Feb. 21, 1956 H. L. KELLY 2,735,563

RUNNING BOARD HANDLING ATTACHMENT FOR LIFT TRUCKS

Filed Dec. 3, 1953

Fig. 1

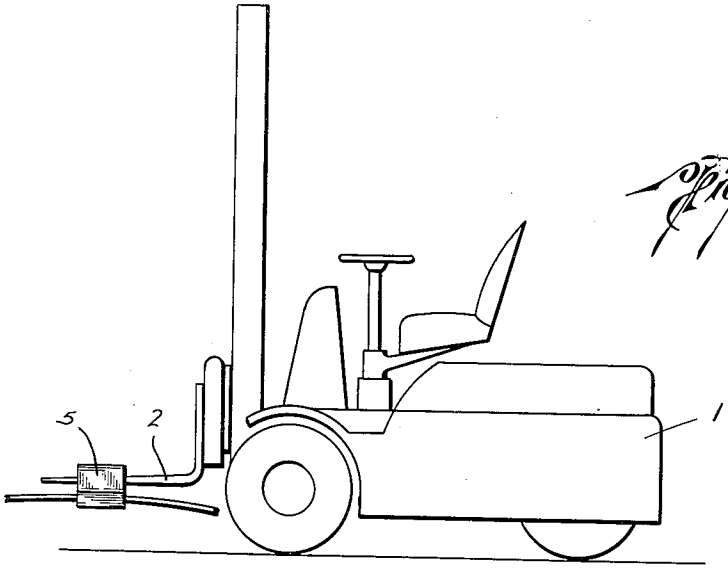


Fig. 2

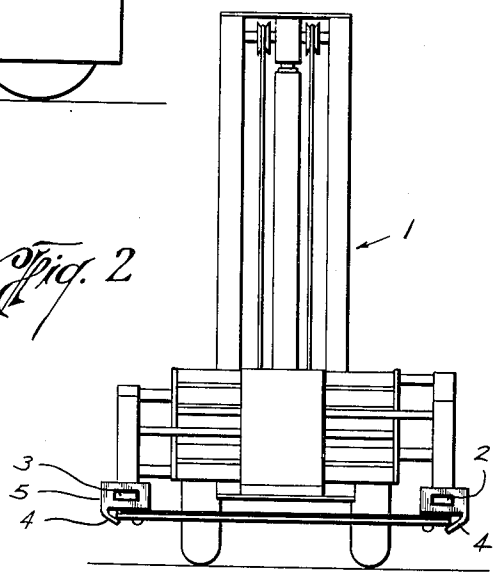
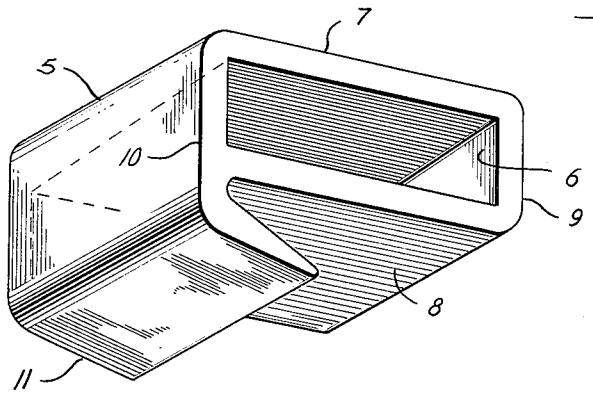


Fig. 3



Henry L. Kelly
INVENTOR.

BY Frank B Pugsley

ATTORNEY

United States Patent Office

2,735,563

Patented Feb. 21, 1956

2,735,563

RUNNING BOARD HANDLING ATTACHMENT FOR LIFT TRUCKS

Henry L. Kelly, San Antonio, Tex.

Application December 3, 1953, Serial No. 395,987

1 Claim. (Cl. 214—620)

This invention relates to material handling devices and more particularly to improved lugs or grab hooks adapted to be used with a fork lift truck.

Conventional fork lift trucks such as, for example, the Hyster fork lift truck, are designed so that the arms of the fork may be moved both laterally and vertically by hydraulic, mechanical, or electrical means. Lateral movement of the arms brings them closer together or farther apart, as desired, while vertical movement lowers or raises them as necessary for loading, transporting, and unloading the object being handled. In lifting boxes and the like, which can be readily tilted, the fork arms are lowered and then moved under the raised edge of the box, the bottom of the box is permitted to engage the top of the arms, and the fork is then raised in order to transport the article. In the case of handling articles packaged in relatively soft containers, handling devices with projecting spines or the like are often provided on the fork arms. Upon laterally moving the arms toward the object to be carried between them, the spines will enter into and grab the soft material, eliminating the necessity of manually lifting or tilting the article. In the case of the handling of many rigid articles, moreover, devices have been designed for use with the arms of the fork lift truck to accommodate the special shape of the article to be lifted. To date, however, no simple and practical means has been provided for handling substantially flat and relatively thin metal objects and the like, without the necessity of manual loading and unloading. This problem is particularly serious in the case of handling the running boards used to bridge the gap from the loading platform to the door threshold plate of railway freight cars, or from car to car, which running boards generally weigh over 300 pounds and require at least two men to load and unload them from the lift truck. This manual operation involves a considerable hazard to hands, fingers and feet because of the weight of the running boards and the relative sharpness of their edges. Many of the older running boards are merely flat plates of steel while the more modern running boards have a slight curvature along one axis. The handling of either type of running board by lift trucks presents a very serious and special problem both from the standpoint of injury to employees and the amount of time required.

Accordingly, it is an object of my invention to provide improved means for lifting and handling substantially flat and relatively thin metal plates.

It is another object of my invention to provide lugs or grab hooks adapted to be used on the arms of a fork lift truck so that the truck operator can load, transport, and unload metal plates such as freight car running boards without the necessity of any manual handling of the plates.

In carrying out these objects in the presently preferred form of my invention I provide a right hand and a left hand removable lug or grab hook for attachment respectively to each of the two arms of a fork lift truck of the type in which the arms can be moved both laterally and vertically. These lugs include a channel section open at both ends which is adapted to slide over the end of the fork lift truck arm, and a downwardly sloping inwardly turned hook portion depending therefrom. While the channel portion of the lugs customarily tapers to conform with the taper of the arms of conventional fork lift trucks, it will be understood that straight channel sections can be employed, in which case an identical and interchangeable lug will be used for both the left and right hand arm. The hook portion of each lug is adapted to slide under the running board upon suitable lowering and converging of the arms, and to support it during movement of the truck to any desired location.

In the accompanying drawings Fig. 1 is a side view of a conventional fork lift truck to which my improved lugs have been applied, showing the lifting of a freight car running board of modern design; Fig. 2 is a front view of the same lift truck showing my improved lugs with their hooked portion supporting the edges of a freight car running board of conventional flat design, to the edges of which rivets have been added; and Fig. 3 is a detailed perspective view of one of my improved lugs.

Referring now to Figs. 1 and 2 of the drawings, a conventional fork lift truck 1 having arms 2 and 3 is shown with the arms in a partially elevated position. Suspended on the arms 2 and 3 are lugs 4 and 5 of similar construction, one only of which will be described in detail. As best shown in Fig. 3 the lug 5 includes a channel shaped portion 6 having a top wall 7, a bottom wall 8 and side walls 9 and 10, respectively. Depending from the side wall 10 is a hook member 11 sloping downwardly and inwardly to form an inclined plane surface beneath the channel portion which is adapted to engage the underside of a flat object. The hook member 11 may be attached to the channel portion 6 in any suitable manner, as by welding, or the entire lug may be made from a single piece of sheet metal bent into the shape of a channel, with one edge bent back upon itself to form the hook member.

As previously explained the arms of many forked lift trucks are tapered from a relatively small thickness at their free ends to a substantial thickness at their point of attachment to the truck lifting mechanism, and provision may be made for the opening formed by the channel portion of the lug to be suitably tapered as an aid in positioning and securing the lug to the arm. In this case the right and left hand lugs 4 and 5 would not be interchangeable. In other cases, however, a pair of identical lugs will be provided with each truck, with the operator sliding them on to the arms in such a position that the hook 11 extends inwardly with relation to the material to be handled. The lugs are preferably made in the elongate form shown in Fig. 3 in order to give a greater area of contact between the underside of the top portion of the lug and the upper surface of the arm. Of even greater advantage is the increased area of the inclined plane surface on the hook 11, which provides a larger area of contact with the article to be lifted.

When my improved lugs are used the operation of the fork lift truck in moving freight car running boards is relatively simple. In the case of the more modern designs of running boards the oval shape causes the center line of the board to be sufficiently elevated to permit the hooks 11 to slide beneath it, while boards of the older flat design may be provided wtih one or more rivets on each side of the board to provide a space in the order of ⅜ of an inch between it and the floor, or between it and the next board when they are stacked. In preparing for handling these boards the right and left hand removable lugs are removed from their place of storage, which may be a hook, bracket or the like on the lift truck itself, and into position on the truck arms. The truck arms are lowered and then moved laterally together until the hook portions of the respective

lugs slide beneath the undersurface of the running board. The arms are then raised to a suitable carrying position, the truck driven to the desired place, and the arms then are lowered either to set the running board in place or to store the board for future use. Then the arms of the truck are moved laterally outwardly to free the hooks. This operation eliminates handling the plates manually from the paltform to the freight car and from car to car, reducing the hazard involved and resulting in a considerable saving of time.

While I have shown a particular embodiment of my invention, it will be understood, of course, that I do not wish to be limited thereto since many modifications may be made; and I therefore contemplate by the appended claim to cover any such modifications as fall within the true spirit and scope of my invention.

What I claim as new and desire to secure by Letters Patent of the United States is:

A freight car running board lifting and handling device for use with a fork lift truck of the type having laterally

and vertically movable arms, comprising a lug having an elongate channel shaped member with top, bottom and side walls forming an opening for receiving an arm of said truck, said lug further having a depending inwardly turned lip providing an inclined plane of substantial area to support said running board by engaging the undersurface thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

2,461,678	Christensen	Feb. 15, 1949
2,562,247	Van Schie	July 31, 1951
2,571,550	Ehmann	Oct. 16, 1951
2,622,750	Ehlers	Dec. 23, 1952
2,663,442	Ehmann	Dec. 22, 1953

FOREIGN PATENTS

137,952	Australia	July 13, 1950