No. 819,855. PATENTED MAY 8, 1906.

J. E. CONCH.

DRILLING MACHINE.

APPLICATION FILED APR. 21, 1905.

Fig. 1.

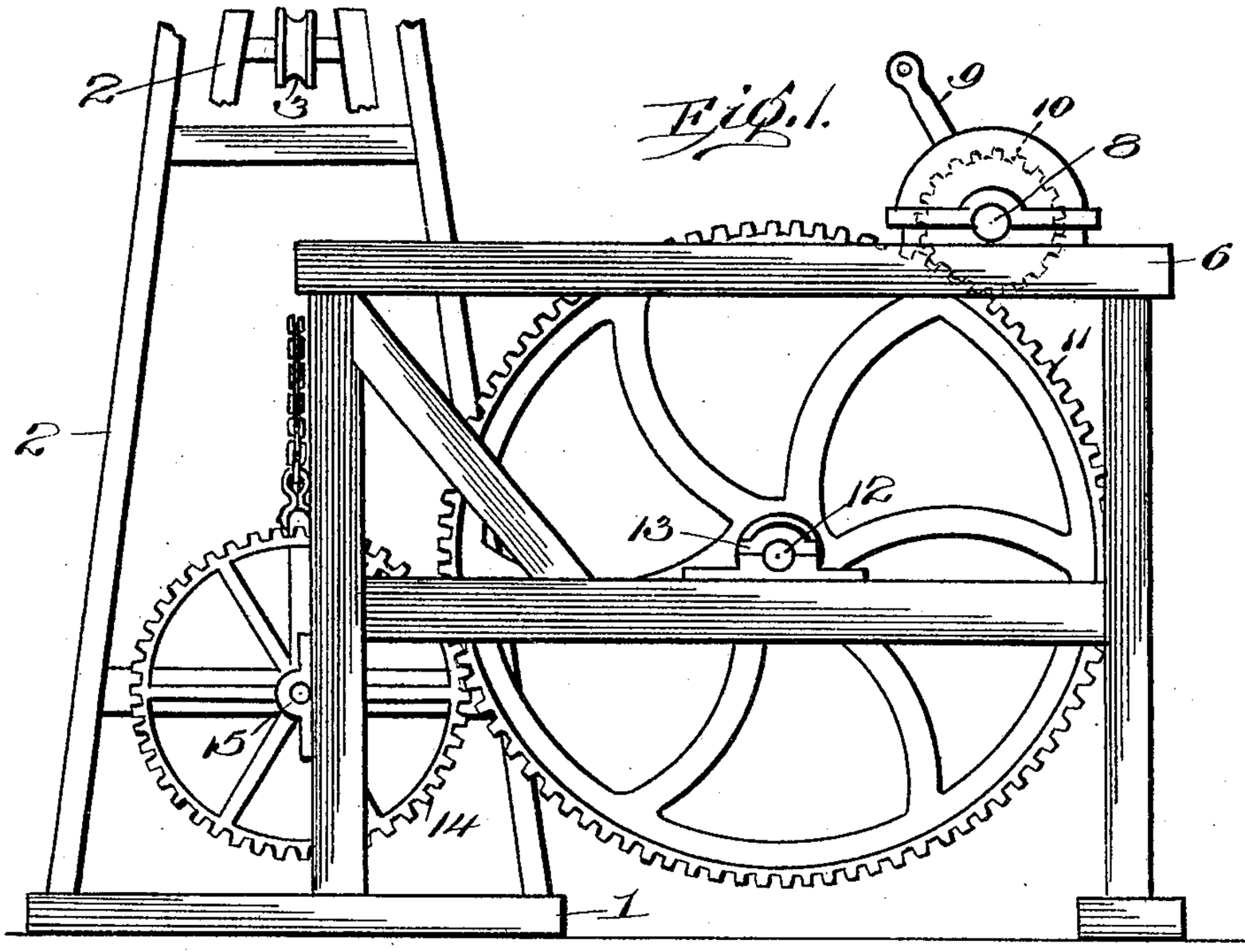
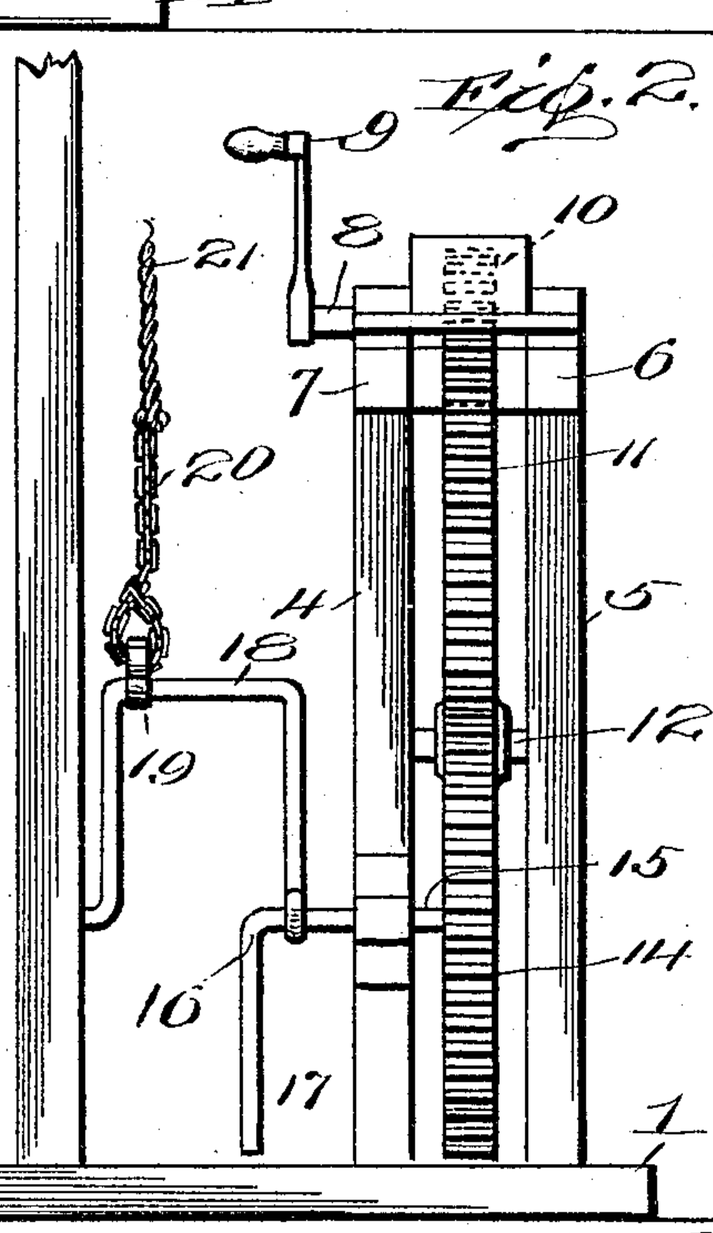


Fig. 2.



Witnesses

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DRILLING-MACHINE.

No. 819,855. Specification of Letters Patent. Patented May 8, 1906.

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To all whom it may concern:

Be it known that I, JOHN E. CONCH, a citizen of the United States, residing at Hazard, in the county of Perry and State of Kentucky, have invented certain new and useful Improvements in Drilling-Machines, of which the following is a specification.

This invention relates to drilling-machines, and more particularly to that class adapted for drilling wells.

The object of this invention is to provide a drilling-machine wherein the drilling-tool may be easily raised and quickly dropped and to construct the same in such a manner that it may be manipulated by hand.

A further object of this invention is to provide a drilling-machine of the character above described and to construct the same in an exceedingly cheap, simple, and durable manner, one composed of but few parts which will efficiently perform all of their intended functions.

With these objects and such others as may hereinafter appear my invention consists of the various parts and in the novel manner of combination and arrangement of said parts, all of which will be more fully described, and specifically pointed out in the appended claims.

In the drawings forming a part of this specification, Figure 1 is a view in side elevation of the complete machine. Fig. 2 is a front view of the same.

Referring by numerals to the drawings, 1 represents the base of the frame, mounted upon which is a derrick 2, having journaled in the top thereof a pulley 3, the object of which will hereinafter appear. Mounted upon the base 1 are two sets of oppositely-disposed uprights 4 and 5, connected by horizontal braces 6 and 7. The uprights 4 are adjacent to the derrick 3, the object of which will hereinafter appear. Journaled in suitable bearings upon the bases 6 is a shaft 8, adapted to be driven by a hand-crank 9. Keyed upon this shaft 8 is a small cog-wheel 10 in mesh with a large cog 11, mounted upon a shaft 12, journaled in suitable bearings 13 upon the horizontal bases 7. The large cog-wheel meshes with a small cog-wheel 14, keyed upon a shaft 15, journaled in suitable bearings upon the uprights 4. One end of the shaft 15 is bent at right angles, as shown at 16, so as to provide an arm 17. Mounted upon the shaft 15 is one end of the yoke 18, the other end of which is journaled upon a brace in the derrick 2. This yoke is provided with a collar 19, which is connected by a chain 20 to a rope 21, which passes over the pulley 3 in the top of the derrick 2 and down to a drilling-tool. (Not shown.)

Upon driving the small cog 10 by means of the hand-crank the large cog-wheel 11 is driven, which in turn drives the small cog 14, which turns the arm 17, so as to engage the yoke 18 and to force said yoke around until it has made half of a revolution, at which time the drilling-tool is raised. After the yoke has been forced past the center on the lower stroke the drilling-tool is dropped. It will be readily seen that the length of the stroke depends upon the size of the yoke. Accordingly different-sized yokes might well be employed for drilling in the different soils.

I deem the foregoing explanation sufficiently plain that the invention will be readily understood by all conversant in such matters, the extreme simplicity rendering an elaborate description unnecessary.

Having thus described the various features of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a drilling-machine, in combination with a derrick, a shaft a yoke having one end journaled upon said derrick, the other end journaled upon said shaft, an arm carried by said shaft, adapted to control said yoke, and gearing for operating said shaft, substantially as specified.

2. In a drilling-machine, the combination of a derrick, a cable passed over said derrick, a yoke attached to said cable, a shaft upon which one end of the yoke is journaled, the other end of the yoke being journaled upon the derrick an arm carried by the shaft for controlling the yoke, and a train of gearing for operating said shaft, substantially as specified.

3. In a drilling-machine, the combination of a derrick a frame mounted adjacent to the derrick, a small gear-wheel mounted upon the top of the frame, a hand-crank for driving said gear-wheel, a large gear-wheel in mesh with the small gear-wheel, a shaft, a

small gear-wheel keyed upon said shaft in mesh with the large gear-wheel, an angular arm carried by said shaft, a yoke having one end mounted upon the shaft and the other end journaled upon the derrick, said arm adapted to control said yoke, a cable connected to the yoke, a pulley in the top of the derrick, over which said cable passes, substantially as shown and for the purpose specified.

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