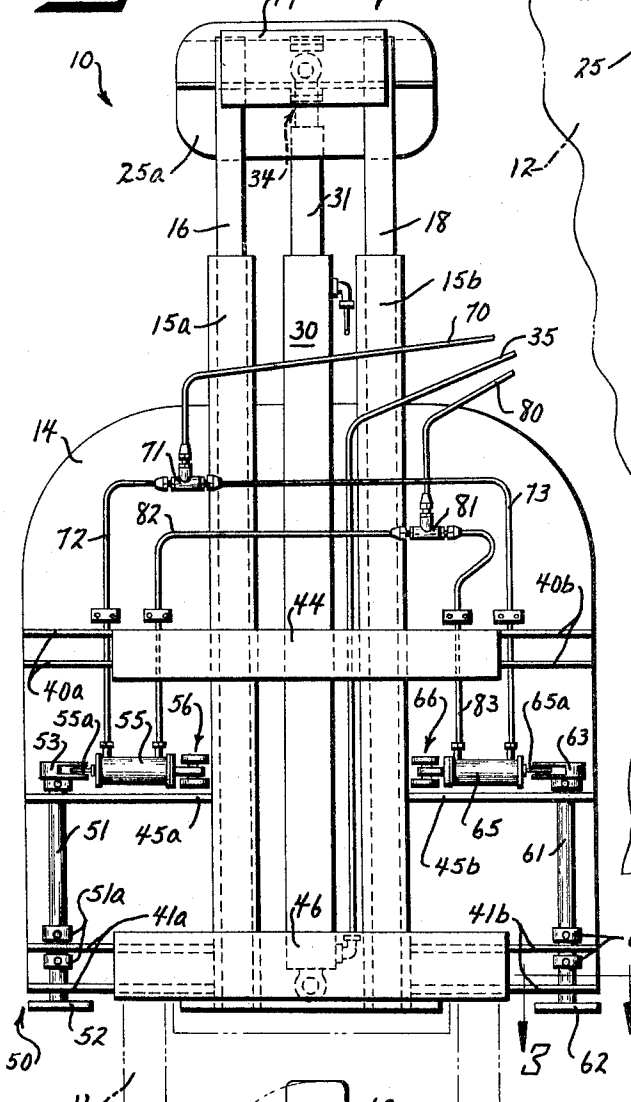
Aug. 16, 1966 F. G. HAUSCHILD ETAL 3,266,650

CONTAINER HANDLER

Filed Dec. 19, 1963

FIG. 1



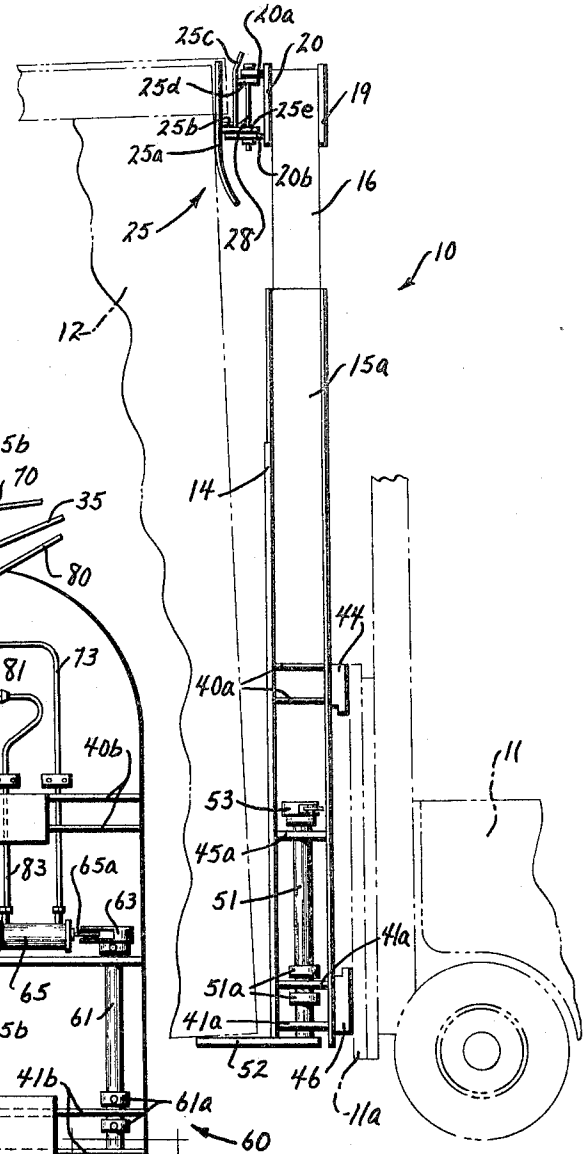


FIG. 2

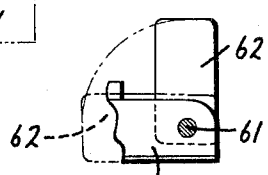


FIG. 3

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CONTAINER HANDLER

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The present invention relates to a container handler, and more particularly to a new and novel mechanism for packing freight cars or the like in an efficient and highly effective manner.

As is known, in handling shipping containrs, as for home appliances, for example, it is difficult to readily place the second, or higher, level of containers in the transporting vehicle. In this regard, not only is additional personnel oftentimes required, but an unwarranted spending of time results, to the economic disadvantage of the shipper.

Accordingly, by virtue of the instant invention, the applicants herein have provided a new and novel handling apparatus for cartoned merchandise which expedites the necessary packing in the transporting vehicle, with a minimum of time expenditure and with highly effective and readily achieved results. Broadly, the applicants' invention is disposed typically on a commonly known factory lift truck, where the forks of the latter are removed, where one feature of the instant device is the ready engaging of the container being moved and where another, and principal, feature is the provision of rotatable feet for selectively engaging the underside of the container for positive placement for shipping.

In this latter regard, the aforesaid feet, as well as the container engaging mechanism, are typically operated through fluid pressure means, and where, in the instance of loading one container on the top of another, the operator, after raising the container with the engaging mechanism, selectively rotates the feet under the container, so that tipping and fulcrum action is positively and effectively achieved.

Accordingly, the principal object of the present invention is to provide a new and novel apparatus for handling merchandise containers.

Another object of the present invention is to provide a new and novel container handling apparatus having selectively movable container supporting feet which permit ready packing of a transporting vehicle in a manner not possible in prior arrangements.

A further object of the present invention is to provide a new and novel container handler having, in combination, means for selectively engaging one portion of the container and selectively movable feet on which the container is readily positioned for highly effective packing action.

A still further and more general object of the present invention is to provide a new and novel container handling device having positively operable container engaging components which combine for economical and highly advantageous use during shipment of such container, and which, at the same time, represents simplicity in manufacturing.

Other objects and a better understanding of the present invention will become more apparent from the following

description, taken in conjunction with the accompanying drawing, wherein

FIG. 1 is a view in front elevation showing details of a container handler in accordance with the instant invention;

FIG. 2 is a view in side elevation, looking from left to right in FIG. 1, showing the instant invention in use, where the container being transported and the conventional factory lift truck are shown in phantom; and,

FIG. 3 is a fragmentary plan view, partly in cross-section, taken at line 3—3 of FIG. 1 and looking in the direction of the arrows, showing, in more detail, the new and novel feet forming an important feature of the instant invention.

For the purposes of promoting an understanding of the principles of the invention, reference will now be made to the embodiment illustrated in the drawing and specific language will be used to describe the same. It will nevertheless be understood that no limitation of the scope of the invention is thereby intended, such alterations and further modifications in the illustrated device, and such further applications of the principles of the invention as illustrated therein being contemplated as would normally occur to one skilled in the art to which the invention relates.

Referring now to the figures, the applicants' new novel container handler **10** is shown in combination with a conventional factory lift truck **11** (indicated by phantom lines) where, it should be understood, the front of such truck **11** is movable vertically, as desired, through the use of conventional controls manually operated by a driver on such truck.

The container handler **10** defining the instant invention comprises a plate **14** having upstanding generally parallel sleeve members **15***a* and **15***b* conventionally secured thereto, into which rods **16** and **18**, respectively, are slideably received. The upper ends of the rods **16** and **18** are secured together by plate members **19** and **20**, as by welding, for example, where flanges **20***a* and **20***b*, fixedly secured to the plate **20**, extend in an outward direction therefrom.

A hook assembly **25** defined by a container engaging plate **25***a*, which, it will be apparent from FIG. 2, has an inwardly curved lower portion, is supported on a mounting structure including components **25***b*, **25***c*, **25***d*, and **25***e*, typically welded together in fixed relationship. The aforesaid elements **25***d* and **25***e* have aligned openings therein, as do the flanges **20***a* and **20***b* on the plate member **20**, where a removable bolt and nut assembly **28** is received therethrough. The preceding ararngement permits pivotal movement of the hook assembly **25** and, additionally, its replacement, if and when necessary.

Disposed between the sleeve members **15***a* and **15***b*, and typically parallel therewith, is a power cylinder **30**, preferably welded in position on the plate **14** which has a movable piston **31** for controlling movement of the hook assembly **25**, and, hence, a container **12** being transported, upon application of fluid pressure to cylinder **30** through a conduit **35**. The piston **31** typically connects between the plate members **19** and **20** by an "eye" and bolt arrangement **34**, or in any other desired assembly relationship, while the lower end of the power cylinder **30** is typically positioned on a bolt extending from the plate **14**.

As discussed hereabove, the applicants' new and novel container handler **10** is typically mounted on the front of a conventional factory lift truck **11**. In this regard, stiffening members **40***a* and **40***b* and **41***a* and **41***b* are secured to a face of the plate **14**, where, in turn, mounting plates **44** and **46** are secured thereto, as well as to the sleeve members **15***a* and **15***b*. The preceding assembled relationship is typically accomplished through welding, for example. In turn, and by conventional fastening means (not shown herein), the mounting plates **44** and **46** are secured to a mounting panel **11***a* disposed on the front of the lift truck **11**.

In order to accomplish the new and novel results attained by the instant invention, the applicants provide a movable foot assembly **50** and **60** at opposite bottom ends of the plate **14**. More particularly, shafts **51** and **61**, having feet **52** and **62**, respectively, at one end of each, are mounted on plate **14**, where each shaft **51** and **61** respectively extends through a stiffening member **45***a* and the stiffening members **41***a*, and a stiffening member **45***b* and the stiffening members **41***b*. The shafts **51** and **61** are each typically maintained in their respective operating position by collars **51***a* and **61***a*.

The opposite end of each shaft **51** and **61** respectively receives an eccentric **53** and **63** thereon, where each, in turn, respectively connects to a plunger member **55***a* and **65***a* forming part of power cylinders **55** and **65**. Conventional securing arrangements **56** and **66** respectively position the aforesaid power cylinders **55** and **65** onto the plate **14**.

Although full details of the hydraulic or fluid pressure system are not disclosed in the drawing, in that such is conventional in form, a conduit **70** extends from a control panel on the lift truck **11** to a T-member **71**, from where conduits **72** and **73** communicate with the piston return end of the power cylinders **55** and **65**, while conduit **80**, which also extends to the aforesaid control panel on the lift truck **11**, extends to a T-member **81**, from which conduits **82** and **83** communicate with the piston drive end of the power cylinders **55** and **65**. In other words, the operation of the instant invention is effected through a conventional fluid pressure or hydraulic system where the operator's controls program the elevating movement of the front of the factory truck **11**, the movement of the piston **31**, which controls the elevation of the hook assembly **25**, through conduit **35**, and, the conduits **70** and **80** which, through their respective systems, control the movement of the pistons in the power cylinders **55** and **65**.

With particular reference to FIGS. 2 and 3, the feet **52** and **62** are movable from a position generally beneath the plate member **14** to an outwardly extending position. The preceding action is accomplished upon activation of the power cylinders **55** and **65**, which, in turn, cause the rotation of the shafts **51** and **61** through the respective eccentrics **53** and **63**. More particularly in this regard, when fluid pressure is supplied through conduits **72** and **73**, the pistons within the power cylinders **55** and **65** move toward the center of the apparatus, causing the respective feet **52** and **62** to move to a non-extending position. Conversely, when fluid pressure is supplied through conduits **82** and **83**, the pistons move oppositely from that described hereabove, i.e. toward the outer edges of the plate **14**, whereupon the respective feet **52** and **62** move from aforesaid non-extending position to an extending position.

After the applicants' new and novel container handler **10** has been secured to the truck **11** for use, the operator raises the mounting panel **11***a* of the latter, and in normal first lever or first layer container loading for transporting, for example, the hook assembly **25** is caused to engage the container under movement. In regard to the latter, the hydraulic system including conduit **35** and power cylinder **30** is activated, thereby raising the movable piston **31** so that the plate **25***a* comes under, for example, the flap

defining the top of the container, or, as a matter of fact, any other container portion capable of being grasped through hooking action.

Thereafter, with movement of the truck **11**, the container **12** can be placed in any desired position or order in an area being loaded. In releasing the container **12**, the converse of the preceding is accomplished, i.e. the hook assembly **25** is released from the container **12**, with the control thereof being effected by the driver of the truck at the fluid pressure or hydraulic control panel.

On the other hand, and most importantly, when it is desired to move a container to a second or higher level in loading, and particularly to position same horizontally or on its back, for example, the preceding action occurs, i.e. the container **12** is hooked; however, in this instance, the hydraulic system to the power cylinders **55** and **65** is activated, through conduits **80**, **81** and **82**, causing the plunger members **55***a* and **65***a* to move, and the respective shafts **51** and **61** to rotate. At this time, the feet **52** and **62** move from their non-extending position to an extending position (see FIGS. 2 and 3).

With the feet **52** and **62** extended, the container **12** is lowered thereon (see FIG. 2), where the operator then raises the mounting panel **11***a* of the truck **11** to the appropriate height to define a fulcrum area on the resting surface of the container. The hook assembly **26** is then released through hydraulic action of conduit **35** and the power cylinder **30**, where, at this point, the weight of the container **12** rests on the feet **52** and **62**. The front member **11***a* then continues any necessary upward movement, until the container **12** tips into position and is straightened, as required. Of course, variation in precise operational steps may be made, as, for example, the container may be unhooked after the feet **52** and **62** are in extending supporting position, but before the container **12** is raised to a fulcrum or tipping area, assuming that same is leaning against a first level container.

After the container **12** is in loaded position, the hydraulic system through conduits **70**, **71** and **72** is activated, causing the plunger members **55***a* and **65***a* of the power cylinders **55** and **65** to move in an opposite direction, whereupon the shafts **51** and **61** rotate, resulting in the movement of the feet **52** and **62** from the extending position to their non-extending position.

From the preceding it should be apparent that the applicants herein have provided a new and novel container handler which effectively permits the horizontal loading of merchandise in multiple levels, representing a considerable savings in loading time for a transporting vehicle, for example, as well as good overall loading flow. The instant container handler is, of course, susceptible to various changes within the spirit of the invention. For example, the precise components described herein may be modified in design, and changes in proportioning and configuration may be accomplished, with equally effective end results. Thus, the above description should be considered illustrative and not as limiting the scope of the following claims.

We claim:

1. A container handler comprising, in combination, a framework mounted on an elevationable portion of a vehicle, said framework having a slidable upper portion, a hooking member pivotally mounted on a vertical axis on said slidable upper portion, power means elevating said slidable upper portion and said hooking member into an engaging relationship between said hooking member and a container, container supporting feet pivotally mounted on a vertical axis on said framework and movable in and out of the plane of said framework, and power means swinging said container supporting feet to underlie said container.

2. The container handler of claim **1** where said hooking member is pivotal laterally of said container to permit alignment therewith.

(References on following page)

References Cited by the Examiner

UNITED STATES PATENTS

2,545,021	3/1951	Coupland	214—620 X
2,713,433	7/1955	Gardner	214—653
2,714,969	8/1955	Bartel	214—653
2,721,668	10/1955	Elsner	214—731
2,776,064	1/1957	Cirillo	214—653
2,827,184	3/1958	Mueller	214—620 X

2,996,205	8/1961	Ulinski	214—653
3,023,919	5/1962	Hobson	214—750 X
3,107,803	10/1063	Glosup	214—520

FOREIGN PATENTS

538,604	3/1957	Canada.

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