

July 13, 1926.

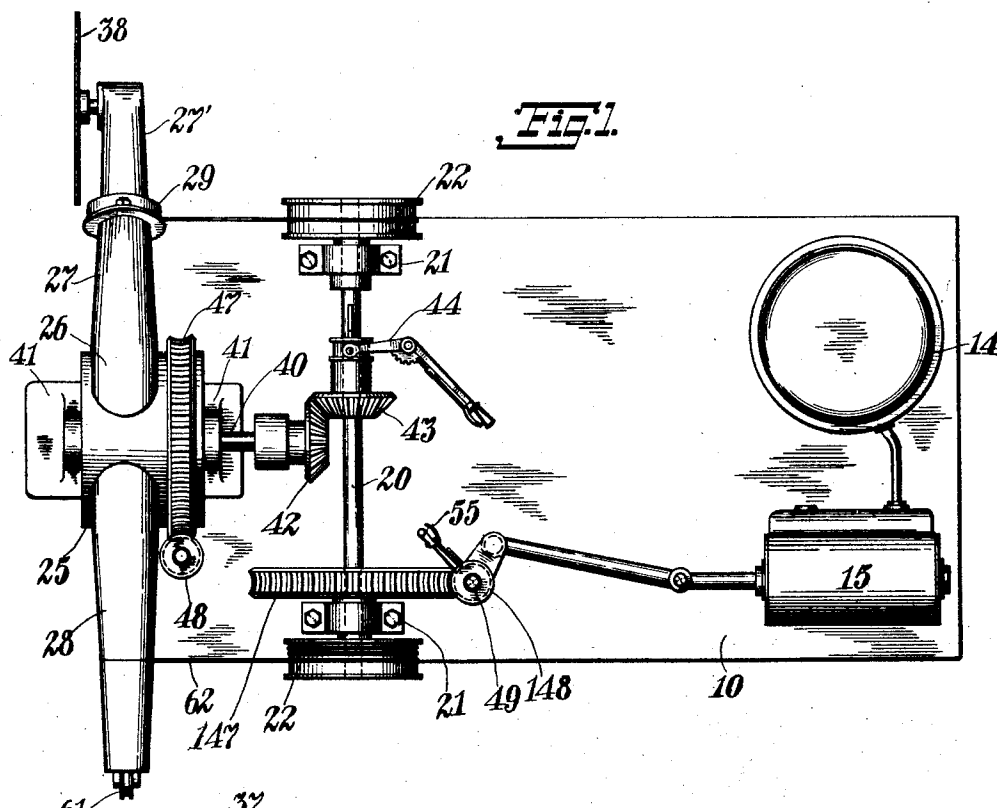
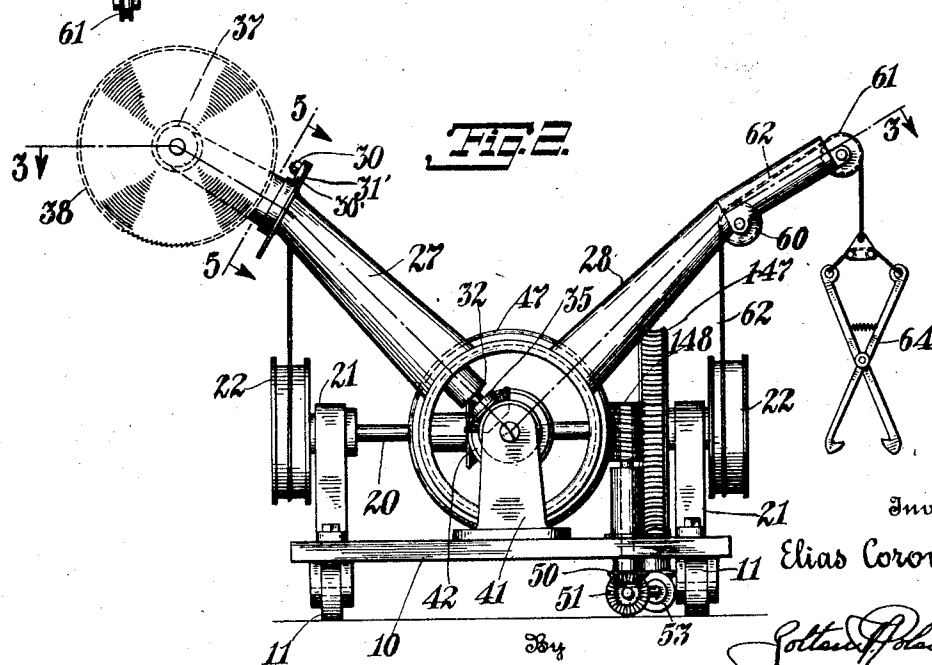
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1,592,656

GROUND-CLEARING AND GRADING MACHINE

Filed Oct. 15, 1923

2 Sheets-Sheet 1



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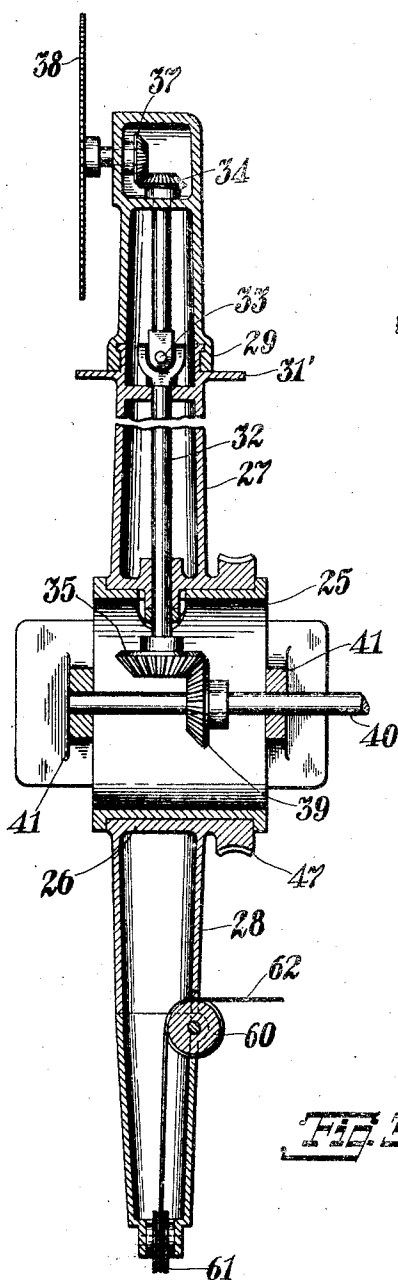


FIG. 3.

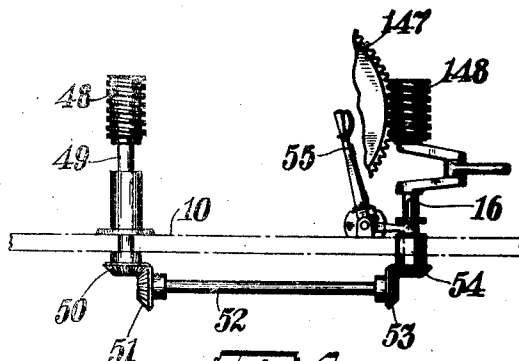


FIG. 4.

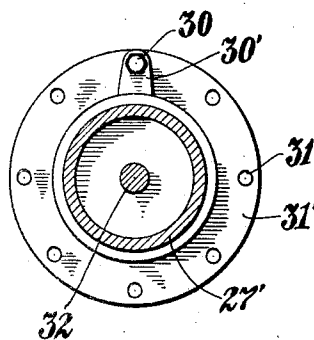


FIG. 5.

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UNITED STATES PATENT OFFICE.

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GROUND CLEARING AND GRADING MACHINE.

Application filed October 15, 1923. Serial No. 668,494.

This invention relates generally to a machine for clearing land, making roads, or the like, and it has for an object the provision of a novel and simple machine which can be used in cutting down trees, severing the main roots, pulling the stumps, or in grading, leveling, excavation, or other road work.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

Fig. 1 of the drawings is a plan view of my improved machine.

Fig. 2 is a detail front end view thereof.

Fig. 3 is a detail horizontal sectional view taken on the line 3—3 of Fig. 2.

Fig. 4 is a detail side elevation showing certain of the operating connections.

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

As here embodied my improved machine comprises a platform 10 which may be suitably mounted on wheels such as 11 for transportation from place to place, and may have suitable draft gear attached thereto, or to its supporting frame. Upon this platform, adjacent the rear end thereof is an upright steam boiler 14 which furnishes steam to a horizontal reciprocating engine 15 which drives a vertical crank shaft 16.

Supported on the platform 10, in front of the boiler 14 and engine 15, is a transverse shaft 20 which may be carried in suitable bearing elements 21 and which has fixed thereon at opposite ends the drums 22 over which cables may be led, when work requiring the use of cables is being done. The crank shaft 16 drives the shaft 20 through the medium of a worm gear 147 fixed on the latter and engaged by worm pinion 148 fixed on the former. Supported on the platform 10, in front of the shaft 20, is a fixed ring or cylinder 25 which is freely surrounded by a ring-hub 26 from which a pair of arms 27 and 28 project and which are adapted to swing in a transverse vertical plane. The arm 27 has an outer section 27' which is arranged for rotary adjustment around the axis of the arm, as indicated at 29, and may be locked in adjusted positions by means of a screw 30 threaded through a lug 30' on the section 27' and adapted to engage in the desired one of a number of apertures 31 in a

flange 31' on the arm 27. Extending longitudinally through this arm is a shaft 32 which has a universal joint 33 therein at the point where the outer section joins the main body of the arm and which has bevel gears 34 and 35 respectively on its outer and inner ends. The gear 34 meshes with another gear 37 on the spindle of a circular saw 38. The gear 35 on the inner end of the shaft 32 meshes with another gear 39 on a shaft 40 extending axially through the cylinder 26 and supported by suitable standards such as 41 to which the cylinder may be fixed. This shaft having a second gear 42 thereon which meshes with a gear 43 feathered on the shaft 20, this gear 43 being adapted to be shifted along the shaft 20 by means of a lever 44 suitably engaged with the hub thereof.

Fixed to the hub 26 is a worm gear 47 engaged by a worm pinion 48 on a vertical shaft 49 which is connected by the pair of gears indicated at 50 and 51 with a horizontal shaft 52 on the opposite end of which is a bevel gear 53 meshing with a gear 54 feathered on the crank shaft 16 before mentioned, this gear being adapted to be shifted along the shaft by means of a hand lever 55.

Mounted in the arm 28, respectively at the outer end and near the inner end thereof, are two pulleys 60 and 61 over which a cable such as 62 may be led to one of the drums 22, the cable being here shown having a grab hook 64 attached to the end thereof.

As will be readily understood the saw 38 will be driven when the gears 42, 43 are in mesh and the shaft 20 is rotating, while the arms 27, 28 can be swung about the cylinder 25 by bringing the gears 53, 54 into mesh. The saw 38, as will be apparent, can be adjusted to any desired angle so that it may be used in cutting down trees, and also in severing large roots before the stump is pulled. Various other implements used in road grading or like work can be attached to the arm 28 when desired in place of the hook 64 and cable 62.

While I have illustrated and described a preferred embodiment of my invention it is to be understood that I do not limit myself to the precise construction herein disclosed, and that various changes and modifications might be made therein without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention what

I claim as new and desire to protect by Letters Patent of the United States is as follows:

1. In a device of the class described, the combination with a base of a hub element rotatably mounted having a projecting hollow arm with an outer section provided with revolvable saw driven by internal shafts and gears, another projecting hollow arm with a grab hook suspended from the outer end by a cable, a transverse shaft rotatably mounted having drums at the ends engageable with said cable, a feather gear engageable with said internal shafts and gears, and a large worm gear engaged by a worm pinion on a crank shaft provided with a feather gear engageable with gears, shafts, and a pinion connected to said rotatable hub element, and a prime mover co-acting with said crank shaft.

2. In a device of the class described, a

base at one end provided with supports rotatably engaging a hub element having a projecting hollow arm with an outer section provided with a revolvable saw driven by internal shafts and gears, another projecting hollow arm with a grab hook suspended from the outer end by a cable, at the other end a prime mover, and centrally provided with supports rotatably engaging a transverse shaft having drums at the ends engageable with said cable, a feather gear engageable with said internal shafts, and gears, and a large worm gear engaged by a worm pinion on a crank shaft provided with a feather gear engageable with gears, shafts, and a pinion connected to said rotatable hub element.

In testimony whereof I have affixed my signature.

ELIAS CORONA.