

March 9, 1965

R. C. RAMER
PORTABLE LIFT

3,172,501

Filed Jan. 25, 1963

3 Sheets-Sheet 1

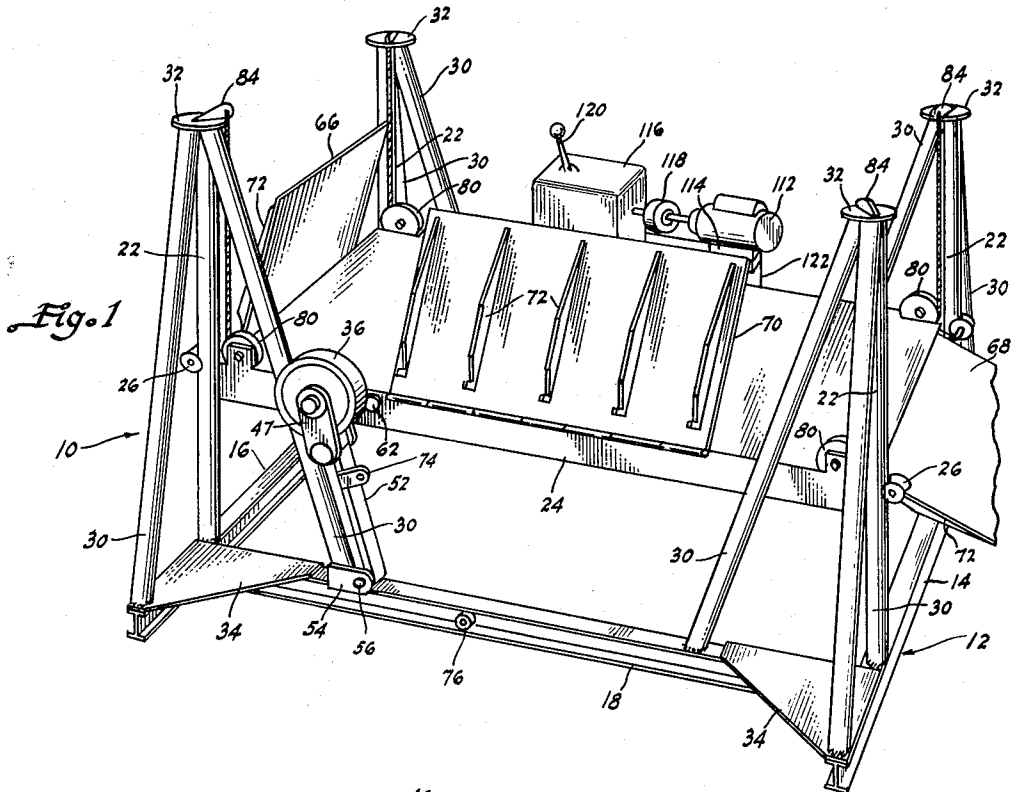


Fig. 1

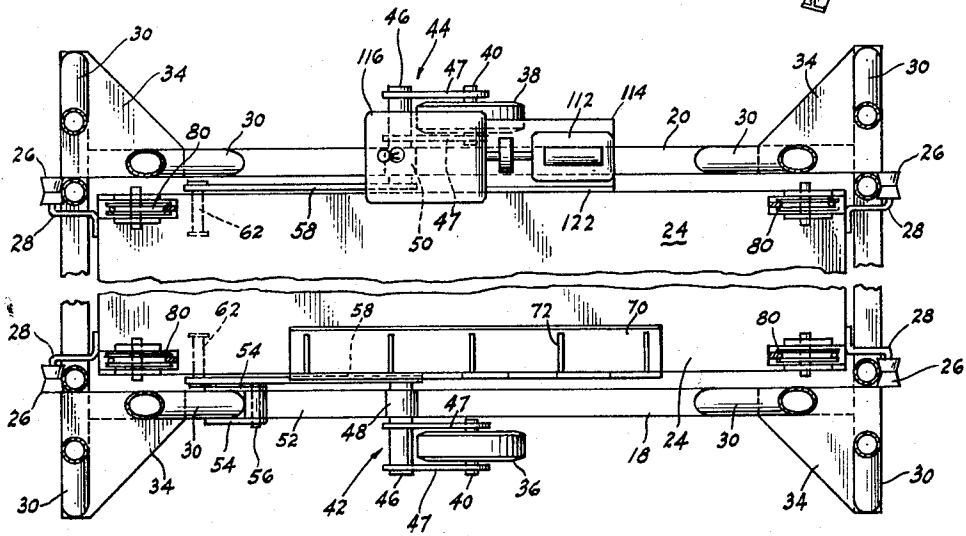


Fig. 3

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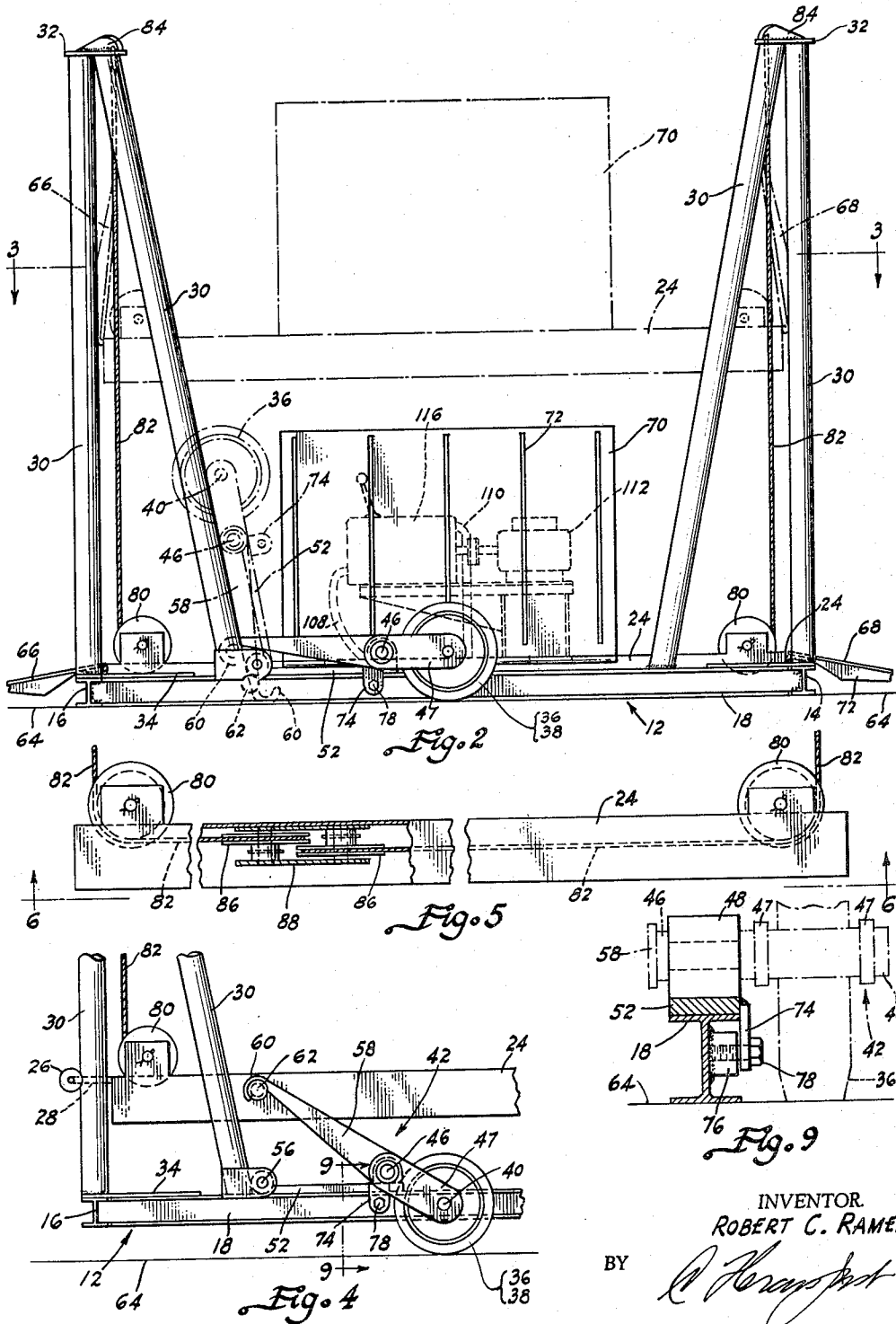
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Filed Jan. 25, 1963

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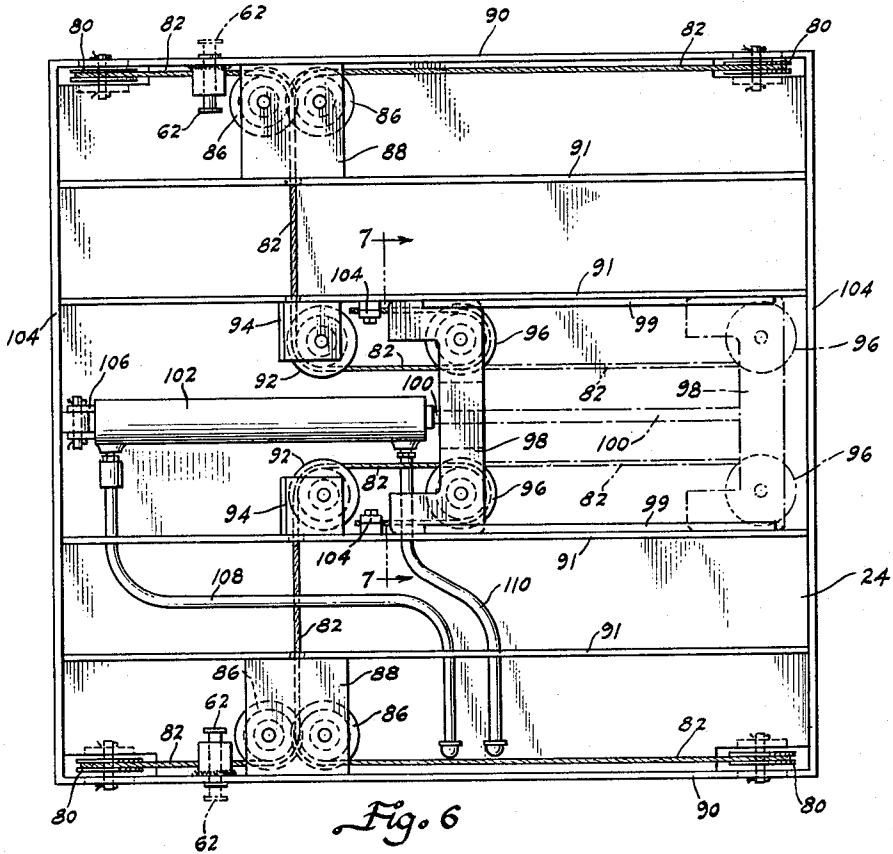


Fig. 6

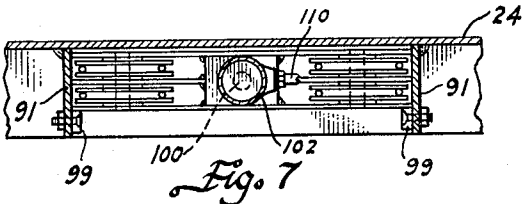


Fig. 7

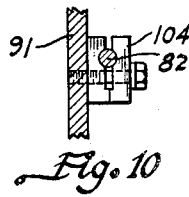


Fig. 10

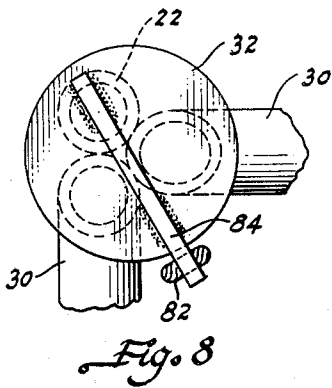


Fig. 8

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3,172,501

PORTABLE LIFT

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Filed Jan. 25, 1963, Ser. No. 253,824

9 Claims. (Cl. 187-9)

This invention relates to improvements in a versatile lift which, more particularly, is portable and has a self-contained power unit for raising and lowering a platform relative to a supporting base capable of resting upon a supporting surface, such as a roadway, factory floor, the ground or the like, and the platform especially being capable of accommodating material handling equipment such as hand, pallet, platform or fork trucks.

Certain types of stationary elevators or lifts have been developed heretofore to raise and lower various loads either on small handling trucks or the like, but these mostly have been bulky, heavy and expensive. If they employed corner posts, they usually were braced at the top by laterally extending means which interfered with the handling of tall objects and loads. By their stationary nature, their use was extremely limited.

Of those available lifts which are portable, they are of a highly unstable nature, especially when in elevated position with a load thereon. An effective and practical combination of portability and stability is lacking in lifts now available. Also, loading and unloading capabilities of those now available is extremely limited, all of them being of the straight-through type; on at one end and off at the other.

There also are available certain fixed types of hoists and lifts employed in garages and service stations, but these are of a stationary nature, except for the portable jacks commonly employed in such types of businesses. Obviously, these are not capable of loading and unloading trucks, for example, especially when requiring the raising and lowering of material-handling means such as hand trucks or power trucks of the pallet, platform or fork type.

The very substantial increase in the transportation of freight by motor trucks and similar vehicles has given rise in recent years to the need for a more versatile type of lift to assist in the loading and unloading of trucks with respect to a loading dock, warehouse or factory floor, or the like. Where loading docks are involved, dock boards are used to bridge the rear of the truck and the dock. This only fulfills a limited part of all material-handling requirements of the trucking industry. Many establishments such as warehouses served by narrow streets and alleys, small shops and the like have no docks or dock boards. Even if they did, they frequently are of little use because large tractor-trailer trucks have no side doors and must park beside a warehouse door, parallel to the wall of the warehouse. Thus, the rear end of the truck can be adjacent the warehouse door and may be about at the same level but there is no means to bridge the space over which material-handling means must move between the two; a bridging platform of some sort is needed and the tailgate of the truck is not adequate, especially to support the weight and permit manipulation of hand or power material-handling trucks.

The floors or decks of modern trucks usually are of the order of approximately four feet above the roadway surface, and this is a substantial distance to elevate or lower a heavy item. In addition to the raising or lowering of objects between the floor of a truck and a floor or roadway surface, for example, there also are situations requiring similar raising and lowering of goods between the deck of a loading dock and the ground or roadway surface adjacent the same, the height of which also are approximately four feet above the adjacent ground or roadway surface.

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The principal object of the present invention is to provide a lift supplying the deficiencies of existing ones, the same comprising a base which may be disposed upon such supporting surface as a factory or warehouse floor, the ground, or the like; frame means having unobstructed upper space for guiding vertical movement of a platform while effectively braced in all directions; power means operable to raise and lower said platform; and ramp plates or members carried by said platform and capable of extending over said base to facilitate the movement of hand or power types of handling trucks onto and off the platform as well as permit manipulation of such trucks on the platform such as turning 90° for movement relative to one side thereof, whereby, for example, through the intermediary of such hand or other types of trucks which may be raised and lowered by such platform of the lift, great convenience is afforded the loading and unloading of motor vehicles and otherwise moving various kinds of freight goods in various ways, as well as facilitating factory operations which require the raising and lowering of loads of various kinds.

Another object of the invention is to provide the aforementioned portable lift with a pair of wheels respectively mounted at opposite sides of the base of the lift intermediately of the ends of said sides, said wheels readily being capable of movement between positions below said base and at least slightly above the bottom of said base, such raising and lowering of said wheels being effected by movement of said platform through the employment of the power means therefor.

A further object of the invention is to provide ramp members similar to dockboards, which preferably are pivotally connected to and carried by selected sides or ends of the platform, at least one of said ramp members extending laterally outward from one side of said platform adjacent one of the wheels on said base, and the invention further providing means by which said wheel may be moved so as to be clear of said ramp member and not interfere with the positioning thereof transversely outward from the platform.

Details of the foregoing objects and of the invention, as well as other objects thereof, are set forth in the following specification and illustrated in the accompanying drawings comprising a part thereof.

In the drawings:

FIG. 1 is a perspective view of a preferred embodiment of the invention and illustrating a portable lift, one of the ramp members thereof being partly broken away to accommodate the view on the sheet.

FIG. 2 is a side elevation of the portable lift shown in FIG. 1 and illustrated on a slightly larger scale than employed in FIG. 1, said view showing the platform of the lift in full lines in lowered position, and in phantom lines in elevated position.

FIG. 3 is a plan view of the portable lift shown in FIGS. 1 and 2, the same being broken away intermediately of the opposite sides thereof in order to foreshorten the view.

FIG. 4 is a fragmentary, side elevation similar to FIG. 2, but showing the wheels by which the lift is supported and rendered capable of being disposed in lowered position for purposes of moving the lift to any desired location, whereas in FIG. 2, said wheels are elevated to permit the base of the lift to rest upon a supporting surface.

FIG. 5 is a fragmentary, side elevation, partly broken away to illustrate details of construction and also broken intermediately of the ends thereof to foreshorten the view, and showing portions of the hoisting mechanism by which the platform is raised and lowered relative to its supporting frame.

FIG. 6 is a bottom plan view of the platform illustrating details of the hoisting cable and the fluid-actuated

piston and cylinder means for operating the same, as viewed from the line 6—6 of FIG. 5.

FIG. 7 is a fragmentary, vertical section of part of the hoisting mechanism, as seen on the line 7—7 of FIG. 6.

FIG. 8 is a fragmentary, top plan view of one corner of the frame of the lift showing details of the cable-securing means.

FIG. 9 is a fragmentary, vertical sectional view, as seen on the line 9—9 of FIG. 4, but on a larger scale than used in FIG. 4, part of the elements shown in FIG. 9 being illustrated in phantom.

FIG. 10 is a fragmentary, sectional view showing details of means for clamping one end of the cable as employed in the hoisting mechanism.

Referring to the drawings, the portable lift comprising the present invention embodies a frame 10, which is best illustrated in FIG. 1 in perspective manner. Frame 10 comprises a base 12 which may be formed in any convenient manner from structural members, such as I-beams, appropriate channels, or the like. In the particular illustration in the drawings, which is not intended to be restrictive, I-beams are illustrated. Certain beams form the opposite ends 14 and 16 of the base 12, while additional I-beams 18 and 20 comprise opposite sides of the base 12. These various beams which form the base 10 may be connected appropriately, such as by welding, bolting, or the like.

Extending upwardly from each so-called corner of the base 12 is a plurality of vertical guide members 22 which, conveniently, may be formed from steel tubing of appropriate gauge and diameter. The guide members 22 are for purposes of controlling the vertical movement of platform 24 of the portable lift, there being provided appropriate guide means at each corner of the platform 24, which are engageable with the vertical guide members 22. In the specific illustration shown in FIG. 1, appropriate grooved guide rollers 26 are employed so as to engage the vertical guide members 22. The rollers 26 may be mounted upon any appropriate brackets 28, which are connected to opposite ends of the platform 24.

Due to the fact that the portable lift comprising the present invention is of the type which preferably is capable of supporting, raising and lowering relatively heavy loads, it is essential that the vertical guide members 22 be braced appropriately and, for this purpose, each of such members is maintained in vertical relationship relative to the base 12 by means of a pair of sloping brace members 30, the lower ends of which are secured by welding, or the like, to the beams comprising the base 12, and the upper ends are connected to any suitable means, such as cap plates 32, which have additional functions, to be described. Additional rigidity is included in the frame, and particularly the base 12, by the employment of horizontal, corner brace plates 34, which may be welded or otherwise secured to the structural members comprising the base 12 and, if desired, the lower ends of at least certain of the brace members 30 may be welded directly to the brace plates 34.

In order that the frame, base, and platform comprising the lift of the present invention may be rendered readily portable, a plurality of relatively small wheels 36 and 38, which preferably are of rugged nature and may be rubber-tired, if desired, or otherwise, are mounted respectively at opposite sides of the base 12, preferably intermediately of the ends thereof. The wheels are supported on short axles 40, which are each carried by one end of a composite lever assembly 42 and 44 respectively movably supported by the opposite side beams 18 and 20 of the base 12, either directly or indirectly, as described in detail hereinafter.

Each of the lever assemblies 42 and 44 comprise short shafts 46, to each of which a pair of spaced ears 47 are connected at one end by welding, or the like, the opposite ends of said ears supporting the short axles 40. This

arrangement, therefore, provides yokes at opposite sides of the base of the frame within which yokes the wheels 36 and 38 revolve. The shafts 46 are supported pivotally within bearings 48 and 50, the bearing 48 being connected directly to an elongated member 52, which is pivotally connected at one end between a pair of ears 54 fixed, for example, to the lower end of one of the brace members 30, as best shown in FIGS. 1 and 2, by means of a pivot pin 56, which extends through said ears and the pivoted end of member 52. The purpose of this arrangement is to be described in detail hereinafter.

Bearing 50 may be connected, such as by welding, or otherwise, directly to the upper surface of side member 20 of base 12, the center of said bearing, however, preferably being the same distance above the upper surface of beam 20 as the center of bearing 48 is above the upper surface of beam 18. Connected to the inner ends of the short shafts 46 are preferably flat and relatively thin levers 58, the shapes of which are best illustrated in FIGS. 2 and 3. One end of each of levers 58 respectively may be secured by welding, or otherwise, to the inner ends of the shafts 46, while the opposite ends of levers 58 preferably have hooks 60 thereon for purposes of being engaged by extensible and retractable lugs 62 carried by the platform 24.

The side elevational shape of the lever assemblies 42 and 44, as is evident particularly from FIGS. 2 and 4, is such that when the platform 24 of the lift is in its lowermost position between the side and end members comprising base 12, the levers 58 of said assembly preferably are substantially horizontal, as are the ears 47. When these elements are in said substantially horizontal position, the diameter of the wheels 36 and 38 is such that they will either be resting upon a supporting surface 64, such as a roadway, factory floor, or the like, or will be disposed slightly above said surface and thereby also be slightly above the bottom of the base 12, as clearly shown in FIG. 2. When in this position, the wheels 36 and 38 will have no supporting effect upon the portable lift and the base 12 will be resting firmly upon the supporting surface 64 for entire support thereby.

In order to render the lift readily portable, it is only necessary to elevate the platform 24, by means to be described, a relative short distance, as shown in FIG. 4, precaution first being taken to project the lugs 62 outwardly so that when the platform 24 is raised, the projected lugs 62 will engage beneath the outer ends of levers 58 and continued raising of the platform 24 will pivotally move the composite lever assemblies 42 and 44 to the angular position shown in FIG. 4, thereby moving the wheels 36 and 38 to extended positions below the bottom of the base 12, whereby the base 12 will be spaced above the supporting surface 64 and thereby render the lift portable.

The wheels 36 and 38 preferably are disposed substantially midway between the opposite ends of the base 12 of the frame of the lift, and the various elements of the entire lift assembly are so arranged that when the wheels 36 and 38 are extended to their lower position as illustrated in FIG. 4, the entire lift assembly will be substantially balanced relatively evenly in opposite directions from the pivots 40 for said wheels, whereby substantially no manual effort will be required to balance the lift so as to maintain the base thereof substantially horizontal relative to the supporting surface 64 over which the lift is to be moved to position it to any desired location, such as in a factory, roadway adjacent the loading dock, or otherwise. The provision of the hook ends 60 on levers 58 of the lever assemblies 42 and 44, for engagement with the extended lugs 62, will insure against disconnection between the slightly elevated platform 24 and the lever assemblies.

One of the very advantageous and important aspects of the location of the wheels 36 and 38 with respect

to base 12 of the lift is that by using only two wheels intermediately of the ends of the base, the entire lift quickly and readily may be revolved within its own length so as to render the same extremely maneuverable and capable of being positioned quickly and precisely where desired upon any supporting surface. Upon being disposed directly above the location desired upon any such supporting surface, the platform 24 then is lowered so as to permit the placement of the base 12 directly upon the supporting surface 64, whereupon the wheels 36 and 38 are rendered inoperative when they are permitted to move to the position shown in FIG. 2 by such lowering of platform 24.

Another advantage of the portable lift comprising the present invention resides in the provision of a plurality of ramp plates which preferably are pivotally connected to outer edges at the opposite ends and one side of the platform 24, as is best shown in FIG. 1. There is specifically illustrated in said figure ramp plates or members 66 and 68 respectively at opposite ends of the platform 24, and ramp plate or member 70 at one side of the platform. The depth of the platform 24 preferably is slightly greater than the height of the end and side beams forming the base 12, whereby when the platform 24 is lowered to its fullest extent within the base 12, the upper or deck surface of the platform 24 will be slightly above the upper surfaces of the end and side beams forming the base 12, thereby permitting the pivoting of the ramp plates 66, 68 and 70 downwardly for engagement of the outer ends thereof upon the supporting surface 64, for example, and when so positioned in such substantially horizontal position, the ramp plates 66 and 68, at least, will not in any way interfere with the end members or beams 14 and 16 of the base 12.

Particularly from FIG. 2, however, it will be seen that the wheel 36 will be in the way of the lowering of ramp plate 70 pivotally connected to the side of the platform 24, due to the height of the wheel 36 and the mechanism which supports it. Due to the fact that the structure which supports wheel 36 is mounted upon elongated member 52 that is pivotally connected to side beam 18 of the base 12, the member 52 and the wheel assembly connected thereto may be moved to the substantially vertical position thereof shown in phantom in FIG. 2, and thereby remove said wheel from any interference with the lowering of ramp plate 70, this arrangement comprising one advantageous feature of the present invention. The provision of the ramp plate 70 at one side of the lift renders the loading and unloading of the platform much more versatile than if it were merely possible, for example, to load the platform either from one end or the other by the use of ramp plate 66 or 68, prior to elevating the platform 24. The provision of the three ramp plates at opposite ends and one side of the platform also renders the loading and unloading of the platform when in elevated position much more versatile and universal than otherwise would be possible if less than this number of ramp plates were provided.

The ramp plates 66, 68 and 70 may be relatively simple construction, such as substantially planar plates of appropriate size and thickness, such as either deck plate material, or the like, and suitable reinforcing ribs 72 are affixed thereto by welding, or the like, the ribs being of any appropriate shape in accordance with conventional practice. In operation, these ramp plates serve in the same manner as dockboards or other forms of loading ramps of a movable nature to render them capable of being positioned where desired. Any suitable means also may be utilized to maintain the ramp plates in substantially vertical position, as shown in phantom, for example, in FIG. 2, as well as in full lines in FIG. 1 relative to plates 66 and 70, particularly when raising and lowering the platform 24. Such positioning may be controlled by the hinge construction by which the

ramp plates are connected to the edges of platform 24, or otherwise, the hinge construction, for example, permitting only a limited amount of inward movement of the ramp plates past a vertical position thereof with respect to the deck of platform 24.

When the wheels 36 and 38 are lowered below the bottom of frame 12 so as to render the lift portable, it is necessary to secure the elongated member 52 against the upper surface of side beam 18 of base 12. A very simple expedient to accomplish this comprises a small ear 74, which is welded or otherwise secured to one edge of member 52 adjacent the outer end thereof which is opposite the pivot 56. If the side beam 18 comprises an I-beam, then an appropriate boss 76 may be welded against the flange of the I-beam, as shown best in FIG. 9. The ear 74 is apertured to receive a securing bolt 78 which is threaded into boss 76 and thus provide a secure, but disengageable, means for anchoring the member 52 against side member 18 of base 12 so as to fix the axis of shaft 46 relative to the base 12 when pivotally moving the lever assembly 42 about said axis to lower the wheel 36 to the position shown in FIG. 4, for example. In order to permit movement of the lever assembly 42 to the broken line position thereof shown in FIG. 2, however, it is simply necessary to remove bolt 78, and then such lever assembly which carries the wheel 36 may be manually moved to such inoperative position and thereby render the side of the base 12 unobstructed for downward pivotal movement of ramp plate 70 across the side beam 18 of base 12 and into engagement with supporting means, such as surface 64.

The hoisting mechanism primarily comprises a system of cables, pulleys and sheaves, and fluid-operated mechanism for actuating the cables. The overall system is best illustrated in the bottom plan view comprising FIG. 6, but the cable arrangement otherwise is also shown in FIGS. 2, 4 and 5. Secured to each corner of the platform 24 is a guide pulley 80. Extending upward from each of these guide pulleys is a cable 82, the upper end of which is looped or otherwise secured relative to an anchor member 84. The members 84 are fixed by welding, or the like, to the cap plates 32 at the upper ends of the guide members 22. The lower periphery of each guide pulley 80 is below the upper deck plate of platform 24, as is best seen from FIG. 5, and the cables 82 extend partially around the guide pulleys 80 so as to be disposed horizontally beneath the deck plate of the platform 24, as also is well shown in FIG. 5.

The pairs of cables 82 adjacent opposite sides of the platform 24 are directed horizontally beneath the deck of the platform 24 so as to extend around closely adjacent, but vertically displaced, additional guide pulleys 86, which are supported by horizontal plates 88 which conveniently may be welded between the exterior side plates 90 of platform 24 and the intervening bracing webs 91 thereon, as best shown in FIG. 6. The vertical displacement of the guide pulleys 86 is illustrated in FIG. 5. Each pair of cables 82 then is led transversely inward from their respective additional guide pulleys 86 for disposition partially around double sheaves 92, which are supported by appropriate brackets 94, the cables 82 then extending in parallel relationship to each other into engagement with additional double sheaves 96, which are pivotally supported by a crosshead connected to the outer end of piston rod 100 movable longitudinally of fluid-operated cylinder 102. The cables extend halfway around the double sheaves 96 and the ends of the cable then are secured fixedly to the platform 24 by means of appropriate clamps 104 carried, for example, by certain of the bracing webs 91, as shown best in FIGS. 6 and 10.

The end of the cylinder 102 opposite that from which the piston rod 100 projects is secured by any conventional means to one of the vertical end plates 104 on platform 24, for example, as shown in FIG. 6, by an appropriate clevis 106.

Through movement of the crosshead 98 from the full-line position shown in FIG. 6 to the broken-line position thereof also shown in said figure, an elevation of the platform 24 relative to base 12 through a distance twice that of the movement of the crosshead 98 is effected, due to the passing of the cables 82 halfway around the double sheaves 96 which are carried by the crosshead. Movement of the crosshead 98 is guided by suitable guide strips 99 fixed to certain of the bracing webs 91 as best seen in FIGS. 6 and 7. Power to actuate the crosshead 98 is provided through fluid under pressure, which is connected to opposite ends of the cylinder 102 by conduit lines 108 and 110 which extend from said opposite ends of the cylinder up through the deck of platform 24, for connection to pump 112 which is suitably supported by bracket 114 connected to and extending upward from the deck of platform 24, as best shown in FIG. 1. The horizontal position of pump 112 relative to the deck of platform 24 is best shown in FIG. 3, wherein it will be seen that the pump extends laterally from the outer edge of platform 24 so as to provide as much load area upon the platform as possible.

Pump 112 is actuated by an appropriate power-pack 116 which, preferably, is self-contained, such as either an electric motor driven by a heavy-duty type storage battery contained within the pack 116, or a gasoline engine and necessary equipment to actuate the same, including a tank for fuel. Preferably, a safety clutch 118 extends between the drive shaft of the power-pack 116 and the pump 112. An appropriate clutch, not shown in detail, may be actuated by a control lever 120, the clutch preferably being two-way so as to enable the pump 112 to be driven in opposite directions respectively to provide pressure to the conduits 108 or 110, selectively, thereby enabling an operator to raise or lower the platform 24 simply through the desired manipulation of control lever 120.

The power-pack 116 also is supported by an appropriate bracket 122, best shown in FIG. 3. For purposes of minimizing space upon the deck of platform 24, the bracket 122 may comprise a vertical plate extending a predetermined distance above the deck of platform 24, and then having an appropriate lateral extension which supports the power-pack 116 in an elevated position above the deck of the platform so as to be clear of the wheel 38 when the same is in its inoperative, elevated position, as shown in FIG. 2. To illustrate this, the power-pack 116 and pump 112 are shown in phantom in this figure to afford an exemplary illustration of the relative vertical positions of the power mechanism and wheel 38. Thus, by disposing all elements of the power unit laterally outward from one edge of the platform 24, no useful load-occupying space of the platform is monopolized by the power mechanism.

From the foregoing, it will be seen that the portable lift comprising the present invention provides relatively simple mechanism by which a load-bearing platform of useful and of relatively heavy-duty nature may be elevated useful distances above a supporting surface, such as a factory or warehouse floor, roadway, or the like, for purposes of facilitating the movement of freight and various objects capable of being loaded onto the platform, either while contained upon hand or power operated loading trucks, or the like, so that the items upon the platform readily may be moved onto or removed from the floors or beds of trucks, loading decks or platforms of terminals, or supporting floor surfaces, such as the floors of shops, warehouses or factories, and the like. Wide versatility is afforded such operations through the use of portable lifts embodying the principles of the present invention.

The provision of loading and unloading ramp plates on at least one side and opposite ends of the vertically movable platform also render the portable lift highly versatile and utilitarian for both loading and unloading

purposes. The provision of very simple but highly effective wheel means to enable the ready and balanced movement of the lift to desired locations, as well as permitting the lift to be turned up to 360° or more within its own length likewise enhance the very extensive versatility of the lift, coupled with the power means for rendering the lift either mobile or stationary, as desired.

A further useful aspect comprises the removability of one of the wheels for the base of the lift out of the path of movement of a ramp plate, movably supported by an adjacent side of the platform, to minimize the height which the deck of the vertically movable platform must be disposed above a supporting surface, such as a floor, roadway, or the like, whereby steep slopes are avoided in positioning all of the ramp plates relative to the platform and a supporting surface which is engaged by the outer ends of the ramp plates when disposed in operative position.

While the invention has been described and illustrated in its several preferred embodiments, it should be understood that the invention is not to be limited to the precise details herein illustrated and described, since the same may be carried out in other ways falling within the scope of the invention as claimed.

I claim:

1. A portable lift adapted to aid in loading trucks, docks and the like and comprising in combination a frame having a base arranged to be supported upon the ground or the like and provided with vertical guide means supported thereby, a normally horizontal load-carrying platform carried by said frame for guided movement vertically to desired elevations above said base thereof, power means operable to move said platform as aforesaid, a pair of wheels rotatably carried by said base of said frame respectively at opposite sides thereof intermediately of the ends of said sides, and positioning means movably supported by said base, said wheels being rotatably supported by said positioning means and said positioning means being actuated by limited movement of said platform relative to said base to effect movement of said wheels vertically to and from supporting positions in which the peripheries of said wheels are below the bottom surface of the base of said frame and constitute the sole mobile supporting means for said frame and platform thereon, thereby rendering the same portable for movement along a supporting surface to position the portable elevator where desired, such arrangement of wheel means relative to said base of said frame permitting the turning of said frame within the limits of its own length incident to positioning the lift as desired and also leaving the opposite end of said frame and platform freely accessible for loading and unloading either when the platform is in its lowermost position or elevated, whereby said wheel means then may be elevated to cause the base of the frame to rest upon a supporting surface for firm support thereby while elevating loads upon said platform relative to said frame.

2. The portable lift set forth in claim 1 further including levers pivotally supported relative to opposite sides of said base of said frame and said wheels being rotatably carried by said levers, and means on said platform engageable with said levers when said platform is raised from its lowermost position and operable to move said levers in a direction to lower said wheels to a position below the base of said frame.

3. The portable lift set forth in claim 2 further characterized by said wheels being carried by said levers adjacent one end of each and the means on said platform engageable with said levers comprising projecting members movable from retracted to projecting positions and when in the latter position being engageable with the opposite ends of said levers to elevate them and cause lowering of said wheels when said platform is elevated.

4. A portable lift adapted to aid in loading trucks, docks and the like and comprising in combination a frame

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having a base arranged to be supported upon the ground or the like and provided with vertical guide means supported thereby, a normally horizontal load-carrying platform carried by said frame for guided movement vertically to desired elevations above said base thereof, power means operable to move said platform as aforesaid, wheels mounted respectively on opposite sides of said base of said frame intermediately of the ends thereof, means supporting said wheels for movement to and from positions below said base and arranged to portably support said frame and platform for movement along a supporting surface when said wheels are disposed below said base so as to position the elevator where desired, a ramp member movably carried by one side of said platform for projection into engagement with such supporting surface to facilitate loading and unloading said platform when the same is in its lowered position relative to said frame, said ramp means being directly adjacent one of said wheels mounted upon said base of said frame and normally being incapable of such projection when said wheel is elevated to permit the base of said frame to rest upon such supporting surface, means associated with said supporting means for said one of said wheels and operable to permit said wheel and its supporting means to be moved away from the path of movement of said ramp member sufficiently to permit said ramp member to engage said supporting surface when said platform is in the lowermost position thereof and thereby permit said ramp member to be extended as aforesaid, and another ramp member movable relative to one end of said platform and projectable onto a supporting surface to facilitate loading and unloading said platform.

5. The portable lift set forth in claim 4 further characterized by said last-mentioned means comprising a member movable relative to said base of said frame in a direction to move said one wheel clear of the path of movement of said first-mentioned ramp member.

6. The portable lift set forth in claim 4 further characterized by said last-mentioned means comprising an elongated member pivoted at one end to one side of the base of said frame near one end thereof and said one wheel being supported by said member adjacent the

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other end thereof, said other end being pivotally movable upward to dispose said wheel thereon out of the path of movement of said first-mentioned ramp member.

7. The portable lift set forth in claim 6 further characterized by said means supporting said wheels comprising levers pivotally interconnected respectively to the opposite side of the base of said frame and each lever having means thereon supporting one of said wheels rotatably, one of said levers being directly pivotally connected to said elongated member and movable therewith when said member is moved pivotally upward.

8. The portable lift set forth in claim 4 further including power means carried by said platform adjacent the side thereof opposite that which movably carries said first-mentioned ramp member and spaced above said platform over the wheel interconnected to the corresponding side of the base of said frame to provide clearance of said wheel when in its elevated position to permit the base of said frame to rest upon said supporting surface.

9. The portable lift set forth in claim 4 further including power means mounted upon said platform for movement therewith, hoisting cables extending between said platform and vertical guide means, and fluid-operated piston and cylinder means carried by said platform beneath the deck thereof and interconnected to said hoisting cables for operation thereof to raise and lower said platform relative to the base of said frame.

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