April 29, 1958 H. A. PIONTEK 2,832,158

IMPLEMENT MOUNTING MEANS FOR CRAWLER TRACTORS

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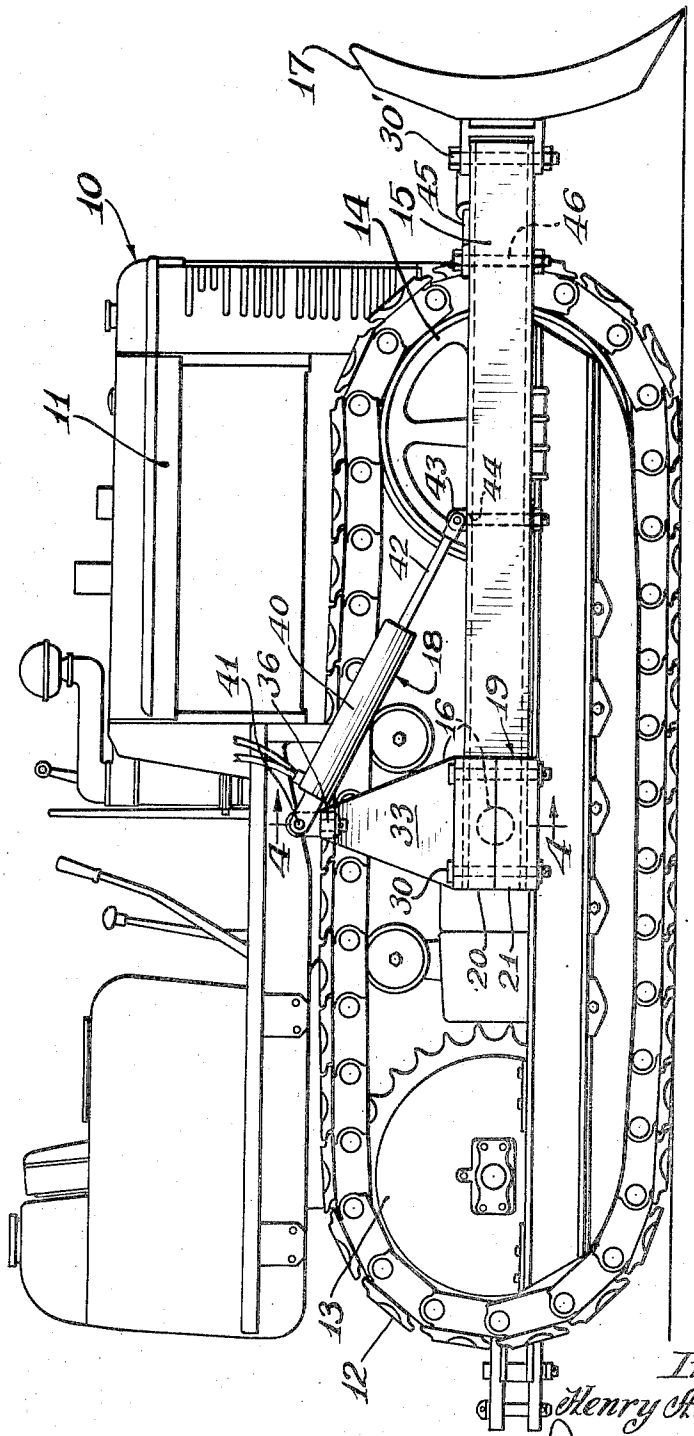


FIG. 1.

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FIG. 2.

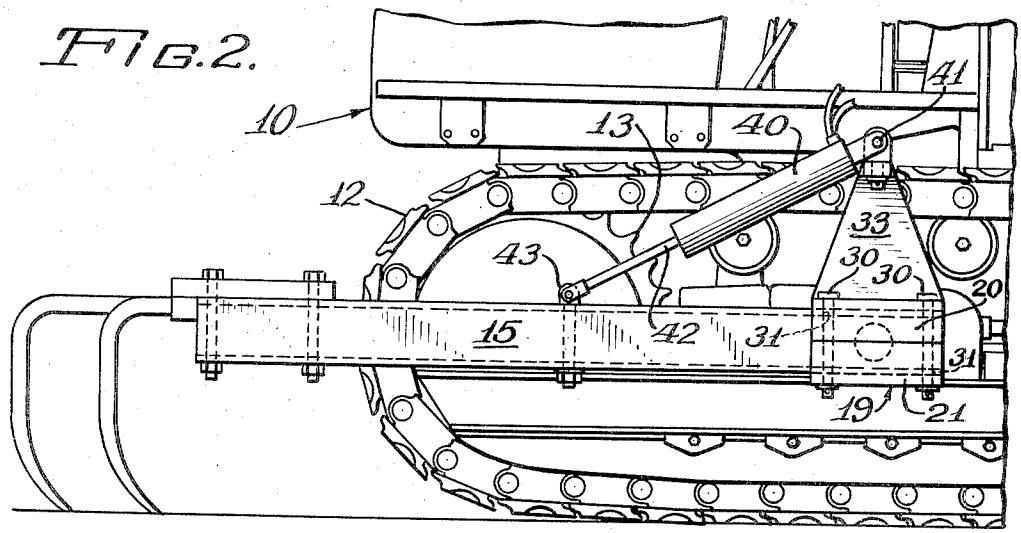
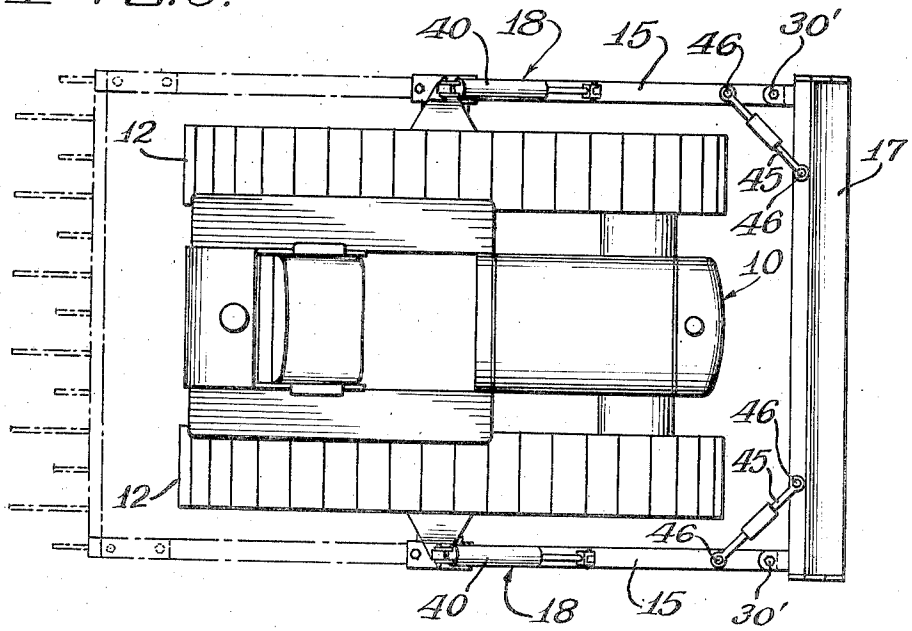


FIG. 3.



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FIG. 4.

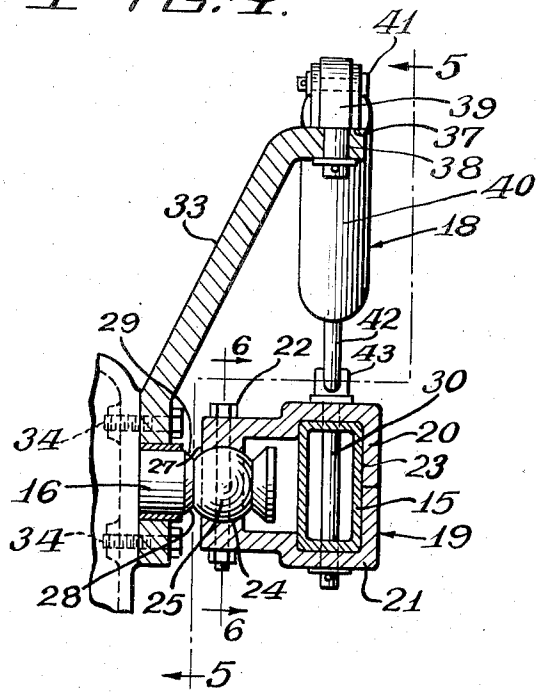


FIG. 5.

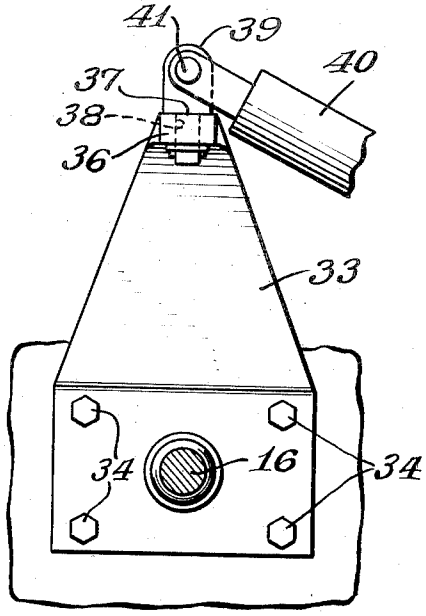


FIG. 6.

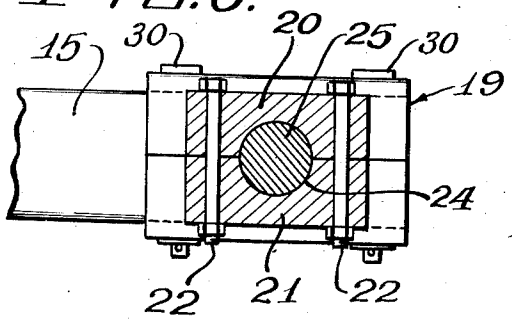
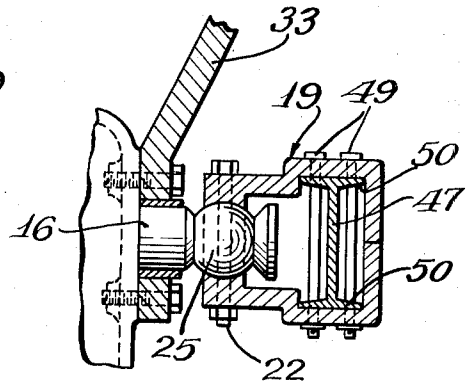


FIG. 7.



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2,832,158

IMPLEMENT MOUNTING MEANS FOR CRAWLER TRACTORS

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Application November 13, 1956, Serial No. 621,837

5 Claims. (Cl. 37—144)

This invention relates to earth moving machines and it has reference more particularly to attaching apparatus for mounting an earth moving implement on a tractive vehicle.

The object of this invention is to provide an improved means for receiving and supporting tool carriers or side beams used for attaching of various earth working tools, and it is a particular feature of this invention to provide such side beams which may be adapted for mounting on tractors so as to allow either for pushing or pulling of a tool.

It is also an object of this invention to provide for side beams which may be reversed from a forward position to a rearward position with the least amount of manual effort.

It is further an object of this invention to provide side beams wherein the hydraulic means used to manipulate said side beams are also easily reversed.

The invention will be more fully understood by now referring to the following detailed description of several illustrative embodiments thereof, reference for this purpose being had to the accompanying drawings in which:

Figure 1 is a side view of the invention as connected to a propelling means in the form of a crawler tractor;

Figure 2 is also a side view but illustrating the mounting of a tool to the rear of the tractor;

Figure 3 is a top view on a smaller scale, showing a forward mounted tool, and in dotted lines a rearward mounting of a different type of tool;

Figure 4 is a sectional view along line 4—4 of Figure 1;

Figure 5 is an enlarged view of the trunnion projecting from the side of the tractor, and showing the hydraulic mounting means;

Figure 6 is a cutaway side view of the mounting sleeve as seen on line 6—6 of Figure 4; and

Figure 7 is a sectional view of a modified form of the invention wherein an I-beam is utilized as the side beam.

For the purpose of simplification in reading, reference will be made to only one unit of a duplicate set of parts to be used in this invention.

Referring now to the accompanying drawings showing a preferred construction, numeral **10** designates a conventional crawler type tractor having a power plant **11** and endless track **12** revolved around sprocket wheel **13** and wheel **14**. Each side beam **15** is pivotally attached to the tractor by means of trunnion **16** carried on the side thereof. The said side beams **15** and attached earth working tool **17** are vertically manipulated by means of hydraulic ram **18**.

At the central side portion of the tractor **10** is shown a sleeve member **19** consisting of identical portions **20** and **21**. These portions **20** and **21** when joined together by bolts **22**, as shown in Figure 4, form a rectangularly shaped opening **23** at one side to facilitate the insertion of side beam **15**, and at the other side a somewhat reduced socket portion **24** adapted to receive and confine the ball-shaped portion **25** of trunnion **16** secured to and projecting from the tractor body. In order to allow for

sway of side beam **15**, socket portion **24** of sleeve **19** is formed to embrace slightly less than the whole of ball portion **25** so that points **28** and **29** of trunnion **16** act as stops engaging the lips **27** of socket **24** to limit the rocking motion of the beam.

The members **20** and **21**, when joined together for use as shown in Figure 2, hold in place the side beam **15** with the help of bolts **30** inserted through a plurality of vertically spaced aligned openings **31** on the members **20** and **21**, and equally spaced openings **32** in the side beam **15**.

A standard **33** is apertured to receive the trunnion **16** and is mounted on the tractor side by means of bolts **34** for the purpose of supporting the shiftable hydraulic ram **18**. Standard **33** is substantially wider at its base for attachment to the tractor, and extends outwardly and upwardly to a tapered point **36** where it is angled to form a flat surface **37**. A bore **38** through said flat surface **37** furnishes a horizontal swivel for eye bolt **39** to which hydraulic cylinder **40** is attached. The eye portion of bolt **39** receives a pin **41** providing for vertical pivoting of the ram **18**.

The other end of the hydraulic ram is attached to the side beam **15** by joining the piston rod **42** to an eye bolt **43** carried in an opening **44** on side beam **15**.

A support brace **45** and mounting bolts **46**, as shown in Figure 3, are used to give added strength to the tool assembly.

The modification shown in Figure 7 illustrates the sleeve member **19** adapted for use with a side beam in the form of an I-beam **47**. This type arrangement requires openings **48** to be of somewhat smaller diameter to accommodate the use of a plurality of bolts **49** adapted to register with suitable openings provided in flanges **50** of the I-beam.

Thus it can easily be seen that a tractor having a front mounted tool attached for pushing work as shown in Figure 1 may be converted to accommodate a rear mounted or pull tool as shown in Figure 2 by merely taking out bolts **30'** and **46** at the front end to detach the front mounted tool and support brace **45**, removing bolts **30** from the sleeve member **19** and removing eye bolt **43** to disconnect the hydraulic ram **18** and then sliding the side beam rearwardly through the sleeve member **19**, swiveling the hydraulic ram to the rear, and assembling the unit in reverse manner.

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

1. In implement attaching apparatus for a crawler tractor, a pair of supporting members pivotally mounted on opposite sides of the tractor body medially of the ends thereof for swinging in a vertical plane about transverse axes, each said supporting member comprising a sleeve member having openings therein, bolts carried in said openings, a pair of longitudinally extending tool-carrying beams adapted to be slidably received in said sleeve members, said beams being slidable so that the tool-carrying ends thereof extend forwardly or rearwardly from the tractor longitudinally in said sleeve members and having spaced openings in each end thereof optionally registrable with the openings in said sleeve members to receive said bolts at either end of said beams to provide for mounting tools in front and rear of the tractor.

2. The invention as set forth in claim 1, wherein said beam is in the form of a tube rectangular in section.

3. The invention as set forth in claim 1, wherein said beam is in the form of an I-beam.

4. In implement attaching apparatus for crawler tractors, a pair of longitudinally extending side beams on opposite sides of the tractor body, attaching means at each end of said side beams for connecting a transversely ex-

tending tool therebetween, and a supporting member on each side of the tractor body adapted for optional connection to either end of said side beams comprising a housing member pivotally mounted on each side of the tractor for swinging in a vertical plane and adapted to slidably receive said beam, whereby the latter may be caused to extend forwardly or rearwardly of the tractor, and means for connecting said side beams to said supporting members at either end thereof.

5. In implement attaching apparatus for crawler tractors, a pair of longitudinally extending side beams on opposite sides of the tractor body, attaching means at each end of said side beams for connecting a transversely extending tool therebetween, and a supporting member on each side of the tractor body adapted for optional connection to either end of said side beams comprising a housing member pivotally mounted on each side of the tractor for swinging in a vertical plane and adapted to slidably receive said beam, whereby the latter may be caused to extend forwardly or rearwardly of the tractor, and means for connecting said side beams to said supporting members at either end thereof, and a hydraulic ram swivelly mounted on the side of the tractor body adjacent said supporting members, said ram being swingable bodily about a vertical axis to extend forwardly or rearwardly thereof, and means on said side beams for connecting the ram thereto in either position thereof.

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