Aug. 2, 1927. 1,637,960

R. T. ROMINE

PORTABLE RACK

Original Filed Jan. 26, 1926 3 Sheets-Sheet 1

Fig. 1.

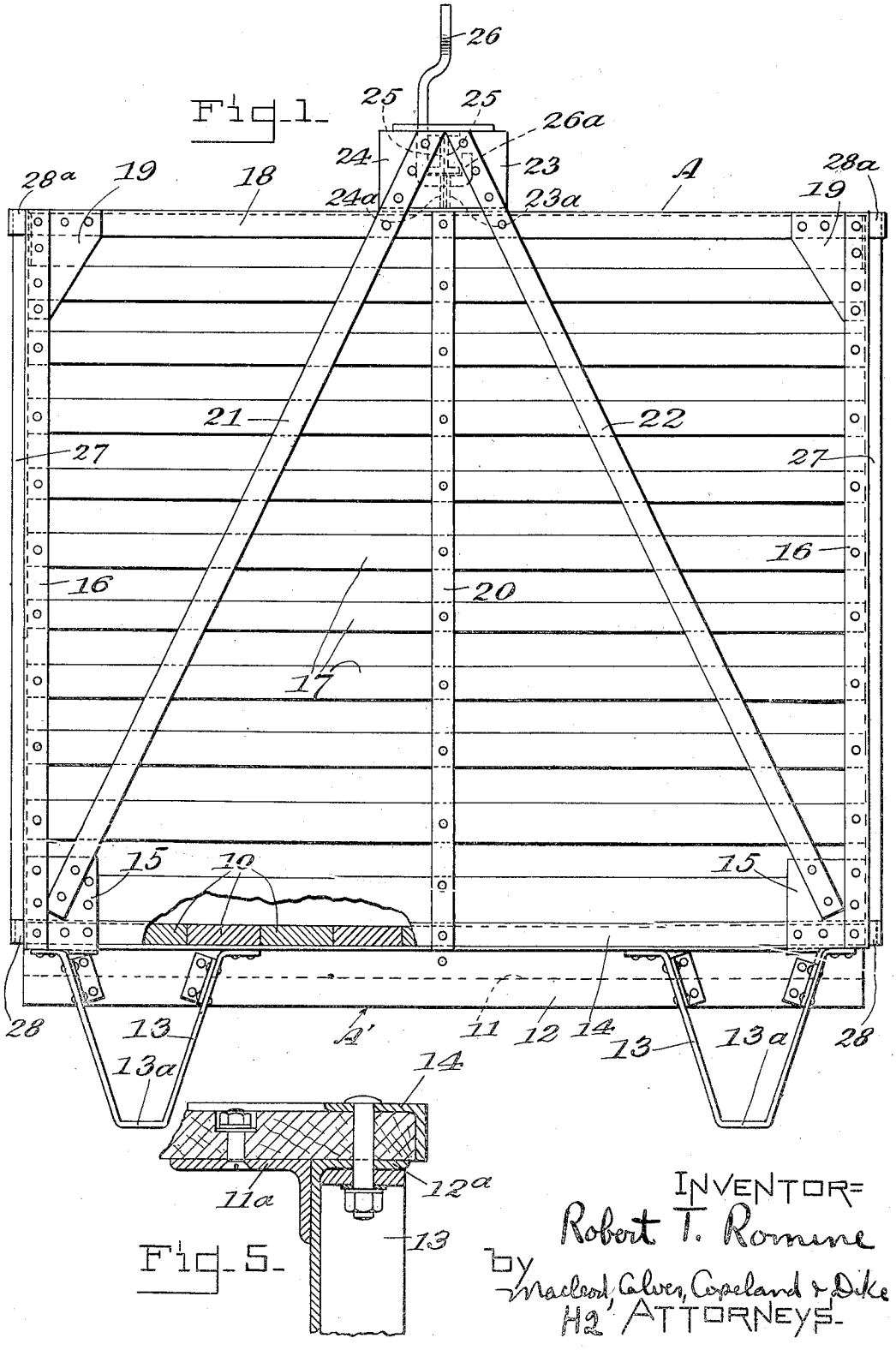


Fig. 5.

INVENTOR=
Robert T. Romine
by Macleod, Calver, Copeland & Dike
HIS ATTORNEYS.

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Original Filed Jan. 26, 1926 3 Sheets-Sheet 2

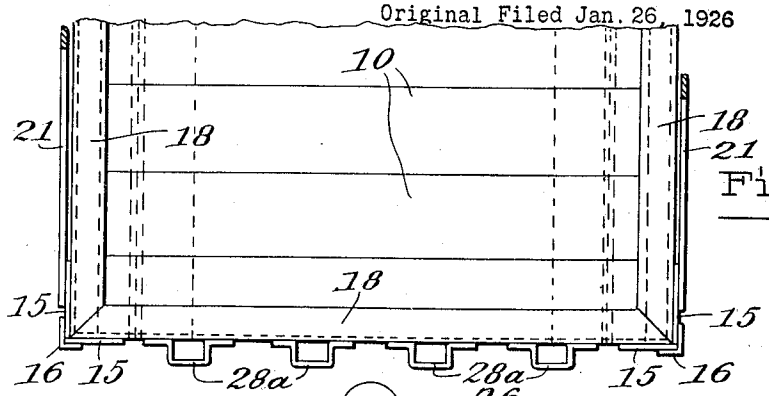


Fig. 3.

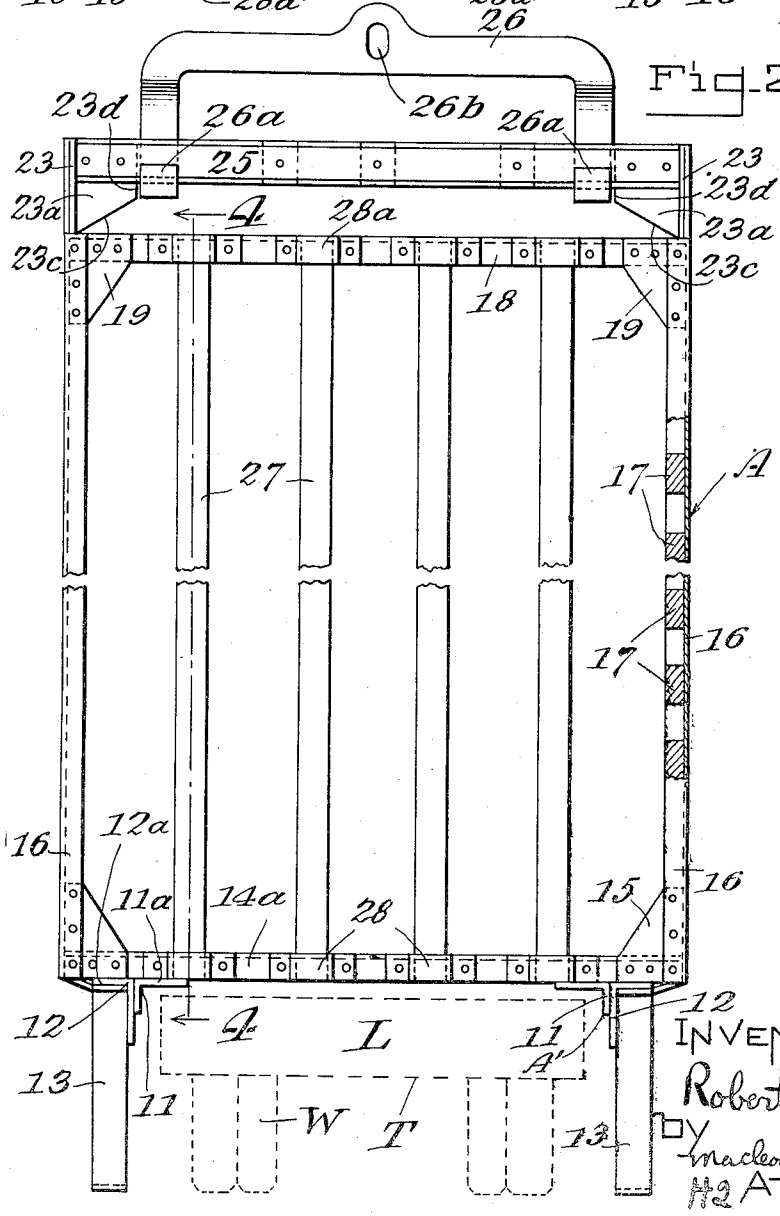


Fig. 2.

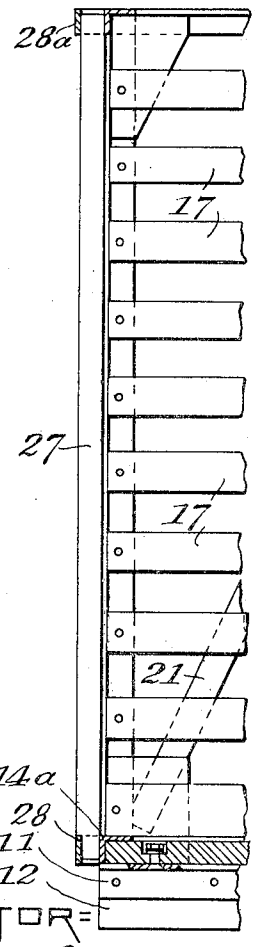


Fig. 4.

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Original Filed Jan. 26, 1926 3 Sheets-Sheet 3

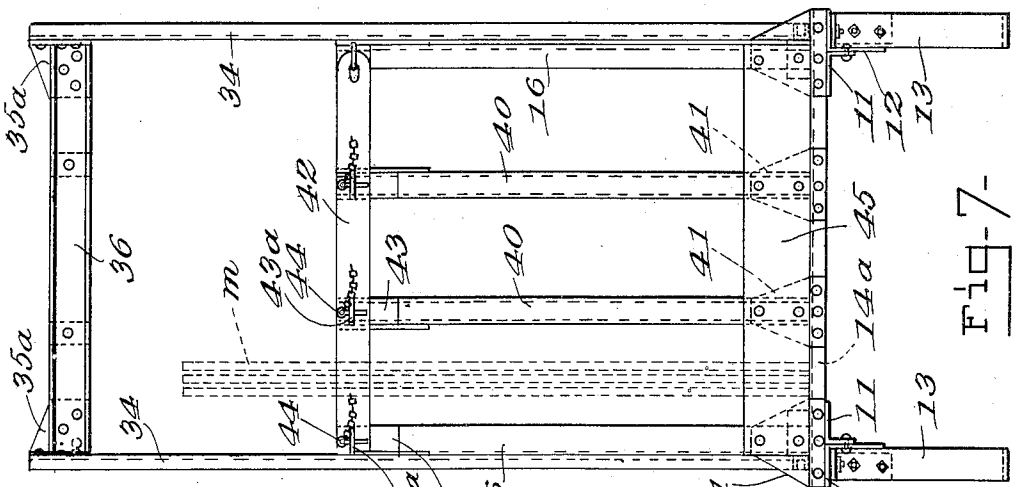


Fig. 7.

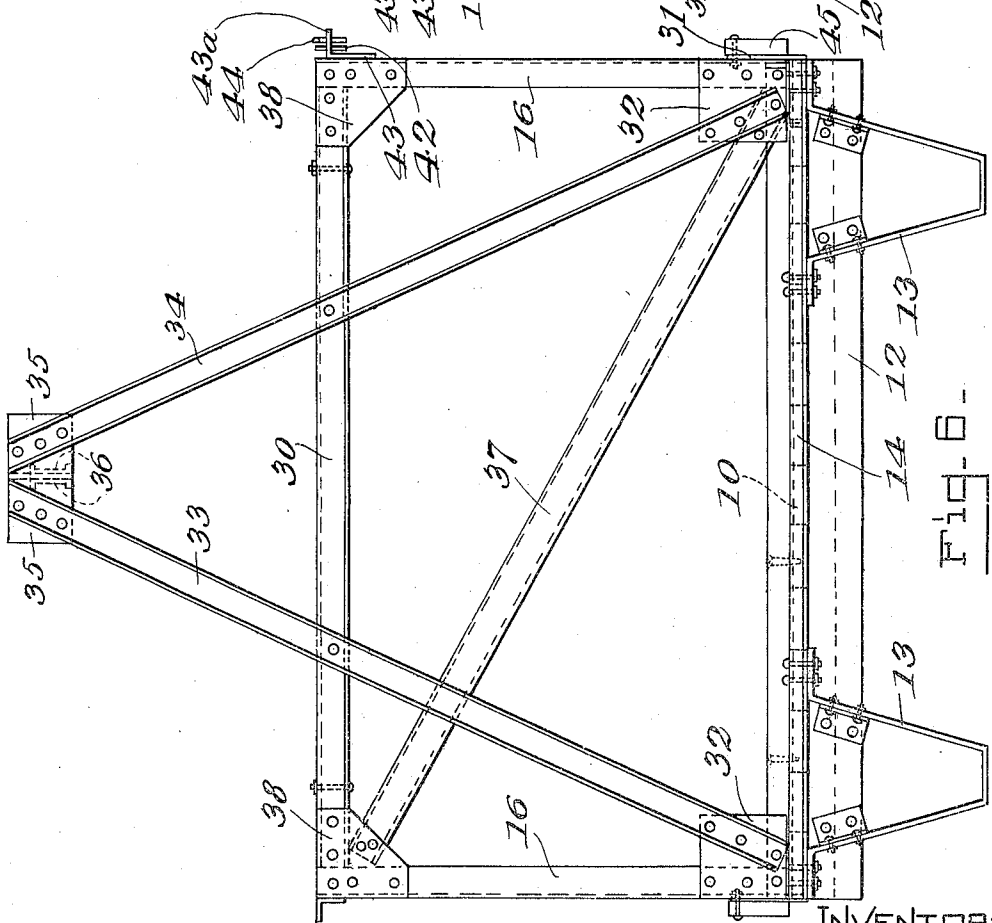


Fig. 6.

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Patented Aug. 2, 1927. 1,637,960

UNITED STATES PATENT OFFICE.

ROBERT T. ROMINE, OF MOUNT CLEMENS, MICHIGAN.

PORTABLE RACK.

Original application filed January 26, 1926, Serial No. 83,947. Divided and this application filed November 10, 1926. Serial No. 147,459.

This invention relates to portable load carrying racks adapted for use in conjunction with lift trucks, in which the lift truck platform may be introduced beneath the floor of the portable rack and elevated to lift and transport the same together with its load. The present application is a division of my co-pending application Serial No. 83,947, filed January 26, 1926.

An object of the invention is to provide a portable rack having a load supporting floor and which may be lifted either from above by means of a hoisting mechanism or crane or from beneath the floor by means of a lift truck, and in which the construction is such as to distribute the lifting strain throughout the length of the platform floor, irrespective of whether the rack and its load are lifted from above or from beneath the floor.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

Fig. 1 is a side elevation of one form of rack embodying my invention.

Fig. 2 is an end elevation of the rack construction shown in Fig. 1.

Fig. 3 is a fragmentary top plan view of the rack.

Fig. 4 is a vertical section taken substantially on lines 4—4, of Fig. 2.

Fig. 5 is an enlarged detail section showing a manner in which the supporting trusses and floor framing members may be connected together.

Fig. 6 is a side elevation illustrating a somewhat modified form of rack embodying my invention.

Fig. 7 is an end elevation of the construction shown in Fig. 6.

Before explaining in detail the present invention, and the method or mode of operation embodied therein, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practised or carried out in various ways. Also it is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation, and it is not intended to limit the invention beyond the terms of the several claims hereto appended or the requirements of the prior art.

Referring particularly to Figs. 1 to 5 inclusive, the platform rack or container A comprises a floor or platform top formed of a series of cross boards 10. Extending beneath the floor are a pair of parallel trusses one at each longitudinal side of the floor, and in the present instance each truss being formed of a pair of structural angle bars 11 and 12. Each pair of abutting angle bars, having the vertical flanges thereof positioned back to back, provide a T-shaped truss, and the angle bars are preferably riveted together to form an integral or unitary truss. It will be noted that each truss comprises an inwardly extending horizontal flange 11^a and an outwardly extending horizontal flange 12^a which provide a wide supporting surface for the floor boards, the flanges 11^a projecting over the lift platform L of the lift truck T so that upon elevating the lift platform the entire upward thrust thereof will be received by the flanges 11^a and transmitted uniformly the full length of the platform floor.

A pair of leg supports 13 are mounted at the outer side of the vertical portion A′ of each truss and these legs are secured to the trusses as by means of angle plates riveted to the respective members as shown in Fig. 1. The vertical portion A′ of each truss forms a guide for the lift platform of the truck when introduced beneath the floor of the rack.

The floor boards 10 are bound around their marginal edges by means of angle iron frame members 14 confining the longitudinal edges, and corresponding members 14^a confining the transverse end edges of the floor. As shown in Fig. 5 the angle iron frame member 14 is secured to the horizontal flange

12[a] of the truss as well as to the leg 13 by means of a bolt, and in this construction the longitudinal frame members 14 are also riveted at various points in their length to the flanges 12[a] of the supporting truss members.

Mounted at each corner of the floor 10 of the rack are pairs of gusset plates 15 which are riveted to the frame members 14 and 14[a]. Secured to each adjacent pair of gusset plates 15 and also secured to the floor framing members 14 and 14[a] at each corner of the floor is an upright corner post 16 in the form of an angle bar, four of these upright posts are provided at the four corners of the floor and it will be seen that each post is connected to the truss 11—12 through the medium of the gusset plates 15 and floor framing members 14, 14[a].

The angle iron posts 16 are connected at their upper ends by means of four horizontal angle bars 18 through the medium of gusset plates 19. A vertical brace bar 20 at each side of the rack connects the upper longitudinal bars 18 with the longitudinal frame members 14. The container framework may be connected together by transverse wood boards or slats 17.

A pair of brace bars 21 and 22 are secured at the lower ends thereof to the gusset plates 15 at each longitudinal side of the rack. These bars extend upwardly in converging relation. Riveted to the upper converging ends of each adjacent pair of bars 21 and 22 are a pair of angle plates 23 and 24 having inwardly extending flanges 23[a] and 24[a] positioned back to back. Riveted to the opposite outer faces of these flanges 23[a] and 24[a] are a pair of abutting channel bars 25 forming a bale to which may be connected the hooked ends 26[a] of a crane hook 26. The crane hook may have an eye 26[b] to which the hoisting mechanism of the crane is attached. Referring to Fig. 2 it will be noted that the edges of the flanges 23[a] and 24[a] are tapered upwardly at 23[c] and terminate in abutments 23[d] between which the hooked ends 26[a] of the crane hook are adapted to be confined. When the crane hook is hooked underneath the bale 25 to lift the rack the tapered edges 23[c] will cause either hooked end of the crane hook 26 to slide upwardly until the parts 26[a] are centered between the abutments 23[d].

It will be noted that the bale 25 is connected through the medium of the converging bars 21, 22 to the gusset plates 15. The latter in turn are connected to the floor framing members 14, 14[a] which are secured to the trusses 11—12 beneath the floor boards. Therefore the lifting strains will be transmitted from the hoisting hook 26 and bale 25 directly to the supporting trusses 11—12, so that the weight of the load and the strain will be distributed the full length of the floor, and the overhead hoisting strain will be transmitted to these supporting trusses beneath the floor boards.

The rack at its front and rear ends may be temporarily closed by means of detachable bars 27 the lower ends of which releasably fit into pockets 28 and at their upper ends are held in eye loops 28[a].

Referring to Figs. 6 and 7, a somewhat modified type of portable rack is illustrated, which is adapted to carry stacked articles such as fenders, running boards, etc., which are usually stacked in upright positions. In this instance the construction in many respects is substantially the same as above described. The floor boards 10 are bound around their four marginal edges by means of the angle iron framing members 14 and 14[a]. Beneath the floor extend the parallel supporting trusses comprising in the present instance as above described, pairs of angle bars 11 and 12 positioned back to back and rigidly united together. The angle bars 11—12 form an integrally united T-shaped truss, and if desired each truss may be a T-bar without departing from the spirit of the invention.

The upright angle iron corner posts 16, which at their lower ends are riveted to the floor framing members 14 and 14[a] are connected at their upper ends by a pair of parallel longitudinal bars 30 through the medium of gusset plates 38. The lower end of each corner post 16 is secured to the frame members 14 and 14[a] through the medium of a gusset plate 31. At each longitudinal side of the rack a pair of upwardly converging channel bars 33 and 34 are secured at their lower ends through the medium of gusset plates 32 to the corner posts 16. The upper converging ends of these channel bars are connected together by means of angle plates 35, having inwardly extending flanges 35[a] riveted together back to back. The flanges 35[a] are united by means of a transverse bale comprising a pair of channels 36 secured back to back. A pair of the diagonally disposed gusset plates 38 and 32 may be connected together by means of a diagonally extending brace bar 37 at each side of the rack.

At each end of the rack, and intermediate the corner posts 16 are located a pair of vertical channel bars 40 which are rigidly secured through the medium of gusset plates 41 to the floor framing members 14[a]. A swinging bar 42 is adapted to extend across the upper ends of the posts 16 and 40 to hold the material within the rack. Secured to the upper end of each of the posts 16 and 40 is an angle bracket 43, and the bar 42 has slots through which the outwardly projecting flanges 43[a] may project thereby supporting the bar 42 in the position shown in Fig. 7. Each of the flange portions 43[a] of the angle brackets have holes

through which may be inserted locking pins 44 whereby the bar 42 may be releasably secured to the upper ends of the posts 16 and 40. By removing the pins 44 the bar 42 may be swung outwardly and then downwardly to permit the material M to be removed from the rack. A bar 45 extends across the lower outer ends of the posts 16 and 40 and is releasably secured thereto by means of bolts. This bar 45 also assists in holding the material within the rack during transportation.

What I claim is:

1. In a platform rack the combination of a load supporting floor, a container framework mounted on said floor, a pair of trusses extending beneath said floor, one at each longitudinal side thereof, each truss being angular in cross section and supporting the floor, leg supports connected to said trusses, a pair of bars at each side of the rack extending upwardly in converging relation and connected at their lower ends to opposite ends of one of the trusses, and means for connecting a hoisting mechanism to the upper converging ends of said bars whereby the upward lifting strain will be transmitted to said trusses.

2. In a platform rack the combination of a load supporting floor, a container framework mounted on said floor, a pair of trusses extending beneath said floor, one at each longitudinal side thereof, each truss being angular in cross section and having vertical guide flanges for a lift truck and inwardly extending horizontal flanges supporting the floor and in position to receive the upward thrust of the truck platform, leg supports connected to said trusses, a pair of bars at each side of the rack extending upwardly in converging relation and connected at their lower ends to opposite ends of one of the trusses, and means for connecting a hoisting mechanism to the upper converging ends of said bars whereby the upward lifting strain will be transmitted to said trusses.

3. In a platform rack the combination of a load supporting floor, angle iron frame members confining the edges of the floor, upright corner posts angular in cross section connected to said frame members, means for connecting said posts together to form a container framework, a truss angular in cross section extending beneath the floor at each longitudinal side and connected to said frame members, leg supports for the floor, bars at each side of the rack extending upwardly in converging relation and connected at their lower ends to said trusses, and means carried by said bars for connecting a hoisting mechanism to the rack whereby the lifting strain will be transmitted from said bars to the trusses.

4. In a platform rack the combination of a load supporting floor, frame members angular in cross section confining the edges of the floor, upright corner posts angular in cross section connected to said frame members, means for connecting said posts together to form a container framework, a truss angular in cross section extending beneath the floor at each longitudinal side and connected to said frame members, said trusses having vertical flanges for guiding a lift truck platform and having inwardly extending horizontal flanges supporting the floor and in position to receive the upward thrust of the truck platform, leg supports for the floor, bars at each side of the rack extending upwardly in converging relation and connected at their lower ends to said trusses, and means carried by said bars for connecting a hoisting mechanism to the rack whereby the lifting strain will be transmitted from said bars to the trusses.

5. In a portable rack adapted for use with a lift truck, a load supporting floor, supporting trusses extending beneath the floor and having vertical flanges for guiding a lift truck and inwardly extending horizontal flanges for receiving the upward thrust of the truck and for distributing the same lengthwise of said floor, a container framework mounted on the platform floor, an overhead lifting bale adapted to be connected to a hoisting mechanism, and means for connecting said bale to said trusses.

6. In a portable rack adapted to be used with a lift truck, the combination of a load supporting floor, leg supports for said floor, supporting trusses extending longitudinally beneath the floor at opposite sides thereof, each truss having a vertical guide flange for a lift truck and an inwardly extending horizontal flange for receiving the upward thrust of the truck, a transverse overhead bale for the rack, means including bars connecting said bale to said trusses whereby the lifting strain on said bale will be transmitted to said trusses.

7. In a portable rack adapted to be used with a lift truck, the combination of a load supporting floor, leg supports for said floor, supporting trusses extending longitudinally beneath the floor at opposite sides thereof, each truss being T-shaped in cross section and having a vertical guide flange for a lift truck and an inwardly extending horizontal flange for receiving the upward thrust of the truck, a transverse overhead bale for the rack, means including bars connecting said bale to said trusses whereby the lifting strain on said bale will be transmitted to said trusses.

8. In a portable rack adapted to be used with a lift truck, the combination of a load supporting floor, leg supports for said floor, supporting trusses extending longitudinally beneath the floor at opposite sides thereof, each truss comprising a pair of angle bars

positioned with their vertical flanges back to back and having outwardly and inwardly extending horizontal flanges supporting the floor, the vertical flanges forming a guide for a lift truck and the inwardly extending flanges overlying the truck to receive the entire upward thrust thereof in any position of the truck beneath the floor, a container framework mounted on the floor, means for connecting a hoisting crane to the upper part of said framework, and means for transmitting the lifting force from said means to said trusses.

In testimony whereof I affix my signature.

ROBERT T. ROMINE.