Aug. 7, 1956 G. E. ADAMS 2,757,813

LOAD HANDLING ATTACHMENT FOR INDUSTRIAL LIFT TRUCKS

Filed Jan. 8, 1954 2 Sheets-Sheet 1

Fig. 2.

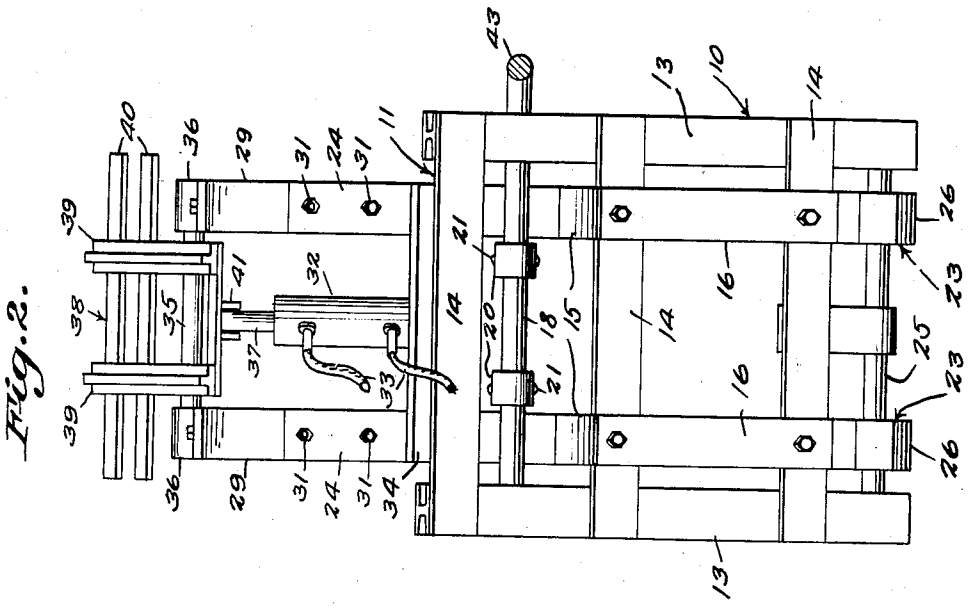
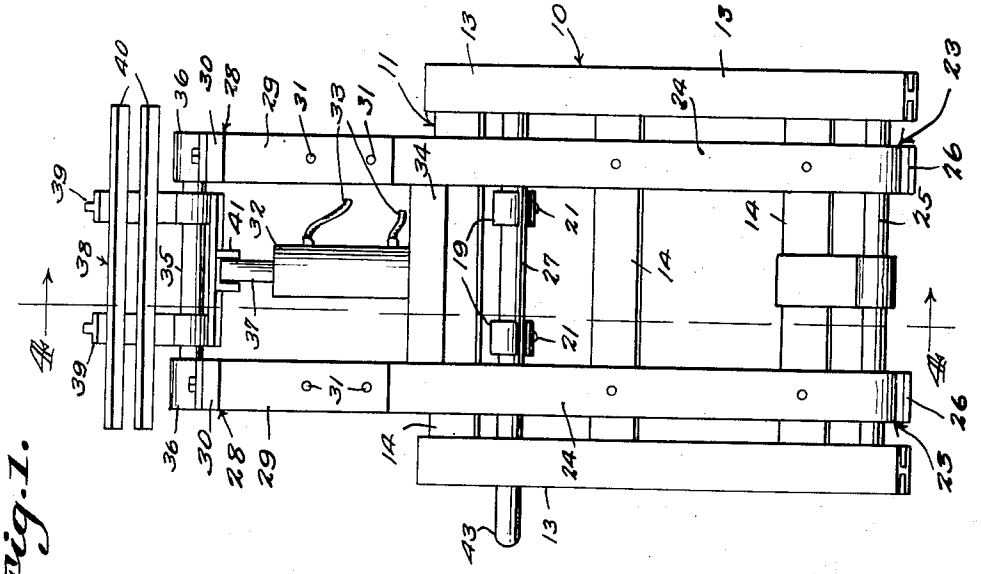


Fig. 1.



G. E. Adams
INVENTOR

BY C. A. Snow & Co.
ATTORNEYS.

Aug. 7, 1956 G. E. ADAMS 2,757,813

LOAD HANDLING ATTACHMENT FOR INDUSTRIAL LIFT TRUCKS

Filed Jan. 8, 1954 2 Sheets-Sheet 2

Fig. 4.

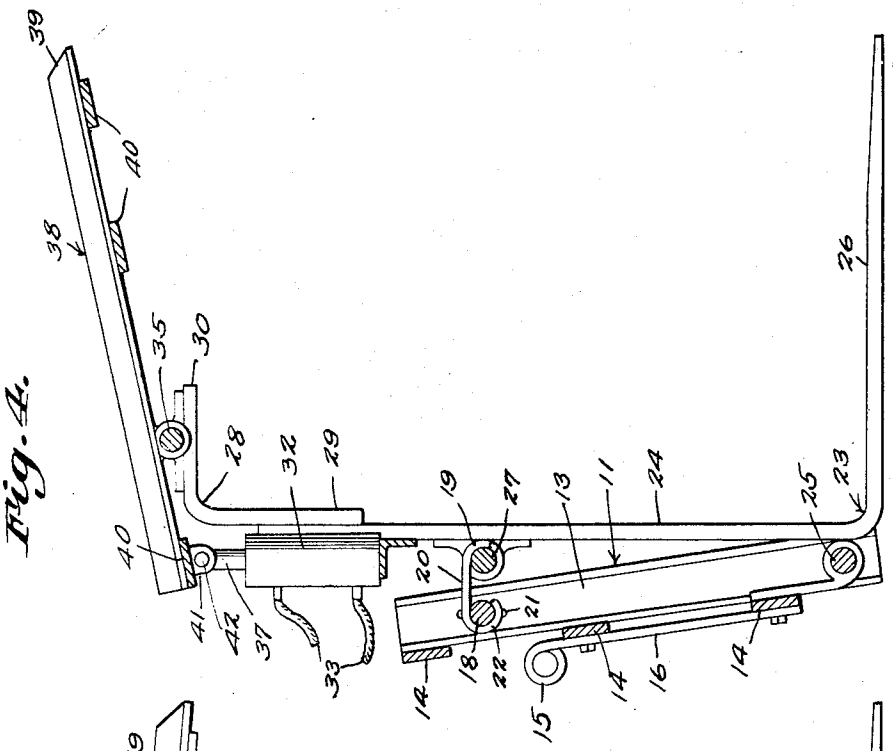
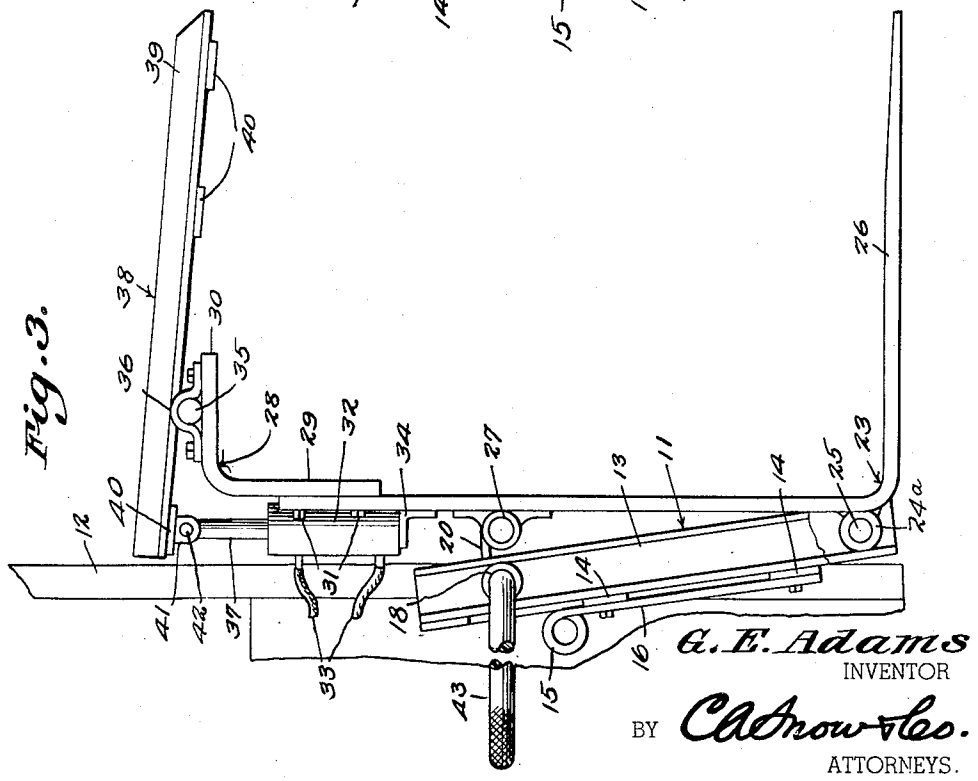


Fig. 3.



G. E. Adams
INVENTOR

BY C. A. Snow & Co.
ATTORNEYS.

United States Patent Office 2,757,813 Patented Aug. 7, 1956

2,757,813

LOAD HANDLING ATTACHMENT FOR INDUSTRIAL LIFT TRUCKS

Grover E. Adams, Vermont, Ill.

Application January 8, 1954, Serial No. 402,913

1 Claim. (Cl. 214—654)

This invention relates to an improved loading and/or unloading industrial truck and more particularly to an attachment for an industrial truck of the kind to be more particularly described hereinafter having load supporting elements engageable underneath a load to be raised and transported with load stabilizing elements releasably engageable with the load, there being a hydraulic means urging the stabilizing elements into contact with the load for transportation and away from the load for unloading the truck.

It is a further object of this invention to provide an improved loading and unloading attachment for an industrial lift truck of the kind having a frame slidable vertically on the lift truck with an attachment of horizontally and outwardly extending load supporting elements pivotally mounted on the slidable frame with horizontally and outwardly extending load stabilizing elements pivotally mounted above the load supporting elements, a hydraulically actuated means for urging the stabilizer elements toward and away from the load supporting elements to stabilize the load while moving the load supporting elements being pivoted on the attachment frame for pivoted movement downwardly to release the load for unloading and the load stabilizing elements being pivotal upwardly to disengage and release the load while unloading.

It is yet another object of this invention to provide a loading and unloading attaching frame for an industrial lift truck of this kind having an attachment frame attachable with the lifting means of the truck with outwardly extending load supporting elements pivotally mounted on the frame attachment for loading and unloading the load onto and from the truck and load stabilizing elements pivotally mounted on the frame attachment above the load supporting elements, a manually hydraulically actuated clamp. being pivoted between the load supporting elements and the load stabilizing elements for clamping or releasing the load stabilizing elements relative to the load supporting elements and a manually operable hook pivoted on the frame engageable and disengageable with the load supporting frame for securely holding the load supporting elements for supporting a load and releasing the load supporting elements for discharging the load from the truck.

Other and further objects and advantages of the invention will be hereinafter described and the novel features thereof defined in the appended claims.

In the drawings:

Fig. 1 is a front elevation of a loading and unloading attachment constructed according to an embodiment of my invention.

Fig. 2 is a rear elevation of the attachment.

Fig. 3 is a side elevation, partly broken away, of the attachment.

Fig. 4 is a vertical section taken on the line 4—4 of Fig. 1.

Referring more specifically to the drawings the numeral **10** designates generally a loading and unloading

device for attachment to a lift truck, the lift truck being formed of conventional means having the lifting and unloading attachment **10** constructed according to an embodiment of this invention attached thereto.

The conventional lift truck is provided with an elevator frame **11** onto which the loading and unloading attachment is connected.

The elevator frame **11** is provided with longitudinally extending vertical frame members **13** secured together by horizontal frame members **14** for movement vertically upwardly or downwardly along the upstanding rods or tracks **12**.

A loop **15** is provided on the upper end of the vertically extending frame members **13** for attachment to the horizontal vertically moving bars of the elevator. The loop **15** is formed integrally on an end of a flat metal shank **16** which is used to secure the transversely extending horizontal frame members **14** together and for movement together along the length of the upstanding rods or tracks **12**.

A transverse rotatable rod **18** is rotatably supported at the elevator frame **11** for the purposes to be described hereinafter.

A hook **19** having a shank **20** is secured at the shank end to the transverse rotatable rod **18** by bolts or rivets **21** for rotation or pivotal movement therewith. An eye is formed at one end of the shank **20** to be engaged about the rod **18** and engaged by the bolts or rivets **21**.

An L-shaped load supporting frame **23** having vertically extending arms **24** thereon are engaged by means of bearings **24a** with the rotatable pivot bar **25** which is secured to the lower end of the vertical arms **13** and the load supporting frames **23** also have outwardly extending members or bars **26** to extend forwardly from the loading and unloading truck **10**. A transverse bar **27** is carried by the vertically extending arms **24** intermediate the length thereof to be engaged by the hook **19** on the rotatable transverse rod **18**.

An inverted L shaped member or element **28** is secured on the extreme upper end of the vertically extending arms **24**, the inverted L shaped member **28** having a vertically extending arm **29** and a horizontally extending arm **30** on one end of the vertically extending arm. The vertically extending arm **29** is secured to the vertically extending arm **24** of the load supporting frame member by bolts **31** as clearly shown in Fig. 3 of the drawings.

A hydraulic cylinder **32** is carried by the vertically extending arms **24** at their end and on the opposite side thereof from the inverted L shaped member **28**.

Hydraulic tubes or lines **33** are connected to the opposite ends of the cylinder **32** and a bracket **34** is fixed to the lower end of the cylinder **32** for attaching the cylinder to the vertically extending arm **24** and for the operation to be more particularly described hereinafter.

A transversely extending pivot shaft **35** is carried adjacent the ends of the stabilizer frame to be described hereinafter. Pivot brackets **36** are secured to the horizontally extending arm **30** of the inverted L shaped element **28** within which the pivot shaft **35** is rotatably engaged.

A piston rod **37** is extended upwardly and outwardly from the cylinder **32** and from a piston in the cylinder, the piston not being shown in the drawings as it is believed that such a showing is unnecessary and can be immediately conceived by a person viewing these drawings and reading this description.

A stabilizer frame **38** is pivotally mounted at the upper end of the load supporting frame, the stabilizer frame **38** having longitudinally extending, ordinarily horizontal bars **39** which are connected together by horizontally extending flat bars **40**.

The horizontal flat bars 40 immediately adjacent to the pivot shaft 35 are provided with downwardly extending pivot brackets 41 within which the pivot pin 42 on the upper outer end of the piston shaft may be rotatably engaged.

In the use and operation of this loading and unloading attachment for a lift truck, described above, the slidable elevator lift frame of the truck is initially positioned at the lowermost position on the truck so that the load supporting frame may be engaged below a load to be supported by the truck. At this time, hydraulic fluid may be introduced into the piston through the uppermost hydraulic line 33 for rocking the stabilizing frame upwardly to be out of engagement with any load engaged on the load supporting frame.

The load stabilizing frame may then be moved to engagement with the load above the supporting frame by movement of the piston rod 37 upwardly in the piston 32 whereupon the load stabilizing frame is lowered about its respective pivot shaft into engagement with the upper surface of the load.

At this time the entire lift truck may be lifted to any desired position so that the load can be moved about on the truck and by the device on which the truck is mounted.

For unloading the load from the lift truck attachment, described above, the elevator frame may be lowered on the truck at which time the stabilizing frame may be raised out of engagement with the load and the hook may then be moved upwardly and outwardly from its engagement with the transverse shaft 27 on the load supporting frame so that the load supporting frame may pivot about the axis of its pivot shaft 25 and the load may be discharged or dumped from the truck.

The loading truck may then have the respective loading frame and stabilizer frame moved to any selected position while the entire truck is moved to a new position for engagement with another load.

A handle 43 is connected to or formed integral with one end of the transverse rotatable shaft 18 for manually actuating the shaft to disengage or engage the hook 19 with the bar 27 of the load supporting frame 23.

While the specific details of one embodiment of this invention have been herein shown and described, the invention is not confined thereto as changes and alterations may be made without departing from the spirit and scope thereof as defined in the appended claim.

I claim:

In a loading and unloading device having an upstanding guide frame, a vertically slidable frame engaging said guide frame, a pair of L-shaped fork members, a bar securing the vertical sides of said fork members together, a pivot bar carried by the lower portion of said slidable frame, means rockably mounting the lower ends of said vertical sides on said pivot bar, a fork locking hook, means rockably mounting said hook on said slidable frame in a position to releasably engage said first-named bar, an operating handle fixed relative to said mounting means, a load presser means, means rockably disposing said load presser means on the upper ends of said L-shaped fork members, and a hydraulic operator carried by said fork members connected to said presser means.

References Cited in the file of this patent

UNITED STATES PATENTS

1,763,351	Gfrorer	June 10, 1930
2,520,564	Reagle	Aug. 29, 1950
2,545,021	Coupland et al.	Mar. 13, 1951
2,557,395	Schmidgall	June 19, 1951
2,578,802	Heidrick et al.	Dec. 18, 1951
2,596,477	Frischmann et al.	May 13, 1952
2,598,515	Dickson	May 27, 1952
2,675,139	Mercier et al.	Apr. 13, 1954
2,684,165	Hill	July 20, 1954
2,698,698	Smith et al.	Jan. 4, 1955

FOREIGN PATENTS

714,482	Great Britain	Sept. 1, 1954