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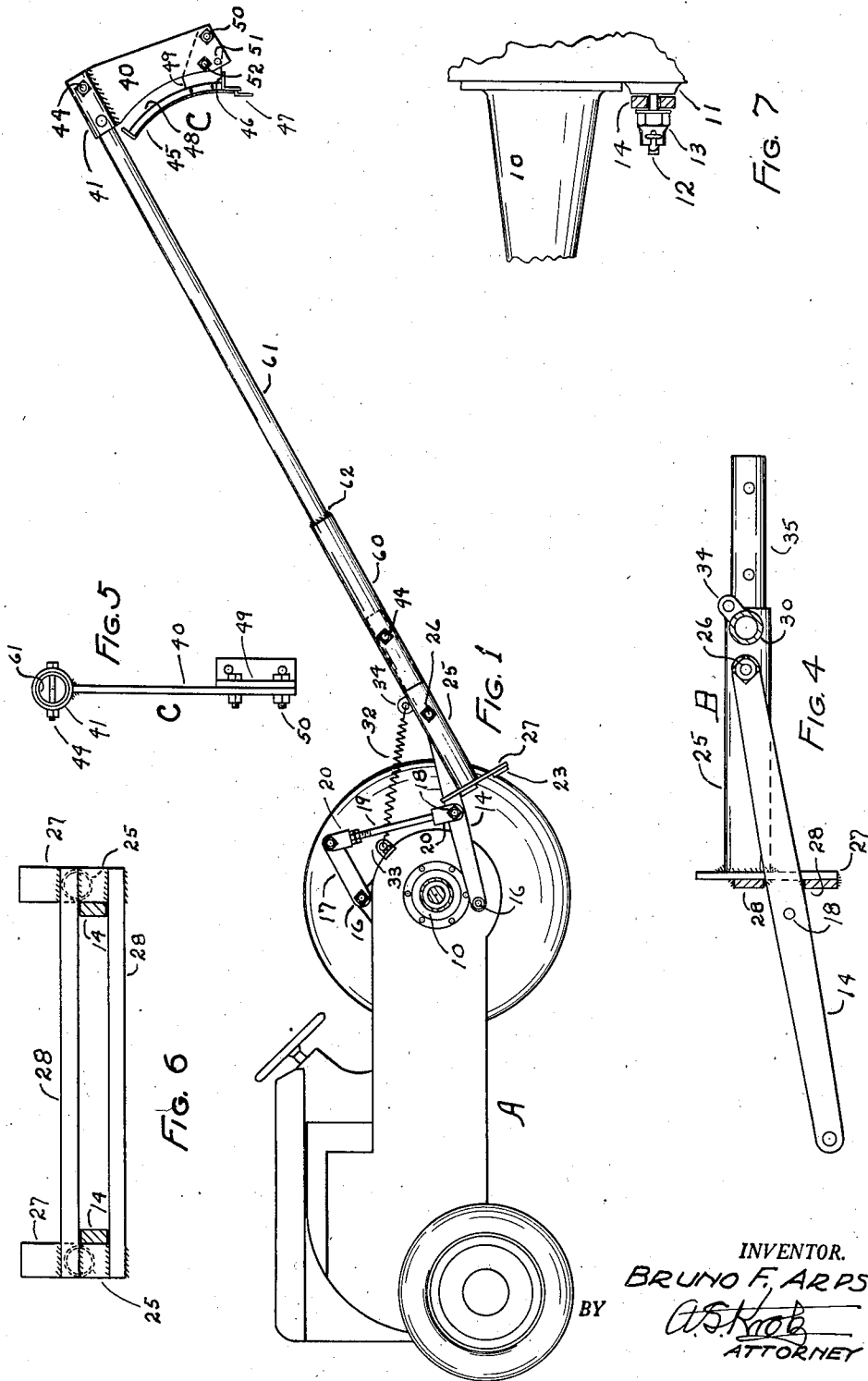
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TRENCH FILLER AND EARTH MOVING ATTACHMENT FOR TRACTORS

Filed Oct. 26, 1942

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

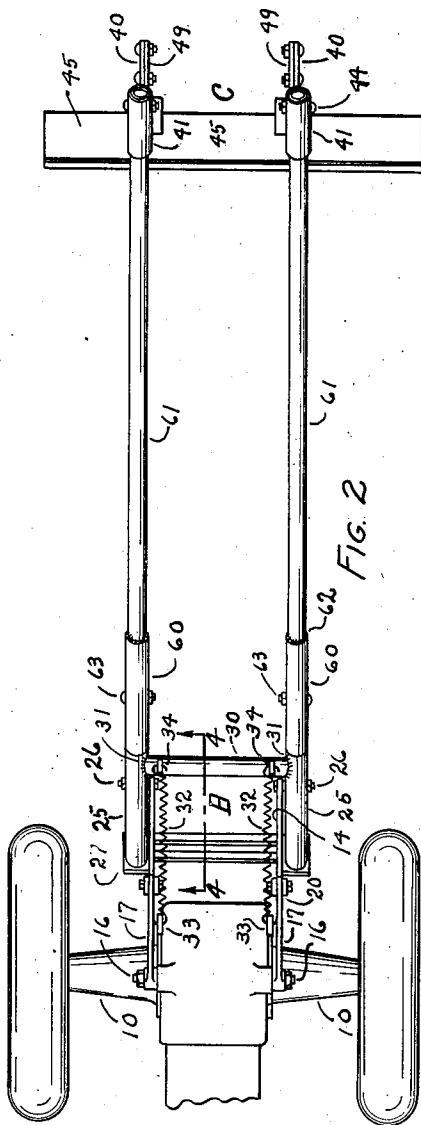


FIG. 2

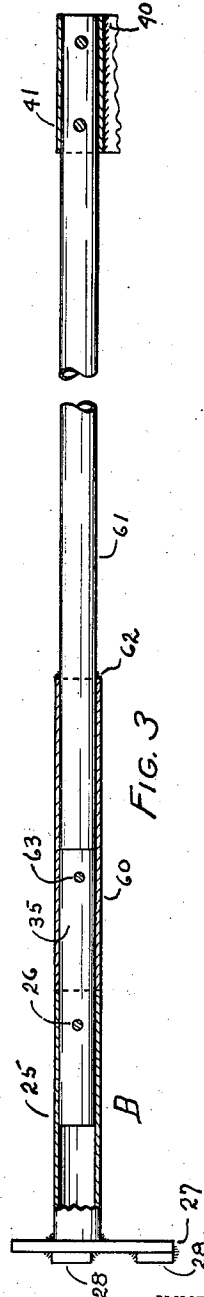


FIG. 3

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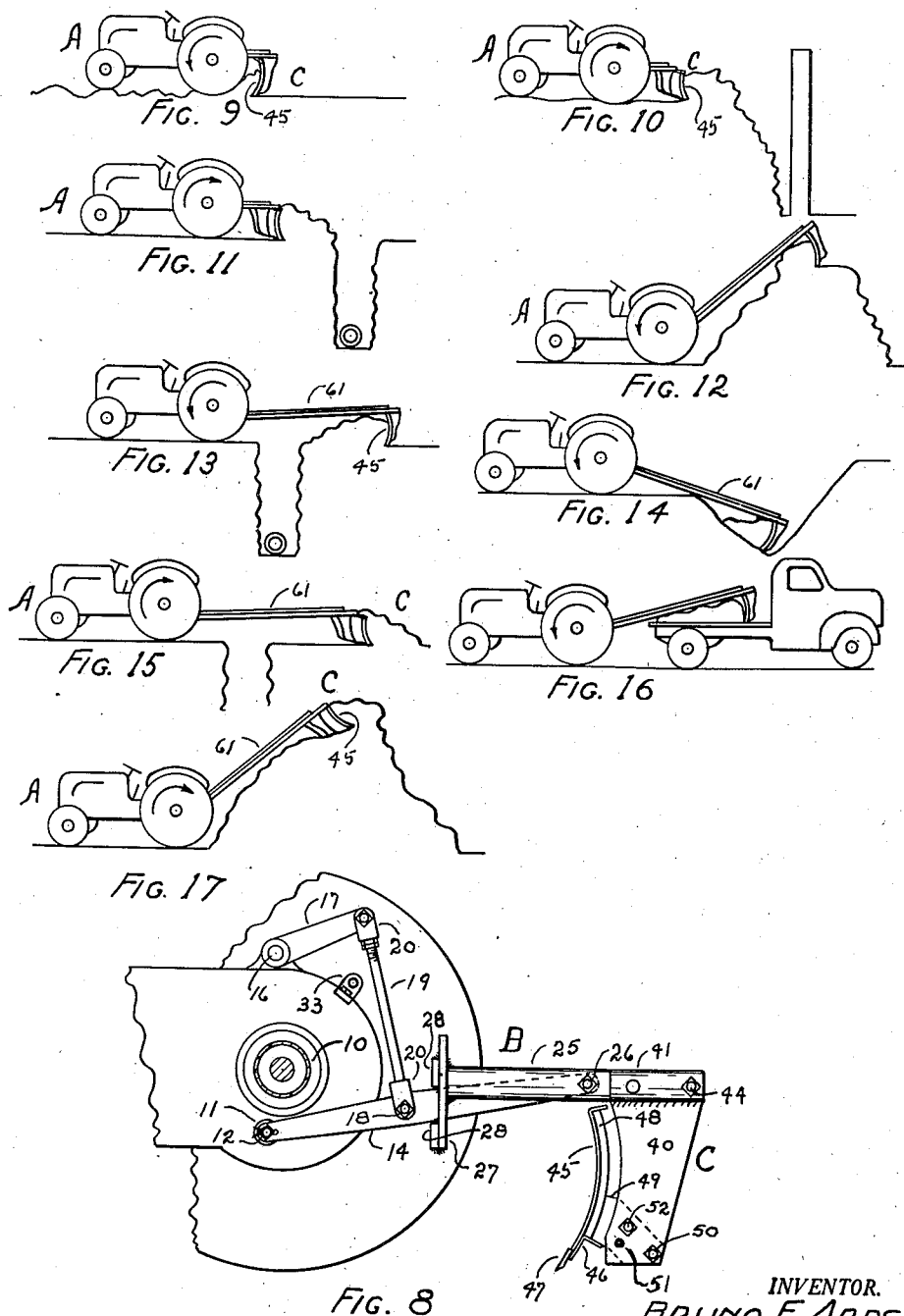
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TRENCH FILLER AND EARTH MOVING ATTACHMENT FOR TRACTORS

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3 Sheets-Sheet 3



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TRENCH FILLER AND EARTH-MOVING
ATTACHMENT FOR TRACTORSBruno F. Arps, New Holstein, Wis., assignor to
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Application October 26, 1942, Serial No. 463,414

3 Claims. (Cl. 37-153)

The present invention relates to a scraper device for direct connection to a conventional tractor which is adapted for trench filling, earth leveling, earth moving, and the like.

An object of the present invention is to provide a device which is easily connected to and disconnected from a conventional tractor and having means whereby the standard lifting means on the tractor may be used for controlling the attachment.

Other objects of the present invention is to provide means whereby the scraper blade of the attachment may be connected close to the tractor for leveling either by pushing the dirt or pulling the blade into the dirt and means whereby the blade may be positioned a considerable distance from the tractor so it may be used for filling trenches with the dirt on either side of the trench, for leveling piles of dirt, or pushing or pulling the dirt away from the trench in either direction.

An object of the present invention is to provide a device which is simple, easily operated and under perfect control of the operator for moving dirt under any known condition or for assisting in digging trenches.

To these and other useful ends, my invention resides in features of construction, combinations of parts, or their equivalents, and mode of operation, as hereinafter set forth and claimed and shown in the accompanying drawings in which:

Fig. 1 is a side elevational view of a conventional tractor equipped with my invention, showing the blade in its lifted position and in its farthest position from the tractor.

Fig. 2 is a top view of the device as shown in Figure 1, illustrating a fraction only of the tractor.

Fig. 3 is an enlarged partially sectioned view of the extended frame and tube connection between the tractor and blade.

Fig. 4 is an enlarged view of a fraction of the frame of the device showing its connection to the right hand draw bar and taken on line 4-4 of Figure 2.

Fig. 5 is a rear view of one of the elements used for connecting the scraper blade to the tubes.

Fig. 6 is a front view of the fastening on the front end of the tube extensions showing the draw bars in section and in the position shown in Figure 4.

Fig. 7 is a rear view of the draw bar fastening to the tractor housing.

Fig. 8 is a side elevational view of the device as shown in Figure 4, illustrating its connection

to the power lift of the tractor and having the scraper unit attached thereto.

Figures 9 through 17 illustrate the operation of my device in its various assemblies and positions for moving dirt.

In Figures 1 and 9 through 17 the tractor is designated in its entirety by reference character A. Tractors of the class are provided with outwardly extending axle housings 10-10, each side of the frame of the tractor being preferably provided with flattened projections 11-11 (see Figure 7). Studs 12 are secured to members 11, the outer ends of which are threaded and have suitable washers and preferably castellated nuts 13-13. Draw bar links 14-14 are preferably provided which are at their forward ends pivotally mounted on studs 12.

Links 14 are in reality standard draft links having considerable strength and having a connection to the power lift of the tractor which is generally hydraulically operated as follows:

The hydraulic device is provided with a transverse shaft 16 having at its ends rearwardly and upwardly extending arms 17-17, the rear ends of which are connected to links 14 as at 18-18 (see Figures 1, 4 and 8) by means of connecting links 19-19. Members 19 are provided with the usual forked end pieces 20-20 in which at least one end of the link is screw threaded for adjustment for purposes which will be obvious.

It will be seen that the operator may manipulate the controlling valve to raise and lower the rear ends of links 14, the valve having means for stopping them in any desired vertical position.

I provide short tubes 25-25 to which the rear ends of links 14 are attached by bolts as at 26-26. I provide means for changing the angle of members 25 relative to members 14 as follows:

Plates 27 are preferably welded to the front ends of tubes 25 and are connected by means of spaced bars 28-28 (see Figure 6). Bars 28 are spaced for the free reception of members 14 (see Figures 4 and 6). The position shown in Figure 4 is generally used for the assembly as shown in Figure 8 wherein links 14 lie between bars 28. When the long tube extension is used (see Figure 1) links 14 are positioned above the top bar 28.

I provide a transverse tube 30 which is welded to the rear ends of tubes 25 as at 31-31, thus forming a rigid frame. Two springs 32-32 are suitably secured to the upper rear corner of the tractor frame as at 33-33 and to tube 30 as at 34-34. These springs are necessary only when

the long tube extension is used as shown in Figures 1 and 2 so as to assist the power lift in controlling the device.

In Figure 3, I illustrate an extension comprising tubes 60 and 61 which are welded together preferably at 62. Tubes 60 are adapted to slide over the protruding ends of tubes 35 and being secured thereto by bolts 63.

The scraper fastening elements are clearly illustrated in the various figures, a rear view being shown in Figure 5 and a side view being shown in Figures 1 and 8. The scraper fastening elements and blade in their entireties are designated by reference character C and comprise plates 40, the upper ends of which are welded to tube sections 41 so as to fit over the rear ends of tubes 61 or 35 and being secured thereto by means of bolts 44.

A scraper blade 45 is provided having preferably an angled bar 46 at its bottom for stiffening purposes and a detachable blade 47 which may be conveniently sharpened and replaced. Blade 45 is also provided with spaced transverse angle irons 48.

I provide brackets or adapters 49 which are secured to blade 45 or preferably to members 48 in any convenient manner, the rear ends of which are pivotally mounted to member 40 as at 50. I provide two or more openings 51 in member 40 (see Figure 8) and a bolt 52 which extends through an opening in member 49, and one of openings 51 in member 40.

The adjustment shown in Figure 8 is the preferred position, the angle of blade 45 however may be changed by extending bolt 52 through the lower opening 51.

Clearly I have provided convenient means for adjusting the angle of blade 45. I have also provided means for changing the angles of members 25 relative to members 14 so that the operator may position the blade in whatever angle is best suited for the work at hand. Suitable openings in members 35 and 61 are provided so member C may be positioned on these members with blade 45 facing forwardly or rearwardly (see Figures 4, 8 and 10).

It will be seen that I have provided means for positioning member C close to the tractor as illustrated in Figure 8 and a considerable distance from the tractor as illustrated in Figures 1 and 2.

Tubes 61 are the same outside diameter as tubes 35, therefore member C may be attached to the rear ends of either tubes as illustrated in Figures 1 and 8.

Clearly I have provided an attachment for tractors which may be adjusted to various kinds of work as illustrated and the various adjustments provided may be easily and quickly made.

Obviously the hydraulic lift may be used for differently positioning member C relative to the soil to be moved. For example, in Figure 9, the blade is shown as used for leveling rough ground. In Figures 10 and 11, the blade is turned facing rearwardly for pushing dirt into trenches or for leveling rough ground. In Figures 12 and 13 the

blade faces forwardly to drag dirt into trenches and for leveling a pile of dirt. In Figure 14, the blade faces forwardly for dragging dirt out of a trench or drainage ditch. In Figure 15 it will be seen that the blade faces rearwardly for pushing dirt away from the trench. In Figure 16 the blade faces forwardly and is adapted for dragging dirt from a truck or elevated platform. In Figure 17 it will be seen that the blade may be faced rearwardly for pushing dirt from a pile of dirt. All of the figures illustrate clearly that I have provided a very convenient attachment for tractors adapted for almost any kind of dirt moving.

Having thus shown and described my invention, I claim:

1. A device of the class described, comprising a tractor having a power lifting device, draft links pivotally secured at their forward ends to opposite sides of the frame of the tractor, operating connections from said power lifting device to said draft links, tubes hingedly secured to the rear ends of said draft links intermediate their ends, means whereby said tubes may be held in different vertical angular positions relative to the draft links, a scraper element adapted to be reversably and detachably secured to the rear ends of said tubes.

2. A device of the class described, comprising a tractor having a power lifting device, a frame having at its rear corners rearwardly projecting members and at its forward corners forwardly projecting members, the forward ends of said last projecting members being hingedly secured to opposite sides of the tractor frame, links forming operating connections between said power lifting device and opposite sides of said frame, a scraper element adapted to be removably secured to said rearwardly projecting members with the scraper blade facing forwardly or rearwardly, extension members adapted to be secured to said first rearwardly extending members and to be removably secured to said scraper element at their rear ends, whereby said scraper element may be secured either to the rear ends of said adapter members or to the rear ends of said rearwardly extending frame members.

3. A device of the class described, comprising a tractor having a power lift device, a frame having at its rear corners rearwardly projecting members and at its forward corners forwardly projecting draft members, the forward ends of said draft members being hingedly secured to opposite sides of the tractor frame, links forming operating connections between said power lifting device and said draft members, a scraper element adapted to be removably secured to said rearwardly projecting members with the scraper blade facing forwardly or rearwardly, extension members adapted to be secured to said rearwardly projecting members and to be removably secured to said scraper element at their rear ends, whereby said scraper element may be secured either to the rear ends of said rearwardly projecting members or to the rear ends of said extension members.

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