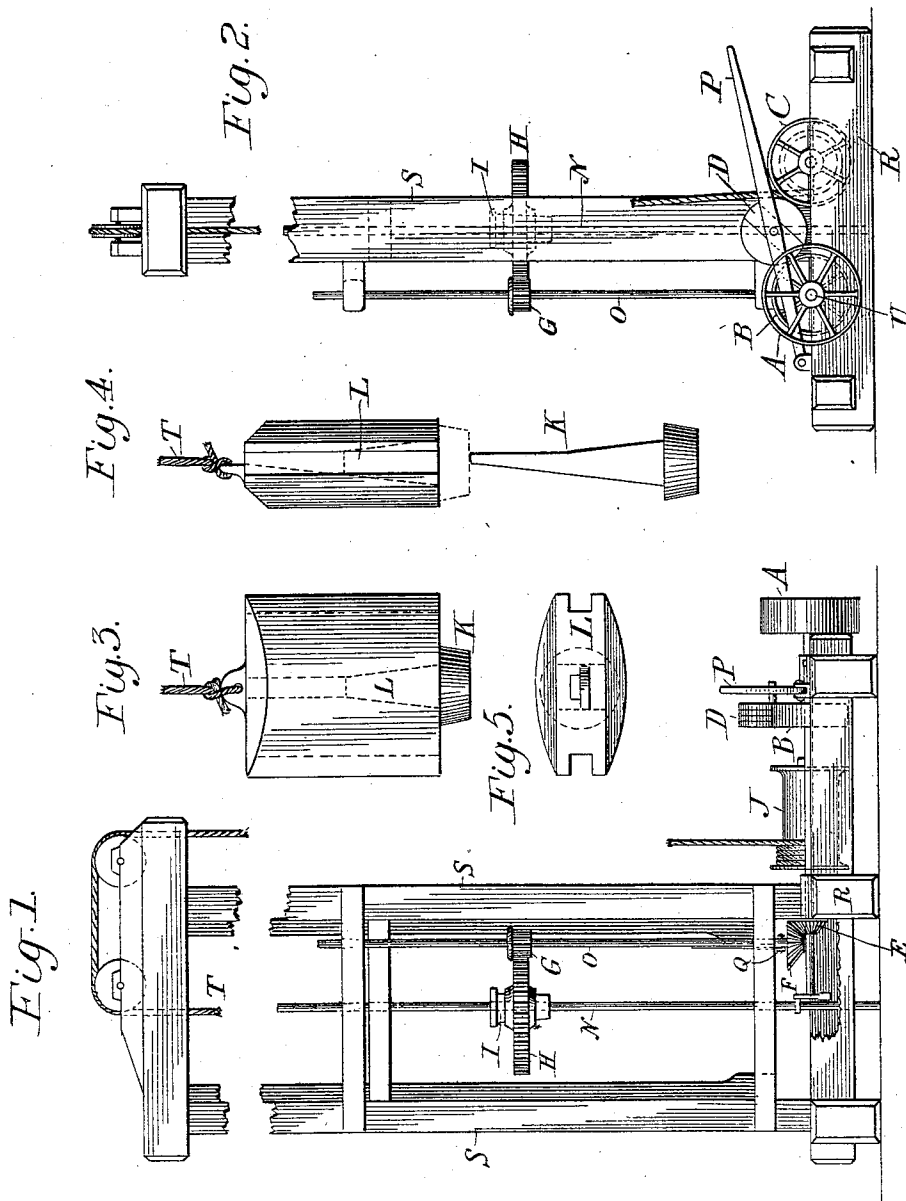


(No Model.)

J. M. GEISINGER.
WELL BORING MACHINE.

No. 565,343.

Patented Aug. 4, 1896.



Witnesses:
James M. Cook
Cyrus M. Howard

Inventor:
Joseph M. Geisinger

UNITED STATES PATENT OFFICE.

JOSEPH M. GEISINGER, OF WARSAW, INDIANA.

WELL-BORING MACHINE.

SPECIFICATION forming part of Letters Patent No. 565,343, dated August 4, 1896.

Application filed March 23, 1896. Serial No. 584,581. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH M. GEISINGER, a citizen of the United States, residing at Warsaw, in the county of Kosciusko and State of Indiana, have invented a new and useful Well-Boring Machine, of which the following is a specification.

My invention relates to improvements in well-boring machines in which the boring-rod or drive-pipe is rotated, plunged, and driven at pleasure by the same power and by a simple and practical change in the gearing; and the object of my improvement is to provide a comparatively inexpensive machine, wherein the boring-rod or drive-pipe is rotated, plunged, or driven with a greater or less degree of speed and force at the will of the operator. I attain this object by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation of the machine with the hammer removed. Fig. 2 is an end elevation. Fig. 3 shows rear elevation of the hammer with the removable cushion in place. Fig. 4 shows side elevation of the hammer and of the cushion removed. Fig. 5 is a plan of hammer.

Similar letters refer to similar parts throughout the several views.

A is the driving-pulley on main shaft.

B is a friction-pulley on main shaft connecting, by friction-pulley D on lever P, with friction-pulley C for hoisting drill or drive-pipe N and hammer L by means of rope T, wound on drum J.

E is a bevel-pinion on main shaft connecting with bevel-pinion F on spline-shaft O.

H is a gear on drill or drive-pipe N, keyed thereto by corrugated corner-wedges I to effect the rotary motion in drilling or boring by its engagement with the pinion G, movable on the said spline-shaft.

K is the removable wooden cushion-block used in hammer L when driving drill or pipe, and removable when rope T is used for raising or lowering drill or pipe.

M M are sheaves at top of derrick for carrying rope T.

P is the lever to operate friction-pulley D, conveying power from drive-pulley A to friction-pulley C on end of drum.

Q is lever for throwing the rotary mechanism in or out of gear.

S is the derrick, which I propose to make in four sizes, from ten to fifty feet in height, with proportionate base R.

U is the main shaft, and will extend through pinion E far enough to put on pitman-wheel for pumping. (Not shown in drawings.)

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a derrick-frame, the drill or drive-pipe having bearings therein, and the gear on said drill or drive-pipe, of the spline-shaft O parallel with said drill or drive-pipe and carrying gear which is adapted to mesh with the gear on the drill or drive-pipe, means for actuating said shaft O, means whereby it may be thrown out of gear with the driving mechanism, a hammer arranged to reciprocate in the derrick above the end of the drill or pipe, and having a longitudinal opening therethrough a removable cushion-block for said hammer, an operating-cable designed to be connected either to said hammer, or to the drill or drive-pipe, and means for winding the same, substantially as specified.

2. The combination with the derrick-frame, the drill or drive-pipe having bearings therein and the gear-wheel carried thereby, of the spline-shaft O, the pinion thereon adapted to mesh with the gear on the drill or drive-pipe, the main shaft journaled in the base of said frame, and having a friction-pulley, gear connections between the said main shaft and the spline-shaft, means for throwing said gear out of operation, the hammer arranged to reciprocate in the upper portion of said frame and having a vertical opening therethrough, the removable cushion-block therefor, the operating-cable adapted to be connected either to said hammer or to the drill or drive-pipe, a winding-drum for said cable, a friction-pulley on the shaft of said drum, a lever pivoted to the frame, and a friction-wheel carried by said lever and adapted to be connected with the friction-pulleys on the main and drum shafts, substantially as specified.

3. The combination with the frame, the main driving-shaft journaled in the base thereof, the friction-pulley thereon, the drill or drive-shaft, gear connections between the

same and the main shaft, and means for throwing said drill or drive-shaft out of gear, of the hammer arranged to reciprocate in the upper portion of said frame, and having an opening therethrough, the cushion-block adapted to be removably secured in said opening, the operating-cable, its winding-drum, the friction-pulley C on the drum-shaft, the lever P, and the friction-wheel carried by said lever all substantially as and for the purposes described.

4. The combination with the frame, the drill or drive-pipe journaled therein, the gear-wheel carried thereby, the adjacent spline-shaft O, its gear-wheel or pinion G, and means

for actuating said spline-shaft and for throwing the same out of gear, of the hammer having the opening therethrough, the cushion-block adapted to be removably secured in said opening, the hoisting-cable, the winding-drum therefor, friction-gear adapted to form a driving connection between the shaft of said drum and the actuating mechanism for said spline-shaft, and means for throwing said friction-gear into and out of operation, substantially as specified.

JOSEPH M. GEISINGER.

Witnesses:

JAMES W. COOK,
S. R. DUNLAP.