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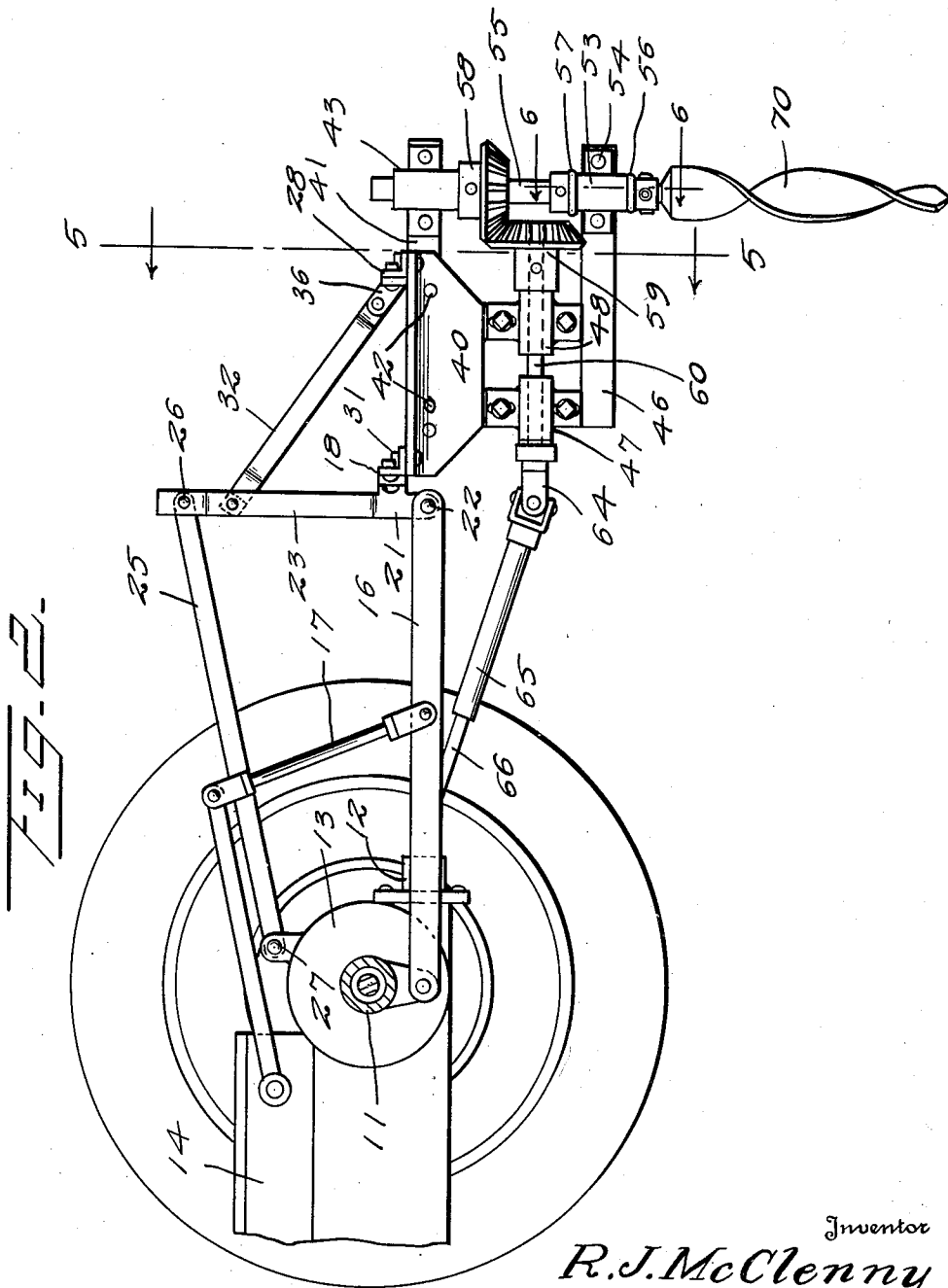
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POSTHOLE DRILL

Filed Dec. 3, 1945

4 Sheets-Sheet 2



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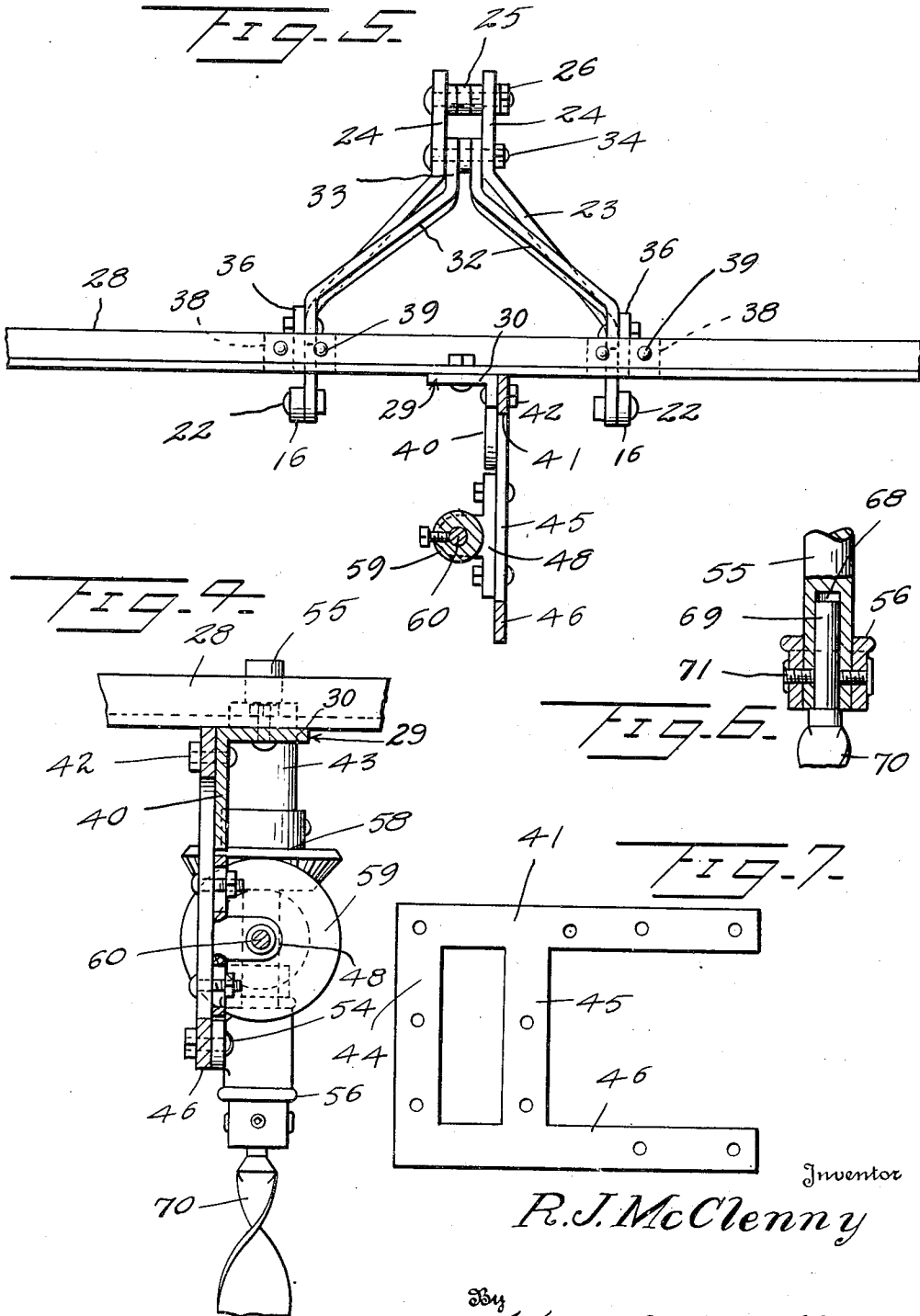
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UNITED STATES PATENT OFFICE

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POSTHOLE DRILL

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1 Claim. (Cl. 255—19)

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This invention relates to hole drilling attachments for tractors.

An object of this invention is to provide a hole drilling attachment which may be coupled to the rear power take-off and to the hydraulic lift so that post holes or the like may be quickly drilled.

Another object of this invention is to provide a post hole drilling attachment for a tractor for attachment to the hydraulic lift and power take-off which includes means for maintaining the drill substantially vertical in its movement into and out of the ground.

A further object of this invention is to provide an attachment of this kind which can be easily and quickly mounted and removed from the tractor.

With the above and such other objects in view as may hereinafter more fully appear, the invention consists of the novel construction, combination and arrangement of parts, as will be more specifically described and illustrated, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention, as claimed.

In the drawings:

Figure 1 is a top plan view of a post hole drill attachment constructed according to an embodiment of this invention mounted on the rear of a tractor, the tractor being shown partly broken away.

Figure 2 is a detail side elevation of the device.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a sectional view taken on the line 5—5 of Figure 2.

Figure 6 is a fragmentary sectional view taken substantially on the line 6—6 of Figure 2.

Figure 7 is a detail side elevation of the supporting plate for the drill and bearings therefor.

Figure 8 is a sectional view taken on the line 8—8 of Figure 3.

Referring to the drawings the numeral 10 designates generally a tractor which is provided with a rear axle 11 having a power takeoff 12 associated with the differential 13. A hydraulic draft bar elevating member 14 is carried by the tractor 10, and includes a pair of lifting levers 15 which are connected to a pair of drawbar supporting levers 16 by means of links 17. A transversely disposed drawbar 18 is disposed rearwardly of the levers 16, and is secured to the levers 16 by means

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of an angle shaped coupling member 19 fixed as at 20 to the forward side of the drawbar 18.

The angle member 19 includes a depending ear 21 pivotally secured at 22 to the rear end of a lever member 16. A pair of upwardly convergent bars 23 extend upwardly from the coupling members 19, and are formed at their upper ends with parallel extensions 24 between which the rear end of a pitman or link 25 is pivotally secured on a bolt 26. The forward end of the link or pitman 25 is secured to an ear 27 carried by the differential housing.

A rear, transversely extending angle bar 28 is disposed parallel with the drawbar 18, and is connected thereto by means of an angle-shaped connecting member 29. The connecting member 29 includes a longitudinal upper side 30 secured by fastening members 31 to the angle bars 18 and 28 in the transverse median thereof.

The rear angle member 28 is supported in substantially a horizontal plane with respect to the forward angle member 18 by means of a pair of upwardly and forward extending bracing bars 32 which are formed at their upper forward ends with parallel extensions 33 engaging between the extensions 24 and secured there-between by a bolt 34.

The rear ends of the bracing members 32 are formed with parallel extensions 35 which are secured to upwardly and rearwardly extending ears 36 by fastening members 37. The ears 36 are carried by plates 38 which are fixed as at 39 to the vertical side of the angle member 28.

The right angular connecting member 29 includes a vertical side 40 to which is secured an upper bearing supporting bar or plate 41. The plate 41 is secured to the vertical side 40 by fastening members 42 and the plate or bar 41 has fixed to the rear portion thereof a vertically disposed bearing 43. The plate or bar 41 includes a pair of vertically disposed bars 44 and 45 disposed in parallel relation and which have formed integral with the lower ends thereof a lower horizontal bar 46.

The vertical bars 44 and 45 have fixed thereto a pair of aligned bearings 47 and 48. The bearings 47 and 48 are formed with elongated slots 49 and 50 respectively through which fastening members 51 and 52 engage so that the bearing members 47 and 48 may be vertically adjusted to dispose these bearings in vertical alignment.

The rear end of the lower bar 46 has secured thereto a rear vertically disposed bearing 53 which is in alignment with the bearing 43 and is secured to the bar 46 by fastening members 54.

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A shaft 55 is journaled through the bearings 43 and 53 and is provided at its lower end with a collar 56 constituting a thrust collar bearing against the lower end of bearing 53. A second thrust member 57 is disposed about the shaft 55 on the upper end of the bearing 53 so that the shaft 55 will be firmly held against endwise vertical movement.

The shaft 55 has fixed thereon between the bearings 43 and 53, a beveled gear 58 which meshes with a beveled gear 59 fixed to a shaft 60. The shaft 60 is journaled through the bearings 47 and 48 and has secured to the rear end thereof, a universal coupling 61, for coupling the shaft 60 to an extensible shaft section 65.

The shaft section 65 has splined thereinto a forward shaft section 66 which is connected to the takeoff shaft 12 by means of a universal coupling 67. As shown in Figure 6, the shaft 55 is formed at its lower end with a socket 68 within which the shaft 69 of a twist drill is secured by set screws or fastening members 71.

In the use and operation of this device the drill 70 is disposed in a substantially vertical position over the point where it is desired to drill a post hole, and is supported in an elevated position by elevating the lifting arms 15. The drill 70 is rotated by rotation of the takeoff shaft 12, and as the drill 70 enters the ground the elevating members 15 are lowered so that the drill 70 will move downwardly with the rotation thereof.

With a device of this kind the matter of digging post holes is a very simple one, and the depth of the holes to be drilled is determined by the length of the drill 70. After the hole has been drilled the device is raised by elevating the lift arms 15. Through the medium of the pitmans 25 the drill 70 will be maintained in a substantially vertical position, during the upward and downward movement thereof so that the post hole will be substantially vertical.

This device can be easily and quickly mounted

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on a tractor and will provide a convenient attachment whereby a great number of post holes may be drilled in a very short time.

I claim:

5 A drill attachment for tractors having a hydraulic lift and a power takeoff at the rear end thereof comprising a frame formed of a pair of spaced elongated parallel bars extending transversely to the longitudinal axis of the tractor at the rear end thereof and connected thereto, and an angle bar fixed between said pair of bars, a pair of vertically disposed upwardly convergent bars fixed at their lower divergent ends to the innermost one of said parallel bars, a second pair of upwardly convergent bars fixed at their lower divergent ends to the rearmost one of said parallel bars and inclined upwardly and forwardly, means securing the convergent ends of said second pair of convergent bars to the convergent ends of said first pair of convergent bars, means pivotally connecting said first pair of convergent bars with the tractor, a vertically disposed drill bit shaft, means supporting said shaft from said frame, a horizontal drive shaft, 25 means connecting said first named convergent bars at the lower ends thereof with the hydraulic lift of the tractor, means connecting said drive shaft with the tractor power take-off, and gear means connecting said drive shaft with said drill bit shaft. 30

ROBERT J. McCLENNY.

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