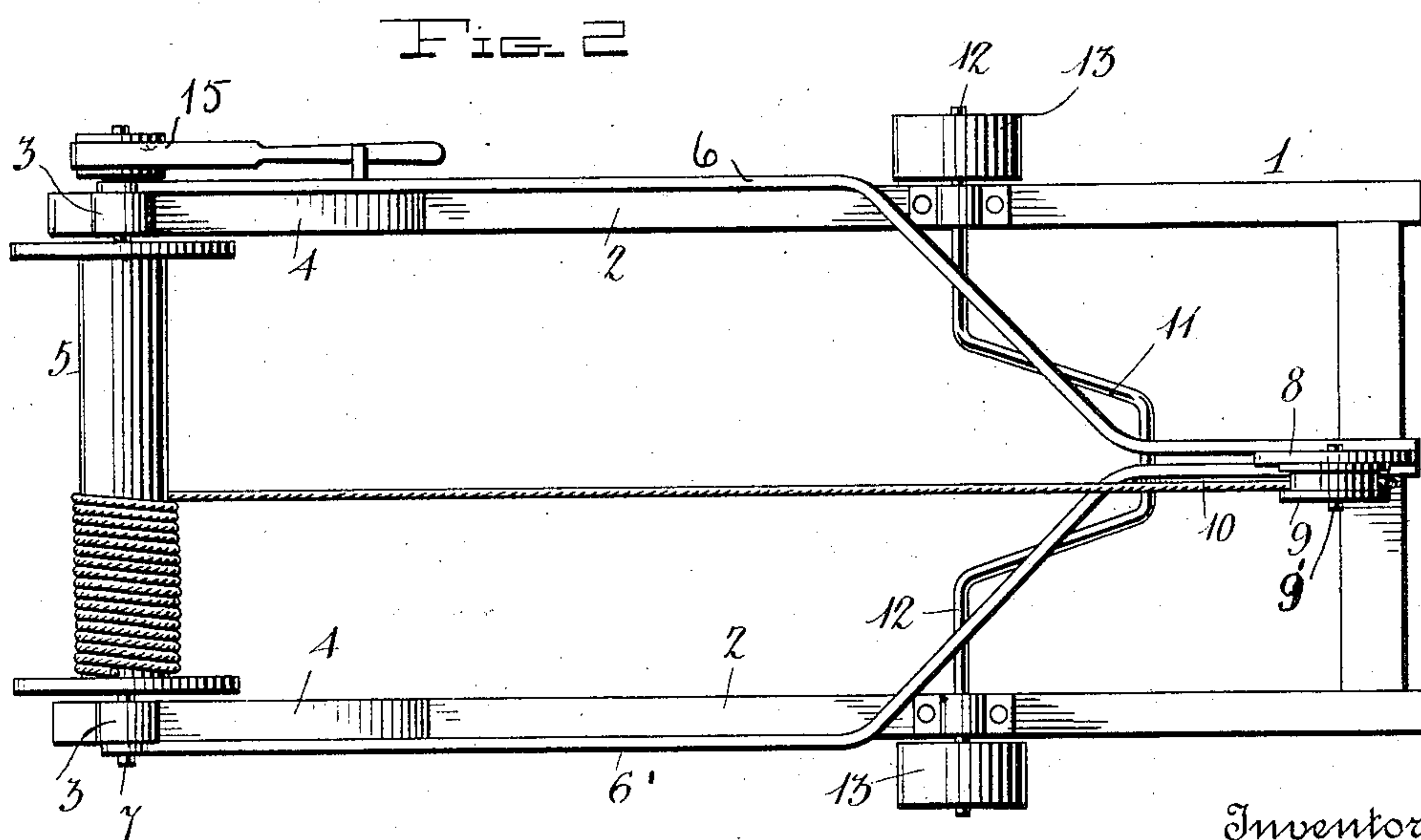
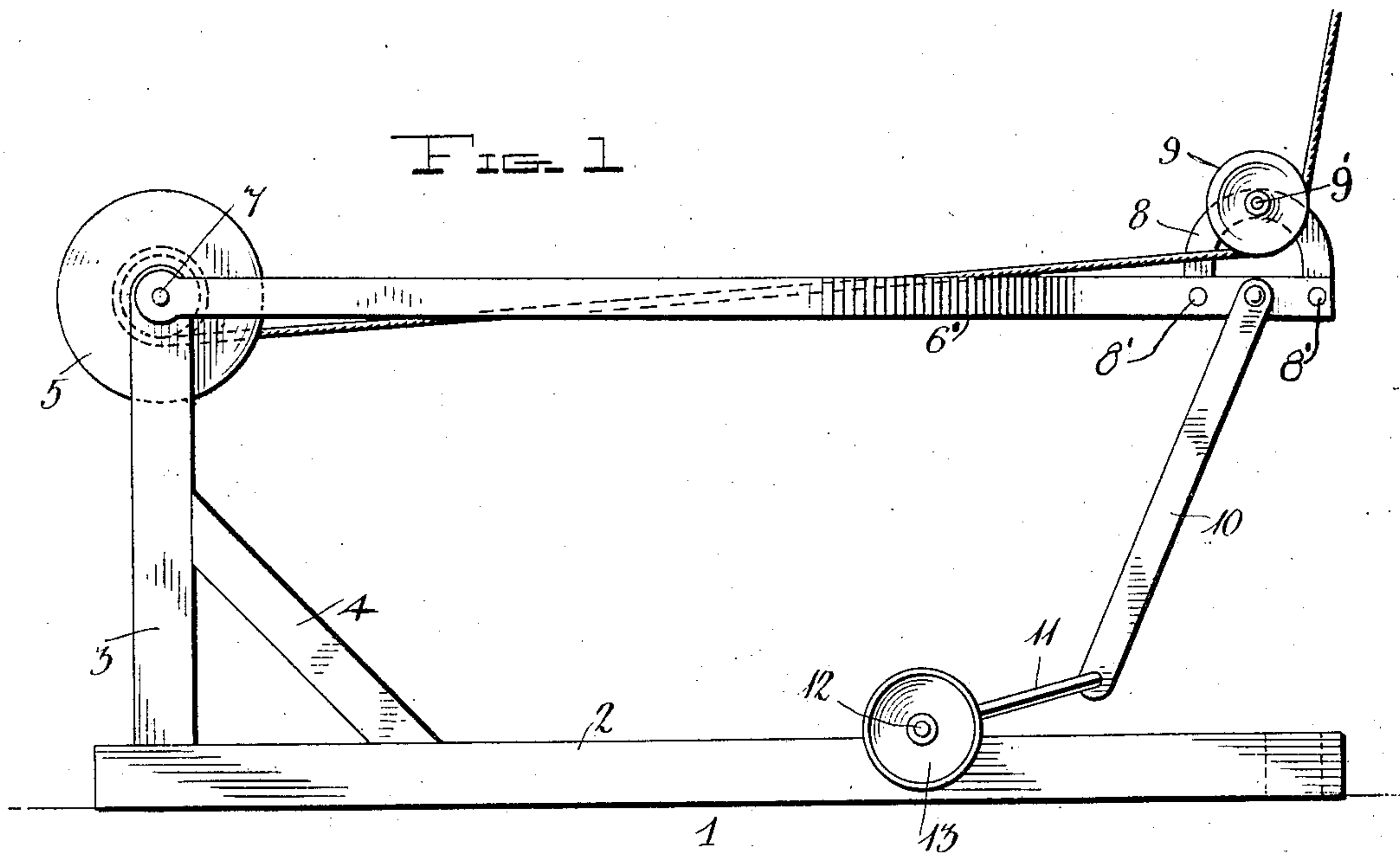


No. 862,301.

PATENTED AUG. 6, 1907.

J. F. BACK.
GEAR FOR DRILL MACHINES.
APPLICATION FILED MAY 28, 1906.



Inventor

J. F. Back

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UNITED STATES PATENT OFFICE.

JOHN F. BACK, OF ST. JOHN, WASHINGTON.

GEAR FOR DRILL-MACHINES.

No. 862,301.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed May 28, 1906. Serial No. 319,198.

To all whom it may concern:

Be it known that I, JOHN F. BACK, a citizen of the United States, residing at St. John, in the county of Whitman and State of Washington, have invented certain new and useful Improvements in Gear for Drill-Machines; and I do 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.

10 This invention relates to drill machines; and one of the principal objects of the same is to provide means for reciprocating the drill and to pay out the drill rope as required in the operation of drilling wells.

15 Another object is to provide a reciprocating reel for the drill rope of a drilling machine, and to provide means whereby the drill rope may be quickly paid out or wound up.

20 These and other objects are attained by means of the construction illustrated in the accompanying drawings, in which:—

Figure 1 is a side view of a rope reel made in accordance with my invention; and Fig. 2 is a plan view of the same.

25 Referring to the drawing for a more particular description of my invention, the numeral 1 represents a framework consisting of longitudinal bars or beams 2 and uprights 3, said uprights being braced by braces 4.

Journalled in the upper ends of the uprights 3 is a rope reel 5.

30 A rocking frame 6 is provided which is preferably formed from flat metal bars which have their ends parallel and the intermediate portions bent so as to cause the free ends to lie close together while the rear ends 6' are far enough apart to lie outside of the uprights 3 and be pivotally mounted upon the ends of the shaft 7, said ends being extended beyond the uprights for that purpose. A bracket 8, preferably flat and semi-circular, is secured to the frame 6, preferably by having its ends secured between the parallel ends of the frame, as by rivets 8'. A guide pulley 9 is mounted on the bracket 8, preferably by means of a stud 9', which projects from one side thereof, and under which pulley the rope or cable is placed to guide it to the reel 5. By bending the free ends of the frame 6 toward each other, greater rigidity is secured and the pulley is located at a point substantially midway between the ends of the reel 5, thereby causing a more equal winding of the cable on the reel than would be secured by locating the pulley at one side or the other.

50 By using a flat, two legged bracket, a very strong, light construction is secured, and by securing the pul-

ley to one side thereof on the stud, the cable can be quickly placed under the pulley, or removed therefrom, as the case may be, for adapting the machine for drilling or simply for winding up the cable. A pitman rod 10 is pivoted to this frame beneath the pulley bracket, and the opposite end of said pitman is pivoted to a crank 11 formed on a shaft 12 journaled in the longitudinal bars of the frame and provided with belt pulleys 13 adapted to be operatively connected to any suitable source of power, preferably the motor or engine of the drilling machine. The upper end of the pitman 10 is connected with the frame 6 between the ends of the bracket 8 and at the outside of one of the bars, whereby the pull or strain upon the frame and the pulley will come directly under the pulley and thereby prevent any twisting of the frame or bending of the free ends of the bars, even though they were of very thin material. A suitable brake 15 may be secured to one end of the rope reel shaft to enable the rope to be paid, as required and to lock the same whenever required.

The operation of my invention may be briefly described as follows: The drill rope which passes up through the drill tower and extends thence down the well shaft and carries the drill, is moved up and down by means of the crank shaft, the pitman rod and the rocking frame. The brake 15 is used to permit more rope to be paid out at intervals as required. When it is desired to wind the rope upon the reel, it may be disconnected from the pulley and wound directly upon the reel, thus relieving the rocking frame of the work incident to this operation.

Having thus described my invention, what I claim as new and desire to secure by Letters-Patent, is:—

In a drilling machine, a frame provided with uprights at one end and a crank-shaft adjacent to the other, a reel mounted in said uprights, a frame comprising two flat bars, pivotally secured upon the reel shaft at one end and having their free ends bent inward and located adjacent to each other, an upwardly-extending, flat, semi-circular bracket secured at its ends between said free ends of the bars, a stud projecting from one side of said bracket, a guide pulley mounted on said stud, and a pitman connected at one end with the crank-shaft and at the other with the outside of one of said bars, directly under said pulley and between the ends of said bracket, whereby the strain or pull of the pitman will not twist said bars nor bend their free ends.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN F. BACK.

Witnesses:

JOHN TERHUNE,
MARVEL J. CRABB.