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ATTACHING BRACKET FOR FRONT END LOADERS

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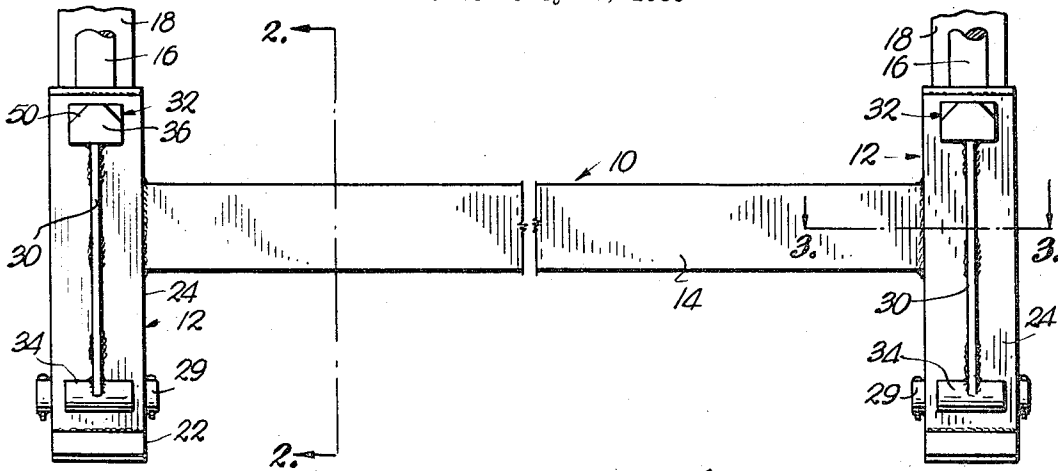


Fig. 1.

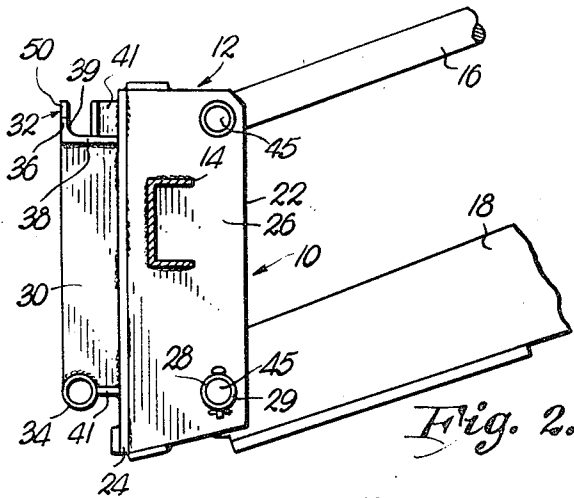


Fig. 2.

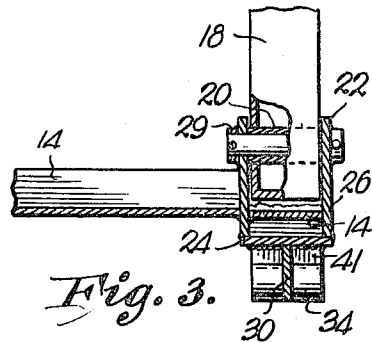


Fig. 3.

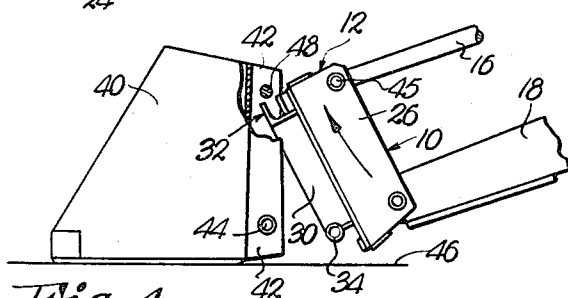


Fig. 4.

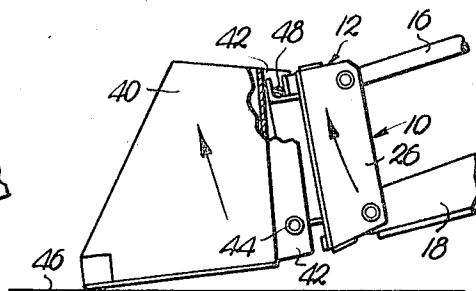


Fig. 5.

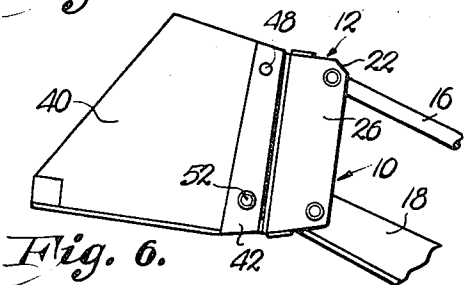


Fig. 6.

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ATTACHING BRACKET FOR FRONT END LOADERS

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ABSTRACT OF THE DISCLOSURE

A bracket for releasable attachment to the control and lift arms of a front end loader, the bracket having hook and latch means thereon for engaging and carrying an implement, such as a bucket, to be operated by the arms of the loader. A bracket unit is provided for each pair of arms and each unit includes a first section provided with pin receiving means for releasably attaching the bracket to the arms, and a second section which extends forwardly from the first section and includes the hook and latch means for engaging and carrying the implement.

A conventional front end loader has forwardly extending control and lift arms having structure at the outermost ends thereof adapted for connection to a bucket which is normally carried by the loader. Other implements, such as stackers, dozers, or gin poles are also used on the loader and this generally necessitates the operator getting down on his hands and knees with pry and hammer to remove pin connectors from the bucket so that the latter may be removed and replaced by another implement.

The change-over of implements as above described is very time-consuming, particularly for an operator out in the field, and accordingly, it is the primary object of this invention to provide an attaching bracket for front end loaders wherein the bracket is secured directly to the arms of the loader in place of the implement, the latter being mounted on the bracket by quick release structure to permit speedy changing of implements. The bracket is adapted for immediate use with conventional loaders and thus, no modifications of the loader are required.

It is another object of this invention to provide a bracket of the aforementioned character wherein the implement may be raised without the necessity of any initial manual connection and, therefore, final mounting may be effected while the implement is in an elevated position. This advantage eliminates the necessity of aligning the lift and control arms of the loader with the connecting structure of the implement while the latter is on the ground and, in addition, insertion of connector pins is facilitated since the operator may stand to force the pins into place.

Other objects will become apparent from the following specification and accompanying drawing, wherein:

FIGURE 1 is a fragmentary, front elevational view of an attaching bracket made pursuant to the present invention, showing the same mounted on the lift and control arms of a front end loader;

FIG. 2 is a cross-sectional view taken along line 2-2 of FIG. 1;

FIG. 3 is a cross-sectional view taken along line 3-3 of FIG. 1; and

FIGS. 4, 5 and 6 are side elevational views sequentially illustrating the mounting of a bucket on the attaching bracket.

The attaching bracket of the present invention, broadly designated by the reference numeral 10, includes a pair of spaced units 12 interconnected by a cross member or channel 14. Bracket 10 is adapted to be connected to a front end loader represented in the drawing by a pair of

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horizontally spaced, forwardly extending control arms 16, and a pair of horizontally spaced lift arms 18 disposed directly below corresponding control arms 16. It will be appreciated that the teachings of the invention are also applicable to loaders wherein the control arms are disposed below the lift arms. Each of the arms 16 and 18 is provided with transverse sleeve structure 20 at the outermost ends thereof (FIG. 3).

Each unit 12 includes a first section in the form of an elongated, transversely U-shaped member 22 presenting a bight 24 and opposed, rearwardly extending legs 26. Each leg 26 is provided with a pair of vertically spaced openings 28 which have outer collars 29 and are horizontally aligned with the corresponding openings in the other legs.

A second section of each unit 12 includes a vertically extending flange 30 projecting forwardly from the front face of bight 24, there being an upwardly open hook portion 32 at the uppermost end of flange 30, and a latch or tube portion 34 at the lowermost end thereof. Hook 32 includes a forward, transversely extending plate-like element 36 which curves inwardly at its lower, inner end to merge with a seat 38 and present a rounded corner 39. Tube 34 also extends transversely and is vertically aligned with hook 32. Hook 32 and tube 34 are each secured to bight 24 by web means 41 (FIGS. 2 and 3).

The implement to be mounted on bracket 10, illustrated in the drawing as a bucket 40, is provided with a pair of spaced, rear plates 42 at each side thereof. Plates 42 have aligned, vertically spaced apertures 44 which present corresponding upper and lower sets of connection components on bucket 40. It has been prior practice to attach a bucket, similar to bucket 40, directly to the lift and control arms of the loader by extending the sleeves of the arms between the corresponding rear plates and inserting pins through the aligned apertures and sleeves, the pins being held in place by suitable locking and cotter pins. If the operator desired to remove the buckets and replace it by another implement, it was necessary to get down on his hands and knees with pry and hammer to remove the pins and detach the bucket so that the control and lift arms would be free for connection to another implement.

In contrast, in the present invention, attaching bracket 10 is secured to arms 16 and 18 with bucket 40 then being mounted on bracket 10. In this regard, each unit 12 connects a control arm 16 to the adjacent lift arm 18 by placement of sleeves 20 between the corresponding legs 26 into alignment with openings 28 for connection by pins 45. Legs 26 and the openings 28 therein thus serve as fastening means to releasably interconnect bracket 10 with the sleeve structure 20 of the loader.

Referring to FIGS. 4, 5 and 6, bucket 40 is preferably supported on a flat surface 46 and has a pair of horizontally spaced bars or pins 48 journaled through the upper apertures 44 of corresponding spaced plates 42. The operator of the front end loader directs arms 16 and 18 to dispose bracket 10 adjacent surface 46 with hooks 32 underlying corresponding pins 48. Bracket 10 is lifted so that hooks 32 loop under and interengage pins 48 with the latter complementally engaging respective rounded corners 39. The forward element 36 of each hook 32 is cut to present converging upper side edges 50 which aid in guiding hook 32 between the respective rear plates 42 (FIG. 2).

As arms 16 and 18 are operated to raise bracket 10, the lower end of bucket 40 will swing rearwardly as pins 48 rotate in seats 38 until lower apertures 44 are aligned with corresponding tubes 34 which are disposed between respective rear plates 42. Pins 52 are then inserted through apertures 44 and tubes 34 and locking and cotter pins

installed thereon to complete the mounting of bucket 40 (FIG. 6). If the center of gravity of the implement is not located so that the implement will gravitate into mounting position, control arms 16 may be retracted to bring the implement into position.

When it is desired to remove bucket 40 and replace it with another implement, the bucket is raised to a convenient height so that the operator may stand beside the bucket and remove the locking and cotter pins from pins 52 and force the latter out of tubes 34. The bucket is then lowered to the ground and hooks 32 disengaged to thereby prepare bracket 10 for mounting of another implement. It will be recognized that this removal operation is easily effected through the quick release structure coupling bracket 10 to bucket 40, particularly the utilization of hooks 32 which decrease the number of pin connections required, and also serve as lifting means to hold the implement in an elevated position during removal or insertion of pins in tubes 34.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In combination with a front end loader having a pair of horizontally spaced, forwardly extending lift arms and a pair of horizontally spaced control arms vertically spaced from said lift arms, each arm having a transversely extending sleeve at the forward end thereof adapted for alignment and releasable pinned connection with corresponding sets of upper and lower apertures on an implement for the loader, an attaching bracket comprising:

a pair of units, each unit being adapted for connecting a control arm to the adjacent lift arm,

each unit having a first section provided with openings therein spaced for alignment and releasable pinned connection with corresponding sleeves, said first sections each comprising a transversely U-shaped member presenting a bight and rearwardly extending legs, the legs having said openings therein and being spaced for receiving the sleeves therebetween in alignment with the openings for releasable pinned connection therewith,

a second section extending forwardly from each of said first sections and having an upwardly opening hook portion and a tube portion arranged for alignment with corresponding apertures of the implement, said second sections each including a flange extending forwardly from said bight, said hook portion being secured at the upper end of said flange and said tube portion being secured at the lower end thereof, whereby when pins are placed in the set of apertures corresponding to said hook portions, the latter may be interengaged with the respective pins and said tubes swung into alignment with the other set of apertures for pinned connection therewith.

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