

Nov. 5, 1946.

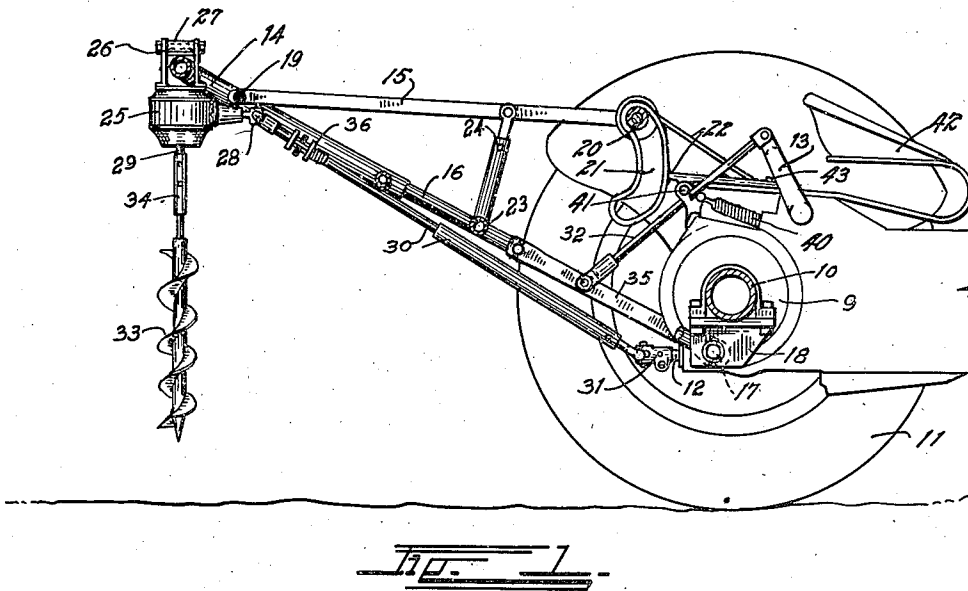
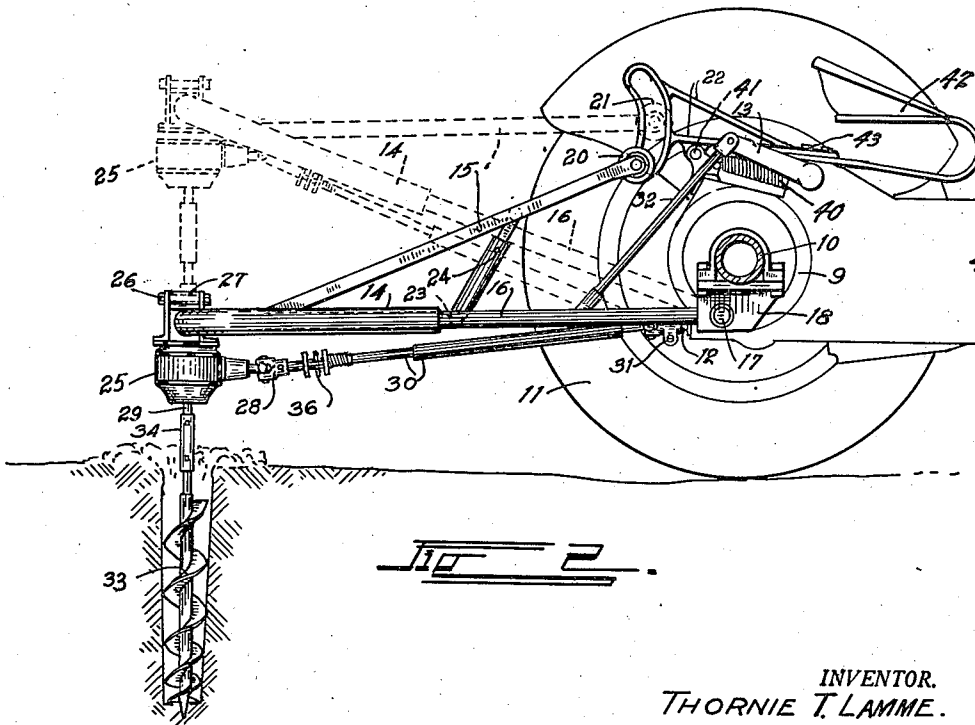
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2,410,508

POST HOLE DIGGING ATTACHMENT FOR TRACTORS

Filed Jan. 1, 1945

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

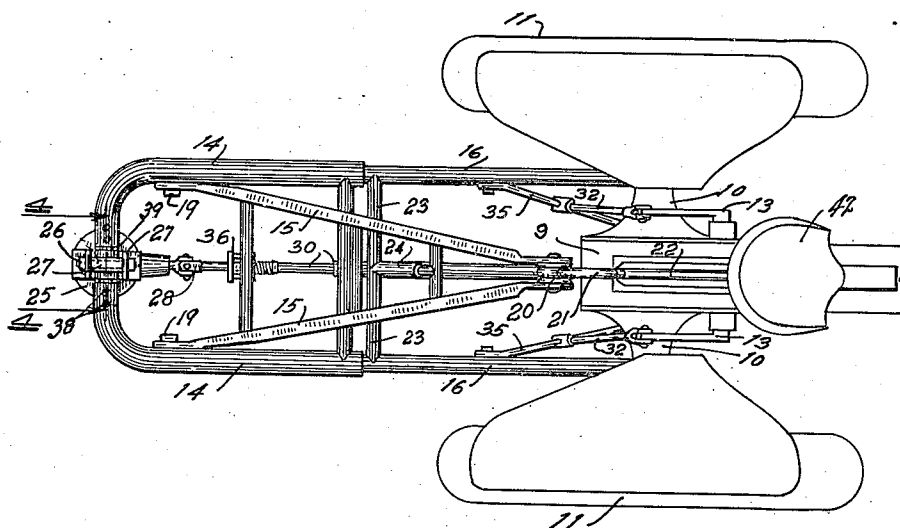


Fig. 2

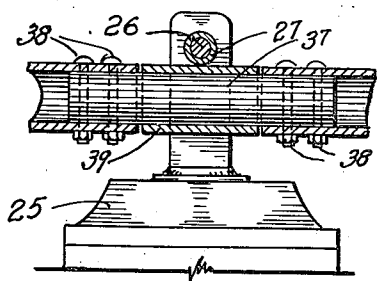


Fig. 4

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POSTHOLE DIGGING ATTACHMENT FOR
TRACTORS

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1 Claim. (Cl. 255—19)

1

This invention relates to a post hole digging attachment for tractors, and has for its principal object the provision of a simple and highly efficient device which can be quickly and easily attached to a standard farm tractor, and which will employ the power lift and power take-off of the tractor to provide a power-operated post hole digger.

Another object of the invention is to provide a hingedly mounted device which will maintain a hole digging auger on a vertical axis throughout the digging operation.

Other objects and advantages reside in the detail construction of the invention, which is designed for simplicity, economy, and efficiency. These will become more apparent from the following description.

In the following detailed description of the invention, reference is had to the accompanying drawings which form a part hereof. Like numerals refer to like parts in all views of the drawings and throughout the description.

In the drawings:

Fig. 1 is a longitudinal sectional view of the improved post hole digging attachment in its elevated position on a typical tractor;

Fig. 2 is a similar side view thereof illustrating digging positions of the tractor; and

Fig. 3 is a plan view thereof; and

Fig. 4 is an enlarged detail section taken on the line 4—4, Fig. 3.

In the drawings, typical parts of a tractor of the "Fordson" type are designated by numeral as follows: gear case 9, rear axle housing 10, rear wheels 11, power take-off 12, power lift levers 13, lift links 32, lift arms 35, master control spring 40, compression link pin 41, seat 42, and seat bolts 43.

The attachment employs a hingedly mounted, telescoping boom frame formed from two tubular, L-shaped, outer frame members 14 which are joined at the rear by a relatively short separating shaft 37 which is secured in the extremities of the tubular outer frame members 14 by means of suitable bolts 38. This construction forms a U-shaped outer boom frame with the outer frame members 14 forming the legs thereof. The members 14 telescope over a hinged boom arm 16. The arms 16 are mounted on pivot bolts 17 in angle clips 18 detachably secured to the rear axle housing 10.

An A-shaped brace frame 15 is hingedly mounted at 19 on the outer frame 14 at its wider extremity and terminates in a roller 20 at its narrower extremity. The roller 20 is mounted in a

2

vertical guide member 21 supported in a supporting frame 22. The frame 22 is attached to the tractor by means of the compression link pin 41 and the seat bolts 43 of the tractor. The guide member has a predetermined crescent shape extending rearward at its extremities and forward at its middle. The A-frame 15 is braced at its middle from a cross member 23, extending between the boom arms 16, by means of an adjustable diagonal brace member 24.

A rotatable sleeve 39 is mounted on the shaft 37 between the outer frame members 14. The sleeve carries a bearing tube 27 extending transversely thereof.

A bevel gear box 25 is swingingly suspended from a hinge bolt 26 extending through the bearing tube 27 so that it may swing freely from side to side on the bolt 26 and forward and back by rotation of the sleeve 39. Suitable gears in the gear box are driven from a universal joint 28, and these gears drive a vertical auger shaft 29. A suitable post hole auger 33 is secured on the auger shaft 29 by means of a set collar 34. The universal joint 28 is driven through a medium of telescoping drive shaft 30 which extends to a second universal joint 31 mounted on the power take-off 12 of the tractor.

The lift arms 35 of the tractor are connected at their rearward extremities to the boom arms 16. The lift links 32 extend downwardly from each of the power lift levers 13 to the lift arms 35 to support the weight of the entire device.

In use, the auger rotated by engaging the power take-off clutch of the tractor and the auger is positioned over the point for the desired post hole. The power lift levers 13 are now operated from the tractor to lower the boom frame so as to bring the auger 33 into contact with the ground. As the boom frames swing downwardly, the diagonal brace 24 pulls the rear extremity of the A-frame 15 downwardly. This causes the roller 20 to travel about the contour of the roller guide member 21. The guide member is so contoured that the roller 20 will be pulled forwardly during the initial descent of the boom frames so as to maintain the auger shaft vertical.

If the entire boom frame was rigid, it would naturally tend to initially swing downwardly and rearwardly. The rearward movement, however, is counteracted by the roller 20 moving forwardly in the upper portion of the member 21, which causes the boom frame to telescope and shorten as it descends. As the bottom of the descending arc is approached, the natural tendency of a rigid boom frame would be to swing forwardly. This

3

forward tendency is counteracted in the present invention by the rearward curve of the bottom portion of the guide member 21. This rearward curve at the bottom of the guide member 21 causes the roller 20 to be forced rearwardly to extend the telescoping boom members so as to maintain the vertical position of the auger shaft as shown in Fig. 2.

Should the tractor be tilted in any direction, it will not affect the vertical position of the auger shaft, since the gear box is universally suspended on the hinge bolt 26 and the rotatable sleeve 39.

While a specific form of the improvement has been described and illustrated herein, it is desired to be understood that the same may be varied, within the scope of the appended claim, without departing from the spirit of the invention.

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

A post hole digging attachment for tractor comprising: a telescoping boom; means for hinging the forward extremity of said boom to a tractor so that it will extend rearwardly therefrom; a brace member extending from a hinged

4

connection on said boom member forwardly to a position above the forward extremity of said boom member; a vertically positioned guide member in which the forward extremity of said brace frame is movably mounted, said guide member being contoured to move said brace member forwardly and backwardly a predetermined distance as said boom member lowers to maintain the rearward extremity of the latter in a substantially vertical plane; means for securing said guide member to said tractor; means for causing the forward extremity of said brace member to move along said guide member in consequence of vertical movement of said boom member; means for raising and lowering said boom member; a gear box suspended from said boom member; a drive shaft protruding forwardly from said gear box; a universally-mounted, telescoping, counter-shaft extending forwardly from said drive shaft; an auger shaft projecting downwardly from said gear box; and a post hole digging auger secured on said latter shaft.

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