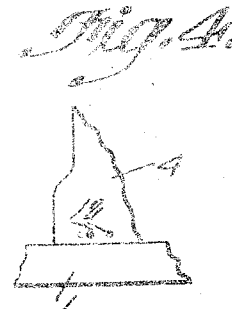
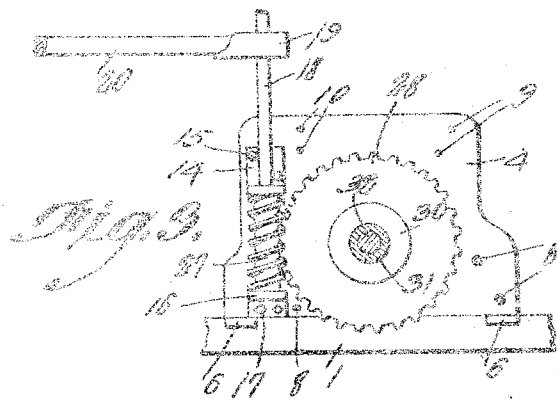
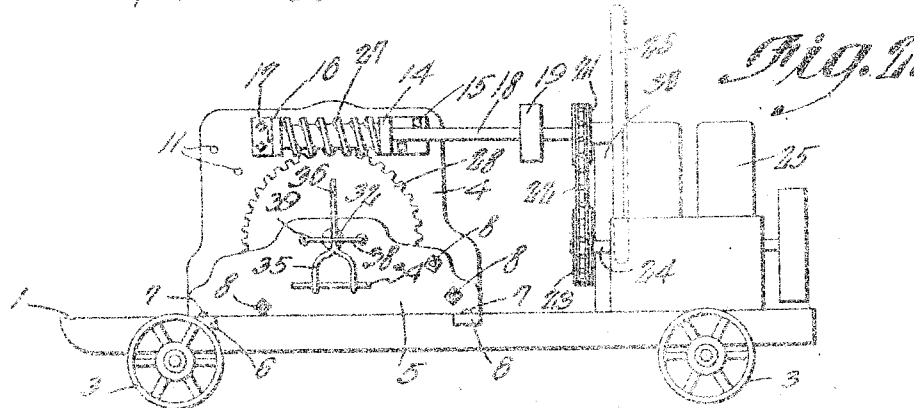


1,061,370.



Witnesses
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UNITED STATES PATENT OFFICE.

ERICK A. GRUNDEEN, OF ESCANABA, MICHIGAN.

STUMP-PULLER.

1,061,370.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed October 5, 1912. Serial No. 724,157

To all whom it may concern:

Be it known that I, ERICK A. GRUNDEEN, a citizen of the United States, residing at Escanaba, in the county of Delta and State of Michigan, have invented a new and useful Stump-Puller, of which the following is a specification.

The device forming the subject matter of this application is a windlass adapted to be employed for pulling stumps, for moving buildings, for raising fish nets and under circumstances where a strong tensile strain is required.

The invention aims to provide a device of this type which may readily be actuated manually, the device being so constructed that it may be operated by horse power, or from an engine.

The invention aims to provide novel means whereby the actuating shaft may be connected with the driving pinion or worm wheel, either in a vertically disposed position, or in a horizontally disposed one, thereby adapting the structure for the application of motive powers of different sorts.

The invention aims, further, to provide novel means whereby, at the will of the operator, the cable may be paid out freely.

The invention aims, likewise, to improve generally, and to enhance the utility of devices of that type to which the present invention appertains.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described, and claimed it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—Figure 1 is a top plan; Fig. 2 is a side elevation; Fig. 3 is a fragmental longitudinal, vertical section, showing the parts arranged as they will appear when the structure is to be operated by horse power; and Fig. 4 is a fragmental side elevation of one of the supporting plates.

In carrying out the invention there is provided a supporting structure which may be of any form, the supporting structure in the present instance comprising parallel

sills 1, united by cross bars 2. The sills 1 are so constructed that they may come into direct contact with the ground, the sills, under such circumstances, acting as runners. However, in the present instance, the supporting structure comprising the sills 1 and the cross bars 2 is shown as mounted upon the supporting wheels 3.

Superposed upon the supporting structure and connected therewith is a frame, comprising side plates 4 and 5, the same having laterally extended feet 6 united by securing elements 7 with the sills 1. The frame further includes a plurality of tie-bolts 8 which unite the side plates 4 and 5. Adjacent its upper edge, the side plate 4 is provided with spaced pairs of openings denoted, respectively, by the numerals 9 and 10. Adjacent its forward edge, the side plate 4 is provided with superposed pairs of openings, denoted, respectively, by the numerals 11 and 12, the openings 11 being shown in Fig. 2 and the openings 12 being shown in Fig. 4. A bearing 14, preferably taking the form of an angle bracket is provided, and by means of securing elements 15, entering the openings 9, the bearing 14 may be assembled with the side plate 4. Another bearing bracket 16 of angular construction is shown, and by means of securing elements 17 entering the openings 10, the bearing bracket 16 may be connected with the side plate 4, so that, as shown in Fig. 2, the bearings 14 and 16 are in substantially horizontal alignment.

Journalled for rotation in the bearings 14 and 16 is an actuating shaft 18. The actuating shaft 18 may be driven in any desired manner. To the end that the actuating shaft may be propelled by horse power, the shaft is provided with a socket 19 adapted to receive a sweep 20 which is shown in Fig. 3. Should it be desired to actuate the shaft 18 from an engine, the shaft may be provided with a sprocket wheel 21, adapted to receive a sprocket chain 22, passed about a sprocket wheel 23 secured to the shaft 24 of an engine 25 which is supported by certain of the cross bars 2. At this point it may be stated that any suitable means may be provided for operatively connecting the engine 25 with the actuating shaft 18. In order that the shaft 18 may be operated manually, the shaft 18 is provided terminally with a hand wheel 26, the shaft being supported, in front of the hand wheel 23, in

a bearing bracket 38 which is secured to one of the side plates 1.

Secured to the actuating shaft 18 and located between the bearings 14 and 16 is a worm 27 which, cooperating with the bearings, constitutes means for preventing the shaft 18 from having longitudinal movement. The worm 27 meshes into a worm wheel 28, carrying upon its inner face, a clutch member 29, cooperating with another clutch member 30 constituting an end wall of a drum 31, the drum 31 and the wheel 28 being upheld for rotation by means of a shaft 32 which is terminally supported in the side plates 4 and 5. Around the drum 31 may be wound the cable 33 which is to be actuated.

Secured to the outer face of the side plate 5 is a bracket 34 upon which are fulcrumed the arms 35 of an upstanding lever 36, extending within a loop 38, the arms of which are mounted to slide in bearing thimbles 39 carried by the side plate 5, the inner ends of the arms of the loop 38 being engaged in a circumscribing groove 40 in one end of the drum 31.

In practical operation, as heretofore stated, the shaft 18 may be driven manually, through the medium of the wheel 26, or be driven from the engine 23, through the medium of the sprocket wheels 21 and 23 and the sprocket chain 22, it being understood that if it is desired to actuate the shaft 18 manually, the engine and accessory parts may be omitted. When the shaft 18 is driven manually or by means of the engine 23, the bearings 16 and 14 will be horizontally positioned, as shown in Fig. 2, and as heretofore described. When, however, the shaft 18 is to be driven by horse power, the securing elements 15 are mounted in the openings 11 of the side plate 4, the securing elements 17 being mounted in the openings 12, so that the bearings 14 and 16 are vertically aligned as shown in Fig. 3, the shaft 18 standing vertically, and the screw 20 being horizontally disposed. Under either of the conditions above pointed out, it will be

seen that when rotatory movement is imparted to the shaft 18, the worm 27 meshing into the worm wheel 28 will actuate the drum 31 and reel in the cable 33.

The drum 31 is free to slide longitudinally upon the shaft 32 and by tilting the lever 36 upon the fulcrum bracket 34, the loop 38 may be drawn outwardly, causing a longitudinal sliding movement of the drum 31, whereupon the clutch members 29 and 30 will be disengaged, permitting the cable 33 to pay out rapidly, the ends of the arms of the loop 38 engaging in a groove 40 in one end of the drum 31, or being operatively connected therewith in some other like manner, so that the drum 31 may rotate freely.

Having thus described the invention what is claimed is:—

In a device of the class described, a frame comprising side plates; a drum journaled in the side plates; a worm wheel secured to the drum; a shaft; a worm on the shaft meshing into the worm wheel; bearings in which the shaft is journaled; means for securing the bearings to one side plate above the drum to dispose the shaft in an approximately horizontal position; means for securing the bearings to said side plate, to one side of the worm to permit the shaft to be disposed in a substantially vertical position; a lever receiving socket secured to the shaft, the socket lying beyond said side plate when the shaft is horizontally disposed and lying above the said side plate when the shaft is vertically disposed; an engine mounted on the frame; means for operatively connecting the engine detachably with the shaft; the socket constituting a fly wheel for the engine and constituting means for throwing the engine over when the shaft is horizontally disposed.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ERICK A. GRUNDEEN.

Witnesses:

W. VARINO,

CLARENCE LAMBERT.