

L. M. GARDINER.
STUMP PULLING APPARATUS.
APPLICATION FILED NOV. 13, 1911.

1,018,970.

Patented Feb. 27, 1912.

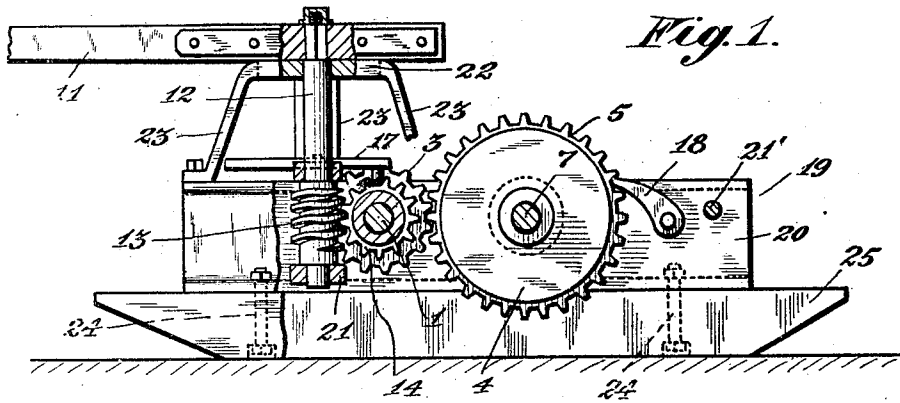


Fig. 2.

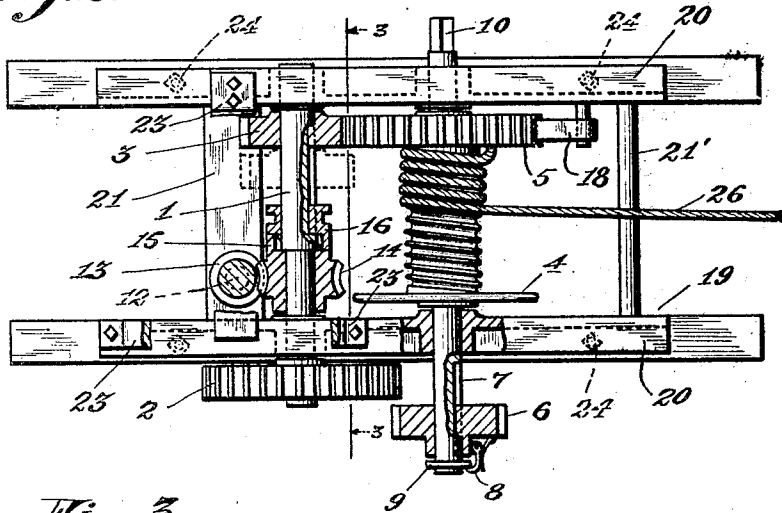
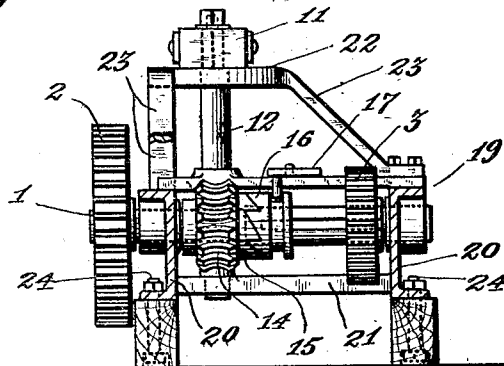


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

LOU M. GARDINER, OF SEATTLE, WASHINGTON, ASSIGNOR TO AMERICAN MACHINE WORKS, OF SEATTLE, WASHINGTON, A CORPORATION OF WASHINGTON.

STUMP-PULLING APPARATUS.

1,018,970.

Specification of Letters Patent.

Patented Feb. 27, 1912.

Application filed November 13, 1911. Serial No. 660,154

To all whom it may concern:

Be it known that I, LOU M. GARDINER, a citizen of the United States of America, and a resident of the city of Seattle, in the county of King and State of Washington, have invented certain new and useful Improvements in Stump-Pulling Apparatus, of which the following is a specification.

My invention relates to apparatus of the above type and has for a primary object the provision of a simplified and improved construction which is powerful and efficient in operation, the drum being capable of being driven at relatively high or low speed from the main drive shaft.

A further object resides in the novel provisions whereby the drum can be disconnected from the main drive shaft.

Other objects will be set forth as my description progresses and those features of construction, arrangements, and combinations of parts on which I desire protection, succinctly defined in my annexed claims.

Referring to the accompanying drawing in which like numerals of reference indicate like parts throughout: Figure 1 is a fragmentary elevation, in partial section, of a machine constructed in accordance with my invention. Fig. 2 is a top plan thereof with portions broken away, and Fig. 3 is a transverse section taken on line 3—3 of Fig. 2.

Referring to the drawing by numerals of reference, 1 indicates a drive shaft provided with a drive gear wheel 2 and a drive pinion 3, and 4 indicates a drum with which are combined gear wheels 5 and 6, of relatively different diameters, the smaller gear of one set or pair being adapted to be brought into mesh with the larger gear of the other pair, as may be desired to operate the drum at relatively high or low speed.

As now considered, gear 6 is splined to one projecting end portion of the drum shaft 7, while pinion 3 is connected in a similar manner with shaft 1. By this construction pinion 3 and gear 6 are capable of endwise movement on their respective shafts and are therefore free to be moved by hand into or out of mesh with the opposing or related larger gear wheel.

Reference numeral 8 indicates a spring pressed catch provided on gear 6 for engagement with the shoulder 9 of shaft 7, for holding said gear in its inactive position.

The other end portion of drum shaft 7 is squared, as at 10 for reception of a suitable crank by which drum 4 can be turned by hand. For operating drive shaft 1, I provide a sweep, as 11, the same being fixed to the upper end portion of a vertical shaft 12 which latter is provided with a worm 13 meshing with the worm wheel 14 loosely mounted on shaft 1. Combined with worm wheel 14 is a clutch part 15 adapted for engagement with the relatively movable clutch part 16 splined to shaft 1 and connected with a suitable shifting lever 17.

Reference numeral 18 indicates a back stop dog pivotally mounted on a main supporting frame 19 for engaging the teeth of gear wheel 5. Main frame 19 is composed of flanged side bars 20, rigidly held in suitable spaced relation to support the mechanism hereinbefore described, by connecting members 21, 21' the former of which acts also as a step bearing for the lower end portion of shaft 12. The upper end portion of shaft 12 is journaled in a stand 22, the legs or branch members 23 of which, bear on and are bolted to the upper flanges of side bars 20, thereby acting conjointly with connecting members 21, 21' to insure rigidity between the side bars. The lower flanges of side bars 20 are apertured for reception of bolts, as 24, for securing the main frame to skids, as 25, to thereby render the apparatus portable in its nature, as will be readily understood.

In the operation of my invention the line or cable 26, having been made fast to the weight or stump, gear 6 is moved into mesh with gear wheel 2, and pinion 3 shifted to the dotted position in Fig. 2 to drive drum 4 at a relatively high speed until all of the slack cable is wound. After this is done, pinion 3 and gear 6 are adjusted to the position shown in Fig. 2. In some instances it is desirable to rotate drum 4 other than through the medium of sweep 11. This can be done in my apparatus by shifting pinion 3 and gear 6 to their inoperative positions and then applying a crank to the squared shaft portion 10, as hereinbefore described.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States of America, is:

1. An apparatus of the character de-

scribed comprising a supporting frame, a drum journaled on said frame, a gear wheel fixed for rotation with said drum, a second gear wheel on the shaft of said drum, said gear wheels being of different diameters, a drive shaft journaled on said frame, gears of relatively different diameters on said drive shaft, the smaller gear of one pair being arranged to mesh with the larger gear of the other pair, one gear of each pair being splined to its shaft, a vertical shaft, a sweep secured to said last named shaft, a worm on said vertical shaft, a loose worm wheel on said drive shaft in mesh with said worm, and provided with a clutch part, and a clutch pair splined on said drive shaft for adjustment into and out of engagement with the clutch part of said worm wheel.

2. An apparatus of the character described comprising a supporting frame, a drum having shaft extensions journaled on said frame and projecting therefrom, one of said shaft extensions having its free end portions squared for reception of a crank, a gear on the other shaft extension of said drum, a gear fixed for rotation with said drum, a drive shaft journaled on said frame, gears on said drive shaft arranged to mesh with said first named gears, one of said last named gears and said first named gear being splined on their shafts whereby they can both be shifted out of mesh with their

opposing related gears to thereby disconnect said drum from said drive shaft, a vertical shaft provided with a sweep, and power transmission gearing between said sweep and said drive shaft.

3. In an apparatus of the character described comprising skids, a supporting frame comprising side members having flanges at their upper and lower edge portions, the lower of said flanges being formed with apertures, securing means passing through the apertures of said flanges into said skids, a drum having shaft extensions journaled in said frame side members, an intermediate member connecting the said frame side members, a vertical shaft having its lower end portion stepped in said intermediate member, a stand in which the upper end portion of said shaft is journaled, said stand having rigid depending legs bearing on and fixed to the upper flanges of said frame side members, a sweep secured to the upper end portion of said shaft, and means for transmitting motion from said shaft to said drum.

Signed at Seattle, Washington this 7th day of November 1911.

LOU M. GARDINER.

Witnesses:

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