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[56]

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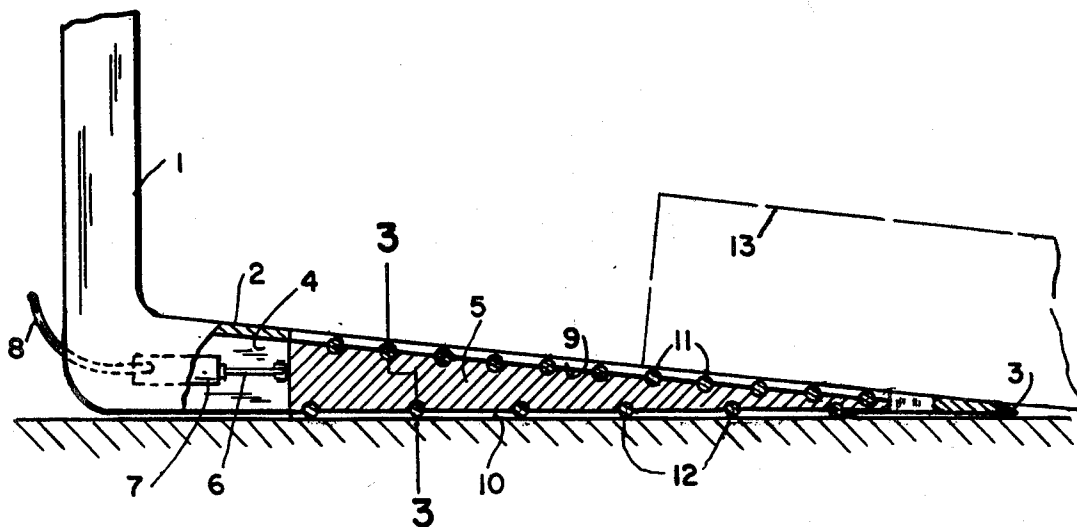
[54] FORK ASSIST
5 Claims, 3 Drawing Figs.

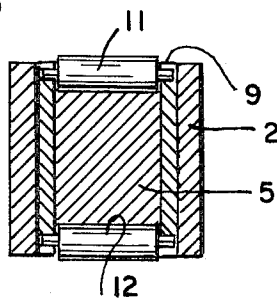
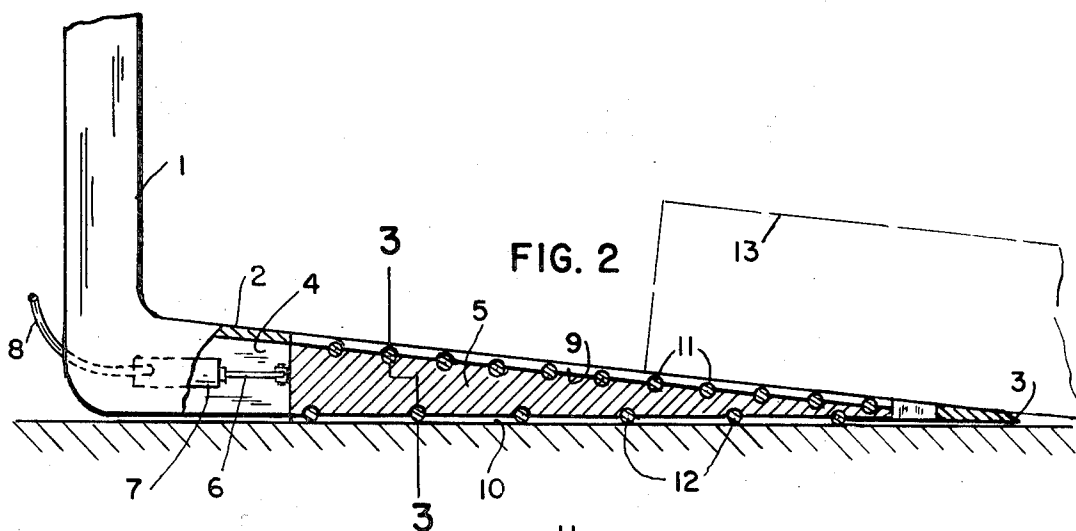
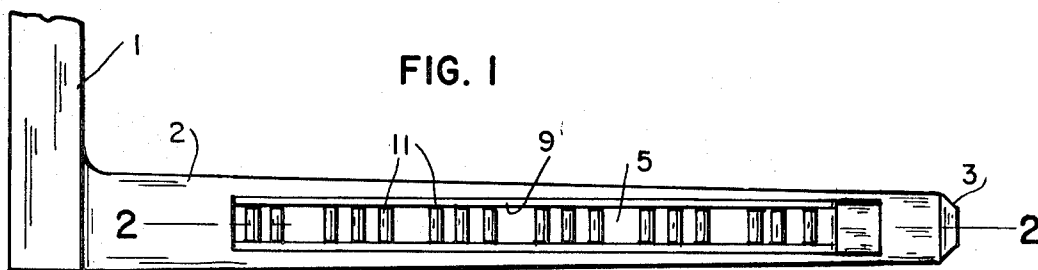
[52] U.S. Cl..... 214/750,
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[51] **Int. Cl.**..... **B66f 9/19**

[50] **Field of Search**..... 214/750,
84; 193/35, 42

ABSTRACT: As an assist in moving the fork of a lift truck under the load more easily and properly positioned without damage to the fork or the commodities constituting the load, an elongated flat surface wedge guided for slight longitudinal movement in each of the tines, and roller bearings arranged transversely of the wedge or wedges for sustaining the load as said rollers, embedded for half of their diameter in the wedge, are moved under the load by the said movement of the wedge which may be by hydraulic or other automatic means.





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FORK ASSIST

SPECIFICATION

The present invention, while relating to lift trucks in general, has more particular reference to trucks employing forks in which load carrying tapered tines extending forward from an upright body portion are forced under the commodity to be moved, particularly an unpalleted commodity, such maneuver of the fork often doing excessive damage not only to the tines in proper positioning them for the lift but to the load itself and or the wrapping when the load comprises one or a number of individual packages.

The main object of the invention is to both ease the insertion of the tines under the load but also eliminate the possibility of damage such as above enumerated.

Another object of the invention is, in the accomplishment of the aforesaid objective, the provision of means whereby, as the fork is moved forward the load, instead of resting directly on the tines, will be sustained and friction reduced by a series of transversely arranged roller bearings brought into engagement with the under surface of the load and by a second series of like roller bearings in engagement with the floor surface from which the load is to be lifted.

Still another object of the invention is the provision of an elongated wedge slidable endwise in each of the tines and comprising the means in which the said roller bearings are journaled.

Yet a further object of the invention is the provision of an hydraulic system for controlling movement of the roller carrying wedge or wedges.

The accompanying drawing illustrating a preferred embodiment of the invention is as follows:

FIG. 1 is a top plan view of the invention;

FIG. 2 is a view partly in side elevation and partly in section on the line 2-2 of FIG. 1;

FIG. 3 is an enlarged vertical section on the line 3-3 of FIG. 2.

Like numerals of reference indicate similar parts throughout the different views.

At 1 there is shown the lower body portion of the fork of a lift truck which may be of standard make or any preferred construction. And, extending laterally forward from the fork portion 1 is a commodity supporting member 2 generally decreasing in thickness toward its outer end. In this instance the member 2 represents one of a plurality of tines the free end 3 of which is chamfered as shown. Within the tine 2 is an elongated chamber 4, the walls thereof providing a housing in

which a wedge 5, flat faced the length and breadth of its top and bottom surfaces, respectively, has a limited longitudinal movement forward and back, such movements being performed through the medium of any suitable operatable means which, in this instance, is represented as a pump, a piston rod 6 in an hydraulic system not otherwise shown but which may also include the means for raising and lowering the fork, the piston rod 6, its cylinder 7 and hose connection 8 also being housed within the chamber 4 in rear of the wedge 5.

Slot openings 9 and 10 in the tines 2 are opposed to the top and bottom surfaces, respectively, of the wedge 5. For the slot 9 there is a series of transversely extending roller bearings 11, and, for the slot 10 there is a like series of roller bearings 12. These bearings 11 and 12 are mounted in the sidewalls of the respective slots 9 and 10 and embedded, each for half its diameter, in the wedge 5. Sufficient clearance is allowed in assembly of parts that the rollers 11 and 12 are brought into and out of contact respectively with the under surface of the load on the fork and the flooring from which the load is lifted. The load, under which a fork is being moved, is indicated in phantom lines at 13 in FIG. 2.

I claim:

1. In a lift truck the combination with a fork including an upright body portion and a forwardly extending load supporting portion, the latter having an elongated chamber, of a wedge slidably mounted for limited endwise movement in said chamber, such chamber having slot openings opposed to the top and bottom surfaces of said wedge, a series of transversely arranged roller bearings mounted in the sidewalls of the top one of said slot openings, a second series of like roller bearings mounted in the sidewalls of the bottom one of said slots, and means for moving said wedge forward and back whereby said first and second named series of rollers are respectively brought into and out of contact with the under surface of the load on the fork and the flooring from which the load is lifted.

2. The combination according to claim 1 wherein the means for effecting the longitudinal movement of said wedge is automatic in operation.

3. The combination according to claim 1 wherein a pump, in an hydraulic system for lifting and lowering the fork, is the means for controlling the movement of said wedge.

4. The combination according to claim 1 wherein the rollers of both said series are embedded for half their diameter in respective slots in top and bottom faces of the wedge in which they are journaled

5. The combination according to claim 1 wherein the said load supporting portion is one of a plurality of tines.

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