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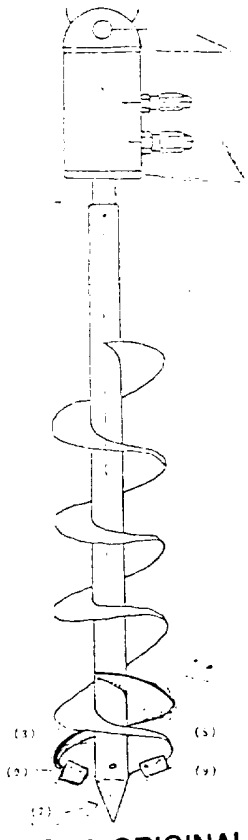
(54) Title: IMPROVEMENT TO A HOLE DIGGER FOR POSTS AND THE LIKE

(57) Abstract: A METHOD FOR DRILLING HOLES IN THE SOIL IN WHICH A HOLE DEILLER, MOUNTED ON A FRAME ATTACHED TO A TRACTOR OR LIKE VEHICLE, IS DRIVEN BY A HYDRAULIC MOTOR WHICH IS POWERED BY THE FLUID SYSTEM OF THE VEHICLE AND IS CONTROLLED FROM THERE. THE FRAME COMPOSED OF A BOXED CHANNEL, HAVING A LONG HORIZONTAL UPPER PART AND AN INCLINED LOWER PART, SUPPORTED BY TWO FLAT BARS AND THAT THE LOWER ENDS OF THE INCLINED PART AND THE TWO FLAT BARS AND THAT THE LOWER ENDS OF THE INCLINED LOWER PART AND THE TWO FLAT BARS ARE ATTACHED TO A THREE LINKAGE OF THE VEHICLE, WHILE THE END OF THE HORIZONTAL UPPER PART CAN CONTAIN AN EXTENDABLE JIG ARM WITH A HOOK. THE HOLE DRILLER CONSISTS PREFERABLY OF AN AUGER AT ITS LOWER END HAS A REPLACEABLE WORM WITH A DOUBLE HELIX IN THE FIRST CIRCUIT AND WITH TWO CUTTING PLATES AT ITS LOWER PART. THE HOLES ARE DUG BY LOWERING AND RISING THE FRAME BY THE THREE POINT LINKAGE. THE METHOD IS USED FOR DRILLING HOLES IN THE SOIL TO INSTALL POSTS, POLES, ANCHORES OR THE LIKE, OR FOR PLANTING TREES



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(56) Documents cited: US 4 998 590 US 5 090 486

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ABSTRACT

A method for drilling holes in the soil in which a hole driller, mounted on a frame attached to a tractor or like vehicle, is driven by a hydraulic motor which is powered by the fluid system of the vehicle and is controlled from there. The frame composed of a boxed channel, having a long horizontal upper part and an inclined lower part, supported by two flat bars and that the lower ends of the inclined part and the two flat bars are attached to a three point linkage of the vehicle, while the end of the horizontal upper part can contain an extendable jig arm with a hook.

The hole driller consists preferably of an auger which at its lower end has a replaceable worm with a double helix in the first circuit and with two cutting plates at its lower part. The holes are dug by lowering and rising the frame by the three point linkage. The method is used for drilling holes in the soil to install posts, poles, anchors or the like, or for planting trees.

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IMPROVEMENT TO A HOLE DIGGER FOR POSTS AND THE LIKE

The invention concerns an improvement to a method to drill holes in the soil for installing posts, poles, stay wire anchors, or for planting trees such as gum trees and fruit trees, or for collecting soil samples.

All these operations requires the digging of a lot of holes. This is very hard labour and of long duration. The improved hole digger digs holes of 20 cm diameter and one meter in depth in one to two minute. All the hard work is done mechnically and the digger is operated by one man, the tractor driver, who controlls the places to dig and the depth of the hole.

The improvement, subject of the present invention is a hole digger driven by a hydraulic motor. The hydraulic motor is powered by the fluid system of the tractor and is controlled by the driver.

The hole digger consists of an auger usually vertically mounted on a frame attached to a tractor or like vehicle. However, the auger may be positioned at an angle should a sloping hole be required. Also the 20 cm diameter auger can be interchanged with a 30 cm diameter auger for digging holes for installing larger poles or planting fruit trees.

The auger consists from lower on of a replaceable worm and a helix with a first circuit as a double helix. Two replaceable cutting plates are fixed at the lowest part of the double helix.

The auger is currently driven by the tractor motor using a power transmission shaft and appropriate gearing. This power transmission system has regularly breakdowns and is cumbersome to operate. Therefore, another way of power supply is proposed.

The hole is dug by lowering the frame on which the post hole digger is mounted. After the hole is dug the frame is risen and the hole is ready for the installation of a post or the like. This lowering and rising is usually done by the tractor three point linkage. The tractor is positioned so that the auger dig a hole in exactly the correct position.

The hole digger is illustrated in the Drawings 1 to 5

Drawing no. 1 shows a general view of the hole digger installed on a tractor.

Drawing no. 2 shows a front elevation of the hole digger.

Drawing no. 3 shows an end elevation of the hole digger.

Drawing no. 4 shows a plan of the hole digger.

Drawing no. 5 shows a preferential embodiment of the auger.

In the general view, illustrated in Drawing no. 1, can be seen the tractor (1) on which is mounted the frame (2) with the post hole digger, composed of the hydraulic motor (3) and the auger (4). The hydraulic motor is linked to the tractor by two tubes (5) to supply and to carry off pressure fluid. At the end of the frame is an extendable jib arm (6) with a hook (7) on the end for holding weights to give the downward pressure to assist the auger. The main frame (2) is mounted on the tractor by a three point linkage (7).

In the Drawings no. 2 to 4 are shown the frame composed of a main frame (1) which is a boxed channel of 8 cm to 8 cm, with a lower 45° inclined part 180 cm long and a 90 cm long upper horizontal part.

At the end of the horizontal part is a variable length jib arm (2)with the hook (3) for attachment of weights and may also be used as a crane for a variety of lifting jobs. At about 82 cm from the lower end of the main frame are two flat bars (4) to support the main frame and which ends (5) together with the lower end of the inclined main frame (6) are attached to the three point linkage of the tractor. The hydraulic motor (7) is fixed at the end of the horizontal main frame and drive an auger (7) of about 120 cm long and a diameter of 23 to 60 cm.

In Drawing no. 5 is shown a preferential embodiment of the auger which at tis lower end has a replaceable worm (7) and as its first circuit a double helix (8). At the lowest part of the double helix are two cutting plates (9).

CLAIMS

1. A method for drilling holes in the soil in which a hole driller is mounted downwards directed on a frame attached to a tractor or like vehicle characterised that the hole driller is driven by a hydraulic motor installed on the hole driller and powered by the fluid system of the tractor or like vehicle and is controlled from there.

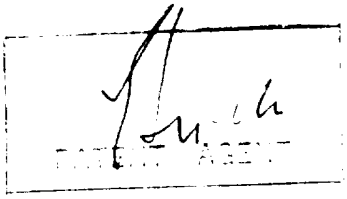
2. A method for drilling holes in the soil according to claim 1 characterised that the hole driller and hydraulic motor are mounted at the end of a frame composed of a boxed channel, having a long horizontal upper part and an inclined lower part, supported by two flat bars and that the lower ends of the inclined part and the two flat bars are attached to a three point linkage of the tractor or like vehicle, while the end of the horizontal upper part can contain an extendable jib arm with a hook.

3. A method for drilling holes in the soil according to claims 1 to 2 characterised that the hole driller consists of an auger which at its lower end has a replaceable worm with a double helix in the first circuit and with two cutting plates at its lower part.

4. A method for drilling holes in the soil according to claims 1 to 3 characterised that the holes are dug by lowering and rising the frame, with the hydraulic motor and auger, by the tractor three point linkage.

5. A method for drilling holes in the soil to install posts, poles, anchors or the like, or for planting trees characterised that the method is used according to claims 1 to 4.

Dated this 15 Day of January 1992.



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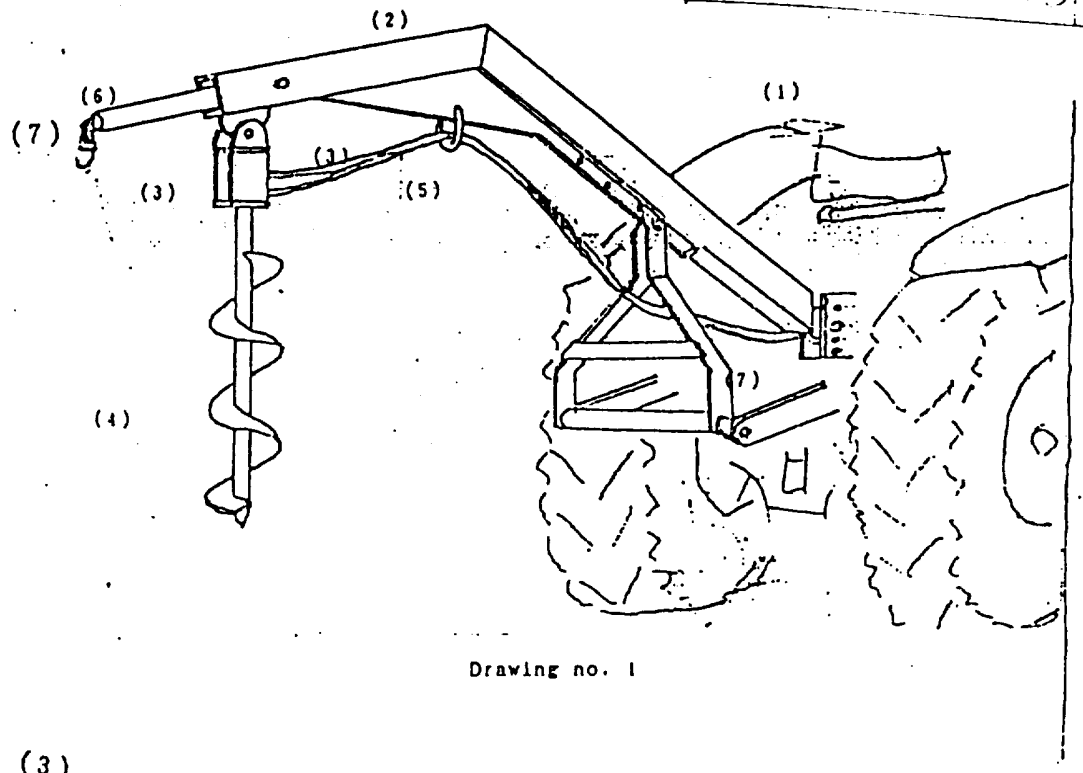
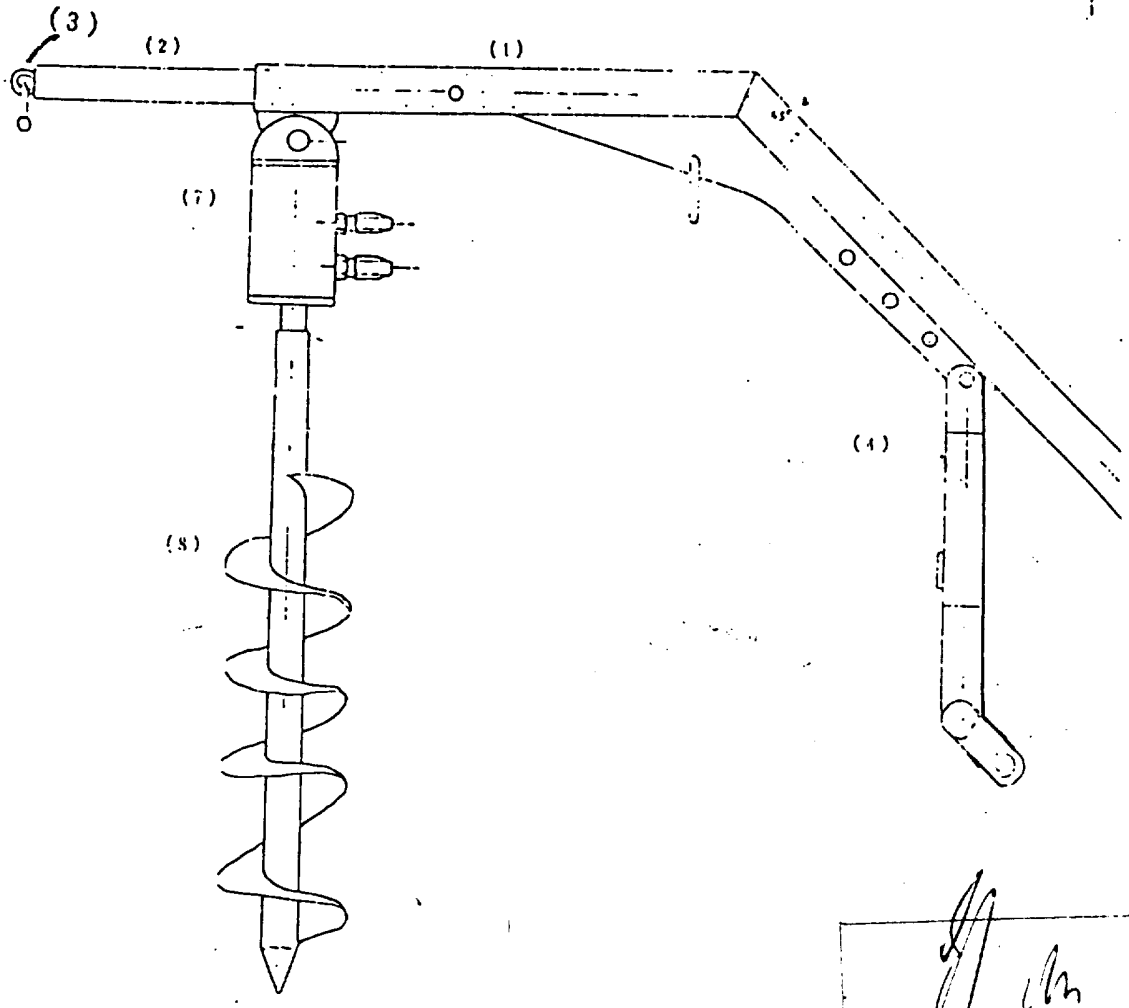


Drawing no. 1



Drawing no. 2

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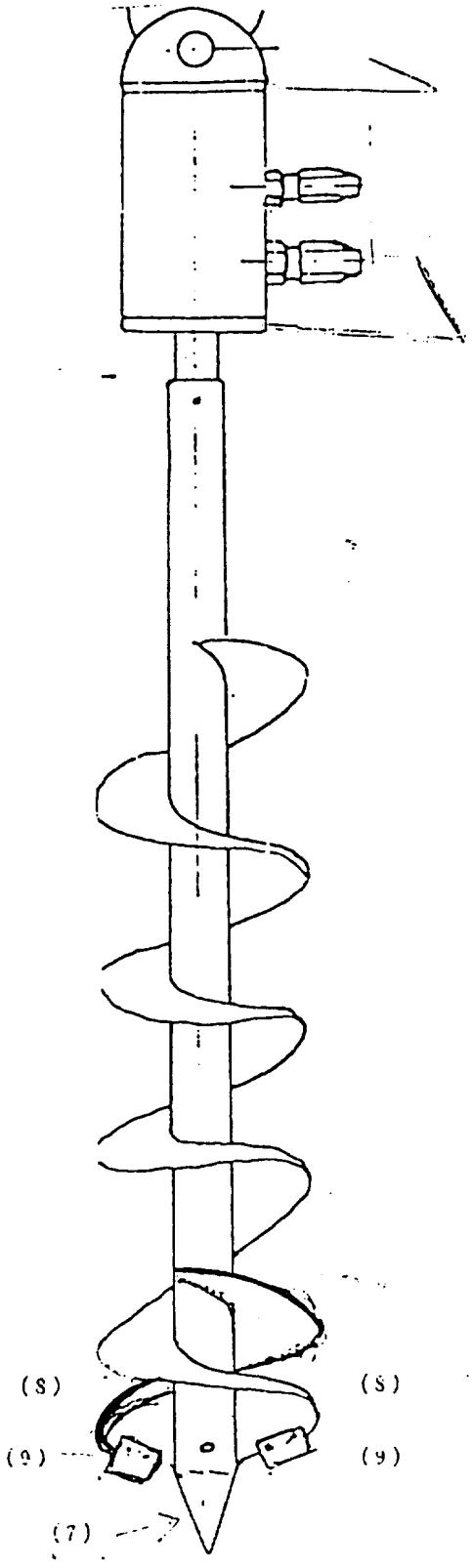

Drawing no. 5

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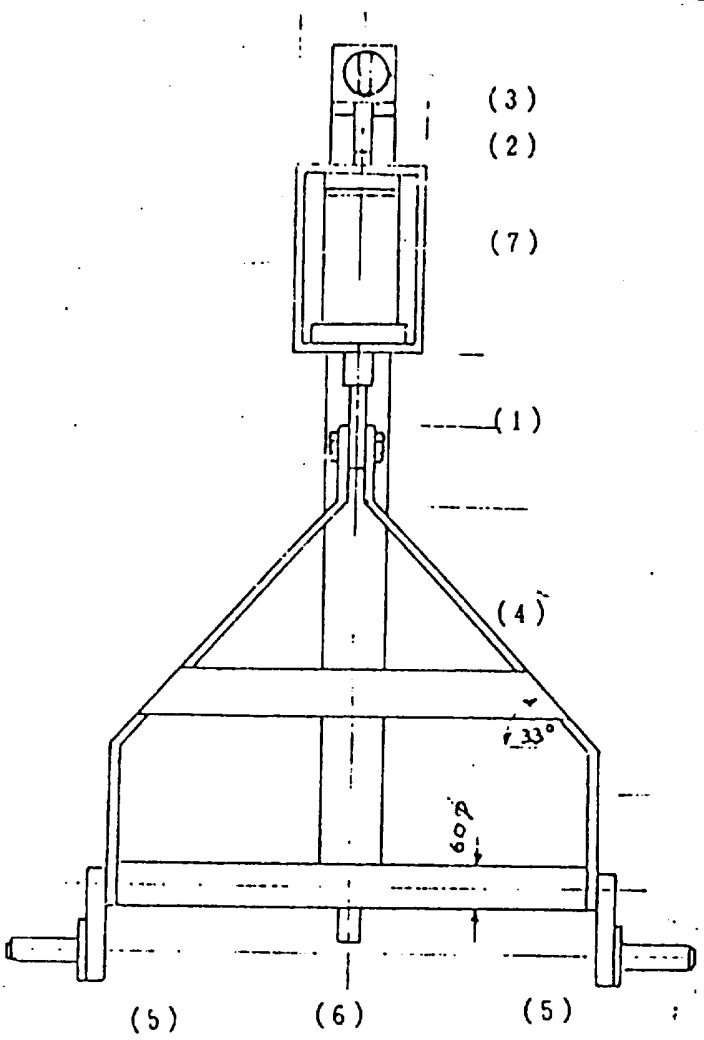
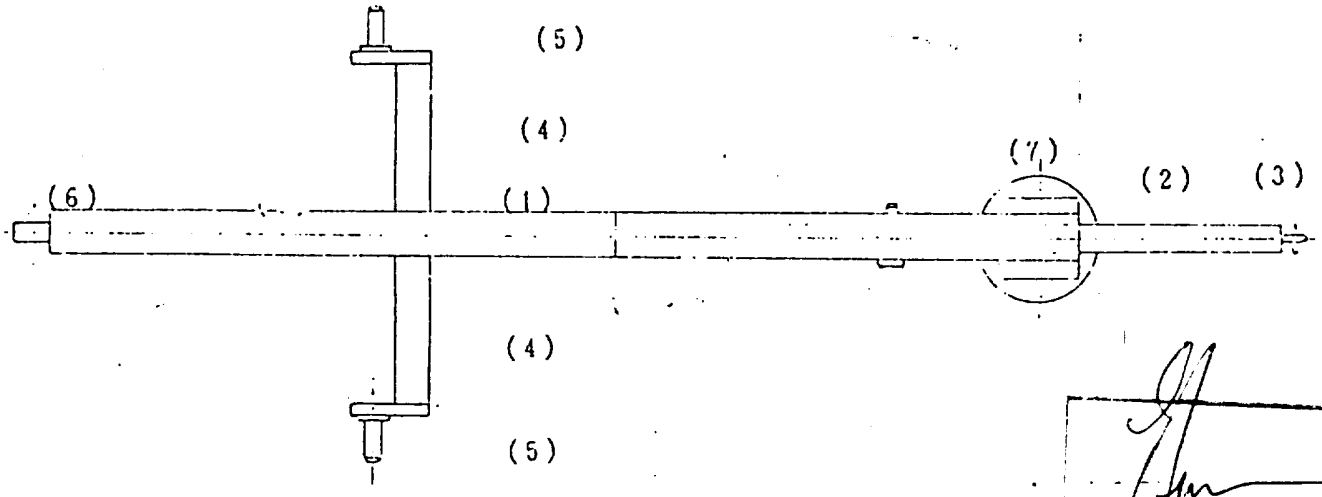


Drawing no. 3



Drawing no. 4

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