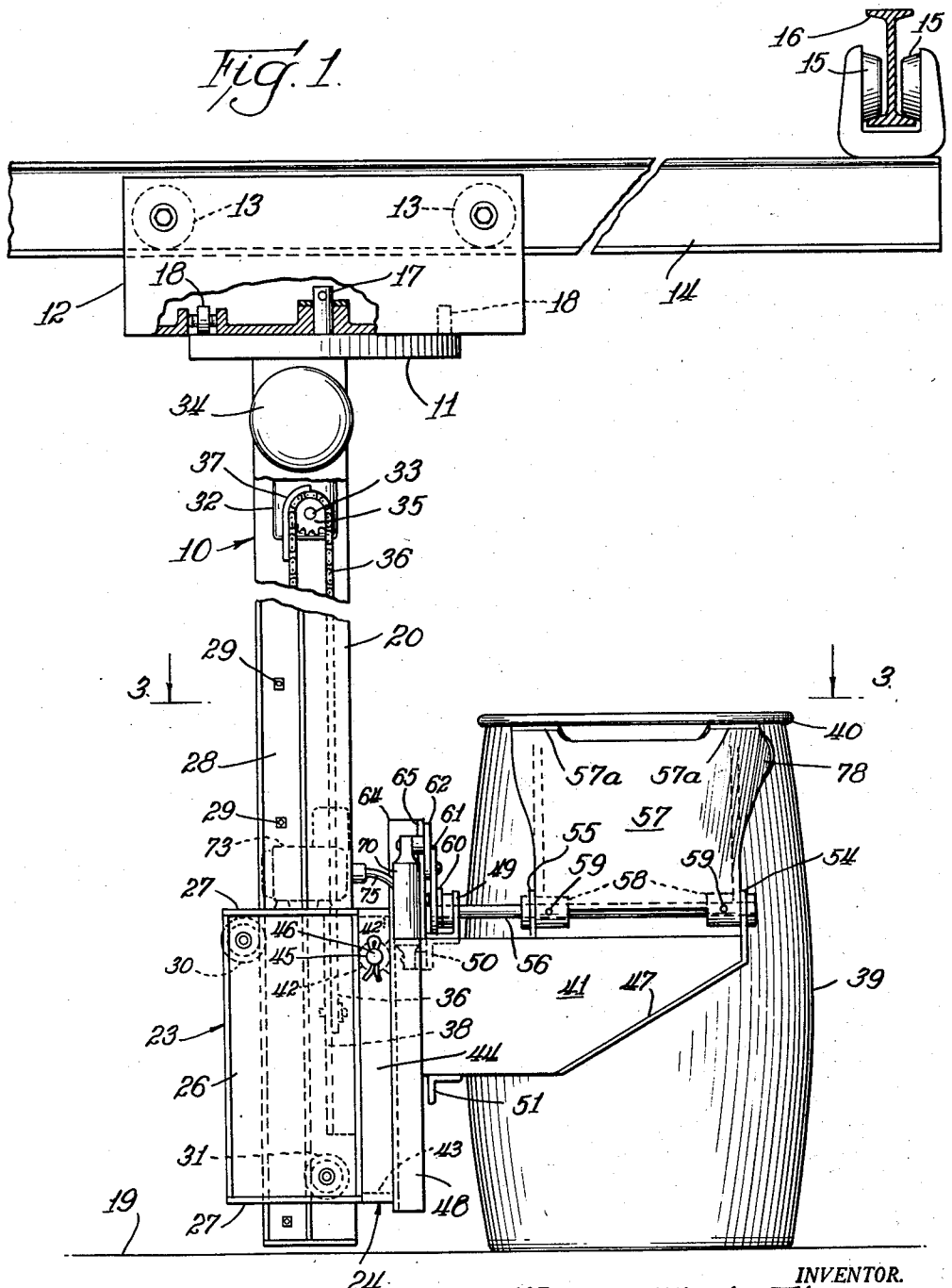
Aug. 19, 1958 H. W. THOMPSON 2,848,128

RIM LIFT HOIST FOR BARRELS

Filed Feb. 20, 1956 3 Sheets-Sheet 1

Fig. 1.



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RIM LIFT HOIST FOR BARRELS

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Fig. 2.

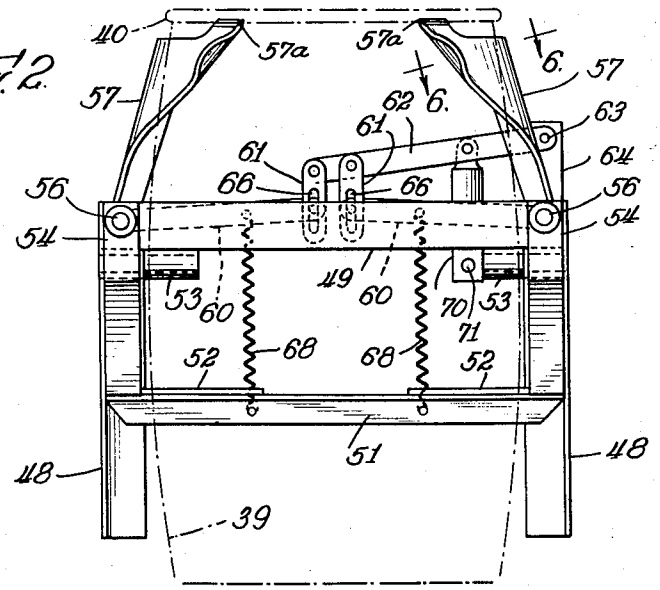
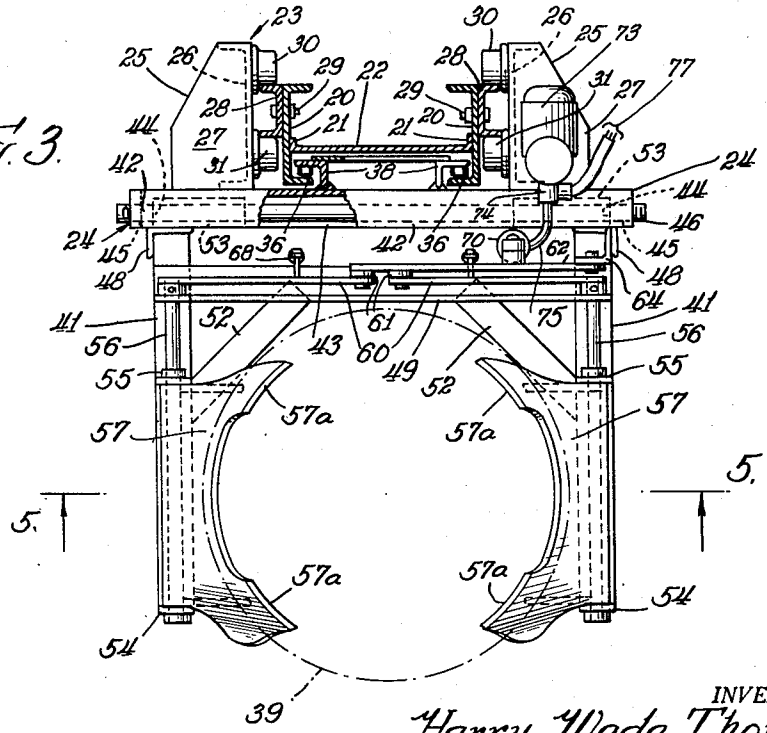


Fig. 3.



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Fig. 4.

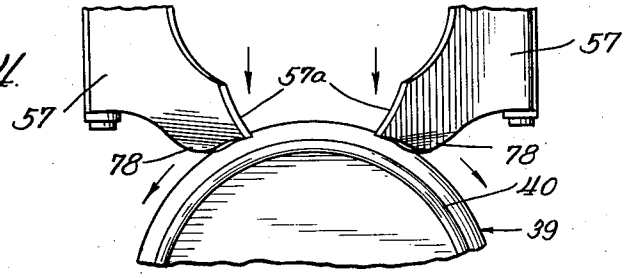
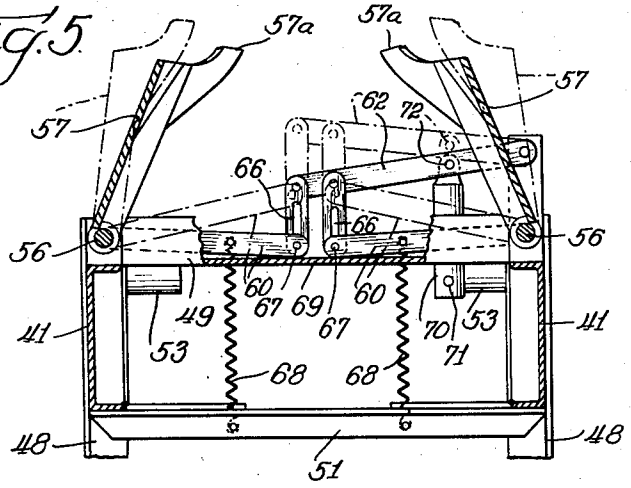


Fig. 5.



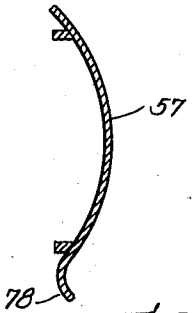
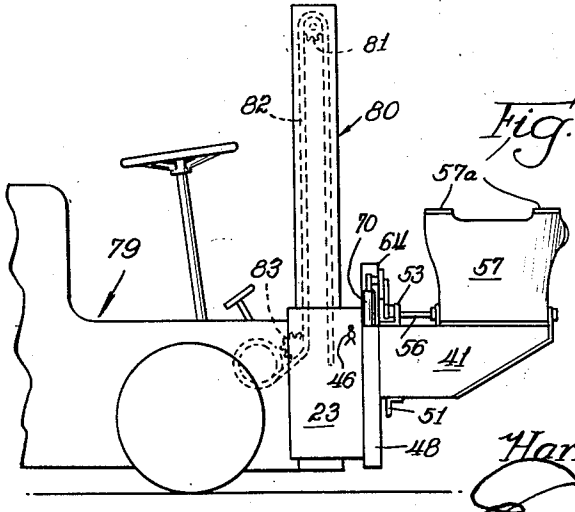


Fig. 6.

Fig. 7.



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2,848,128

RIM LIFT HOIST FOR BARRELS

Harry Wade Thompson, Chicago, Ill., assignor to Chicago-Tramrail Corporation, Chicago, Ill., a corporation of Illinois

Application February 20, 1956, Serial No. 566,422

5 Claims. (Cl. 214—653)

This invention relates to devices for lifting and carrying containers such as barrels, drums and the like which have an annular rim or downwardly presented shoulder therearound, and has reference more particularly to facilities for lifting and carrying such containers by the rim or annular shoulder thereof.

Such containers usually occupy an upright position in transportation, storage and use thereof, and especially when filled, and it is quite desirable to lift and carry them from place to place in this upright position so that they can be picked up and deposited in this upright position without necessitating any change of position or extra handling which has been required heretofore in lifting and carrying such containers.

The principal objects of the present invention are to provide improved equipment for picking up and carrying containers of the barrel or drum type; to lift and carry such containers by the rim or annular shoulder with which they are usually provided at or near the top thereof; to locate the lifting facilities at the sides of the container between the top and bottom thereof; to utilize a fork type lifter which straddles the container and is movable sidewardly to and from the container lifting position; to provide container rim or shoulder engaging facilities which are conveniently retractable to receive the container therebetween and which positively engage the rim or annular shoulder of the container for safe lifting thereof and uniformly support the container at suitable intervals therearound to maintain the container in upright position, these and other objects being accomplished as pointed out more particularly hereinafter and as shown in the accompanying drawings, in which:

Fig. 1 is a side view of a hoisting device provided with lifting and carrying facilities in accordance with this invention and showing a barrel or drum in position for lifting thereof;

Fig. 2 is a front view of the container straddling and container rim engaging facilities of Fig. 1 with the container shown in broken lines;

Fig. 3 is a top view of the structure shown in Fig. 2 and showing the connection thereof to the hoist mast which is shown in section on the line 3—3 of Fig. 1;

Fig. 4 is a top detail view showing portions of the container rim engaging members with the container at the place of entrance thereto and removal therefrom;

Fig. 5 is a sectional view taken substantially on the line 5—5 of Fig. 3 and showing the facilities for retracting the container rim engaging members;

Fig. 6 is a sectional view through the top of one of the container rim engaging members taken on the line 6—6 of Fig. 2; and

Fig. 7 is a partial view of another form of hoist with the container lifting and carrying facilities of the present invention applied thereto.

The container lifting facilities of this invention are applicable to any form of equipment for carrying the container from place to place, a suspended traveling crane supported hoist adaptation of the invention being shown

in Fig. 1 wherein the crane is of conventional traveling type and has a hoist generally similar to commonly used hoists of fork lift type rotatably suspended from the crane and comprising a mast, indicated as a whole at 10, which is secured at its upper end to and extends vertically downward from a turntable 11 which is rotatably carried by a crane trolley 12 having wheeled engagement at 13 with a bridge or beam 14 which is in turn supported at its opposite ends by wheels 15 on overhead runways 16, only one end support of the bridge or beam 14 being shown, as both end supports are alike and the construction of such cranes is well known.

The turntable 11 is centrally pivoted to the bottom of the trolley 12 as indicated at 17 to rotate on a vertical axis and anti-friction means such as wheels 18 may be provided on the trolley at intervals around the turntable within and near the periphery thereof to facilitate turning movement of the turntable. The mast 10 extends downwardly to a place near to the floor, which is indicated by the reference numeral 19 in Fig. 1, but terminates at a sufficient distance thereabove for free movement of the mast throughout the area of the floor.

Thus the mast 10 is freely turnable about the vertical axis of the pivot 17 and is movable from place to place within the area serviced by the crane in the permissible movements of the crane trolley 12 from end to end of the bridge or beam 14 and the movement of the bridge or beam 14 from end to end of the runways 16 of the crane.

The mast 10 as shown herein is composed of two channel irons (see Fig. 3) which are rigidly secured together, as for example by welding and at corresponding places intermediate of their width to the opposite lateral edge flanges 21 of an intervening web 22 so that the channel irons 20 are fixedly spaced part in parallel relation with their flanges facing inwardly as shown in Fig. 3, and each angle iron is securely connected at its upper end to the turntable 11 to be positively held by the turntable in vertical position.

This mast 10 serves as a guideway for a carriage 23 which is movable vertically therealong and has a rectangular front plate or work support mounting at the front thereof, and indicated as a whole at 24, and provided with two laterally spaced corresponding vertically elongated brackets 25 projecting from the rear thereof between which the mast 10 is interposed.

Each bracket 25 may be conveniently made of a length of wide channel iron as indicated at 26 with end plates 27 secured to the upper and lower ends respectively of each, and each bracket 25 is spaced from the respective mast channel iron 20 to accommodate therebetween a small channel iron 28 which is secured to the outer face of the respective mast channel iron 20, as for example by bolts 29 and extends from end to end thereof to serve as a guide for the carriage 23.

Each bracket 25 has a pair of rollers 30 and 31 thereon located respectively near the upper and lower ends thereof and flanged at their outer sides, as shown in Fig. 3, the upper ones 30 of which engage the front faces respectively of the channel iron guides 28 and the lower ones 31 of which engage the rear faces of said guides 28 to facilitate movement of the carriage 23 vertically along the mast 10, and this carriage is suspended from hoisting mechanism by which it is operable vertically along the mast.

This hoisting mechanism may be of any desired construction, that shown herein being similar to that of Claud C. Riemenschneider application Serial No. 190,800 and comprises a vertically elongated gear case 32 interposed between the side channels 20 of the mast and having a shaft 33 extending horizontally therethrough at its lower end, the said shaft being operable by a

reversible motor 34 through a reduction gearing in the gear case 32.

The shaft 33, which extends between the channels 20 of the mast in a plane paralleling the web 22, has a pair of sprockets 35 thereon, each of which has a separate length of sprocket chain 36 trained thereover and maintained in operating engagement therewith by an overlying curved guard 37.

The portions of the chains 36 depending respectively from the sprockets 35 at the front thereof are of equal length and extend downwardly in front of the web 22, as shown in Fig. 3, and at their lower ends are secured to a bracket structure 38 which is rigidly secured to and projects from the rear of the carriage front plate 24, and the other end portions of the chains 36 hang loosely at the rear of the sprockets 35.

Thus by operating the motor 34 in the reverse directions the carriage 23 is movable along the mast to lift or lower the load carried by the carriage 23.

For lifting and carrying containers such as barrels, drums, and the like which have an annular rim or downwardly presented shoulder therearound, as for example a barrel such as shown at 39 in Fig. 1 having an annular rim 40 around the top, the front plate 24 of the carriage 23 has a fork like structure projecting forwardly therefrom and comprising two side arms 41 which are spaced apart a suitable distance to accommodate the barrels, drums or other containers therebetween.

These side arms 41 may be of any desired construction and combined with the front plate 24 in any desired manner, but are preferably part of a composite fork structure which is readily attachable to and detachable from the carriage to permit conversion of the lifting and carrying equipment for lifting and carrying other loads by removal of the barrel or drum handling facilities and substitution of handling facilities suitable for such other loads.

The front plate 24 of the carriage is provided with a forwardly projecting reinforcing rim therearound, the top and bottom portions of which are indicated at 42 and 43 respectively in Fig. 3, and with upright rim portions 44 at the opposite ends of the plate 24 and extending between the opposite ends respectively of the top and bottom rim portions 42 and 43. These upright rim portions 44 which are sufficiently heavy for the purpose, are correspondingly provided near their upper ends with aligned bearing openings 45 therethrough to accommodate a shaft 46 for detachably securing the composite fork structure (or any other desired load handling facilities) to the carriage 23.

The fork arms 41 of the composite fork structure hereof may be of any desired construction but are shown herein as lengths of relatively wide channel iron with their outer ends beveled at the underside, as indicated at 47, and each fork arm 41 is secured at the rear end to an upright angle iron 48, and immediately ahead of the upright angle irons the fork arms 41 are connected to one another in parallel spaced apart relation by a top pair of angle irons 49 and 50 and a bottom angle iron 51, all of these parts being preferably secured to one another by welding, and the fork arms are connected at the bottom to the bottom angle iron 51 by braces 52. Each upright angle iron 48 has a bearing 53 secured thereto through which the shaft 46 extends to secure the fork structure to the carriage front plate or mounting plate 24 and the angle irons 48 extend downwardly below the bottom portion 43 of the mounting plate 24 and bear against the respective upright rim portions 44 to hold the fork arms 41 horizontally.

Each fork arm 41 has a pair of spaced bearing brackets 54 and 55 thereon and projecting upwardly therefrom and having aligned bearing openings for a shaft 56, and each shaft 56 has fixed thereon between the bearings 54 and 55 a wide wing member 57 which projects upwardly therefrom and is contoured at its upper end on a suitable curvature, as shown in Fig. 6, to correspond substantially to the curvature of a conventional barrel or drum, each wing member being widely and shallowly forked at the upper end to provide a pair of widely spaced ledges 57a which are spaced apart and positioned to engage under the rim 40 of a barrel or drum and thereby provide four place support for the barrel underneath the rim 40 at such intervals therearound that a barrel supported thereon will be securely held in upright position. The wings 57 may be secured to the shafts 56 in any convenient manner, each being shown herein with a pair of spaced apart hubs 58 at the lower end thereof through which the respective shaft 56 extends and with pins 59 extending through the hubs 58 and shaft 56 to lock the wings on the shafts to turn therewith.

The fork members 41 are spaced apart not only to accommodate barrels 39 freely therebetween but also to locate the mounting places of the wings 57 sufficiently far apart so that the wings 57 slope inwardly, as shown in Fig. 2, to engage under the barrel rim 40, and thus are held securely in engagement with the barrel by the weight of the barrel thereon.

Each shaft 56 extends rearwardly through a respective bearing opening in the upright flange of the angle iron 49 and at the rear of said flange has a lever arm 60 secured thereto which extends inwardly toward and terminates in close proximity to the other lever arm 60, as shown in Fig. 5, and each arm 60 is connected at its inner end by a separate link 61 to the outer end of an operating lever 62 which is pivoted at its outer end at 63 to the upper end of a short upright length 64 of angle iron which is secured at its lower end to the upper end of the angle iron 48 at that side of the fork assembly in a quarter turn position with respect to said angle iron 48 so that the short angle iron 64 has a flange 65 thereof at the front for pivoted connection of the operating lever 62 thereto.

Each lever arm 60 has a lost motion connection with its respective link 61, each link 61 having a long slot 66 for this purpose in which the pivot pin 67 of the respective arm 60 is engaged for connection thereof with the link so that the pivot pin 67 is movable from end to end of the slot 66 and the inner end of each arm 60 thus movable independently of the link 61 by which it is connected to the operating arm 62.

Each lever arm 60 has a separate spring 68 connected thereto and extending downwardly and connected to the angle iron 51 to exert a tension on the respective lever arm 60 to hold it at the lower end of its respective slot 66 with the inner end thereof bearing against the horizontal flange 69 of the angle iron 49 as shown by the full lines in Fig. 5, so that the horizontal flange 69 serves as a stop for said lever arms 60, and the lever arms 60 are oriented on their respective shafts 56 in such relation with their respective wing members that when the inner ends of the lever arms 60 are in lowermost position bearing against the horizontal flange 69 of the angle iron 49, the wings 57 are swung inwardly each to an equal extent and with their upper ends separated a distance less than that required to accommodate therebetween barrels or containers which are to be lifted and carried thereby.

Thus when a barrel or container is interposed in lifting position between the lifting wings 57, the inner ends of the lever arms 60 are necessarily raised to some extent above the horizontal flange 69 of the angle iron 49, the lost motion connection of the arms 60 with the links 61 permitting such raising thereof, and the springs 68 then are free to exert tension on the wings 57 to hold them firmly engaged with the barrel or container interposed therebetween.

The lever 62 is operable by the operator to lift the inner ends of the lever arms 60 conjointly to swing the wings 57 outwardly, for example to the broken line position shown in Fig. 5, to receive a barrel or container therebetween for lifting or to release a barrel or con-

tainer therefrom and said lever **63** may have facilities for manual operation for this purpose or it may be operable in any other desired manner.

Preferably, however, it is power operated and for this purpose I have provided a hydraulic jack **70** which is pivoted to the angle iron **49** at **71** (see Fig. 5) and has a piston or plunger which is connected at the upper end of the jack to the operating lever **62** by a pivot pin **72** to raise and lower the lever **62** and operate the wings **57**.

For operating the jack **70** any conventional hydraulic supply and control facilities may be employed, such as a conventional combination pump and motor unit **73** having a liquid reservoir from which liquid is pumped into a pressure chamber and maintained therein at a jack operating pressure and wherein a conventional three position valve **74** is provided which is connected by a hose **75** with the jack **70** and has one position in which liquid is supplied under pressure from the pressure chamber of the unit **73** to operate the jack **70** to lift the operating lever **62**, and has a second position to hold the jack and lever **62** in any position of operation thereof, and has a third position to relieve the pressure in the jack **70** and permit return of the liquid therefrom to the reservoir of the unit **73**, this valve **74** being preferably operated by a solenoid **76** with flexible leads **77** therefrom to a conventional three position valve control switch which may be located at any convenient place for operator control.

The wings **57** may be engaged with the barrel or container **39** in various ways for lifting thereof and, for engagement therewith by movement of the fork arms **41** horizontally to the barrel or container straddling position, each wing **57** is provided at the extremity thereof remote from the carriage **26** and near the upper end with an outwardly directed extension **78** each of which is curved or inclined outwardly in a direction opposite to that of the corresponding extension **78** of the other wing member **57** so that conjointly these outwardly directed extensions **78** provide a flared entrance to the space between the upper ends of the wings **57**.

In the operation of the above described equipment the hoist is moved to the place where the barrel or container to be lifted is located by operating the bridge **14** along the runways **16** and the trolley **12** along the bridge **14** and the fork arm **41** are adjusted to the desired elevation by operation of the hoist motor **34** in the appropriate direction, and if the barrel or container **39** is maintained in a substantial manner in an upright position, as for example when it is filled with a sufficiently heavy load, the wings **57** may be automatically engaged therewith for lifting by mere movement of the fork arms **57** sidewise to straddle the barrel or container.

In such case the hoist is moved along the beam or along the runway or by movement along both to a position at one side of the barrel or container **39** and the mast **10** is turned on its pivot **17** so that the fork arms **41** project toward the barrel or container **39** in a position to straddle the barrel or container. Then the carriage **23** having been adjusted along the mast **10** to a sufficiently low position so that the upper extremities of the wings **57** are some distance below the rim **40** around the top of the barrel or container **39**, the hoist is moved, either by operation of the trolley **12** or movement of the bridge **14** or by movement of both, directly toward the barrel or container so that the fork arms **41** straddle the barrel or container **39** to an extent that the wings **57** are at diametrical opposite sides of the barrel or container, the wings **57** being adapted to separate and receive the barrel or container **39** therebetween, during such movement of the hoist, by reason of the flared portions **78** of the wings which serve at the time as deflectors which engage the curved sides of the barrel or container and swing the wings **57** outwardly to receive the barrel or container therebetween.

As the wings **57** are thus swung outwardly, the inner ends of the lever arms **60** lift upwardly from the flange **69** of the angle iron **49** against the tension of the springs **68**, the pivots **67** thereof moving upwardly in the slots **66** of the links **61** at that time, and thus throughout the application of the wings **57** to the barrel in this manner, the upper ends of the wings **57** are maintained in contact with the barrel.

When the forward extremities of the wings **57** at the location of the outwardly flared portions **78** thereof pass the half way place across the barrel in the direction of straddling movement of the fork arms **41** and wings **57** the said forward extremities of the wings are caused to follow the then receding contour of the barrel until the barrel is at a central position, shown by broken lines at 39 in Fig. 3, between the ledges **57*a*** of each wing member 57, and in this position the wings **57**, by reason of their concavo-convex form of Fig. 6 will have closed against the opposite sides of the barrel under the tension of the springs **68** so that the spaced apart ledges **57*a*** of the wings bear firmly against the barrel and as explained above, these ledges are shaped to correspond to the cross sectional contour of the barrel at the places where they engage therewith.

As above explained, before this operation of straddling the barrel takes place, the carriage **23** was adjusted along the mast so that the upper ends or ledges **57*a*** of the wings **57** are some distance below the annular rim **40** around the upper end of the barrel **39** and accordingly when the barrel has been straddled in this explained operation the ledges **57*a*** are engaged against the sides of the barrel at a distance below the barrel rim **40**.

Then after the barrel **39** has been thus straddled by the fork arms **41** and the wings **57**, the hoist is operated to lift the carriage **23** and the fork arms **41** attached thereto, whereupon the wing ledges **57*a*** slide upwardly along the sides of the barrel to close the distance at which they are positioned below the rim **40** and engage the underside of the barrel rim **40**, the springs **68** serving at that time to hold the ledges **57*a*** firmly against the sides of the barrel, and thereupon further elevation of the carriage **23** and fork arms **41** cause the wings **57**, by the engagement of the ledges **57*a*** thereof with the barrel rim **40**, to lift the barrel off of the floor **19** whereupon it may be transported by operation of the trolley **12** and beam **14** to any place within the area serviced by the traveling crane and deposited in upright position at any elevation within the range of lift for which the hoist is capable.

At the place of deposit the carriage **23** and fork arms **41** are moved downwardly until the barrel **39** rests on the floor **19** or other surface on which its is to be deposited, and thereupon the load is transferred from the ledges **57*a*** to the floor **10** so that the wings **57** are released and free to be withdrawn from the barrel, and if the barrel is then substantially supported so that it is not likely to be tipped thereby, the wings **57** may be withdrawn from the barrel by merely backing the hoist away from the barrel, at which time the inside concavity of the wings **57** provide such inward flaring of the outer halves of the wings **57** that the outer ledges **57*a*** of the two wings **57** ride against the transverse curvature of the barrel walls and deflect the wings **57** outwardly from the barrel against the tension of the springs **68** until the crown portion of the opposite sides of such transverse curvature is reached, whereupon the forward upper ends of the wings then ride down the declining opposite sides of the barrel until the inner ends of the lever arms **60** come to rest upon the flange **69** of the angle iron **49**.

If the barrel **39** which is to be lifted is empty or lightly loaded and is likely to be tipped by engaging the wings **57** therewith, as explained above, the carriage **23** may be elevated to a position so that the wings **57** are at an elevation above the barrel and the hoist moved so that the fork arms are positioned in such relation to the barrel that they may be moved directly downwardly from that

position to the straddling position at the opposite sides of the barrel.

Then, in such case it is merely necessary to lower the carriage **26** and the fork arms **41** to a sufficiently low position wherein the upper ends of the wings **57** are below the rim **40** of the barrel, in which operation the wings **57**, because of their inward inclination, engage the rim **40** of the barrel and are deflected outwardly until the ledges **57***a* of the wings **57** pass the rim **40** to a position thereunder, whereupon the springs **68** cause the ledges **57***a* of the wings to snap inwardly and engage the sides of the barrel underneath the rim **40**, and the barrel is ready to be lifted as explained above by operating the hoist to lift the carriage **26** and the fork arms **41**.

When such barrel has been lifted and transferred to the place of deposit thereof it is lowered to a position in which it rests upon the floor **19** or other supporting surface and is then released by operating the valve **74** to cause the jack **70** to lift and hold the operating lever **62** in an elevated position in which the wings **57**, through their connections **56**, **60** and **61** with the lever **62** are swung outwardly from the barrel and held in such outwardly swung position, whereupon the hoist is either backed away from the barrel or the carriage **26** and fork arms **41** lifted to an elevation above the barrel so that the hoist may then be moved away from the deposited barrel without contact therewith.

Obviously the wings **57** may, in any event, be operated solely by the hydraulic mechanism to admit the barrel to the lifting position at the loading place and to release the barrel at the place of deposit thereof, without resort to the automatic separation of the wings **57** by engagement thereof with the barrel as explained above.

Thus when the hoist approaches or reaches the position at the side of or above the barrel to receive the barrel in the lifting position between the fork arms **41**, the valve **74** is operated to retract the wings **57** and hold them in the retracted position.

Then the fork is moved either sidewise or downwardly as the case may be, so that the arms **41** thereof straddle the barrel with the ledges **57***a* of the already retracted wings **57** located at an elevation below the barrel rim **40**, whereupon the valve **74** is then operated to release the retracted wings **57** and permit the springs **68** to swing the wings **57** inwardly so that the ledges **57***a* thereof engage the barrel underneath the rim **40** thereof.

Then the barrel may be lifted and carried to a new location in the same manner as previously explained and deposited at the new location, and at this new location the valve **74** is operated to retract and hold the wings **57** and their ledges **57***a* away from the barrel until the fork **41** is moved away from the barrel. Obviously, if the hoist is to be returned to pick up and carry another barrel, the wings when thus retracted at the place of barrel deposit may be retained in the retracted position until the hoist is positioned to pick up another barrel and the valve **74** then operated to release the wings from the position to which they were retracted in deposit of the preceding barrel.

Any form of lifting and transporting equipment may be employed with the present invention, as for example, a fork lift truck such as indicated at **79** in Fig. 7 which has the barrel engaging and lifting facilities at the front end thereof, such truck application being advantageous, for example, when the barrels are to be loaded in or removed from freight cars or in other places where overhead support of the hoist is not desirable or is impracticable.

In this embodiment of Fig. 7 the mast **80** is of the same construction as the mast **10** of the previously described construction, but it is secured at its lower end to the front of the truck **79** and the two chains of the hoist are passed around idler sprockets **81** at the upper end of the mast and have the rear length **82** then extended down to and engaged with sprockets **83** at the front end of the truck **79** which are power operable under the control of the truck operator to raise and lower the barrel lifting facilities, which are the same as those previously described herein and have the same reference numerals applied thereto as in the previously described traveling crane supported embodiment of the invention.

It is to be noted that in accordance with the invention hereof, the lifting facilities for the opposite sides of the barrel or container may be located entirely between the upper and lower ends of the barrel or conainer supported thereon so that there is no obstruction either at the top of the barrel or at the bottom thereof, and that the barrel or container may be lifted directly from its position on the floor without tipping or any other manipulation of the barrel or container preparatory to lifting thereof or to engage the lifting facilities therewith, and that all operations are preformed mechanically under the control of the operator, and the barrel or container is maintained at all times in the same upright position and that the barrel engaging facilities are held in the barrel supporting position by the weight of the barrel or container and its contents and safe lifting and carrying of the barrel or container thus assured.

While I have shown and described my invention in a preferred form, I am aware that various changes and modifications may be made therein without departing from the principles of the invention, the scope of which is to be determined by the appended claims.

What is claimed is:

1. A device for lifting an upright positioned barrel type container with external annular shoulder thereabout, the said device comprising a hoist having a work holder which is liftable by the operation of the hoist and has opposed work engaging rocker members between which such upright container is receivable in an interposed position between said rocker members and by which such interposed container is peripherally grippable for lifting thereof by the work holder, each said rocker member being individually pivoted at its lower end and extended upwardly therefrom to swing inwardly above the pivot toward the other rocker member and lean against such aforesaid interposed barrel like container in upwardly and inwardly pushing relation thereagainst, the said rocker members being yieldingly impelled to swing inwardly toward one another and provided at their upper extremities with upwardly facing seats arranged to engage and push upwardly against the underside of the external annular shoulder of such interposed barrel like container in the aforesaid lifting operation of the hoist and said rocker members being connected to common operating means by which they are conjointly swingable away from one another against the force by which they are yieldingly impelled to swing toward one another as aforesaid.

2. A device in accordance with claim 1 wherein the said common operating means thereof includes a loose connection thereof with said rocker members permitting a substantial extent of swinging movement of each rocker member away from the other rocker member independently of said common operating means.

3. A device for lifting an upright positioned barrel type container with external annular shoulder thereabout, the said device comprising a portable hoist, having a work holder which is liftable by the operation of the hoist and of fork type open at one end and closed at the other end with two arms projecting from the closed end thereof to the open end thereof and spaced apart to accommodate such barrel type container therebetween in upright position, each said arm having mounted thereon a work engaging rocker member pivoted at its lower end to its respective arm on a pivotal axis extending lengthwise of the respective arm and each rocker arm extending upwardly from its said pivotal axis to swing inwardly above its pivotal axis toward the

other said rocker member to lean against such aforesaid interposed barrel like container in upwardly and inwardly pushing relation thereagainst, the said rocker members being yieldingly impelled to swing inwardly toward one another and provided at their upper extremities with upwardly facing seats arranged to engage and push upwardly against the underside of the external annular shoulder of such interposed barrel like container in the aforesaid lifting operation of the hoist and said rocker members being connected to common operating means by which they are conjointly swingable away from one another against the force by which they are yieldingly impelled to swing toward one another as aforesaid, the said common operating means being located at the closed end of the fork type work holder.

4. A device for lifting an upright positioned barrel type container, the said device comprising a hoist having a work holder which is liftable by the operation of the hoist and has opposed work engaging members between which such upright container is receivable and by which said container is peripherally grippable for lifting thereof by the work holder, the said opposed work engaging members being retractable to receive such upright container therebetween in an interposed position for peripheral gripping of the upright container by said members and lifting of the upright container by the work holder, the said opposed work engaging members having a bottom entrance through which such upright container is receivable vertically to said interposed position and said opposed work engaging members having a side entrance through which such upright container is receivable horizontally to said interposed position and said opposed work engaging members being retractable as aforesaid by relative entering movement of such upright container vertically through said bottom entrance and by relative entering movement of such upright container horizontally through said side entrance.

5. A device in accordance with claim 4 wherein the said work engaging members thereof are provided at opposite sides of said entrances with portions flaring outwardly in a direction reverse to the respective direction of entrance of the container therethrough and engageable by the entering container to retract said work engaging members by said relative entering movement of said upright container through said entrances.

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