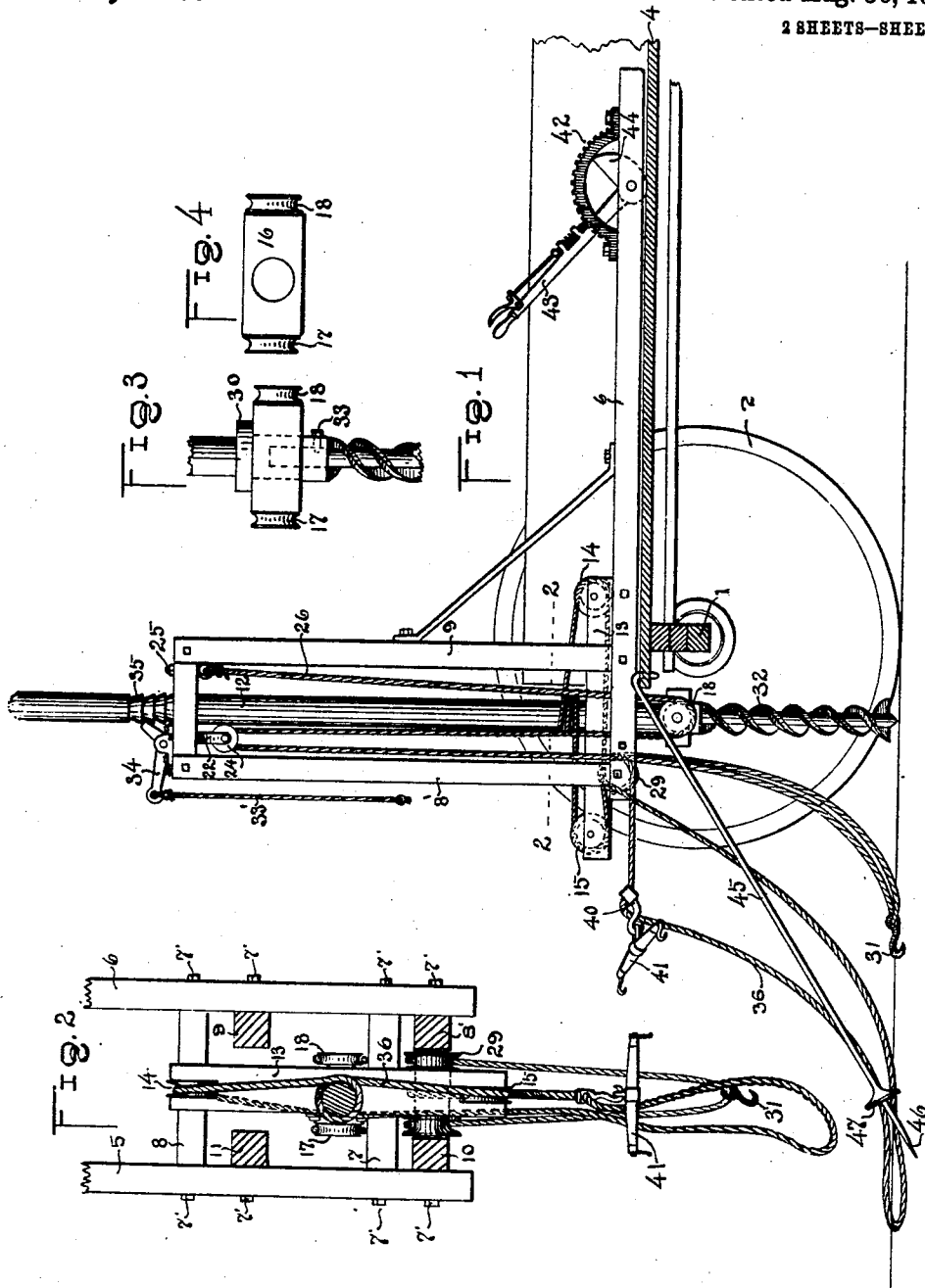


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 POST HOLE DIGGING MACHINE.
 APPLICATION FILED NOV. 19, 1909.

969,062.

Patented Aug. 30, 1910.
 2 SHEETS—SHEET 1.



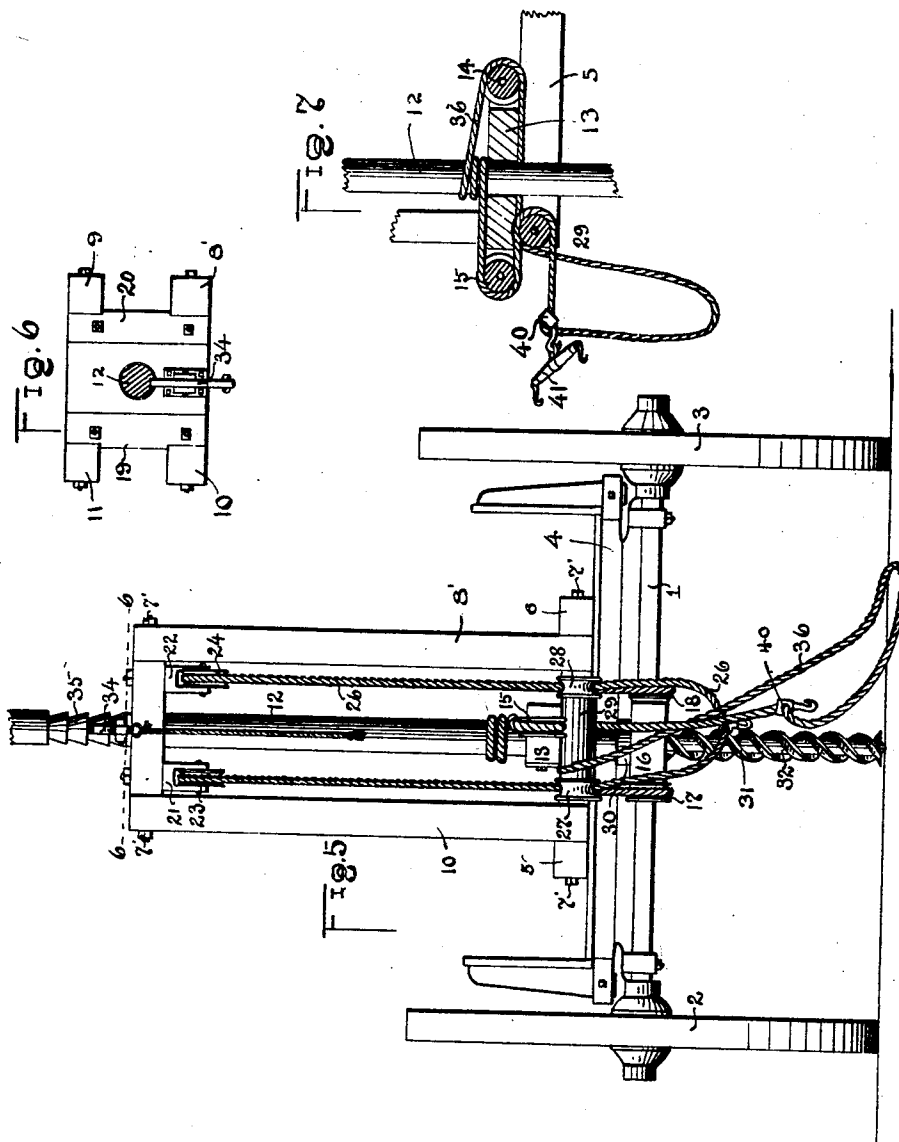
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 Attorneys.

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UNITED STATES PATENT OFFICE.

LEWIS J. KERIGAN AND PATRICK J. LAWLER, OF BRED A, IOWA.

POST-HOLE-DIGGING MACHINE.

969,062.

Specification of Letters Patent. Patented Aug. 30, 1910.

Application filed November 19, 1909. Serial No. 528,998.

To all whom it may concern:

Be it known that we, LEWIS J. KERIGAN and PATRICK J. LAWLER, citizens of the United States, residing at Breda, in the county of Crawford and State of Iowa, have invented certain new and useful Improvements in Post-Hole-Digging Machines; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to new and useful improvements in post hole digging machines and especially to the class adapted to be operated by machinery or by a horse or the like, having for an object to provide a device of the class which may be readily transported from place to place, when it is desired.

A still further object is to provide a digger which may be attached to an ordinary wagon or cart, a still further object being to provide a means for directing the digging portion of the device downward into the ground, also upwardly after the work has been completed and a still further object is to provide a means for securing the digging member in an elevated position, in order that the device may be moved.

In the accompanying drawings forming a part of this application, Figure 1 is a side elevation in transverse section showing the digging mechanism carried by a wagon or the like. Fig. 2 is a transverse section of the post hole digging mechanism taken on the line 2—2, Fig. 1. Fig. 3 is a detail elevation showing a fragment of the digging parts connected with a fragment of the shaft. Fig. 4 is detail elevation of the shaft bearing. Fig. 5 is an end elevation of the device in its assembled position and attached to the body of a wagon. Fig. 6 is a transverse section of the frame and shaft taken on the line 6—6, Fig. 5, and, Fig. 7 is a fragmentary section in detail disclosing how the shaft is rotated.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 is an ordinary axle of a wagon carried by wheels 2 and 3, while a bed or plate 4, as is commonly used on wagons, is supported by said axle. Extending along the bed 4 of the wagon are a pair of parallel frames 5 and 6 having transversely extending braces 7 and 8 secured to each of said frames respectively by means of bolts 7', while each of

said frames have a pair of standards 8' and 9, and 10 and 11 respectively, secured perpendicularly to said frames. These standards 8', 9, 10 and 11 are located adjacent one end of each of said frames respectively, in order that the shaft 12 may extend beyond the axle 1, said shaft 12 being located at a point about central to the framework comprised by the standards and the braces. A supporting bracket 13 extends at a point about midway of the frames 5 and 6 and at right angles to braces 7 and 8, each end of said supporting bracket being slotted to receive pulleys 14 and 15. Mounted on said shaft 12 just below the braces 7 and 8 is a bearing member 16^a and upon either end of which is rotatably mounted two pulleys 17 and 18.

A pair of supporting blocks 19 and 20 are secured between each of the upright standards 8' and 9, 10 and 11 respectively, while a pair of swivels 21 and 22 are carried by each of said supporting blocks and in each of said swivels 21 and 22, are pivotally mounted pulleys 23 and 24. At each end of the supporting blocks 19 and 20, opposite the swivels 21 and 22, is secured an eye bolt 25, to which is secured a rope or cable 26, said rope or cable extending downwardly from said eye bolt to the pulleys 17 and 18 on each end of the bearing 16 and from there upwardly and passing over each of the pulleys 23 and 24, thence downwardly to pass around the pulleys 27 and 28 carried on either end of a shaft upon which is also rotatably mounted independent of said pulleys a roller 29, said shaft upon which said roller and pulleys are mounted being supported upon the rear end of said bracket 13.

A collar 30 is positioned on the lower end of the shaft adjacent the bearing 16, this collar permitting the shaft to be raised upwardly when pressure is brought to bear upon the rope or cable 26 at the point where the hook 31 is secured on said cable. It will be understood that in order to accomplish the raising of the shaft 12, it will be necessary to engage the hook 31 into a swingletree or the like, which in turn, may be attached to a horse or it is possible to secure the hook 31 into a cable or the like which may be wound up on the drum in coöperation with an engine. The lower end of the shaft 12 is adapted to receive an auger or boring tool 32 which may be secured in said shaft by means of a set screw 33. When it

is desired to dig a post hole, the wagon is drawn to the desired point and the shaft lowered until the auger 32 is immediately over the desired place, when the shaft may be lowered until the point of the auger comes in contact with the ground by means of downward pressure being exerted on a chain 33' or the like, which in turn is connected to one end of a substantially L-shaped dog 34 fulcrumed upon one of the supporting blocks and adapted to engage a series of burs of toothed portions 35 adjacent the upper end of the shaft 12. It is obvious how, when the dog is released from engagement with said burs 35, the shaft may be lowered to any desired point and so on the other hand, the shaft may be elevated to any desired height in order that the auger 32 may not be snapped off by obstructions on the ground, as the wagon is drawn from place to place.

The rotation of the shaft and auger secured thereto is produced through the medium of an endless cable 36, which if traced will first be found to pass under the roller 29, thence back and over the pulley 15 continuing onward and wrapped one or more times about the shaft 12, thence on over the pulley 14, thence passing backward to one side of said shaft 12 and then over said roller 29 and thus forming a complete circuit, so to speak. A hook having a base clamp 40 thereon is adapted to be secured in the length of said rope just outside of said roller 29 and said hook adapted to be secured to a swingle tree 40 whereby when a horse or the like is secured thereto and driven forward said cable passing over the pulleys, roller and shaft, as heretofore traced, will rotate said shaft and the auger secured thereto, for the purpose described. It will be noted that said cable 30 is endless and that one portion in its circuit passes over the roller 29 while the other passes under and when the horse is driven outward to the limit of the cable the horse may be brought back and the clamp 40 placed upon another portion of the endless cable 36 adjacent the roller 29, so that this action may be repeated until a hole of sufficient depth has been made, whereupon the auger may be elevated. The elevation of the auger of course will necessitate the removing of the hook containing the clamp 40 and connecting to the swingle tree the hook 31 of the cable 26 and by driving the horse outwardly it will be seen that the shaft carrying the auger will be drawn upwardly through the medium of said cable 26, pulleys, etc., as heretofore described.

A means for raising the frames 5 and 6 upward from the bed of the wagon 4, in order that the auger 32 may be directed perpendicularly into the ground when the pitch of the wagon is such that it would other-

wise be directed on a slant, is provided for by securing a substantially semi-circular ratchet 42 on one or both of the frames 5 and 6, while a lever 43 having a spring operated dog is adapted to slide in engagement with said ratchet and on the lower end of the lever 43 is an eccentric 44, which when the lever 43 is moved laterally along, the ratchet 42 will cause the frames 5 and 6 to be raised or lowered accordingly. A rod 45, having a spike 46 extending from a collar 47 is attached to the bed of the wagon or carrying means for the post hole digging device in order that the wagon may be prevented from moving either from the grade on which the wagon stands or by the vibration or jarring caused by digging the post hole.

It will thus be seen from the foregoing described device that we have provided a power post hole digging machine which may be readily and easily operated and one which may be transported from place to place without any unnecessary inconvenience. The system of pulleys employed and the arrangement thereof provides a maximum amount of power with a minimum amount of work.

The combination and arrangement of parts are so simple and the material employed therein may be so readily obtained that the cost of production may be well maintained at a point wherein the device will come within the reach of persons desiring it for the work for which it is so constructed.

What we claim is:

1. A device of the character described, comprising a main frame adapted to rest on a wagon body, a derrick frame secured to one end of said main frame, a shaft extending through said derrick frame and having an earth auger secured to one end thereof, a bracket on said main frame through which said shaft extends, said bracket carrying a pulley ahead of and an additional pulley in the rear of said shaft, a roller also carried by said bracket below and intermediate of said pulleys, and an endless cable circumferentially engaging said shaft and extending in a circuit over said pulleys, for the purpose described.

2. A device of the character described, comprising a main frame adapted to rest on a wagon body, a derrick frame secured to one end of said main frame, a shaft extending through said derrick frame and having an earth auger secured to the lower end thereof, said shaft also having secured thereon a bearing member carrying a pulley at either end thereof, a bracket member secured on said frame and also carrying a pair of spaced apart pulleys, an additional pair of pulleys carried by the upper portion of said derrick frame, and a cable secured at

one end to the upper portion of said derrick frame and having engagement with the aforesaid pulleys, whereby when the free end thereof is pulled forwardly said shaft and auger will be raised.

3. In combination with a wagon having supporting wheels therefor, and a pair of longitudinal frames secured on said wagon and extending for a part of their length beyond the end thereof, a supporting frame-work extending upwardly from and perpendicularly to said frames, a shaft carried within said supporting frame-work, the upper end of said shaft having a burred portion in a part of its length, a means for holding said shaft in an elevated position coöperating with said burred portion, a digging means secured on the other end of said shaft and a means for rotating said shaft and said digging means, whereby said shaft and said digging means are directed downwardly for the purpose described.

4. A device of the character described, comprising a main frame adapted to rest on a wagon body, a derrick frame secured to one end of said main frame, a shaft extending through said derrick frame and having an earth auger secured to the lower end thereof, the upper portion of said shaft being burred for a portion of its length, a bracket secured to said main frame and carrying a pair of spaced apart pulleys, said shaft also carrying a bearing member with a pulley at either end thereof, additional pulleys at the upper portion of said derrick frame, a cable secured at one end to the upper portion of said derrick frame and having engagement with the aforesaid pulleys for elevating said shaft and auger, and means on said derrick frame for engaging said burred portions and retaining said shaft in an elevated position.

5. A device of the character described,

comprising a main frame adapted to rest on a wagon body, a derrick frame secured to one end of said main frame, a shaft extending through said derrick frame, an earth auger secured to the lower portion of said shaft, the upper end of said shaft being burred for a portion of its length, means to raise and lower said shaft and auger, and a dog secured to the upper portion of said derrick frame and adapted to engage said burred portions whereby said shaft and auger may be held in an elevated position.

6. A device of the character described, comprising a main frame adapted to rest on a wagon body, a derrick frame secured to one end of said main frame, a shaft extending through said derrick frame and having an earth auger secured to the lower end thereof, a bracket secured to said main frame and extending through said derrick frame, said bracket carrying a pulley at each end thereof and also supporting a roller and an additional pair of pulleys below and intermediate of said other pulleys, a cable having engagement with said shaft, and pulleys on said bracket and said roller for the propulsion of said auger, a bearing member on said shaft and carrying pulleys and an additional cable secured at one end of said derrick frame and having engagement with the pulleys on said bearing member and pulleys adjacent said roller for the raising and lowering of said shaft and auger.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

LEWIS J. KERIGAN.
PATRICK J. LAWLER.

Witnesses:

DENIS MURPHY,
BARNABAS F. PHILBROOK.