

June 3, 1952

J. L. THOMPSON ET AL

2,598,730

PORTABLE DOCK SCAFFOLD

Filed March 3, 1948

2 SHEETS—SHEET 1

Fig. 1.

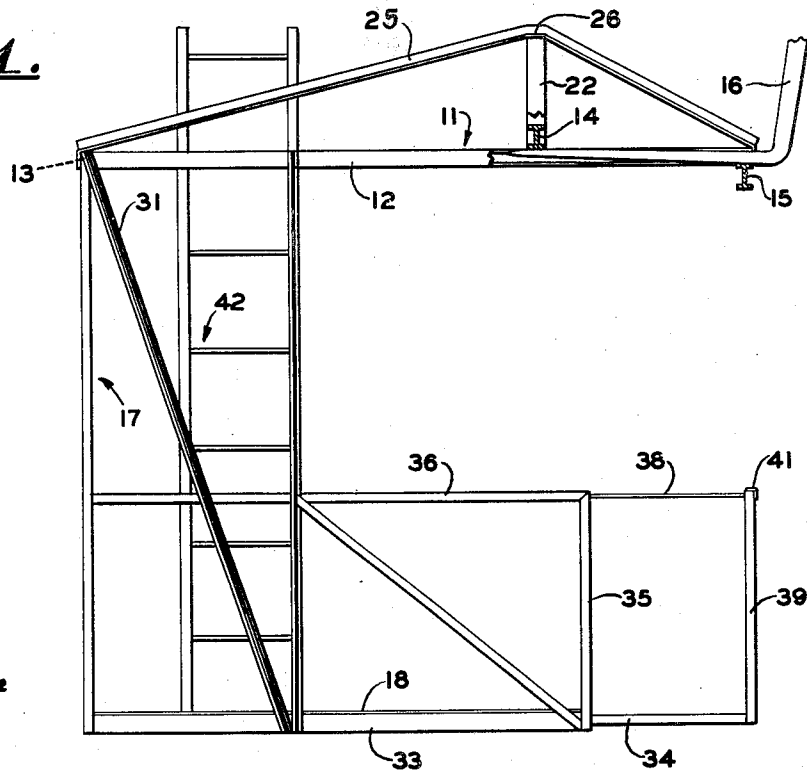


Fig. 2.

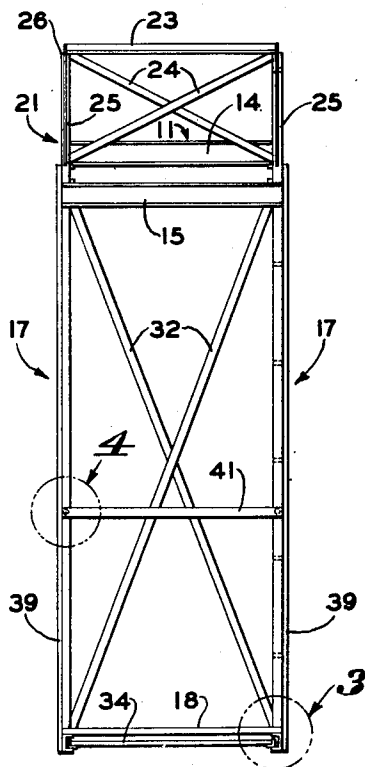
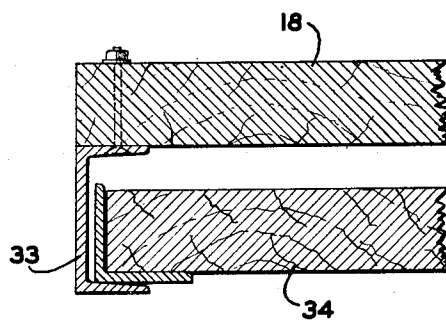


Fig. 3.



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2 SHEETS—SHEET 2

Fig. 4.

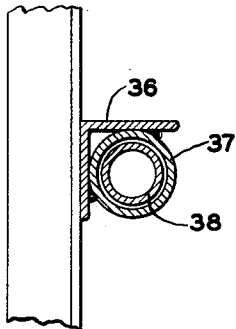


Fig. 5.

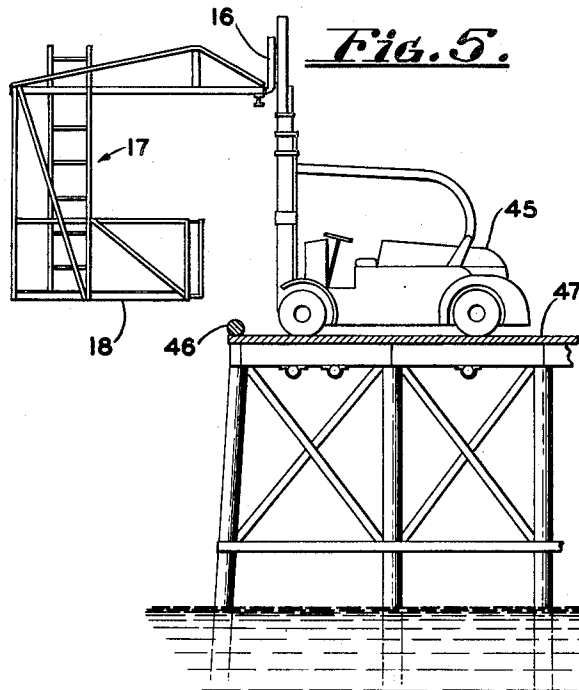
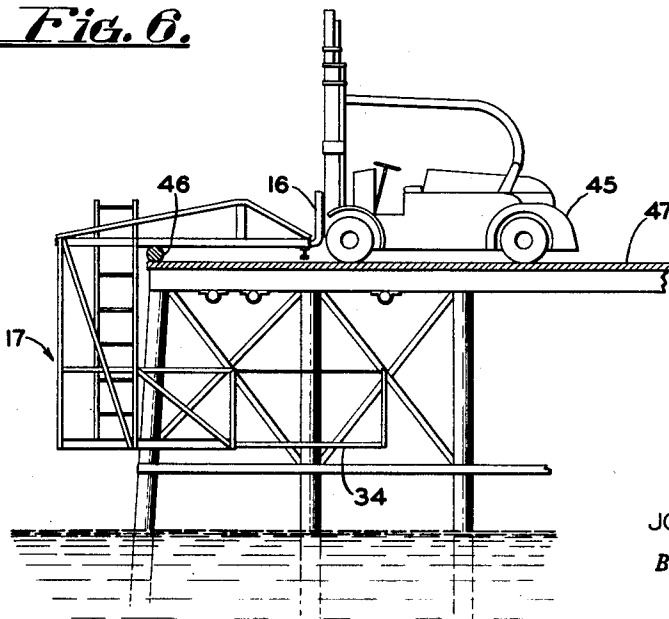


Fig. 6.



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PORTABLE DOCK SCAFFOLD

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4 Claims. (Cl. 304-15)

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amended April 30, 1928; 370 O. G. 757)

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This invention relates to portable scaffolds, and more particularly to a portable scaffold capable of being positioned to give access to the underside of piers and docks.

Underneath a typical waterfront dock there are numerous operations which must be periodically performed. Oil lines and other plumbing must be repaired and inspected. Telephone wires and electric wiring often require servicing. Tension members holding posts and bollards often need tightening. Braces must often be shimmed as they shrink with the passage of time. The bolts and nuts which hold the timbers together often must be cleaned and painted. In addition, it is necessary to inspect the underside of docks as a matter of general preventive maintenance.

It is an object of this invention to provide a portable scaffold which may be readily moved into place beneath a dock, whereby necessary operations under the dock may be performed.

It is another object of this invention to provide a portable scaffold which may be simply and detachably mounted to the lift fork of a truck, which truck may then be used to transport the scaffold to various locations and lower it into place underneath the dock.

It is another object of this invention to obviate the cost and time involved in constructing temporary scaffolding under a dock, by using a completely portable scaffold which has no attachment whatever to the dock, being positioned in place solely by the proper disposition of the lift truck which carries it about.

It is a further object of this invention to provide a portable scaffold for use under docks, whereby the safety, health, and convenience of maintenance and service personnel may be enhanced.

In accordance with this invention, the scaffold comprises a horizontal, generally elongate frame, from one end of which depends a pair of vertical frames. To the bottom edges of the frames is secured a horizontal platform extending beneath the horizontal frame. The horizontal frame includes a pair of transverse girders, one of them being disposed at the end of the frame, the other being spaced inwardly of the frame. The inward girder is secured to the frame in a plane slightly above that of the outward girder, so that the frame may be held to the horizontal extending fork of a lift truck, with the outer girder disposed immediately under the fork, and the inward girder disposed above the tip of the fork. In this way the frame is

supported in cantilever fashion, with the platform depending below the fork of the truck.

In use, the truck is driven to the edge of the dock, and stopped with the front wheels abutting the barricade timber. The fork is then lowered, thereby lowering the entire scaffold over the edge of the dock. When the horizontal, upper frame is almost touching the timber, the truck is backed away until the vertical frame almost touches the edge of the dock, thus positioning the platform in under the dock.

A gangplank is telescopically mounted beneath the platform, so that it may be extended for added length, to enable the workmen to get in farther under the dock. A ladder is vertically secured between the horizontal frame and the platform to provide access to and from the platform when it is in position under the dock.

The horizontal frame is strengthened against bending by the provision of a vertical bridge frame secured transversely to and above the horizontal frame, which serves to mount an elongate member in the form of a T sectioned beam anchored at its respective ends to the ends of the horizontal frame, and extending up and over the edge of the bridge frame, to which it is secured. In this way the effective section modulus of the horizontal frame is made great enough to accept the weight of the platform and the workmen thereon.

A preferred embodiment of the instant invention is shown in the drawing, wherein:

Fig. 1 is a side view of the scaffold;

Fig. 2 is an end view thereof;

Fig. 3 is a detailed view showing the manner in which the telescoping gangplank is mounted beneath the platform;

Fig. 4 is a fragmentary enlarged view showing the mounting of a telescoped hand rail for the gangplank;

Fig. 5 is a view showing the scaffold secured to its fork lift truck, in position to be lowered over the edge of the dock; and

Fig. 6 is a view showing the scaffold in use with the gangplank extended to give maximum access to the underside of the dock.

Referring to Fig. 1, there is shown a horizontal frame 11, comprised of a pair of longitudinal channel beams 12 secured together by transverse girders 13, 14, and 15. The girder 15 is disposed at one end of the frame 11 and is attached to the bottom edge of the beams 12. The girder 14 is secured transversely of the frame 11, inwardly of the girder 15, and is attached at the top edge of the members 12. The two girders 14 and 15

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are thus disposed in horizontal planes, one slightly above the other.

In this manner the lift fork 16 of a hoisting truck may be inserted under the girder 14 and over the girder 15, so that the frame 11 can be supported in cantilever fashion.

Depending from opposite sides of the outer end of the frame 11 are a pair of vertical frames 17, to the lower edges of which is secured a horizontal platform 18 extending inwardly underneath the frame 11, the general effect of the scaffold being that of a U tipped on its side.

The section modulus of the frame 11 alone is not enough to support the overhanging weight of the structure depending therefrom. It is therefore necessary to strengthen the frame 11 by securing thereabove a vertical bridge frame 21, consisting of a pair of upright members 22 anchored to the respective beams 12 and bridged by a horizontal member 23. The frame 21 is strengthened by diagonals 24. Elongate tension members in the form of T sectioned beams 25 are secured at their respective ends to the ends of the frame 11, and extend up and over the edge of the vertical bridge 21, to which they are secured as by welding at 26. The bridge member 21 is preferably disposed in the same vertical plane as that occupied by the transverse girder 14, thereby providing maximum section modulus for the given type of construction.

Tension members 31 are diagonally mounted within the vertical frame 17 to lend added strength thereto. Similarly, diagonal members 32 are mounted between the two frames 17, transversely of the scaffold at the end of the frame 12, to give strength to the assembly.

Beneath the platform 18, the two edges of which are formed of channel members 33 (Fig. 3), is telescopically mounted a gangplank 34, which may be extended from the platform 18 as shown in Fig. 1 to give access farther in under the dock. Balustrades 35 at the end of the platform provide for mounting hand rails 36, formed of angle iron, in which are secured, as by welding, pipes 37 (Fig. 4). Telescopically within each pipe 37 is mounted another pipe 38, which constitutes a hand rail for the gangplank 34, these hand rails in turn being supported by a balustrade 39 at the end of the gangplank 34. A hand rail 41 is secured transversely between the two balustrades 39 to prevent workmen from walking off the end of the gangplank 34.

A ladder 42 is mounted in one of the frames 17 to provide ready access to and from the platform 18 when the scaffold is in position underneath a dock.

Operation

Use of the instant invention will now be described. The lift fork 16 is first inserted between the girders 14 and 15 substantially as shown in Fig. 1. The fork is then raised, lifting the platform 18 off the ground; and the truck 45 is then fronted toward the barricade timber 46 (Fig. 5) at the edge of the dock 47. During this procedure, the gangplank 34 is in telescoped position. When the platform 18 is completely clear of the edge of the dock 47, as shown in Fig. 5, the fork 16 is lowered until the platform 18 is substantially level with the dock 47. At this point workmen may board the platform 18 under the rail 41.

The fork 16 is then lowered further until the frame 11 is positioned just above the timber 46. This brings the platform 18 well beneath the level of the dock 47, so that the truck 45 may then be

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backed up until the inner edges of the frames 17 almost touch the edge of the dock 47. The fork 16 is then lowered until most of the weight of the scaffold rests on the timber 46, as shown in Fig. 6. The gangway 34 is then ready to be extended as shown in Fig. 6, so that a considerable length of elongate platform is provided under the dock 47. Necessary repairs may then be made as required. The weight of the truck 45, coupled with the fact that the scaffold rests principally on the timber 46, serves to maintain the scaffold safely in position. Much of the work may be done with the center of gravity of the scaffold and its contents substantially beneath the front wheel of the truck 45, thereby providing a very stable and safe assembly. During operation, access to the platform 18 and the gangplank 34 is had by the ladder 42.

The invention described herein may be manufactured and used by or for the Government of the United States of America for governmental purposes without the payment of any royalties thereon or therefor.

What is claimed is:

1. A portable scaffold adapted to be carried by a lift truck, comprising a flat, horizontal, generally elongate frame including a pair of transverse girders, one of said girders being disposed at one end of said frame, the other girder being spaced from said one girder inwardly of said frame and in a plane slightly above said one girder, said frame being adapted to be held by the lifting fork of the truck in cantilever fashion with said one girder disposed under said fork and said other girder disposed over said fork, a vertical bridge frame secured transversely to and above said horizontal frame, an elongate tension member secured at its respective ends to the ends of said horizontal frame and secured intermediate its ends to the top of said bridge frame, a vertical frame secured to said horizontal frame at the overhanging end thereof and depending therefrom, and a horizontal platform secured to said vertical frame and extending beneath said horizontal frame.

2. A portable scaffold adapted to be carried by a lift truck, comprising a flat, horizontal, generally elongate frame including a pair of transverse girders, one of said girders being disposed at one end of said frame, the other girder being spaced from said one girder inwardly of said frame and in a plane slightly above said one girder, said frame being adapted to be held by the lifting fork of the truck in cantilever fashion with said one girder disposed under said fork and said other girder disposed over said fork, a pair of flat vertical frames secured respectively to opposite sides of said horizontal frame at the overhanging end thereof and depending therefrom, a horizontal, generally elongate platform secured to the lower ends of said vertical frames and extending beneath said horizontal frame, and a gangplank telescopically mounted beneath said platform and selectively extendable away from said vertical frame.

3. A portable scaffold adapted to be carried by a lift truck, comprising a flat, horizontal, generally elongate frame including a pair of transverse girders, one of said girders being disposed at one end of said frame, the other girder being spaced from said one girder inwardly of said frame and in a plane slightly above said one girder, said frame being adapted to be held by the lifting fork of the truck in cantilever fashion with said one girder disposed under said fork and said other girder disposed over said fork, a vertical bridge

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frame secured transversely to and above said horizontal frame, an elongate tension member secured at its respective ends to the ends of said horizontal frame and secured intermediate its ends to the top of said bridge frame, a pair of flat vertical frames secured respectively to opposite sides of said horizontal frame at the overhanging end thereof and depending therefrom, a horizontal, generally elongate platform secured to the lower ends of said vertical frames and extending beneath said horizontal frame, a gangplank telescopically mounted beneath said platform and selectively extendable away from said vertical frames, and a ladder secured vertically between said horizontal frame and said platform.

4. A portable scaffold adapted to be carried by a lift truck, comprising a flat, horizontal, generally elongate frame including a pair of transverse girders, one of said girders being disposed at one end of said frame, the other girder being spaced from said one girder inwardly of said frame and in a plane slightly above said one girder, said frame being adapted to be held by the lifting fork of the truck in cantilever fashion with said one girder disposed under said fork and said other girder disposed over said fork, a vertical bridge frame secured transversely to and above said horizontal frame in substantially the same vertical plane as said other girder, an elongate tension member secured at its respective ends to the ends of said horizontal frame and

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secured intermediate its ends to the top of said bridge frame, a pair of flat vertical frames secured respectively to opposite sides of said horizontal frame at the overhanging end thereof and depending therefrom, a horizontal, generally elongate platform secured to the lower ends of said vertical frames and extending beneath said horizontal frame, a gangplank telescopically mounted beneath said platform and selectively extendable away from said vertical frames, and a ladder secured vertically between said horizontal frame and said platform.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
466,890	Dean	Jan. 12, 1892
1,268,607	Pettis	June 4, 1918
1,427,453	Fleming	Aug. 29, 1922
2,068,825	Stevenson	Jan. 26, 1937
2,362,170	Swaisgood	Nov. 7, 1944

FOREIGN PATENTS

Number	Country	Date
9,147	Great Britain	1911
250,300	Switzerland	June 1, 1948