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TRACTOR MOUNTED ADJUSTABLE POST HOLE DIGGER

Filed Feb. 19, 1952

2 Sheets-Sheet 1

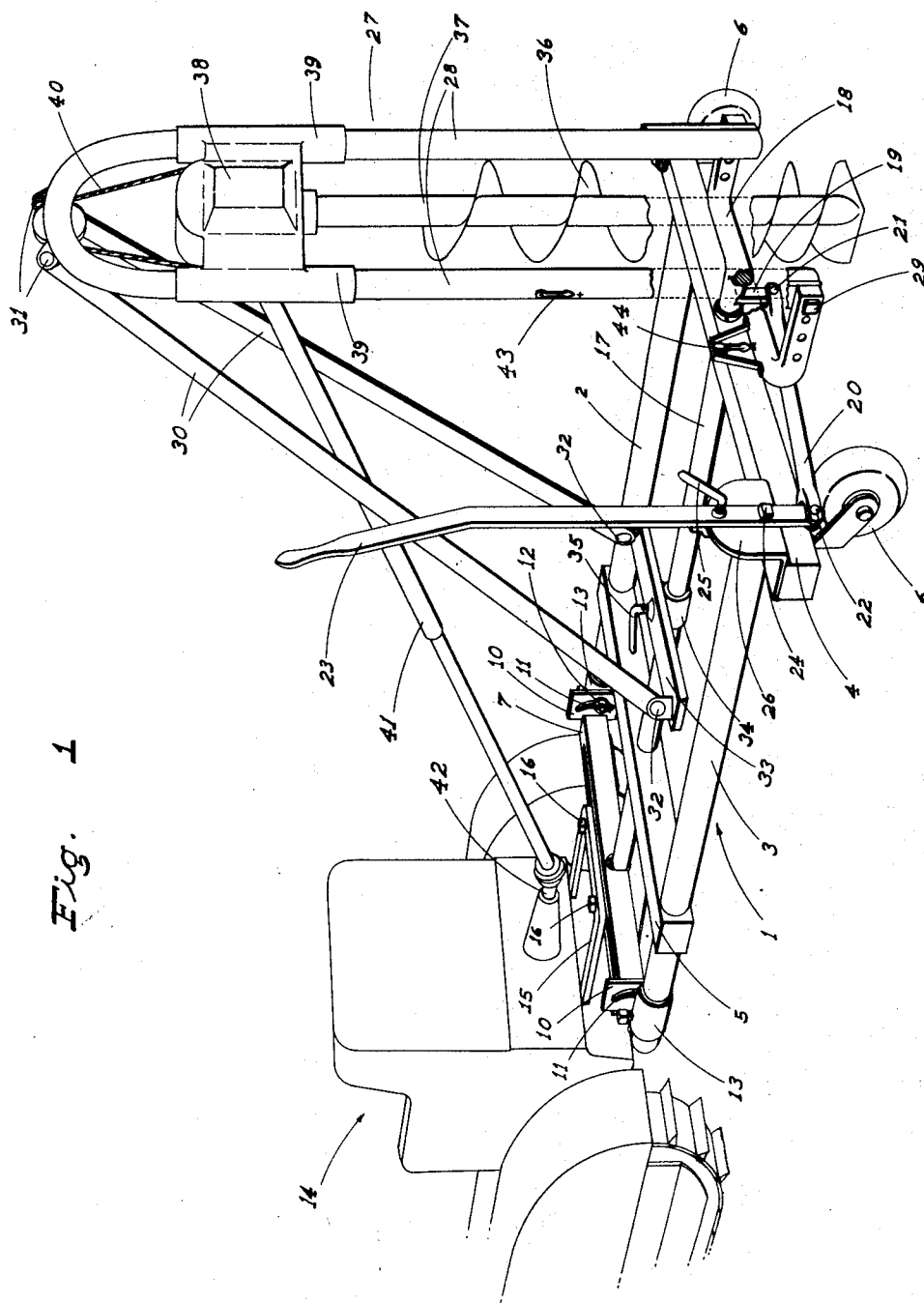


Fig. 1

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Fig. 3

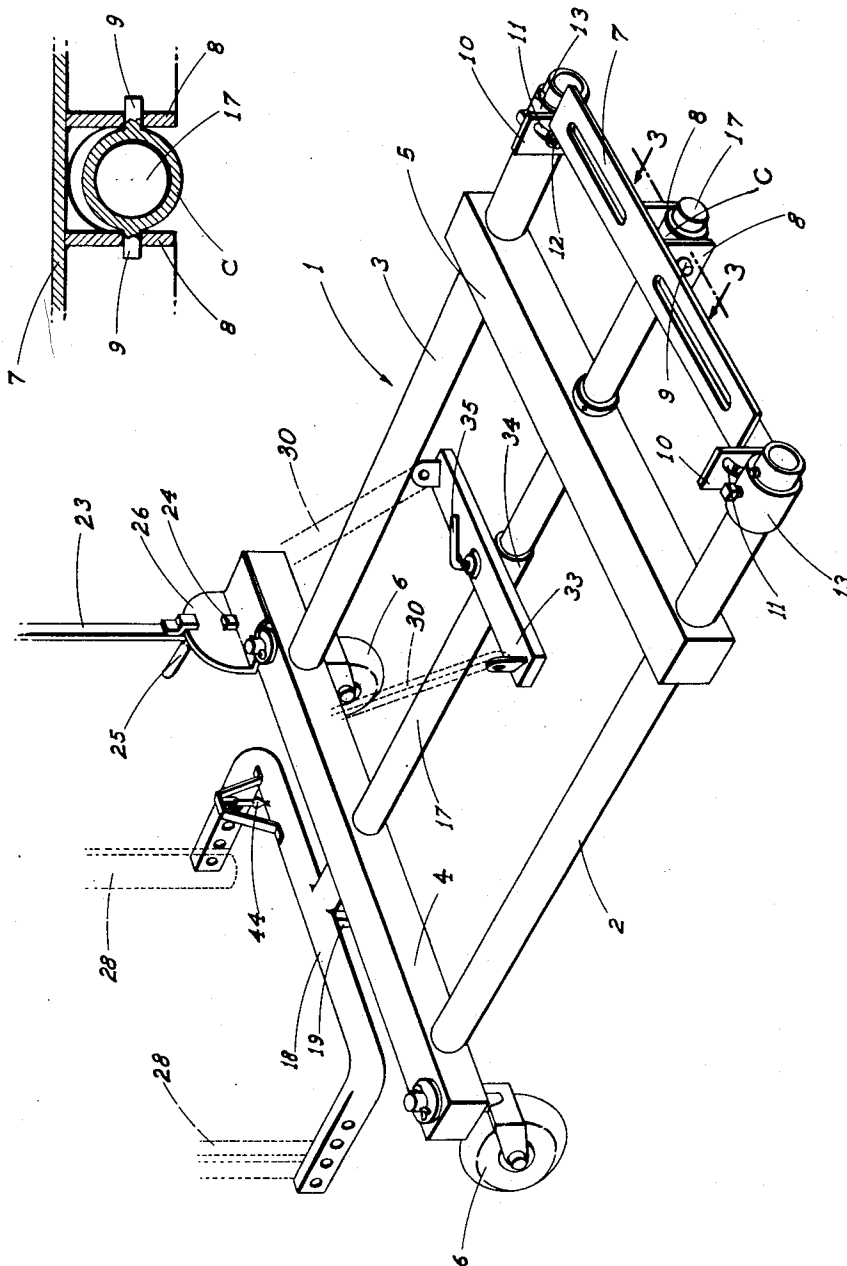


Fig. 2

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TRACTOR MOUNTED ADJUSTABLE
POST HOLE DIGGER

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4 Claims. (Cl. 255—19)

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The present invention is directed to, and it is a major object to provide, novel improvements in a frame-supported, power actuated post hole digger; the invention being especially designed, but not limited, for use in connection with a post hole digger of the type coupled to, and driven from, a tractor.

Another important object of this invention is to provide a post hole digger which employs a novel, adjustable mount for the power actuated auger; such mount being arranged for ready manual adjustment whereby to dispose the auger perpendicular before it is placed in operation. The mount is constructed, in a novel manner, so that adjustment may be had both in a longitudinal direction and in a transverse direction; such dual adjustment, being in planes at right angles to each other, permitting the auger to be very accurately set.

An additional object is to provide an adjustable post hole digger wherein the mount, as in the preceding paragraph, includes a wheel supported frame adapted to couple at the front to a tractor at the rear; there being driving connections between the tractor power take-off shaft and the auger, yet the arrangement being such that the auger is adjustable without interference by said connections.

A further object of the invention is to provide an adjustable post hole digger which positively holds its position of adjustment, once set for operation.

A still further object of the invention is to provide an adjustable post hole digger which is sturdy and compact in structure, and readily portable.

A separate object of the invention is to provide the frame of the post hole digger with a novel coupling unit for attachment to the hitch of the tractor; such coupling unit permitting of articulation, about a transverse horizontal axis, between the tractor and said frame.

It is also an object of the invention to provide an adjustable post hole digger which is designed for ease and economy of manufacture; convenience of operation; and long service with a minimum of servicing or maintenance required.

Still another object of the invention is to provide a practical and reliable adjustable post hole digger, and one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

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In the drawings:

Fig. 1 is a perspective view, from the rear, of the adjustable post hole digger as coupled to a tractor.

Fig. 2 is a perspective view, from the front, of the frame assembly.

Fig. 3 is an enlarged fragmentary transverse section on line 3—3 of Fig. 2.

Referring now more particularly to the characters of reference on the drawings, the novel adjustable post hole digger comprises a rigid, somewhat elongated, draft frame indicated generally at 1. The frame 1 comprises transversely spaced tubular, longitudinal side beams 2 and 3; a rear cross beam 4 fixed to the corresponding ends of the beams 2 and 3; and a forward cross beam 5 fixed to the beams 2 and 3 adjacent, but short of, the front ends of the latter.

The rear cross beam 4 projects at its ends beyond the side beams 2 and 3, and the projecting portions of beam 4 are supported from below by caster wheels 6.

A transverse draft bar 7 spans between the front ends of the side beams 2 and 3, and centrally of its ends the bar 7 is fitted with transversely spaced depending ears 8 which depend on opposite sides of a longitudinal axis collar C whose purpose will appear hereinafter.

The collar C is provided with trunnions 9 which project laterally through the ears 8. With this arrangement the transverse draft bar 7 is capable of pivotal motion about the trunnions 9 as an axis; opposite ends of said draft bar 7 being provided with laterally facing guide flanges 10, arcuately slotted as at 11 concentric to the trunnions 9. Guide bolts 12 project from collars 13, on the side beams 2 and 3, through the slots 11. The draft bar 7 is thus maintained in proper transverse position yet permitted to tilt about the trunnions 9.

The draft frame 1 is coupled to a tractor 14 by securing the tractor hitch 15 to the transverse draft bar 7 by means of bolts 16.

A central longitudinal shaft 17 is rotatably journaled in frame 1, being carried in collar C at the front and at the rear in the cross beam 4 and projecting a short distance rearwardly of said beam 4. At its rear end the shaft 17 is formed with a transversely extending, rearwardly opening yoke 18; such yoke being rocked about its axis—to level the yoke—by the following mechanism:

Rearwardly of the cross beam 4, the shaft 17 is formed with a rigid depending radial arm 19 and a transverse link 20 is pivoted at its inner

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end, as at 21, to said arm 19. The link 20 extends outwardly to pivotal connection, as at 22, with a lower end of an upstanding laterally swingable hand lever 23. The hand lever 23 is pivoted adjacent, but short of, its lower end, as at 24, and such lever is normally but releasably clamped by a hand screw 25 to an adjacent holding plate 26 on cross beam 4.

An inverted U-shaped guide frame 27, which is vertically elongated, upstands from the yoke 18, the lower ends of the legs 28 of said guide frame being pivoted as at 29 to the opposite sides of said yoke.

The guide frame 27 is maintained adjustably, in an upright position by a pair of transversely spaced stay bars 30, pivoted at their upper ends as at 31 to the top of the frame 27. From the pivots 31 the stay bars 30 extend at a forward and downward incline in diverging relation being pivoted at their lower ends, as at 32, to opposite ends of a transverse adjustment bar 33.

The transverse adjustment bar 33 spans over the center shaft 17 between the cross beams 4 and 5, and said bar is adjustable along said center shaft by means of a collar 34. The collar 34 is fixed to the bar 33, and a hand screw 35 normally but releasably locks the collar 34 on said shaft.

It will be recognized that by adjusting the bar 33 lengthwise of shaft 17, the guide frame 27 will be swingably adjusted to or fro.

The post hole digging auger 36 is disposed in upstanding position between legs 28 of guide frame 27, and the upper end of the auger shaft 37 extends into and is driven from a gear box 38. The gear box is mounted for movement up or down in the guide frame 37 by means of sleeves 39 running on legs 28. The gear box 38 is lowered to run the auger 36 into the ground, or raised to withdraw said auger, by conventional gear box hoist mechanism, here shown in part at 40.

The gear box 38 is driven by a universally connected telescopic drive shaft 41 which extends from the front of said gear box at a forward and downward incline to connection with the power take-off shaft 42 of the tractor.

When the above described post hole digger is in use, it is pulled by the tractor 14 from digging point to digging point, and at each such point, before digging the post hole, the guide frame 27 is first adjusted in a longitudinal direction and in a transverse direction to dispose the shaft 37 perpendicular; the adjustment in a longitudinal direction being accomplished by shifting the bar 33 lengthwise on the center shaft 17, and the adjustment in a transverse direction being accomplished by rotating the shaft 17 by suitable manipulation of the hand lever 23, which produces a transverse rocking motion of the yoke 18. With this dual adjustment feature the post hole digger can be effectively set to perpendicular, with the adjustment being accomplished manually and in a minimum of time.

By reason of the embodiment of the universally connected telescopic drive shaft 41, the guide frame 27 may be adjusted, as above, without interference from said driving mechanism.

For the purpose of visually indicating the position of adjustment, both in a longitudinal direction and in a transverse direction, the implement is provided with two plumb bob units; one—indicated at 43—being mounted on a leg 28 of the guide frame 27, and the other—indicated

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at 44—being mounted on the yoke 18 in offset relation to the shaft 17.

From the foregoing description it will be readily seen that there has been produced such a device as will substantially fulfill the objects of the invention as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations therefrom may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired.

1. A mount for a post hole digger which includes an upstanding guide frame, and a driven auger mounted on the guide frame for up or down motion; said mount comprising a supported main frame, a longitudinal shaft journaled on the main frame, normally fixed but releasable means to rotatably adjust the shaft, a yoke on the shaft, said guide frame and yoke both having transversely spaced legs, means pivoting the guide frame legs adjacent their lower ends to corresponding yoke legs for longitudinal swinging adjustment of said guide frame, and normally fixed but releasable means to so swingably adjust the guide frame.

2. A mount for a post hole digger which includes an upstanding guide frame, and a driven auger mounted on the guide frame for up or down motion; said mount comprising a supported main frame, a longitudinal shaft rotatably journaled on the main frame and projecting at one end therefrom, normally fixed but releasable means to rotatably adjust the shaft, a yoke on said projecting end of the shaft, said guide frame and yoke both having transversely spaced legs, means pivoting the guide frame legs adjacent their lower ends to corresponding yoke legs for longitudinal swinging adjustment of said guide frame, a collar normally clamped to but releasable for adjustment along said shaft in spaced relation to the guide frame, a transverse bar on the collar, and transversely spaced stay bars pivotally connected to and diagonaling between the guide frame adjacent the top and said bar adjacent its ends.

3. A mount for a post hole digger which includes an upstanding guide frame, and a driven auger mounted on the guide frame for up and down motion; said mount comprising a supported main frame, a longitudinal shaft rotatably journaled on the main frame and projecting at one end therefrom, normally fixed but releasable means to rotatably adjust the shaft, a yoke on said projecting end of the shaft, said guide frame and yoke both having transversely spaced legs, means pivoting the guide frame legs adjacent their lower ends to corresponding yoke legs for longitudinal swinging adjustment of said guide frame, a collar normally clamped to but releasable for adjustment along said shaft in spaced relation to the guide frame, a transverse bar on the collar, and transversely spaced stay bars pivotally connected to and diagonaling between the guide frame adjacent the top and said bar adjacent its ends; said means for rotatably adjusting the shaft including an upstanding transversely swingable hand lever pivoted on the main frame laterally of the shaft, a radial arm on the shaft, a transverse link pivotally connecting the lever and arm, and releasable holding means between the lever and main frame.

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4. A mount for an earth boring implement which includes an upstanding guide frame and a driven tool mounted on the frame; the mount comprising a supported main frame, a horizontal shaft extending lengthwise of and journaled for rotation on the main frame, means between said frame and shaft to control the rotation of the shaft, means pivotally mounting the guide frame at its lower end on the shaft for longitudinal swinging movement, and means between the guide frame and the shaft to control the swinging of said guide frame and comprising a member slidably mounted on the shaft intermediate its ends, a diagonal brace extending between and

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pivotally connected to said member and the guide frame, and releasable means to clamp the member on the shaft.

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