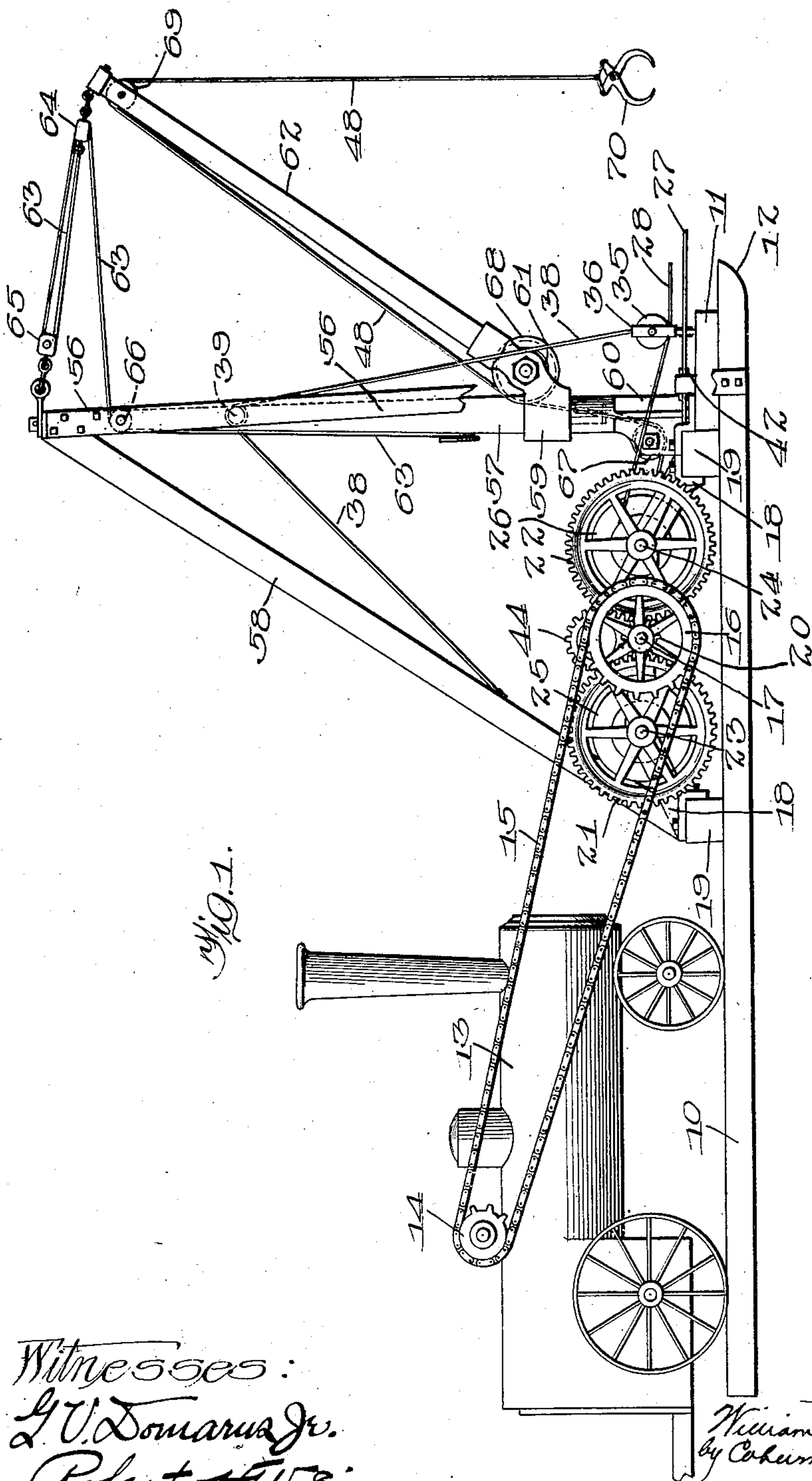


W. M. SEYMOUR.  
LAND CLEARING MACHINE.  
APPLICATION FILED SEPT. 27, 1907.

900,433.

Patented Oct. 6, 1908.  
3 SHEETS—SHEET 1.



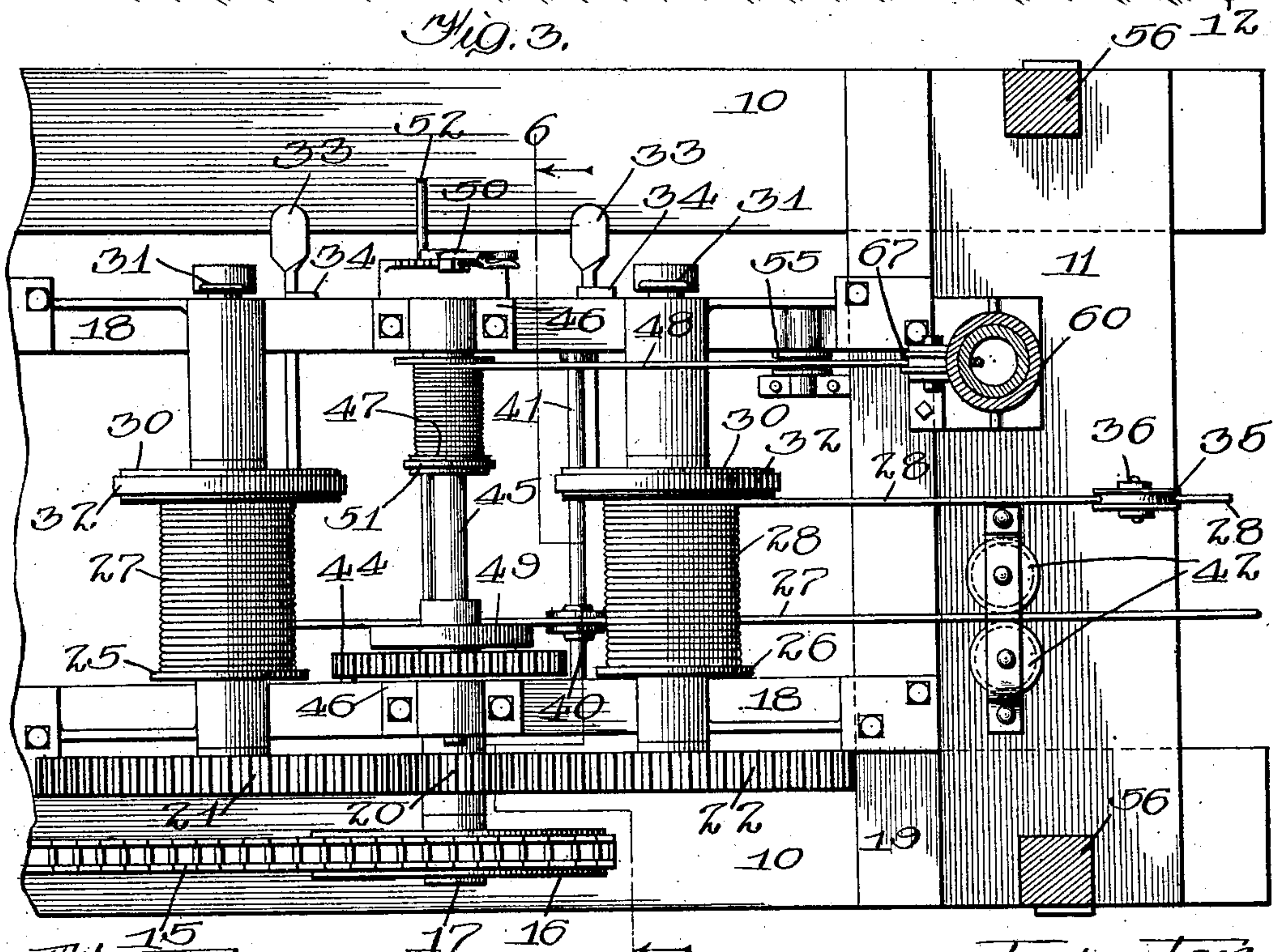
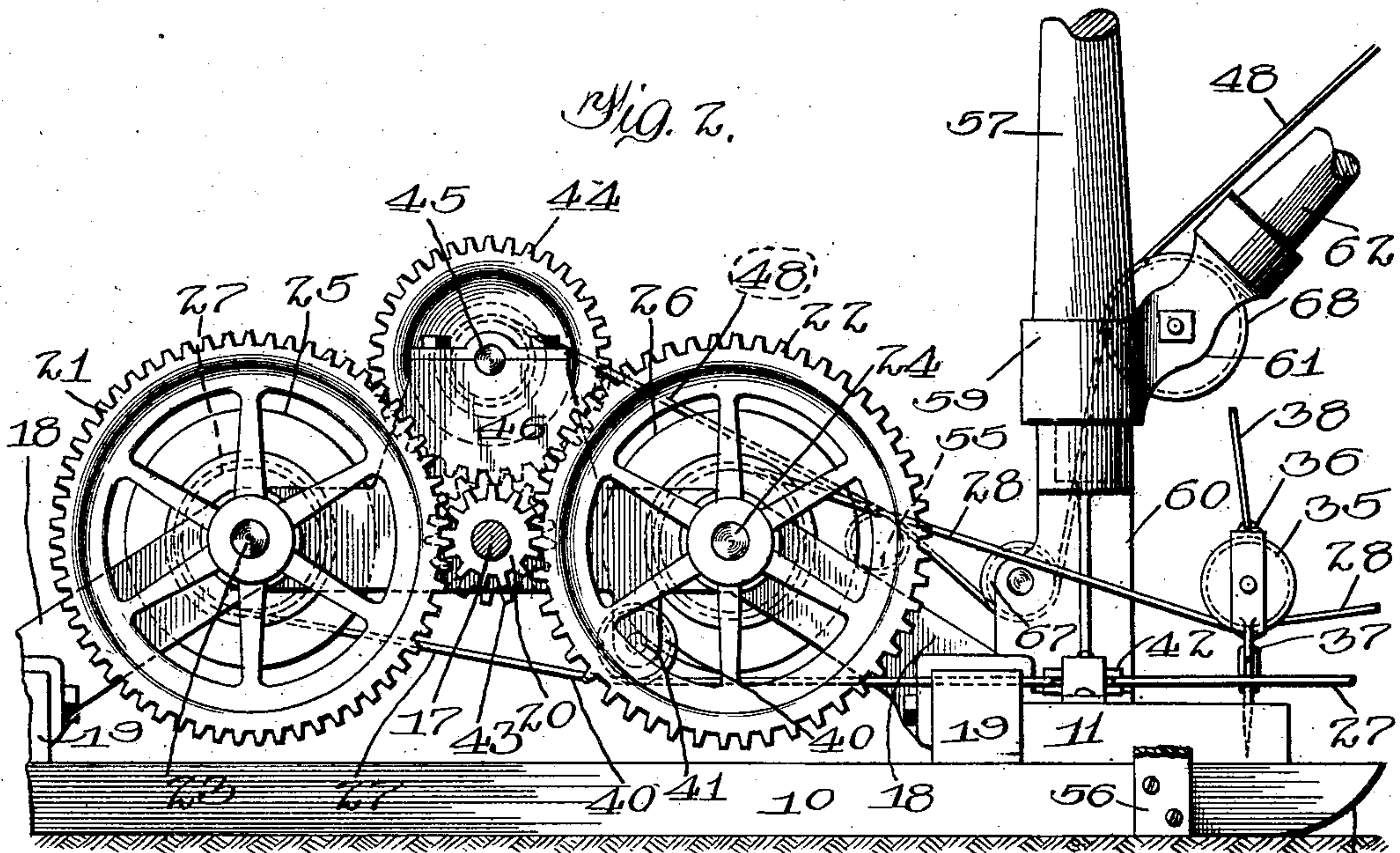
Witnesses:  
G. U. Domarus Jr.  
Robert H. Weir

Inventor:  
William M. Seymour  
by Cahoon & McRoberts  
His attorneys.

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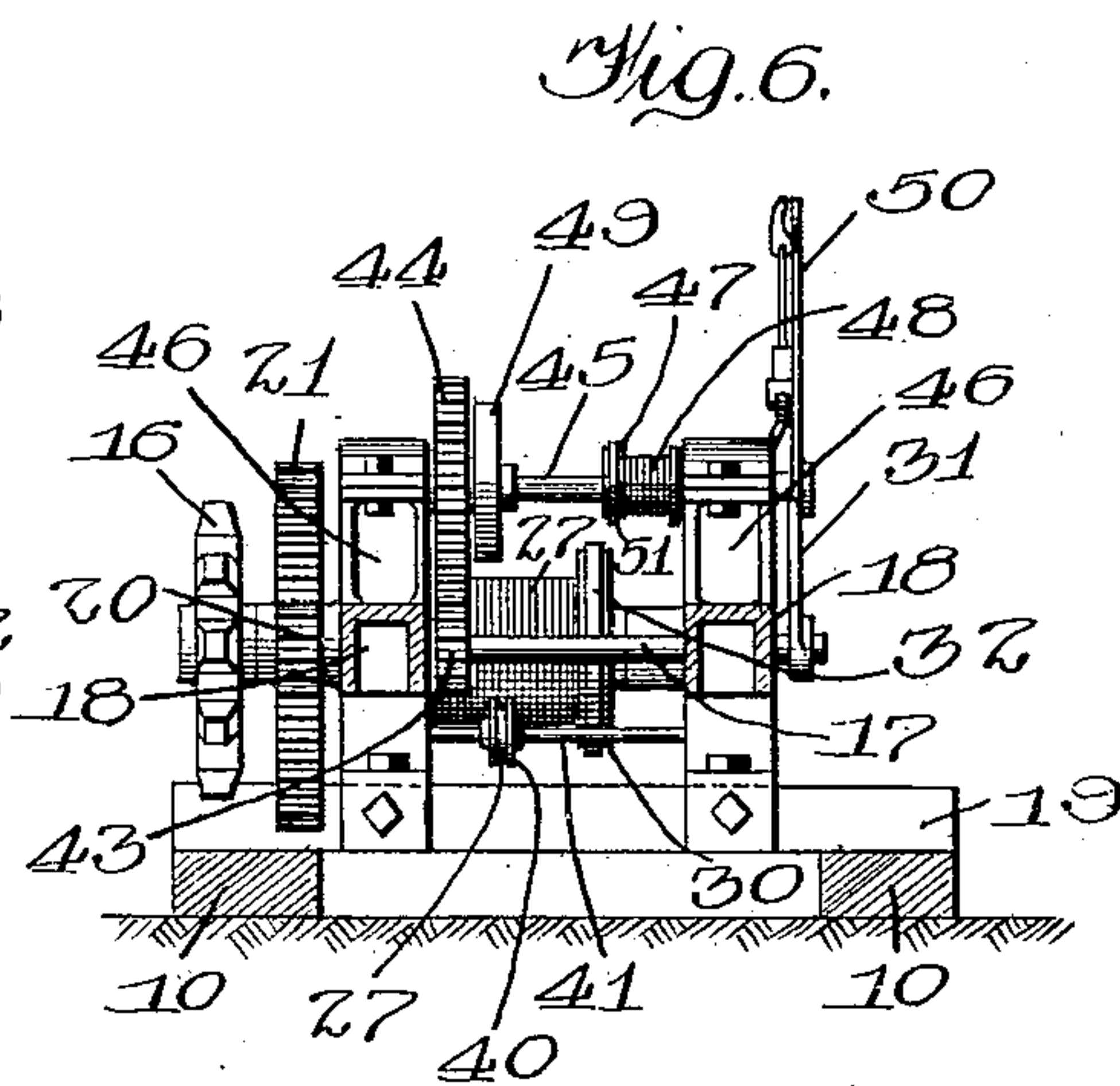
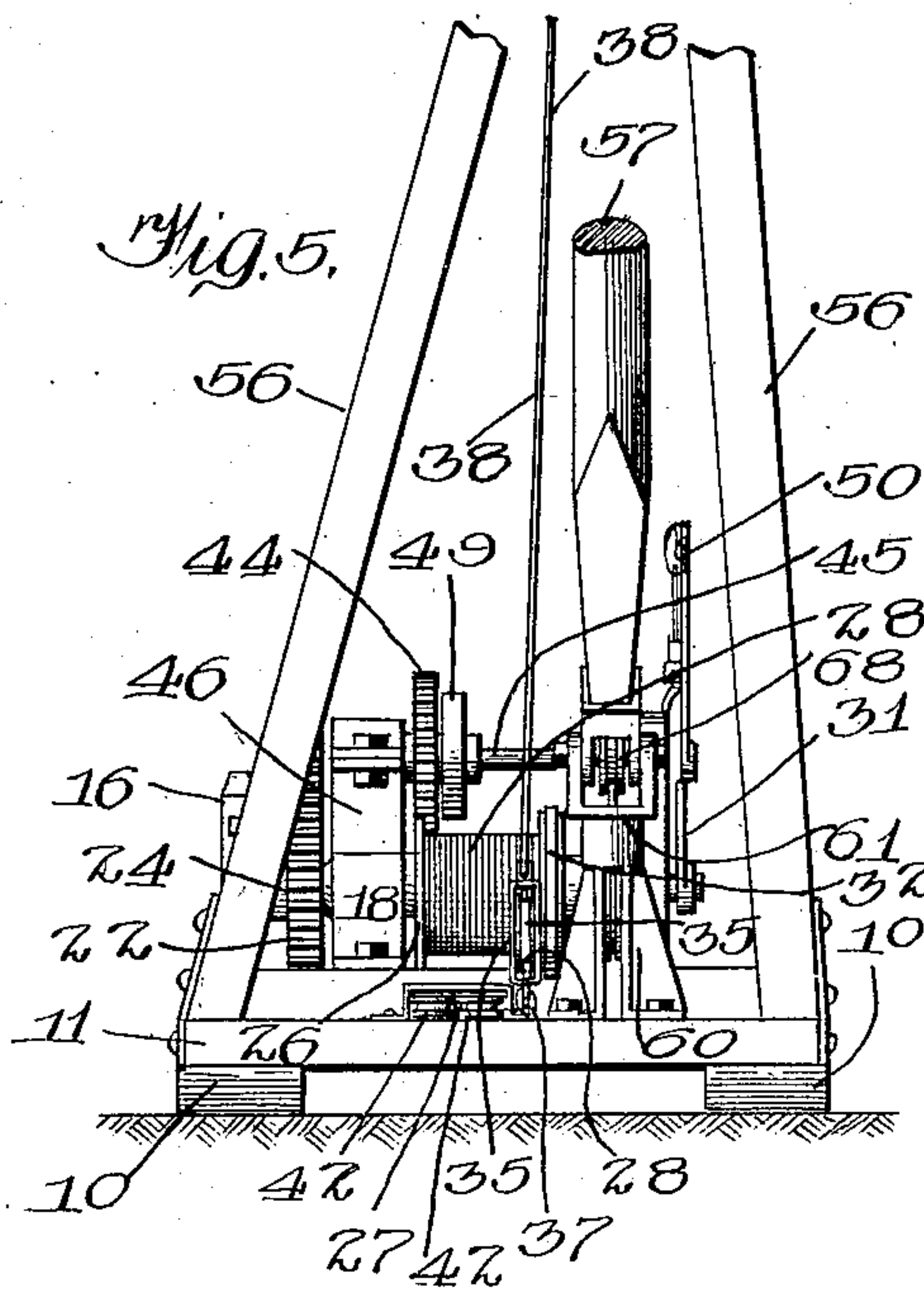
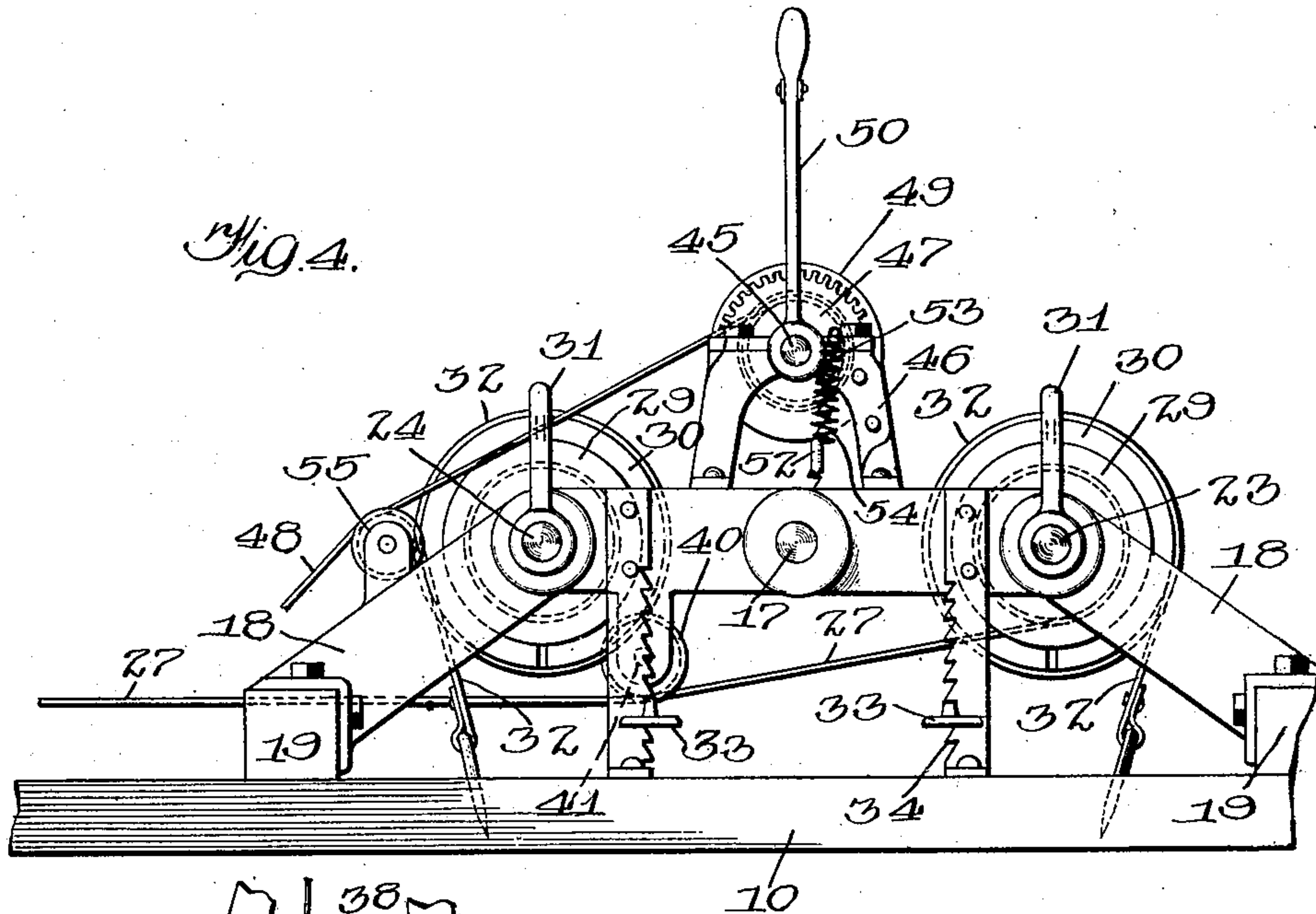
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Witnesses:  
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# UNITED STATES PATENT OFFICE.

WILLIAM M. SEYMOUR, OF MARSHFIELD, WISCONSIN, ASSIGNOR OF ONE-HALF TO JOHN P. HUME, OF MARSHFIELD, WISCONSIN.

## LAND-CLEARING MACHINE.

No. 900,433.

Specification of Letters Patent.

Patented Oct. 6, 1908.

Application filed September 27, 1907. Serial No. 394,808.

*To all whom it may concern:*

Be it known that I, WILLIAM M. SEYMOUR, citizen of the United States, residing at Marshfield, in the county of Wood and State of Wisconsin, have invented certain new and useful Improvements in Land-Clearing Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in machines for clearing land, as in pulling and piling stumps, and the primary object of the invention is to provide means whereby the machine may be easily skidded over rough or marshy ground so as to move it from point to point by its own motor or engine.

A further object is to provide means whereby the machine may be turned by its own motor or engine, and preferably in either direction.

Other objects to be accomplished will appear from the detailed description.

With the several objects in view, the invention consists in the arrangements and organizations of parts as hereinafter described and particularly enumerated in the claims.

In the accompanying drawings, illustrating an embodiment of the several features of my invention, Figure 1 is a view in side elevation of the machine with one of the shear-legs broken away for purposes of clearer illustration of other parts; Fig. 2 is a side view partly in elevation and partly in section of the front portion of the machine with one of the shear-legs removed; Fig. 3 is a plan view of the same with the sprocket wheel and portion of the drive chain added; Fig. 4 is a side view of certain parts taken on the side opposite to Fig. 2; Fig. 5 is a front view with the motor removed, and Fig. 6 is a sectional view on the line 6—6 of Fig. 3.

In carrying out the present invention I provide a unitary structure whereby the entire machine may be skidded over the ground and turned by its own motor or engine, and in constructing such device I mount all the mechanism upon a skidding frame or base. In the embodiment illustrated in the drawing this frame comprises suitable longitudinal side pieces 10, a front cross-piece 11 and suitable braces (not shown) provided in any desired manner, the front ends of the side pieces being beveled as at 12.

A suitable motor of any desired form is carried upon the base, such for example as a traction engine 13 which is run upon the base and suitably chocked or otherwise locked in place. It is of course understood that other forms of motors may be employed without departing from my invention.

The engine or motor has a reversibly-driven sprocket wheel 14 from which a sprocket chain 15 extends to a sprocket wheel 16 on one end of a main shaft 17 which is journaled in position upon suitably-braced uprights 18 secured to cross-pieces 19 on the base near its front end. The shaft 17 carries a fixed pinion 20 which meshes with larger gears 21 and 22 fixed respectively upon shafts 23 and 24 suitably journaled in the uprights 18 parallel with the drive shaft 17. Each of the shafts 23 and 24 is provided with a winding-drum 25 and 26, respectively, loosely carried thereon and having the inner ends of field cables 27 and 28 respectively secured thereto. Frictional shipping devices or clutches 29 of any usual or approved construction are arranged upon the shafts 23 and 24 and are adapted to engage with lateral flanges 30 of the drums to couple and uncouple the latter with their respective shafts. The shipping devices or clutches are actuated by suitable means, such as fulcrum levers or handles 31 within convenient reach of the operator.

It is obvious that when the drive shaft 17 is rotated the drum-shafts 23 and 24 are oppositely rotated, and as the cables 27 and 28 are oppositely directed or wound upon the drums they are drawn in or payed out according to the direction of rotation of the shaft, and simultaneously or separately according to the position of the clutches. These cables are primarily used for drawing stumps and for hauling the stumps, logs etc. to a point in proximity to the machine, and are called the field cables, their other functions being to draw or skid the entire machine over the ground and to turn the machine, as hereinafter more fully described.

Each of the cable-drums may be engaged by a suitable brake which in the present instance comprises a friction strap or band-brake 32 suitably connected at one end to the frame of the machine and at the other end to a suitable brake-lever 33 pivoted upon the frame in any suitable position with its free end extending out into proximity to the op-



erator and preferably in the form of a treadle by which it may be operated. Each of the brake-levers may engage with the teeth of a cooperating rack-bar 34, as clearly shown in Fig. 4.

The field cable 28 passes from its winding-drum 26 through a grooved sheave 35 in a hinged or swinging pulley-block 36 mounted upon the cross-piece 11 of the frame. In practice it is desirable to have the pulley-block 36 self-adjustable or capable of assuming a substantially vertical position, as shown in Fig. 2, or a horizontal position at either side of its vertical position, and it may be supported in any convenient manner to permit it to take these various positions; in the embodiment illustrated the block is connected to the frame of the machine by means of one or more flexible links 37, so that it may assume the various positions described, and a cable 38 is connected to the top of the block and passes over a suitable pulley or guide 39, carried by the mast or derrick hereafter described, to position within convenient reach of the operator, so that the block may be held in substantially vertical position as shown in Figs. 2 and 5 or allowed to swing down to horizontal position on either side. The field cable 27 passes from the rear drum 25 down to a guide-sheave 40 slidably mounted upon a suitable shaft 41 journaled on the lower faces of the uprights, this sheave acting as a guide to conduct the cable 27 to a fixed guide consisting in the present instance of a pair of horizontal sheaves 42 journaled in fixed bearings on the front of the machine as shown in Figs. 3 and 5.

The main shaft 17 is also provided with a second pinion 43 which meshes with a gear 44 fixed on a shaft 45 journaled in suitable bearings upon extensions 46 of the uprights and parallel with the main shaft. The shaft 45 carries at or near one end a loosely mounted winding-drum 47 for a hoisting cable 48, and the shaft and gear are connected and disconnected by a suitable shipping device or clutch 49 upon the shaft and adapted to engage and disengage the gear and operated by a suitable handle 50. The drum is also provided with a suitable brake-band 51 of any approved construction connected to and operated by a suitable handle 52 pivoted at one end on the extension and cooperating at its other end with a notched or toothed bar 53 into which it is drawn by a spring 54. The hoisting cable passes from the drum 47 over a guide pulley 55 to suitable sheaves upon a mast and boom hereinafter described.

The front end of the frame or base is provided with a mast which as herein shown is composed of two inclined members 56 constituting a shear leg, and a pivoted or swinging member or shaft 57; this form of mast is preferred as the shear-leg provides rigidity but leaves the central portion of the frame

or base free for the reception of the other parts. The mast is braced by a rearwardly extending member 58 going to the rear cross-piece 19, and in practice one of the members 56 is more nearly vertical than the other as shown in Fig. 5, so that the shaft 57 is located in line with the hoisting-drum 47. The shaft 57 is pivotally mounted upon the front end of the base in any suitable manner; in the form shown it is supported at its lower end in a suitable hollow casting 59 pivotally mounted on a hollow standard 60, and at its upper end it is pivoted in the cap or joint connecting the members 56 of the shear-leg, so that it is free to swing or turn. The casting 59 is provided with suitable ears 61 in which the lower end of a boom 62 is suitably pivoted. The upper free end of the boom is supported by a rope or cable 63 which is rove through blocks 64 and 65, secured respectively to the boom and mast, and then passes over a pulley 66 on the mast down to position to be grasped by the operator, whereby the inclination of the boom may be adjusted.

The hoisting cable 48 passes from the sheave 55 to and under a sheave 67 journaled on the standard 60, thence up through the casting 59 over a sheave 68 journaled in the ears 61 and out over a sheave 69 on the end of the boom, its free end being provided with a suitable grapple 70.

The machine provides two field cables for pulling stumps, and a cable for piling them, the field cables cooperating with sheaves or guides so arranged that either cable may be used in front or at either side of machine, it being obvious that the horizontal sheaves 42 and the hinged or self-adjustable sheave 35 not only keep the cables down in proper working position but also enable either cable to be shifted to either side of the machine. Furthermore, the feature of having the pulley 35 hinged so as to be capable of assuming a substantially vertical position is important as it makes it possible to more easily skid the machine from point to point, even over very rough or marshy ground, as it enables its cable to exert a lifting action on the front of machine, thereby preventing the machine from digging into the ground which of course impedes its progress. As all of the parts are mounted on the frame, the entire device may be skidded from place to place by securing the field cables to suitable stationary objects and winding them on the drums by the usual operation of the motor or engine, and when this is done the capacity of the pulley 35 to stand in substantially vertical position allows the free end of its associated cable to be attached at an elevation, as to a tree, so that the pull exerted by this cable will raise the front end of the base or frame and prevent it from digging into the ground as it is drawn forward by the



other field cable. This is especially important where the ground is rough or sloughy, as it permits the machine to be easily skidded about from place to place in localities where the character of the ground would render its transportation upon wheels or the use of horses etc. impossible. All of the parts, including the motor, being carried on the frame it is obvious that the entire device is skidded as a unit; and the employment of two field cables not only provides for raising the front end of the machine when skidding but also doubles its stump-pulling capacity, both cables being operative at the same time upon the same or opposite sides of the machine although independently manipulated.

In this connection I call attention to the fact that a chain drive from the engine to the main shaft is desirable in a machine adapted to be skidded by its own motor, for the reason that in skidding the machine over the ground, and especially over rough ground, the frame or base is apt to sag or bend and this action would slack up a belt so that it would not drive the shaft. By employing a chain this objection is obviated as the chain operates to drive the shaft under all conditions.

The provision of fixed guides for the field cables on the front of the machine, as pulleys 35 and 42, is important as when either or both are used the machine may be swung or turned in either direction by hitching either or both of the field cables to a suitable object at one side or the other of the machine, and operating the associated drum to wind it up, this movement amounting to a quarter turn when the hitch of the cable or cables is at a right angle. It is of course to be understood that in turning or skidding the machine, the hitch is made to a suitable stationary object which will not be displaced by the strain put upon it.

What I claim is:—

1. In a device of the class described, a frame or base adapted to be skidded over the ground, a motor on the frame, stump pulling and piling mechanism on the frame including cables, one of said cables adapted to raise the front end of said frame and another to skid said frame over the ground.

2. In a device of the class described, a frame or base adapted to be skidded over the ground, a motor on the frame, stump pulling and piling mechanism on the frame including a hoisting cable and a pair of field cables, and a guide on the frame adapted to cooperate with one of the field cables to raise the front of the frame when the said cable is hitched above the frame.

3. In a device of the class described, a frame or base adapted to be skidded over the ground, a motor on the frame, stump pulling and piling mechanism on the frame including a hoisting cable and a pair of field ca-

bles, a horizontal guide on the frame for one field cable, and a hinged guide on the frame for the other field cable.

4. In a device of the class described, a frame or base adapted to be skidded over the ground, a motor on the frame, stump pulling and piling mechanism on the frame including a hoisting cable and a pair of field cables, a fixed guide on the frame to produce lateral change of direction of one field cable, and a self-adjusting guide on the frame to produce lateral or vertical change of direction of the other field cable.

5. In a device of the class described, a frame or base adapted to be skidded over the ground, a motor on the frame, stump pulling and piling mechanism on the frame including a hoisting cable and a pair of field cables, a pair of horizontal sheaves on the frame for one field cable, and a hinged pulley on the frame for the other field cable.

6. In a device of the class described, a frame or base adapted to be skidded over the ground, a motor on the frame, stump pulling and piling mechanism on the frame including cables, one of said cables adapted to raise the front end of said frame and another to skid said frame over the ground, and a chain drive between the motor and the pulling and piling mechanism.

7. In a device for pulling and piling stumps, a skidding frame, a motor on the frame, a main shaft journaled on the frame and driven from the motor, drum-shafts located above and on each side of said main shaft and driven therefrom, winding drums on the shafts, means to couple and uncouple each associated drum and shaft, a shaft with a swinging boom pivotally mounted on the frame, cables running from the drums, two of said cables passing over pulleys mounted on the front of the frame and the other cable running over a sheave on the boom.

8. In a device for pulling and piling stumps, a skidding frame, a motor on the frame, a main shaft journaled on the frame and driven from the motor, winding drums arranged above and laterally of said shaft, means to operate the drums from said shaft, an upright shaft having a swinging boom pivotally mounted on the frame, a pulley hinged on the frame to swing from vertical to horizontal position, guide sheaves on the upright shaft and boom, and cables on the drums, one of said cables passing to the hinged pulley and another to the said sheaves.

9. In a device for pulling and piling stumps, a skidding frame, a motor on the frame, a main shaft journaled on the frame, a sprocket chain connection between the motor and shaft, winding drums arranged above and laterally of said shaft, means to operate the drums from said shaft, an upright shaft having a swinging boom pivot-



ally mounted on the frame, a pulley hinged on the frame to swing from vertical to horizontal position, guide sheaves on the upright shaft and boom, and cables on the drums, one of said cables passing to the hinged pulley and another to the said sheaves.

10. In a device for pulling and piling stumps, a skidding frame, a motor on the frame, a main shaft journaled on the frame, a sprocket chain connection between the motor and shaft, pinions on the shaft, drum shafts located above and laterally of said shaft, gears on said lateral shafts meshing with one of said pinions, a gear on the upper shaft meshing with the other of said pinions, winding drums on the shafts, a clutch to connect and disconnect each associated drum and shaft, an upright shaft with a swinging boom pivotally mounted on the frame, a hoisting cable connected to the drum of the said upper shaft and passing over a sheave on the boom, and a pair of field cables connected to the drums of the lateral shafts.

11. In a machine for pulling and piling

stumps, a skidding frame, a motor on the frame, a shaft on the frame driven by the motor, winding drums mounted on the frame, means to connect the drums to the shaft, cables connected to the drums, an upright shaft with its swinging boom pivotally mounted on the frame and having suitable cable-pulleys, and a field-cable guide fixed on the front of the frame.

12. In a machine for pulling and piling stumps, a skidding frame, a motor on the frame, a shaft on the frame driven by the motor, winding drums mounted on the frame, means to connect the drums to the shaft, cables connected to the drums, an upright shaft with its swinging boom pivotally mounted on the frame and having suitable cable-pulleys, and a horizontally disposed field-cable sheave fixed on the front of the frame.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. SEYMOUR.

Witnesses:

HUGO WEGENER,  
NORAH E. LONG.