails 15 and 16 and are suitably attached thereto. The illustrated slat means may be fir deck boards. However, it should be appreciated that plywood, steel plates, expanded metal sheets, or any other type of decking may be employed.

Plugs 22 are mounted in the lower ends of the lug members for direct engagement with the floor or supporting surface of the rack. These plugs are preferably of metal and are suitably formed and secured in place.

Inasmuch as both end frames 11 and 12 are identical, for purposes of simplicity, only one will be described in detail, and numerals will be applied to the end frame 11. The end frame, as shown in upright position, includes upright parallel spaced post members 23 and 24, interconnected at their upper ends by cross bar means in the form of an angle bar 25. Targets 26 and 27 are respectively provided at the upper ends of post members 23 and 24 to facilitate the stacking of one rack on another. Each target is formed with outwardly flaring side walls wherein the largest dimension is greater than the cross section of the post member. The targets are formed and suitably fastened to the upper ends of the post members, such as by welding or the like. When stacking one rack on another, the targets facilitate the positioning of the lower ends of the leg members of the superposed rack with respect to a lower rack.

The end frames are mounted to the base by means of hinge and coacting mating means provided at the adjacent ends of the post and leg members. Each hinge and coacting mating means is identical, and for simplicity, reference will be made to FIGS. 2 to 4 in describing the details of this means.

The coacting mating means includes a socket 28 formed in the upper end of each leg member, and a socket member 29 formed in the lower end of each post member. In keeping with the construction of the leg and post members illustrated, the socket 28 would merely be the upper open end of the tubular leg member 20, while a smaller size piece of tubular material may be inserted in the lower end of the post member 28 and suitably secured thereto such as by welding or the like, to define an insert or socket member that will matingly fit into the socket 28

of the leg member. As shown in FIG. 2, the lower end 24a of the post member 24 is in abutting engagement with the upper end 20a of the leg member 20 when the socket member 29 is telescopically received within the socket 28, thereby causing the leg member 20 to support the post member 24.

The hinge means includes slot means 30 formed in the leg member 20. The slot means extends longitudinally or axially of the leg member and effectively includes a slot in one side of the leg member aligned with the slot of the other side thereof. A pin or bar means 31 is suitably supported and secured to the post member 24 and pivotally and slidably received in the slot means 30. The pin 31 is attached at opposite ends to a pair of opposed tie bars or straps 32, 33 that are secured at their upper ends to the post member 24. In the illustrated embodiment, the tie bars extend parallel to the longitudinal axis of the post members and are secured at their upper ends to the opposite sides of the post member, such as by welding or the like, and extend downwardly beyond the free end of the socket member 29. The pin 31 which may even be in the form of a rivet, is secured to the tie bars 32, 33 adjacent their free ends and below the free end of the socket 29. The length of the slot means 30 is such as to accommodate the necessary movement of the pin 31 during the insertion and withdrawal of the socket member 29 relative to the socket 28. At this point, it should be appreciated that the socket member could be provided on the leg member while the socket is provided on the post member. Similarly, the slot means could be provided on the post member while the pin and straps could be attached to the leg member.

Further rigidity is provided for the end frames by a cross bar means 34 in the form of an angle bar which extends between the facing by bars of the opposed post members 23 and 24. This also provides some rigidity in the tie bar and pin arrangement. Any type of filler means may be employed in the open area defined by the post members and the cross bar means of the end frames, and the type illustrated includes vertically extending and horizontally spaced metal slats 35.

In the operation of the rack of the present invention, the end frames 11 and 12 are moved to erect position and locked there during normal useage of the rack for loading of same. In this position, the socket members 29 will engage in the sockets 28, thereby effectively defining a single upstanding member by interconnection of the leg and post members. With articles supported on the decking, another rack may be then positioned in superposed relation with a rack supported on the floor whereby the plug ends of the leg members are set in the targets of the post members. As many racks as desired may be placed one above another during the use of the rack with the end frames in upright position. Following the unloading of a rack, and when it is then desired to return the rack to a point for reloading, the end frames 11 and 12 may be lifted upwardly so that the socket members disengage from the sockets, and swing over onto the base or platform such as shown in FIG. 4 to enable the rack to be rather compact for shipping purposes. One end frame will be abutting the base at the side rails, while the other end frame will abut in overhanging relationship to the first end frame, the difference in levels being possible because of the sliding hinge means. In the event of racks having bases at least twice as long as the height of the end frames, both end frames will lie against the base in folded position. This permits a larger number of racks to be shipped in a given volume of space. Thereafter, to

re-use the racks it is a simple matter to again erect the end frames. Inasmuch as the end frames are hingedly mounted to the base, they are always ready and available when needed for the re-use of the rack.

The invention is hereby claimed as follows:

1. A portable storage rack or pallet comprising a horizontal rectangular base including horizontally extending and parallel opposed side and end rails, an upstanding leg member at each corner fixed to said rails and supporting the rails above the floor and extending above and below the rails, decking supported on said rails defining an article supporting area within the confines of the rails, a pair of opposed foldable end frames one at each end of the base, hinge and coating mating means for selectively positioning the end frames in an upright locked position substantially normal to the base or in a folded position adjacent to and substantially parallel to the base, each end frame in its upright position including a pair of upstanding post members parallel spaced and in alignment with a pair of leg members, upper and lower cross bars interconnecting said posts, and filler means supported on said cross bars between said posts, said hinge and coating mating means including a tubular socket defined in the upper end of each said leg member, a socket member formed on the lower end of each said post member adapted for telescopic mating engagement within said tubular socket, slot means in each leg member extending substantially parallel and mesially to the upright axis thereof, and pin means secured to each post member slidably and pivotally received in each slot means to permit the socket member to bottom in the socket when the end frames are upright and to permit the socket member to clear the socket when swinging the end frame to folded position.

2. A portable storage rack or pallet as defined in claim 1, wherein said pin means includes a pair of parallel spaced straps secured to opposite sides of the lower end of a post member and extending downwardly terminating in spaced relation beyond the lower end of the post member, and a bar secured at opposite ends to the straps adjacent the free ends thereof and extending substantially normal to said straps and being slidably received in said slot means.

3. A portable storage rack or pallet as defined in claim 2, wherein targets are formed on the upper ends of said post members to receive leg members of another storage rack or pallet mounted in stacked relation thereto.

#### References Cited

##### UNITED STATES PATENTS

2,699,911	1/1955	Chase et al. ....	108—53
2,704,194	3/1955	Diamond .....	108—53
2,791,325	5/1957	Schecter et al. ....	108—53 X
2,956,763	10/1960	D'Arca .....	108—53
3,160,120	12/1964	Skubic .....	108—53
3,224,388	12/1965	Skubic .....	108—53
3,327,654	6/1967	Duncan .....	108—53

##### FOREIGN PATENTS

528,944	5/1953	Canada.
969,970	9/1964	Great Britain.

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U.S. Cl. X.R.

UNITED STATES PATENT AND TRADEMARK OFFICE  
CERTIFICATE OF CORRECTION

PATENT NO. : 3,499,398  
DATED : March 10, 1970  
INVENTOR(S) : J. M. Murray

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 2, line 35, change "lug" to --leg--;  
Col. 3, line 58, change "swing" to --swung--;

Col. 4, line 33, change "frame" to --frames--.

Signed and Sealed this

*seventh* Day of *October* 1975

[SEAL]

*Attest:*

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