Dec. 28, 1954 J. F. E. ERICSON 2,698,107

DRUM HANDLING ATTACHMENT FOR MATERIAL HANDLING TRUCKS

Filed May 15, 1952 3 Sheets-Sheet 1

Fig. 1

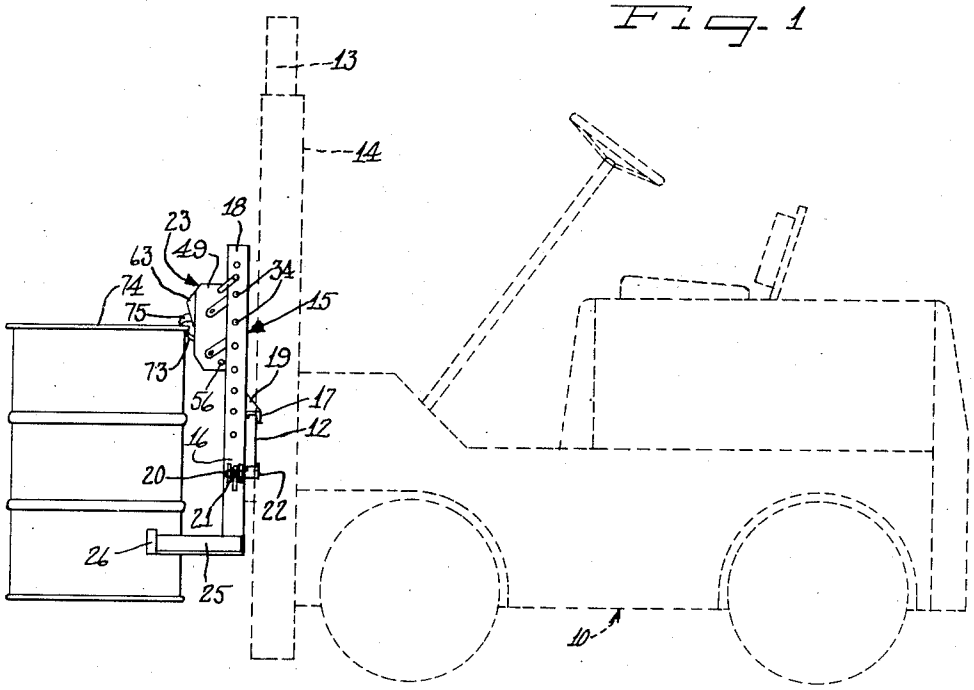
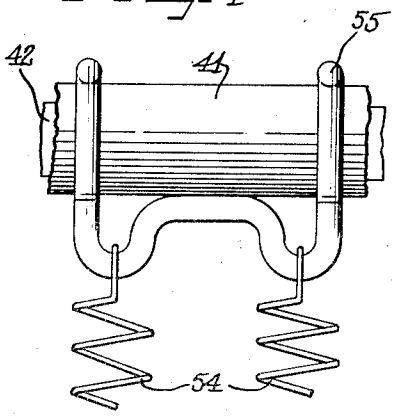


Fig. 4



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DRUM HANDLING ATTACHMENT FOR MATERIAL HANDLING TRUCKS

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Fig. 3

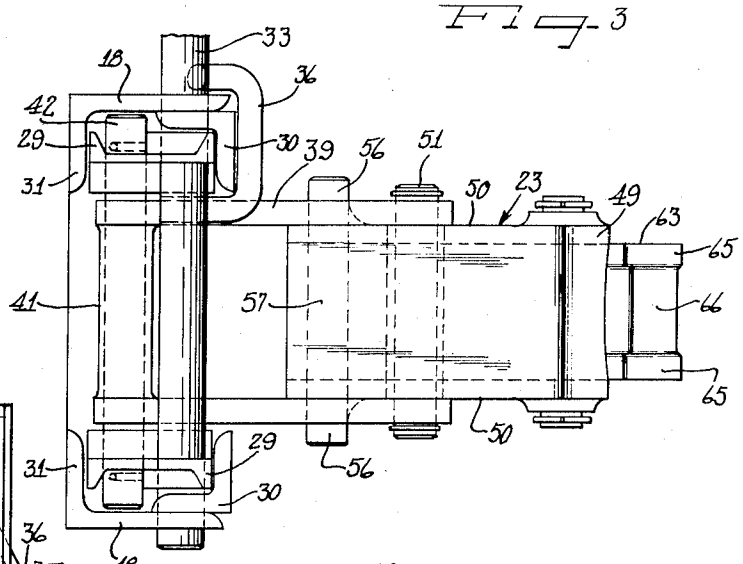
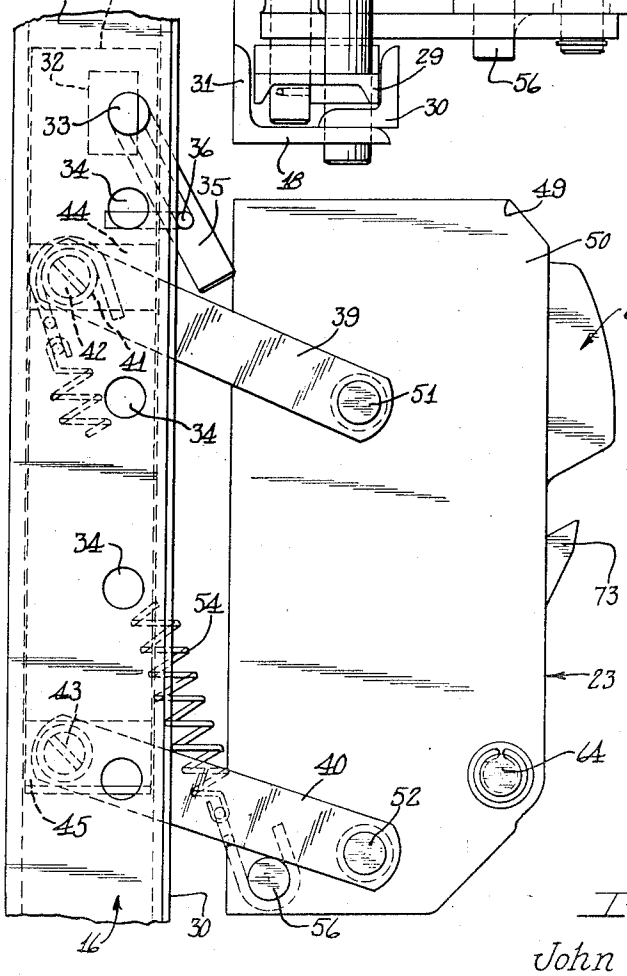


Fig. 2



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DRUM HANDLING ATTACHMENT FOR MATERIAL HANDLING TRUCKS

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Fig. 5

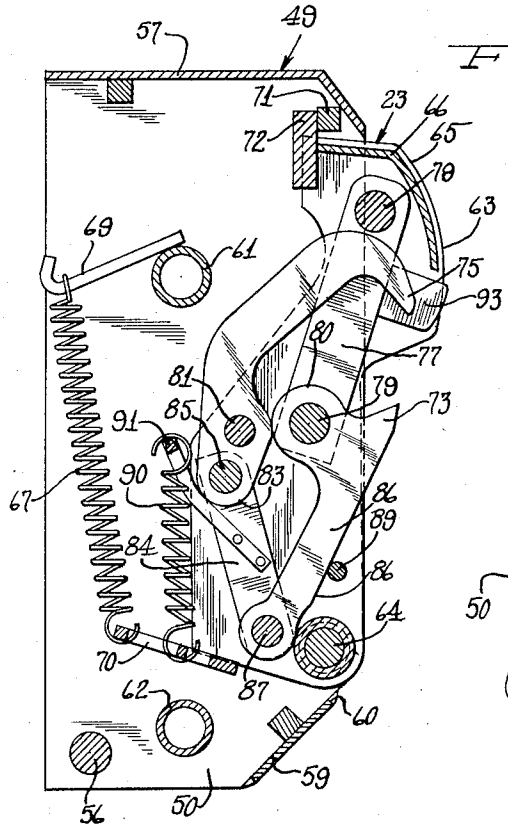
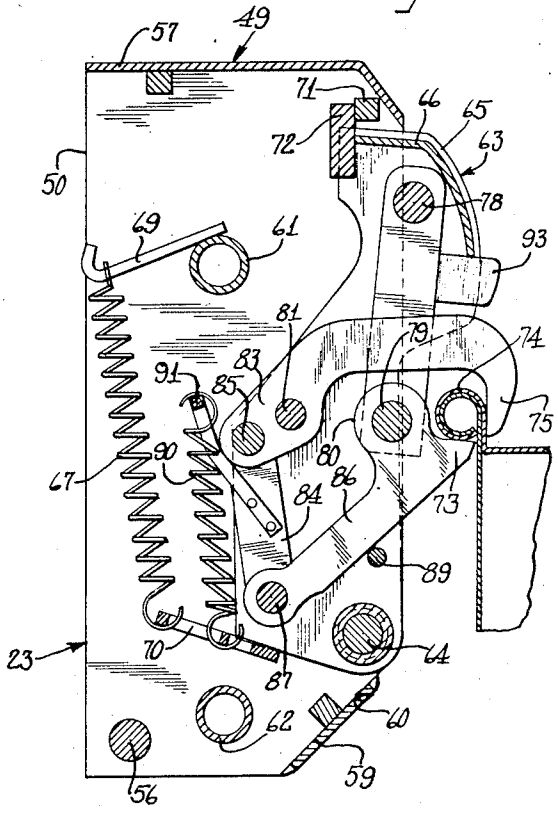


Fig. 6



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2,698,107

DRUM HANDLING ATTACHMENT FOR MATERIAL HANDLING TRUCKS

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Application May 15, 1952, Serial No. 287,983

13 Claims. (Cl. 214—653)

This invention relates to improvements in handling attachments for drums, barrels and the like and more particularly relates to such a handling attachment adapted for lifting, transporting and stacking drums, barrels and the like.

A principal object of my invention is to provide a novel and improved form of gripping and lifting attachment for handling drums, barrels and the like in a simple and expeditious manner.

Another object of my invention is to provide a drum handling attachment for material handling trucks of the industrial type for automatically gripping and releasing drums, barrels and the like to lift, stack and transport the same in a more efficient manner than formerly.

Another and more detailed object of my invention is to provide an efficient form of gripping jaw arrangement for attachment to a lifting truck so arranged as to readily be adapted to drums or barrels of various heights and automatically adapting itself to drums or barrels of similar heights and coming into gripping engagement with the drum or barrel upon vertical movement of the gripping jaws with respect to the drum.

Still another and more detailed object of my invention is to provide an efficient form of drum-lifting device for attachment to the vertically lifting element of an industrial truck having a cradle engageable with the side wall of the drum and two jaws, one of which is engageable with the underside of the bead of the drum and the other of which is engageable with the inside of the bead of the drum upon vertical lifting movement of the lifting device, to lift the drum for transportation or stacking.

Still another object of my invention is to provide a drum handling attachment for material handling trucks of the industrial type in which a frame is adapted to be attached to the vertical lifting element of the truck, and has a cradle extending therefrom for engagement with the wall of the drum for maintaining the drum in centered relation with respect to the frame and has a lifting jaw casing connected thereto on a linkage connection and is yieldably extended with respect to the casing when out of engagement with the drum, but moves inwardly toward the frame upon lifting movement of the drum, to position the gripping jaws to cooperate with the cradle and lift and lower the drum in a vertical position.

These and other objects of my invention will appear from time to time as the following specification proceeds and with reference to the accompanying drawings, wherein—

Figure 1 is a view in side elevation of a drum handling attachment constructed in accordance with my invention, showing the attachment mounted on the lift bar of an industrial type of lift truck and as supporting a drum in vertically spaced relation with respect to the ground.

Figure 2 is a fragmentary view in side elevation of the attachment shown in Figure 1;

Figure 3 is a top plan view of the attachment shown in Figure 1;

Figure 4 is a fragmentary detail view showing the connection of the springs from the support frame of the attachment to the casing for the gripping jaws;

Figure 5 is a view in side elevation with the end cover of the casing for the clamping jaws and certain other parts removed and showing the clamping jaws in an open position to engage the bead of a drum; and

Figure 6 is a view somewhat similar to Figure 5, but showing the clamping jaws in clamping engagement with the bead of a drum.

In the embodiment of my invention illustrated in the drawings, I have shown by broken lines in Figure 1, a power operated truck **10** of an industrial type commonly used to transport material from place to place and to lift the same for stacking. The truck **10** is shown for illustrative purposes only, and is no part of my invention except insofar as the attachment of my invention may be attached thereto and lifted thereby to grip the bead of a drum and lift and transport the same, so need not herein be shown or described in detail.

As herein shown, the truck **10** has a bar **12** vertically guided at the forward end thereof and moved vertically, preferably by hydraulic motors (not shown) operatively connected with said bar through slides **13, 13**, guided in inwardly facing guides **14, 14**, in a manner well known to those skilled in the art so not herein shown or described in detail.

The transverse lift bar **12** is adapted to have a supporting frame structure **15** for the drum gripping and lifting device of my invention supported thereon for holding the same in position and lifting the same upon vertical movement of said bar. As herein shown, the frame structure **15** includes two laterally spaced vertically extending angles **16, 16** having legs **31, 31** thereof extending inwardly toward each other in parallel relation to the front face of the bar **12**, and adapted to abut the same. The frame structure **15** is supported on the bar **12** by means of an inwardly extending angle **17** which may be secured to the inner legs **31, 31** as by welding. The vertical leg of the angle **17** is shown as being spaced inwardly of the legs **31, 31** and as extending downwardly to engage the back of the lift bar **12**. Gusset plates **19, 19** are shown as extending from the tops of the horizontal legs of the angle **17** to the legs **31, 31** of the angles **16, 16** to reinforce the same.

A clamping means may be provided to clamp the frame structure **15** to the bar **12**, which is herein shown as being a hand-operated eccentric clamp **20** pivoted on an outer leg **18** of one angle **16** on ears **21, 21** extending horizontally outwardly from said leg. The clamp **20** is shown as having a recessed engaging end portion **22**, coming into engagement with the bottom and rear end of the bar **12** upon upward pivotal movement of said clamping member in an obvious manner.

A gripping or clamping device **23** engageable with a bead or rim of a drum or barrel is adjustably carried by the frame structure **15**, as will hereinafter be more fully described as this specification proceeds.

A cradle **25** is provided at the lower end of the frame structure **15** to engage the wall of the drum or barrel and hold the same in parallel relation with respect to the angles **16, 16** when engaged by the clamping device **23**. As herein shown, the cradle **25** comprises two arms **26** generally conforming to and engaging the wall of the drum so as to hold the drum from twisting and maintain the drum in a vertical position during lifting thereof by vertical lifting movement of the frame structure **15** and the clamping device **23**.

The means for adjustably supporting the clamping device **23** on the frame structure **15** for movement therealong is shown as comprising two carriers **29, 29** extending along the insides of the angles **16, 16**. The carriers **29, 29** are shown as being elongated strips of a channel-shaped formation facing the insides of the outer legs **18, 18** of the angles **16, 16**. Said carriers are restrained from lateral movement with respect to said angles **16, 16** by angles **30, 30** secured to the insides of the legs **18, 18** on one of their legs and extending inwardly in parallel relation with respect to the legs **31, 31** of said angles.

The carriers **29, 29** are each shown as having a reinforcing block **32** adjacent the upper end thereof and disposed within the channel thereof. Said carriers are shown as being drilled through said blocks to receive a support pin **33** extending through any one of a series of aligned apertures **34, 34** extending through the legs **18, 18** of the angles **16, 16**. The pin **33** is shown as having an outer end portion **35** bent to extend at right angles with respect thereto and having a locking pin **36** extending therefrom to the inner side of an angle **30** and movable into position to retain the pin **33** to the angles **16, 16** and support the carriers **29, 29** therein.

The carriers **29, 29** are shown as being spaced apart

by links 39 and 40 herein shown as being slightly out of parallel arrangement, although they may be parallel. These links are each of a similar construction and are shown as being of a generally U-shaped form with two aligned legs connected together at their inner ends by a cross member or sleeve 41. Pivot pins 42, 43 are provided to pivotally connect the respective links 39, 40 to the carriers 29, 29. The links 39 and 40 abut blocks 44, 44 and 45, 45, respectively, secured to the outsides of the webs of the carriers 29, 29 in vertically spaced relation with respect to each other and extending inwardly therefrom. The blocks 44, 44 and 45, 45 are drilled to receive the respective pins 42 and 43, to pivotally support said links on the carriers 29, 29.

The links 39 and 40 form a means for movably connecting an outer casing 49 of the gripping device 23 to the frame structure 15 for vertical movement with respect thereto in a generally parallel path. As herein shown, the legs of the links 39 are pivotally connected to the outer sides of side walls 50, 50 of the casing 49 on the ends of a pivot pin 51 disposed adjacent the upper end portion of said casing. In like manner, the legs of the link 40 are pivotally connected to the outer sides of the side walls 50, 50 of the casing 49 on the ends of a pivot pin 52 extending outwardly from said casing and located adjacent the lower end thereof.

The links 39 and 40 and casing 49 are shown as being yieldably maintained in extended relation with respect to the frame structure 15 by means of two spaced relatively strong tension springs 54, 54 strong enough to maintain the casing extended upon engagement of the casing 49 with the wall of a drum. The tension springs 54, 54 are shown in Fig. 4 as being connected to a hanger 55 mounted on the cross member 41 of the upper link 39. The opposite ends of the springs 54, 54 are shown as being connected to the casing 49 within the plates 50, 50 thereof on a pin 56 extending through and outwardly from said casing plate 50, 50 and disposed adjacent the lower inner ends thereof. Springs 54, 54 thus maintain the links 39 and 40, casing 49 and gripping device 23 in extended relation with respect to the frame structure 15, in position to engage the object to be gripped. Extension of the links 39 and 40 and casing 49 is limited by engagement of the projecting ends of the pin 56 with the lower link 40. The projecting ends of the pin 56 also come into engagement with the frame structure 15 to limit inward movement of the casing 49 with respect to said frame structure when the gripping device 23 is in lifting engagement with a barrel or drum, as shown in Figure 1.

Referring now in particular to Figures 5 and 6, and certain details of the gripping device 23 and the clamping jaw structure of my invention, the casing 49 is shown as comprising the casing plates 50, 50 connected together at the upper ends thereof by a top wall 57 extending downwardly at an angle along the forward end portions of the plates 50, 50 for a short distance thereof. The plates 50, 50 are shown as being spaced apart and connected together adjacent the lower ends thereof by an inclined bottom plate 59 secured to upwardly and outwardly inclined bottom surfaces 60, 60 of said plates. The plates 50, 50 are also shown as having inwardly extending annular bosses 61 and 62 through which extend the respective pins 51 and 52 to which the links 39 and 40 are pivotally connected.

A supplemental swingable or receding jaw-carrying casing 63 is pivotally mounted between the plates 50, 50 on a pivot pin 64, herein shown as being disposed adjacent the lower forward ends of the plates 50, 50 just above the upper end of the inclined bottom surface 60. The supplemental casing 63 includes two parallel spaced plates 65, 65 connected together adjacent their upper ends by a protective shield 66 extending therebetween and downwardly along the forward edges thereof for a short part of the length thereof.

The receding jaw casing 63 is yieldably biased to extend partially through the open forward end of the casing 49 by means of a tension spring 67. The spring 67 is shown as being connected at its upper end to an arm 69 secured to and extending rearwardly from the boss 61 to a position adjacent the rear end of the casing 49. The opposite end of the spring 67 is shown as being connected to an arm 70 connected to the bottom of the supplemental casing 63 and extending rearwardly therefrom. Outward pivotal movement of the casing 63 is limited by a stop 71 at the upper end of the plates 50, 50 and extending thereacross. The stop 71 is shown as being engaged by an upwardly projecting arm 72 connected between and extending upwardly from the rear end portion of the plates 50, 50 of the supplemental casing 63.

The supplemental casing 63 forms a movable mounting for a lower clamping jaw 73 engageable under the bead 74 of a drum to be lifted, and an upper clamping jaw 75 engageable with the drum on the inside of the bead thereof. The lower clamping jaw 73 is shown as being suspended within the casing 63 by two parallel spaced links 77, 77 extending along the plates 65, 65 and pivotally mounted on a pivot pin 78 connected between said plates adjacent the upper ends thereof. The lower ends of the links 77, 77 extend along the outer sides of a lug 80 extending rearwardly from the jaw 73, and are pivotally connected to said lug by means of a pivot pin 79.

The upper jaw 75 is shown as being of an elongated generally C-shaped form and is formed at its engaging end portion to readily engage the inside of the bead 74 of a drum, as best shown in Figure 6. The upper jaw 75 is pivotally mounted between the casing plates 65, 65 of the casing 63 adjacent its rear or inner end, a substantial distance from the jaw portion thereof, on a pivot pin 81 spaced inwardly from the lower jaw 73. The jaw 75 has an arm 83 extending from its pivotal axis in an opposite direction from the jaw thereof. Links 84, 84 extend downwardly from said arm along opposite sides thereof and are pivotally connected thereto on a pivot pin 85. The opposite ends of the links 84, 84 are pivotally connected to the lower end of an arm 86 extending downwardly from the jaw 73, on a pivot pin 87.

An abutment or reaction pin 89 is mounted between the plates 65, 65 of the supplemental casing 63 and engages the advance face of the arm 86, to retain the lower jaw 73 in a retracted position until engaged beneath the bead of a drum.

A tension spring 90 is provided to yieldably maintain the jaws 73 and 75 separated, upon the release of weight therefrom. As herein shown, the spring 90 is connected from the member 70 inwardly of the point of connection of spring 67 thereto, and the outer end of an arm 91 secured to the links 84, 84 and extending therefrom in an upwardly and rearwardly inclined direction.

Movement of the jaw 75 toward the jaw 73 is limited by lugs 93, 93 projecting forwardly from the links 77, 77 and engageable with the under surface of the shield 66.

When the casing 49, jaw casing 63 and lower jaw 73 are in the extended position shown in Figure 2, and the frame structure 15 is mounted on a truck as shown in Figure 1, the clamping device 23 is in position to engage and grip a bead or rim of a drum or barrel. The clamping device is usually positioned beneath the bead of the drum and the truck moved toward the drum to engage the projecting end of the jaw casing 63 therewith. The jaw casing 63 will then initially retractably move within the casing about the axis of the pivot pin 64 against the spring 67. The lifting mechanism of the truck is then operated to lift the lift bar 12, frame structure 15 and clamping device 23. When the nose of the jaw casing 63 clears the bead of the drum, the spring 67 will extend said casing and bring the lower jaw 73 into position to engage beneath the bead of the drum. Lifting movement of the clamping device is continued, and engagement of the lower jaw 73 beneath the bead of the drum will effect movement of the upper jaw into engagement with the inside of the bead of the drum. Continued lifting movement will move the lower jaw outwardly toward the upper jaw and positively grip and lift the drum. As the drum is lifted from the ground or floor the springs 54, 54 will yield and the stops 56 will engage the angles 30. The drum, gripped at its upper end by the jaws 73 and 75 and engaged adjacent its lower end with the cradle 26, is thus held vertically by said cradle and jaws and may be lifted and lowered in a vertical position. The drum may thus be transported from place to place in a vertical position and may be lifted vertically for stacking on the top of other drums and may be gripped with no attention from the operator except operating the truck to engage the drum with the jaw casing 63 and at the same time operating the lifting mechanism of the truck to elevate the clamping device.

When it is desired to release the drum it is only necessary to set the drum on the ground or floor or on another drum on which the drum being handled is to be stacked, by downward movement of the bar **12** and frame structure **15** until the weight of the drum is relieved from the lower jaw **73**. The truck may then be backed away from the drum, the relief of weight from the jaw **73** effecting opening movement of the jaw **75** by means of the tension spring **90**. As the jaws **73** and **75** open to release the bead **74** of the drum as the truck is backed away from the drum, the springs **54, 54** will extend the casing **49** about the parallel links **39** and **40** and position the gripping device in position to grip and lift another dum, with no attention from the operator except driving the truck toward the drum to engage the lower jaw **73** and casing **49** therewith.

It may be seen from the foregoing that a simple, novel and efficient form of gripping and transporting device for drums or barrels has been provided, which is entirely automatic in operation and positively grips the bead of a drum and holds the drum vertically during lifting or lowering and transporting and stacking, and completely eliminates the need for pallets, or the spacing of the drums, to enable the bringing of the lift truck into engagement with the bottom or sides of the drum, as has formerly been the practice in the lifting, transporting and stacking of drums, barrels and the like.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In a drum lifting device, a vertically extending casing, two jaw members mounted within said casing for extension from the forward end thereof, one being a lower jaw member engageable beneath the bead of a drum and the other being an upper jaw member engageable within the bead of a drum, a movable support member, means movably supporting said casing on said support member in an elevated position with respect to the ground, yieldable means extending said casing with respect to said support member and accommodating said casing to move inwardly toward said support member upon engagement of said jaw members with a drum, a link pivoted within said casing adjacent the upper end thereof, a pivotal connection between the lower end of said link and the lower of said jaw members inwardly of the jaw thereof, a pivotal connection between the lower end of said link and the lower of said jaw members inwardly of the jaw thereof, a pivotal connection between the upper of said jaw members and said casing for movement about a transverse axis disposed adjacent and inwardly of the lower of said jaw members, a link connected to the lower of said jaw members at a point spaced beneath the jaw thereof and to the upper of said jaw members on the opposite side of its pivotal axis from the jaw thereof, a reaction abutment slidably engaging the advance face of the forward of said jaw members, a spring connected between said plates and said last named link for biasing said jaw members into an open position whereby engagement of the lower jaw member beneath the bead of a drum and vertical movement of said casing will move said jaw members into engagement with the inside of the bead of a drum and effect lifting thereof, and a lug extending forwardly from the first mentioned of said links and engageable with said casing and limiting outward movement of the lower of said jaw members.

2. In a drum lifting device of the class described, a jaw casing comprising two parallel spaced connected plates, a shield connected between said plates at the upper ends thereof and extending downwardly along the forward side thereof for a short distance of the length thereof, two jaw members movably mounted between said plates for extension therefrom, a link pivoted between said plates adjacent the upper end thereof and inwardly of said shield and depending therefrom, a pin pivotally connecting the lower end of said link with the lower of said jaw members, adjacent and inwardly of the jaw thereof, a pin mounted between said plates inwardly of said last mentioned pin and having the upper of said jaw members pivotally connected thereto, said pin being disposed adjacent and inwardly of the jaw of the lower of said jaw members, and the upper of said jaw members extending upwardly and outwardly from said pin into overlying relation with respect to the lower of said jaw members, an arm extending downwardly from the lower of said jaw members, a link pivotally connected to said arm, a pivotal connection from said link to the upper of said jaw members on the opposite side of its pivotal axis from the jaw thereof, a reaction abutment member connected between said plates and slidably engaged by the forward face of the arm of the lower of said jaw members and limiting outward movement thereof, yieldable means biasing said jaw members into an open position, said links and jaw members being so constructed and arranged that engagement of the lower of said jaw members beneath the bead of a drum and vertical movement of said casing will move said jaw members toward each other into clamping engagement with the bead of a drum for lifting the same, and stop means comprising a lug extending forwardly from the first mentioned of said links in underlying relation with respect to the edge of said shield and engageable therewith upon a predetermined movement of said jaw members toward each other.

3. In a drum handling device, a casing, a plate pivoted to said casing for retractable movement with respect thereto, yieldable means biasing said plate in an extended position with respect to said casing, two jaw members movably mounted on said plate, one above the other, for engagement with an object, means pivotally connecting the upper of said jaw members to said plate at a point spaced inwardly and downwardly from the jaw thereof, a link connected with said plate at a point spaced upwardly from the upper of said jaw members and movably connecting the lower of said jaw members to said plate at a point spaced inwardly of the jaw thereof, a second link connecting said jaw members together at points spaced downwardly from the jaws thereof, and yieldable means biasing said jaw members into an open position, said links and jaw members being so constructed and arranged that engagement of the lower of said jaw members on the underside of an object to be lifted and lifting movement of said casing and plate will effect gripping engagement of said jaw members with opposed sides of the object to be gripped.

4. In a drum handling and lifting device, a casing having a vertically extending open forward end portion, a plate pivotally connected to said casing adjacent the lower end thereof and extending upwardly therealong in registry with said open forward end portion, means yieldably positioning said plate to extend from said casing through the open forward end thereof, other means limiting extensible movement of said plate with respect to said casing, two movable jaw members carried by said plate for extensible movement from the forward end thereof, one of said jaw members being a lower jaw member and swingably suspended from an upper end portion of said plate, the other of said jaw members being an upper jaw member and being pivotally mounted on said plate for movement about an axis disposed adjacent and inwardly of the jaw of the lower of said jaw members, and a link pivotally connecting said jaw members together to move the upper said jaw member toward the lower of said jaw members upon engagement with the lower of said jaw members beneath the bead of a drum and upon upward lifting movement of said casing and jaw member.

5. In a drum handling device of the class described, a casing having a vertically extending elongated open forward end portion, a retractible plate pivoted within said casing adjacent the lower forward end thereof and extending upwardly therealong in registry with said open forward end portion, yieldable means biasing said plate to extend from said casing through the open forward end thereof, and two movable jaw members carried by said plate, one being a lower jaw member and pivotally movable about a movable axis and the other being an upper jaw member and mounted on said plate for pivotal movement about a fixed axis disposed inwardly of and adjacent the jaw of the lower of said jaw members, a link connecting said jaw members to move together, a reaction abutment on said plate engageable with the lower of said jaw members and limiting outward movement thereof, and yieldable means biasing said jaw members into an open position, said plate being retractible upon engagement with a drum and positioning the jaw of the lower of said jaw members beneath the bead of a drum upon vertical movement of said casing and plate, to move the jaws of said jaw members into gripping engagement with the bead of a drum upon continued upward movement of said casing and plate.

6. In a drum handling device of the class described, an elongated vertically extending casing having an open forward end portion, a retractable jaw casing pivotally mounted within said casing for movement about a horizontal axis disposed adjacent the lower forward end thereof, yieldable means biasing said jaw casing in an extended position with respect to said first mentioned casing, two movable jaws carried within said jaw casing, a link pivoted to said jaw casing adjacent the upper end thereof and extending downwardly therealong, a pivotal connection from said link to one of said jaws, suspending said jaw for movement about a movable axis, a fixed pivot pin within said retractable casing and having the second of said jaws pivotally mounted thereon and extending upwardly therefrom in overlying relation with respect to the first of said jaws, and a link pivotally connecting said jaws to move together whereby movement of said first mentioned casing to engage said retractable casing and jaws with a drum will first retractably move said retractable casing within said first mentioned casing, and vertical movement of said casings along the drum will engage the lower of said jaws beneath the bead of a drum and react thereagainst and effect movement of both of said jaws into engagement with opposed sides of the bead of the drum and firmly grip the same.

7. In a drum handling device of the class described, a vertically extending casing having an open forward end portion, a retractable jaw casing pivoted within said first casing for movement about a horizontal axis disposed adjacent the lower forward end thereof for limited extensible movement from said casing, a spring connected between said casings and biasing said jaw casing in extended relation with respect to said first mentioned casing, two jaw members movably mounted within said jaw casing, one above the other, a link pivoted to said jaw casing adjacent the upper end thereof and extending downwardly therealong, a pivotal connection between said link and the lower of said jaw members inwardly of the jaw thereof, a pin within said jaw casing and having the other of said jaw members pivotally mounted thereon for movement about an axis adjacent and spaced inwardly of the jaw of the lower of said jaw members, an arm extending downwardly from the lower of said jaw members, a second arm extending downwardly from the upper of said jaw members, a link pivotally connecting said arms together, a reaction abutment engageable with the forward face of said first arm and limiting outward movement thereof, and a spring biasing said arms into an open position, said retractable casing engaging the wall of a drum beneath the bead thereof and positioning the lower of said jaws to engage beneath the bead of the drum upon vertical movement of said casing to move said jaws toward each other into gripping engagement with the bead of the drum and positively grip the same upon continued vertical movement of said casings.

8. In a drum handling device, a vertically extending frame adapted for attachment to the lifting bar of a power truck, a cradle extending forwardly from the lower end of said frame and having arms engageable with the wall of a drum, a clamping device carried by said frame above said cradle for lifting engagement with the bead of a drum and comprising a casing having two vertically spaced gripping jaws movably mounted therein for engagement beneath and within the bead of a drum, a linkage arrangement for suspending said casing from said frame for movement toward and from said frame, spring means connected between said frame and casing and biasing said casing in extended relation with respect to said frame and accommodating said casing to move inwardly toward said frame into engagement therewith upon gripping engagement of said jaws with the bead of a drum and upward lifting movement of said frame and casing.

9. In a drum lifting and handling device, a vertically extending frame adapted for attachment to the lifting bar of a power truck, a cradle extending from the lower end of said frame and having arms engageable with the wall of a drum, two vertically spaced movable lifting jaws engageable beneath and within the bead of the drum, a casing for said jaws, means contained within said casing for mounting said jaws for retractable movement with respect thereto and for movement toward each other, to grippingly engage the bead of the drum upon engagement of the lower of said jaws beneath said bead and upward lifting movement of said casing, and means mounting said casing on said frame for movement toward and away therefrom comprising two generally parallel links pivotally connected to said frame and casing and suspending said casing therefrom, a spring connected between said frame and the lower end of said casing and biasing said casing and links into extended relation with respect to said frame, and a stop on said casing engageable with one of said links for limiting extensible movement of said casing with respect to said frame and with said frame for limiting inward movement of said casing with respect to said frame and reacting against said frame upon vertical movement thereof and gripping engagement of said jaws beneath and within the bead of a drum.

10. In a drum handling and lifting device, a vertically extending frame adapted for attachment to the lifting bar of a power truck, a cradle adjacent the lower end of said frame having spaced arms engageable with the outer wall of a drum, a clamping device carried by said frame above and in alignment with said cradle comprising a casing having an open forward end portion, a retractable jaw casing pivoted within said first mentioned casing for movement about a transverse axis disposed adjacent the bottom thereof, yieldable means biasing said jaw casing in extended relation with respect to said first mentioned casing, two vertically spaced jaws movably mounted within said jaw casing, a pivotal mounting for the upper of said jaws within said jaw casing, a movable pivot for the lower of said gripping jaws within said jaw casing, linkage means connecting said jaws to move toward each other upon the exertion of a downward load on the lower of said jaws, yieldable means biasing said jaws away from each other, and means mounting said casing on said frame for extensible and retractable movement with respect thereto comprising two generally parallel links suspending said casing from said frame, spring means biasing said casing in extended relation with respect to said frame, and a stop on said casing engageable with said frame and limiting inward movement of said casing with respect to said frame and reacting against said frame upon upward lifting movement of said casing upon clamping engagement of said jaws with the bead of a drum and upward lifting movement of said frame and casing.

11. A lifting device for drums and the like comprising a casing, two jaw members carried by said casing, a support, means movably supporting said casing on said support, and spring means biasing said casing in extended relation with respect to said support, one of said jaw members being a lower jaw member adapted to engage beneath the bead of a drum and the other said jaw members being an upper jaw member engageable within the bead of a drum, a link pivotally connected to said casing adjacent the upper end thereof and extending downwardly therealong and having pivotal connection with the lower of said jaw members adjacent but inwardly of the jaw thereof, and forming a swingable support therefore, a fixed pivotal mounting for the upper of said jaw members intermediate the ends thereof, but spaced a substantial distance from the jaw thereof and inwardly of the lower of said jaw members, linkage means pivotally connecting said jaw members together at points spaced inwardly of the jaws thereof, and spring means biasing said jaw members into open positions.

12. A lifting mechanism for drums and the like comprising a casing, two spaced jaw members carried by said casing, a support for said casing, means movably connecting said casing to said support for extensible and vertical movement with respect thereto, spring means connected between said support and casing for biasing said casing in an outwardly extended position with respect to said support, one of said jaw members being disposed beneath the other and being engageable with the underside of the bead of a drum to be lifted, a transversely pivoted link pivotally connected with said casing adjacent the upper end thereof and with the lower of said jaw members inwardly of the jaw thereof, and pivotally suspending said jaw member for bodily movement toward and from a drum to be lifted, the other of said jaw members overlying the lower of said jaw members, means mounting the other of said jaw members for pivotal movement about a fixed pivot spaced inwardly from the lower of said jaw members, linkage means connecting said jaw members together adjacent the lower ends thereof, spring means connected with said linkage means and biasing said jaw members into open positions, said linkage means being so constructed and arranged that upon the engagement of the lower of said jaw members beneath the bead of a drum and elevation of said casing with respect to said support that upward

lifting movement of said jaw members reacting against the bead of a drum will pivotally move said jaw members toward each other into clamping engagement with the bead of a drum.

13. In a drum lifting mechanism, a casing, two jaw members movably mounted within said casing, one above the other, to engage beneath and within the bead of a drum, a support means movably supporting said casing on said support in an elevated position with respect to the ground, other means connected with said movable support means for yieldably extending said casing with respect to said support, a link pivoted within said casing adjacent the upper end thereof, a pivotal connection between said link and the lower of said jaw members at a point spaced inwardly of the jaw thereof, a pivoted mounting for the upper of said jaw members within said casing adjacent the inner end thereof, a second link pivotally connecting the lower ends of said jaw members together and an abutment on said first mentioned link limiting outward movement of the lower of said jaw members.

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