

No. 747,322.

PATENTED DEC. 15, 1903.

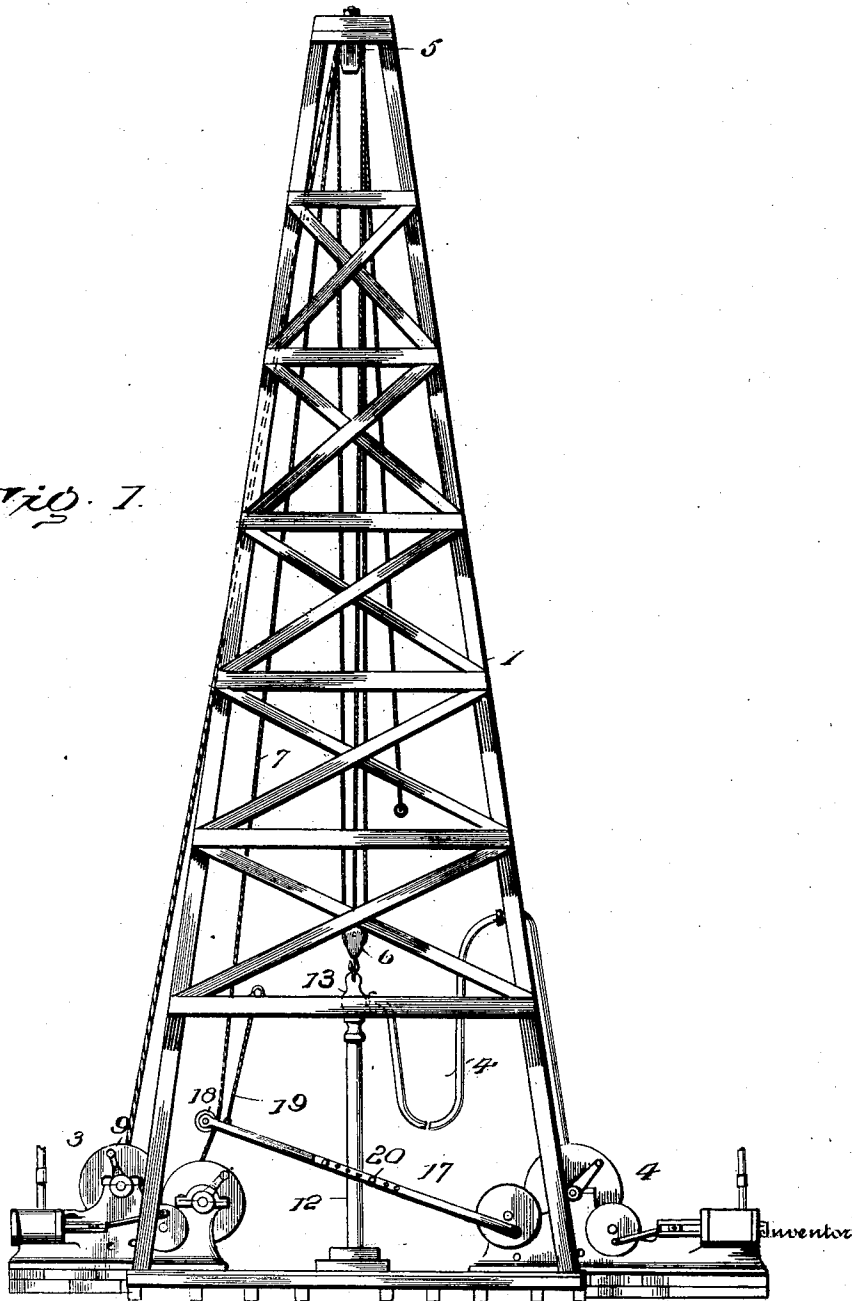
P. HIGGINS.  
SPUDDING AND PIPE DRIVING MACHINE.

APPLICATION FILED DEC. 17, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



Witnesses

*Geo. E. ...*  
*Geo. Rott*

By

*Patillo Higgins*

*R. A. D. Lacey*, Attorney

No. 747,322.

PATENTED DEC. 15, 1903.

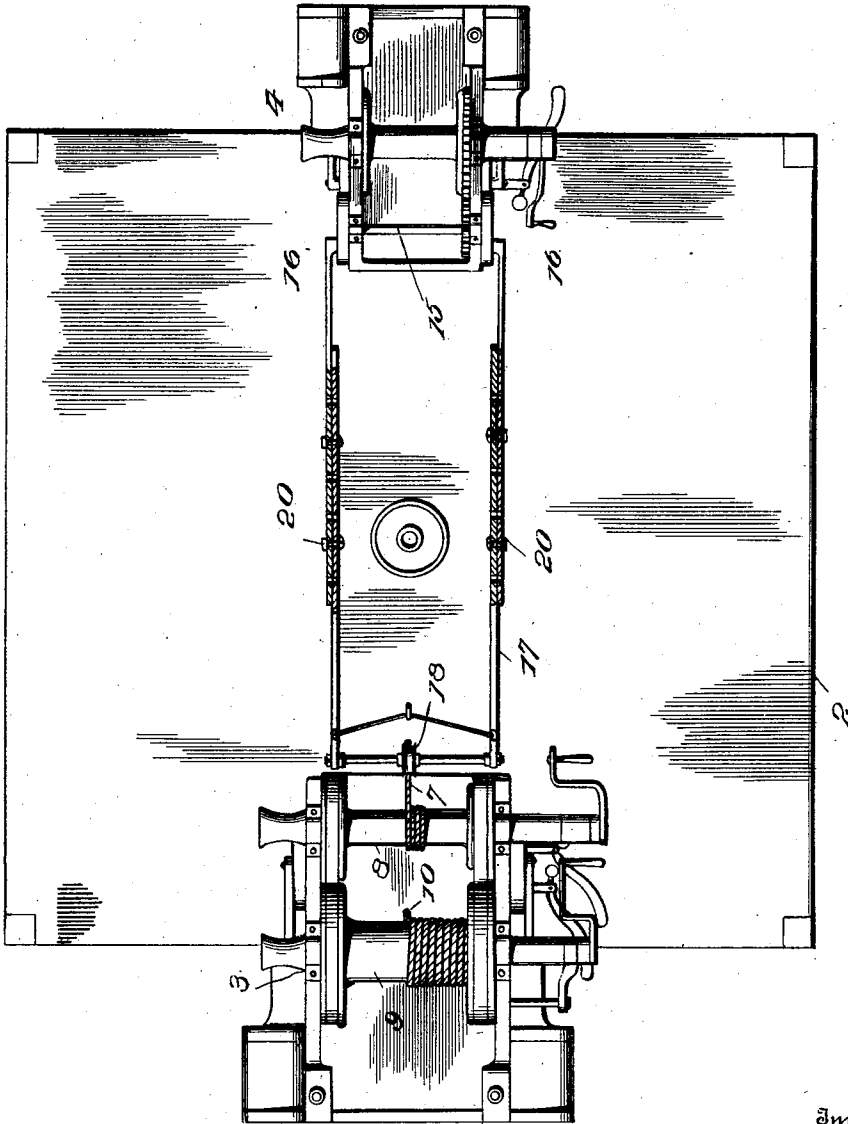
P. HIGGINS.  
SPUDDING AND PIPE DRIVING MACHINE.

APPLICATION FILED DEC. 17, 1902.

NO MODEL.

2 SHEETS—SHEET 2.

Fig. 2.



Inventor

*Patillo Higgins*

Witnesses

*J. W. Moore*  
*J. P. Robb*

*R. A. Dacey*

Attorney

# UNITED STATES PATENT OFFICE.

PATTILLO HIGGINS, OF BEAUMONT, TEXAS.

## SPUDDING AND PIPE-DRIVING MACHINE.

SPECIFICATION forming part of Letters Patent No. 747,322, dated December 15, 1903.

Application filed December 17, 1902. Serial No. 135,569. (No model.)

*To all whom it may concern:*

Be it known that I, PATTILLO HIGGINS, a citizen of the United States, residing at Beaumont, in the county of Jefferson and State of Texas, have invented certain new and useful Improvements in Spudding and Pipe-Driving Machines, of which the following is a specification.

This invention provides a novel apparatus or machine for drilling deep wells and driving the casing either into the well or out therefrom, as desired to meet the requirements of the work, said apparatus comprising two oppositely-disposed engines, a block and tackle for supporting either the spudding or driving mechanism, and means for imparting a jogging movement to the well-rope to operate the drill or hammer according to whichever one is in working position.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a machine for spudding and driving pipe constructed in accordance with and embodying the salient features of the invention. Fig. 2 is a plan view thereof, the derrick, casing, and drill-rod being in horizontal section.

Corresponding and like parts are referred to in the following description and indicated in both views of the drawings by the same reference characters.

The apparatus comprises a derrick 1, platform 2, and engines 3 and 4, said parts being of any approved construction.

The derrick 1 may be of any height and is provided at its upper end with a multiple sheave-pulley 5 for cooperation with a corresponding multiple sheave-pulley 6 and rope or tackle 7, passed around the sheave-pulleys of the blocks 5 and 6. The rope or tackle 7 is designated as the "well-rope" and is adapted to support either the spudding or driving devices and has a jogging movement imparted

thereto, whereby the hammer and the drill are actuated. The drill-rope 7 is adapted to wind upon the drum 8 of the engine 3 and is adapted to be paid off from said drum as the work progresses. The multiple sheave pulleys or blocks 5 and 6, in conjunction with the rope or tackle 7, admit of certain and smooth operation of the spudding and driving mechanisms and, furthermore, enable a comparatively small engine 4 being utilized for imparting the jogging movement necessary for the operation of the drilling and driving mechanisms. The engine 3 is provided with a drum 9 in addition to the drum 8 for reception of an end portion of the rope 10, utilized for supporting the casing 11 either when lowering the same into the well or drawing the casing therefrom. The engines 3 and 4 are of the type adapted to be employed in well-drilling machinery and are provided with the accustomed clutches, brakes, and ratchet-and-pawl devices to admit of throwing the drums into and out of action and reversing their movement as may be required.

Fig. 1 of the accompanying drawings shows the drill-rod 12 suspended from the lowermost sheave-pulley 6 and provided at its upper end with the usual swivel-coupling 13, to which a hose-pipe 14 is connected for supplying water to the drill-rod in the operation of the machine for washing the drillings or loose particles from the well as the work progresses. The engine 4 is used for imparting the jogging movement to the drill-rod or hammer, and a shaft 15 thereof is provided at its ends with wrist-pins 16, to which a frame 17 is journaled, a grooved pulley 18 being loosely mounted upon the outer cross-shaft of the frame and receiving the well-rope 7, whereby the same is deflected from a normal position so as to impart a jogging movement to either the drill or the hammer. The outer end of the frame 17 is supported by a hanger 19 from a convenient portion of the derrick. The side bars of the frame 17 are capable of being lengthened and shortened, and each comprises sections having their adjacent ends overlapped and adjustably connected by bolts or fastenings 20. The frame 17 is mounted so as to float and has a longitudinal reciprocatory movement imparted thereto from the wrist-pins 16 of the engine 4, said movement being

imparted to the rope 7 and transmitted through the block and tackle to the tool to be operated. The frame 17 being rigid and supported at its ends by the hanger 19 and wrist-pins 16 does not impede the action of rope 7 when relaxed to permit the drill, hammer, or other tool to drop. Moreover, by lengthening or shortening the frame the stroke of the tool may be varied without affecting the stroke of the wrist-pins 16, since pulley 18 will remain in contact with rope 7 for a greater or less extent of its movement.

Having thus described the invention, what is claimed as new is—

1. In well spudding and driving machine, independent cooperating engines, connecting means between one of the engines and the spudding or driving mechanism, said connections including a well-rope, a floating frame provided with a cross-bar, a pulley slidably mounted on said cross-bar and in contact with said well-rope, means for imparting a reciprocating movement to the floating frame from the other engine for actuating either the drilling or driving mechanism, and means for lengthening and shortening said floating frame to vary the stroke of the tool, substantially as specified.

2. In wellspudding and driving machinery, the combination of independent engines op-

positely disposed, connections between one of the engines and the spudding or driving mechanism, said connection including a well-rope, a floating frame connected to the other engine to receive a reciprocating movement therefrom and comprising side bars and a connecting cross-bar, each of the side bars being formed of sections adjustably connected to admit of lengthening and shortening the frame, a pulley slidably mounted upon said cross-bar and in contact with said well-rope to impart a jogging movement thereto, and means connecting the other engine with the floating frame, substantially as described.

3. In well-drilling machinery, the combination of a shaft provided with wrist-pins, a well-rope, a rigid frame supported at one end by the wrist-pins, a hanger for supporting the frame at the opposite end, a pulley carried by the outer end of the frame and in engagement with the well-rope, and means for lengthening or shortening said frame, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

PATTILLO HIGGINS. [L. S.]

Witnesses:

GENEVIEVE MATTHEWS,  
GEORGE G. WATT.