(No Model.) 2 Sheets—Sheet 1.

J. ROURK.

CABLE POWER.

No. 457,842. Patented Aug. 18, 1891.

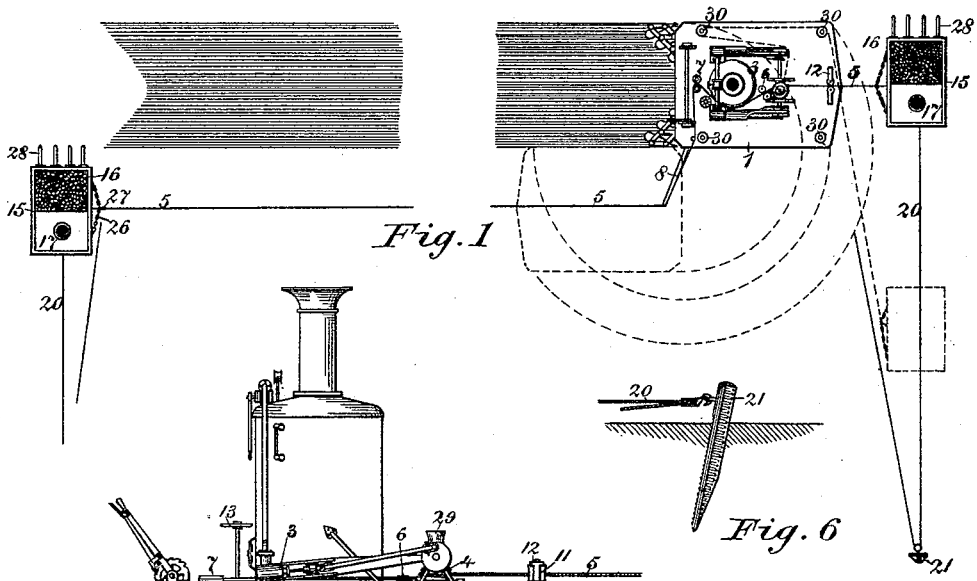

Fig. 1

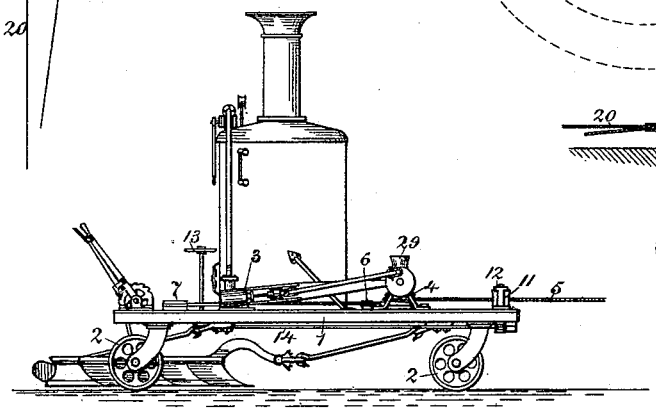

Fig. 2

Fig. 6

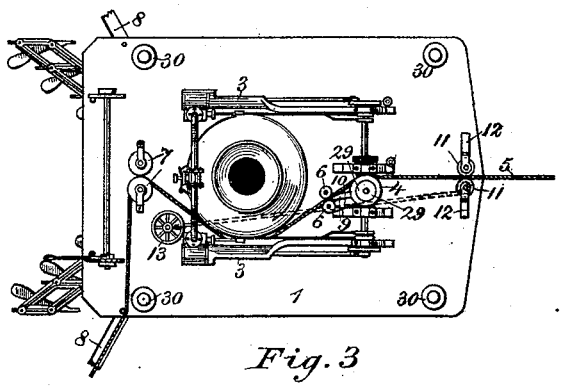

Fig. 3

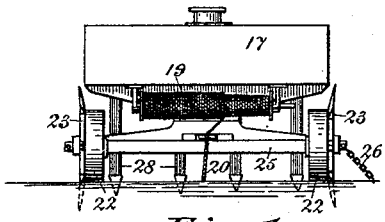

Fig. 4

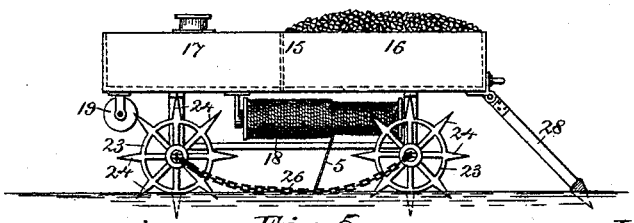

Fig. 5

Witnesses

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(No Model.) 2 Sheets—Sheet 2.

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CABLE POWER.

No. 457,842. Patented Aug. 18, 1891.

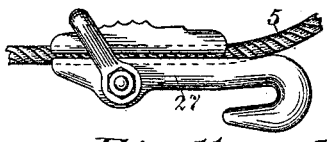

Fig. 11

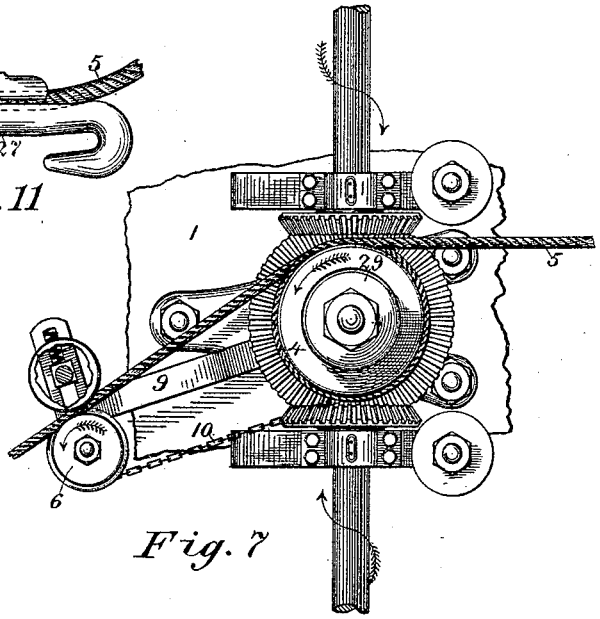

Fig. 7

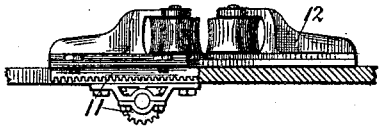

Fig. 9

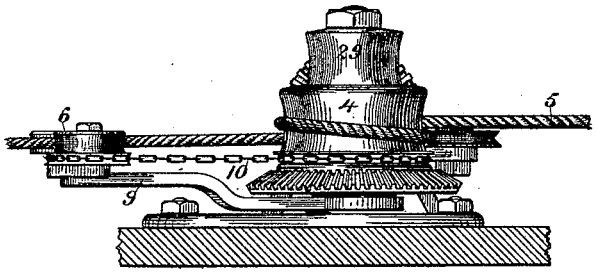

Fig. 8

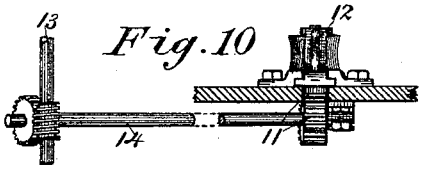

Fig. 10

Witnesses

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UNITED STATES PATENT OFFICE.

JOHN ROURK, OF TORONTO, CANADA.

CABLE-POWER.

SPECIFICATION forming part of Letters Patent No. 457,842, dated August 18, 1891.

Application filed February 13, 1890. Serial No. 340,372. (No model.)

To all whom it may concern:

Be it known that I, JOHN ROURK, a subject of the Queen of Great Britain, residing at Toronto, in the county of York and Province of Ontario, Canada, have invented a new and useful Cable-Power, of which the following is a specification.

The object of my invention is to provide a cable-power that can be employed to operate agricultural machinery with greater advantages than by animal-power or has heretofore been accomplished by any of the different methods of applying steam-power. I attain the above object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 represents a plan of the application of my improved cable-power to operate a gang of plows; Fig. 2, a side elevation of the same when alone; Fig. 3, a plan of the same shown in the foregoing figure; Fig. 4, a front end elevation of one of the two similar anchors employed in connection with my cable-power; Fig. 5, a side elevation of the foregoing figure; Fig. 6, a side elevation of one of the two similar permanent anchors I employ, the ground being shown in section. Fig. 7 represents an enlarged plan view of the capstans, the driving-bevels on the main shafts, the swinging arm, and surrounding parts, to more fully illustrate the foregoing parts. Fig. 8 represents a side elevation of the parts shown in the foregoing figure, one of the driving-bevels and its shaft being removed to aid in the illustration of the capstan. Fig. 9 represents a side elevation of the traversing frame and the rack and pinion employed as the means whereby the machine is guided along the cable. Fig. 10 represents a partial end elevation of the foregoing figure, together with the worm and pinion device shown in Figs. 2 and 3; and Fig. 11 represents a side elevation of the clutching device employed on the cable to secure the same to the chain on the anchors.

The machine 1 is essentially a suitable car or vehicle mounted on suitable caster or other wheels 2 or runners secured beneath it and on which said machine 1 moves by means of the winding or drum engine 3, conveniently secured on the platform or top of the said machine. The engine 3 operates by bevel-gearing on the main shaft a vertical capstan 4, around which the cable 5 is passed once or twice, thence between a pair of tightening-pulleys 6, and thence passing round the side of the boiler of the said engine 3 to the rollers 7 in rear, thence out to the land side, where it is laid from the extremity of an arm 8, of which there is one on each of the two sides. The tightening-pulleys 6 are secured on one end of a swinging arm 9, the other end of which is secured to the axle of the capstan 4. One of the pulleys 6 is driven by a suitable belt 10 from the said capstan 4 to run slightly faster than the travel of the periphery of said capstan 4, so as to maintain a strain on and keep the cable 5 taut around the capstan 4.

At the front end of the machine 1 is provided a pair of guide-rollers 11, fixed in a laterally-traversing frame 12, having on its under side a rack-and-pinion movement operated by and connected to the hand-wheel 13 by a shaft 14, for the purpose of changing the position of the draft on the cable 5, passing between said guide-rollers 11, thereby controlling the direction of the said machine 1 to a limited extent and at the will of an operator.

The plows or other implements to be operated are attached beneath the machine or in rear, or with grain-harvesting machinery it may be pushed in front, as it is desirable. For the operation of plows and such machines as can be attached beneath, a lever and pawl and sector are provided on the rear of the platform of the machine 1. For the operation of other machines in front a pulley on the main shaft is provided. The cable 5 is fastened at or toward each extremity to an anchor 15, provided with a fuel-box 16, water-tank 17, and a bobbin 18 beneath the fuel-box 16 and tank 17, upon which the extra length of cable 5, not in use, is rolled. At the front end of the anchor 15 is provided another bobbin 19, upon which the extra length of the cable 20 for drawing the anchor 15 is stored. The cable 20 is attached to the front of the anchor 15, thence to and through a suitable block on the fixed anchor 21, (secured in the ground,) and thence to the rear and convenient to the machine 1, for the purpose hereinafter explained. The anchor 15 is provided with and mounted on truck-wheels 22, and has also ad-

ditional detachable spur-wheels 23, as shown, with spurs 24 to hold fast in the ground against lateral strain. To the ends of the axles 25 of the anchor 15 is secured a chain 26, to which the cable 5 is hooked by a suitable clutch 27, engaged on and adjustable to any part of said cable 5. The spur-wheels 23 can be removed from the truck-wheels 22 when not required, facilitating transport of the anchor 15. To the rear end of the anchor 15 is attached pointed braces 28 to resist running back of the anchor 15 during the turning round of the machine 1.

The mode of operating my improved cable-power will be best explained by reference to Fig. 1, which shows the same as having plowed across the work to the turning part and near one of the anchors 15, the other one having been placed in position opposite the next width or the return. To turn round, I first (before disengaging the plows from the ground) draw up from the rear some slack in the cable 5 and disengage the same from the tension-pulley 6. Then take up the cable 20, the other end of which is secured to the anchor 15, and pass it once round the secondary capstan 29 of the capstan 4, holding it taut thereon, and start the engine 3, which will cause the anchor 15 to move forward, and when opposite the return half of the next round, or, as shown in dotted lines, stop the engine 3 and cast off the cable 20. I then take in sufficient slack in the cable 5 to pass or carry it round the rollers 30, (shown near the corners of the machine 1.) The cable 5 will then occupy the position shown by dotted lines. I next place the cable 5 between the tension-pulleys 6, disengage the plows or implement being operated from the ground, then start the engine 3, which will wind in the cable 5 and cause the machine 1 to swing round on three of its caster-wheels 2 or its runners, as the case may be, the wheel or corner most remote from the cable 5 remaining pivotal, the other corners of the machine 1 describing the curves shown in dotted lines from them. When I have turned round as far as the cable 5 will bring, I stop the engine 3 and readjust the cable 5 by taking the part paid out from the arm 8 and placing it over the capstan 4 and the part just cut off over the arm 8 on the opposite side of the machine 1, which when completed places the cable 5 around the opposite side of the boiler of the engine 3. Upon starting the engine 3 again the machine 1 will continue to swing round into the alignment of the cable 5, which is being towed on, and when there I drop the plows and proceed on the return trip.

Having now described my improved cable-power and the manner of operating the same in the only part of operation requiring any explanation—that of turning—what I claim, and desire to secure by Letters Patent, is—

1. For agricultural and kindred purposes, a cable-power composed, essentially, of a platform mounted on suitable wheels or runners and supporting an engine geared to operate a vertical capstan, round which a cable is passed and maintained taut by tension-rollers secured suitably on one end of a swinging arm, secured at its opposite end to the said capstan, the said cable at the front passing between guide-rollers carried in a laterally-traversing frame operated by a hand-wheel conveniently located and suitably connected by a shaft, worm-wheel and rack and pinion to operate said guide-frame, said cable passing round the boiler to suitable rollers in the rear and thence distributed from a laying-arm projecting laterally from the machine, provided with rollers for turning round, and means for attaching and operating implements, substantially as shown and described.

2. As an auxiliary to a cable-power, the truck supporting a fuel-tender and provided with anchor-wheels secured on the axles with the bearing-wheels, a chain connecting the ends of said axles, suitable bobbins beneath the tender to carry the cables, a clutch to secure the cable with said chain, and trailing braces at the rear of said tender, connected by a cable at the front to a fixed anchor, substantially as shown and described.

3. The hereinbefore-described cable-power, mounted on suitable wheels or runners and supporting an engine, a capstan operated by said engine, tension-rollers arranged on the free end of a swinging arm, a cable passing around said capstan and paid out in the rear thereof and adapted to draw the machine, means, as described, for guiding said machine, and wheels provided thereon for turning it, in combination with the movable anchor composed of a fuel-tender mounted on a truck provided with anchor-wheels secured on the axles with the bearing-wheels, a chain connecting the ends of said axles, suitable bobbins to carry the cables, a clutch to secure said cable and chain engaged, and trailing braces hinged to the rear of the tender, secured at its front end to a fixed anchor by a suitable cable, substantially as shown and described.

4. In combination with a cable-power machine and its auxiliary anchor, the fixed anchor, essentially a stake of suitable material, provided with an adapted single or multiple sheaved block attached near the head of said anchor and through which a suitable cable passes from the said auxiliary anchor to be employed in reversing said cable-power machine, substantially as shown and described.

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Witnesses:
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F. M. KEVINS.