

Feb. 21, 1933.

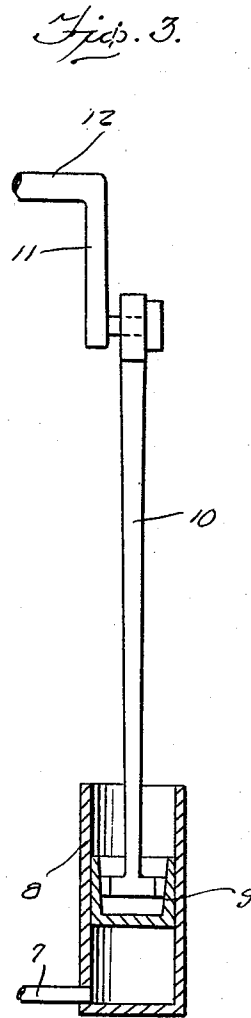
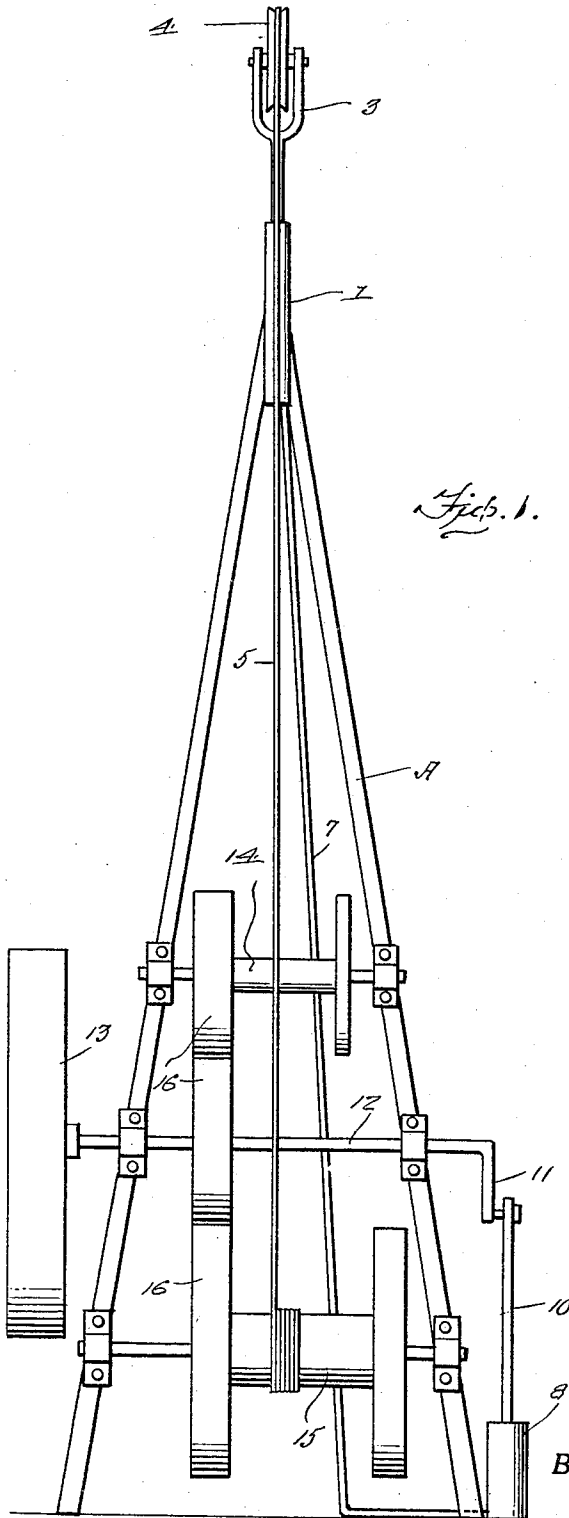
H. PEARSALL

1,898,684

HYDRAULIC SPUDDER

Filed March 30, 1932

2 Sheets-Sheet 1



Inventor

Harold Pearsall

By

Clarence A. O'Brien

Attorney

Feb. 21, 1933.

H. PEARSALL

1,898,684

HYDRAULIC SPUDDER

Filed March 30, 1932

2 Sheets-Sheet 2

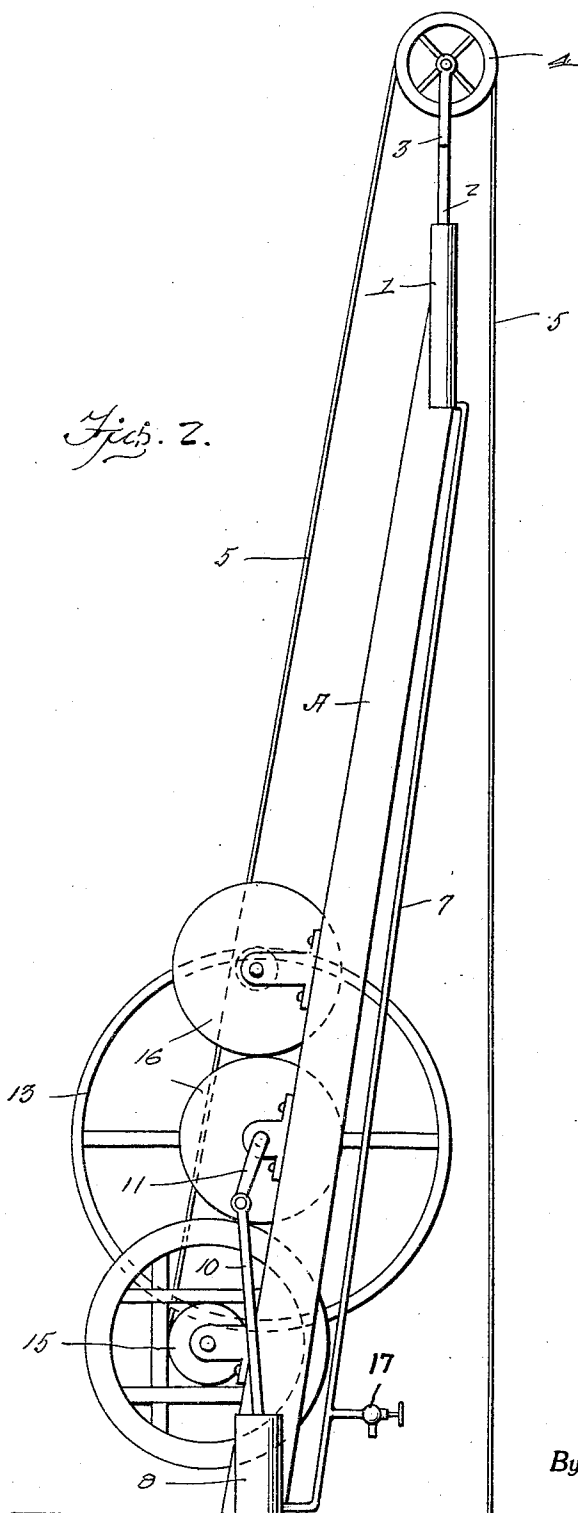
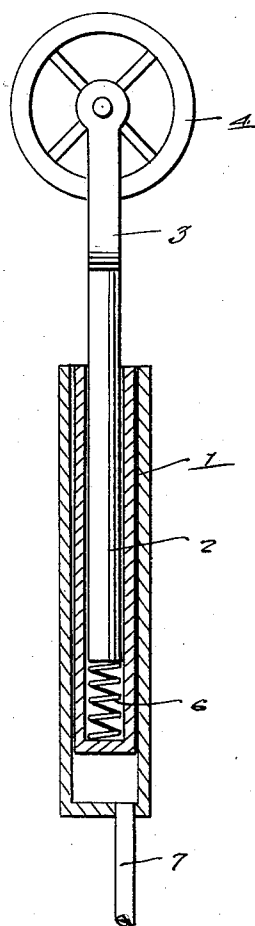


Fig. 4.



Inventor

Harold Pearsall

By

Clarence A. O'Brien

Attorney

UNITED STATES PATENT OFFICE

HAROLD PEARSALL, OF KEATING SUMMIT, PENNSYLVANIA

HYDRAULIC SPUDDER

Application filed March 30, 1932. Serial No. 602,036.

This invention relates to a hydraulic spud-
der, the general object of the invention be-
ing to provide a cylinder at the top of the
mast of the device provided with a piston
5 which carries a pulley and a connection with
a pump, the reciprocatory motion of which
forces liquid into the cylinder and with-
draws the liquid therefrom so that the piston
is given a reciprocatory movement to raise
10 and lower the pulley and the cable which
passes thereover.

This invention also consists in certain oth-
er features of construction and in the com-
bination and arrangement of the several parts
15 to be hereinafter fully described, illustrated
in the accompanying drawings and specifi-
cally pointed out in the appended claim.

In describing the invention in detail ref-
erence will be had to the accompanying
20 drawings wherein like characters denote like
or corresponding parts throughout the sev-
eral views, and in which:—

Figure 1 is an elevation showing one man-
ner of carrying out the invention.

25 Fig. 2 is a side view of the device.

Fig. 3 is a sectional view through the
pump cylinder and piston with the connect-
ing means in elevation.

30 Fig. 4 is a sectional view through the hy-
draulic cylinder with its piston and pulley
in elevation.

In these drawings, the letter A indicates
the mast and the numeral 1 indicates the
vertically arranged cylinder supported at
35 the top of the mast and containing a piston
2 which extends upwardly and is formed
with a forked end 3 which rotatably supports
a pulley 4 over which the cable 5 passes.

A sleeve 1' is slidably arranged in the cy-
40 linder and receives the piston and a spring 6
is located in the closed bottom of the sleeve
and acts as a cushion for the piston. A pipe
7 connects the bottom of the cylinder with
the bottom of a pump cylinder 8, the piston
45 of which is shown at 9. The piston rod 10
is connected to the crank 11 of a shaft 12
rotatably supported in the lower part of the
mast and having a combined fly wheel and
belt wheel 13 attached to its opposite end.

50 A suitable liquid is used for transmitting

the movement of the pump piston to the pis-
ton 2 and thus the operation of the pump will
reciprocate the piston and sleeve in the cylin-
der 1 so that the pulley 4 is raised and low-
ered during the operation of the pump. 55

The pump can be operated from any suit-
able source of power by a belt passing over
the wheel 13 and this wheel acts as a fly
wheel to counterbalance the pump and the
movable pulley 4 and eliminates the use of 60
the usual walking beam and the temper
screw.

The sand reel is shown at 14 and the drum
or bull wheel is shown at 15 to which the
cable is attached. The members 14 and 15 65
may be driven from the shaft 12 through the
friction wheels 16. A relief valve 17 may be
placed in the fluid line to prevent breakage
of rope or equipment in case the drilling tool
sticks. In case of standard rigs an inverted 70
pulley can be used.

With the use of this device there is less
wear on the line as the line goes through but
one pulley instead of three, and there are
no clamps to ruin the line and the parts are 75
fewer and lighter than those now in use.

The device also saves time as there is no
hooking or unhooking of the lines to the
walking beam, and the tool may be pulled
out quickly. The coiled spring and the 80
sleeve in the hydraulic cylinder softens the
shock on the line when drilling, so that a
wire cable can be used exclusively. The air
pressure in the fluid line also assists in elim-
inating jars. The tools do not need to be 85
pulled out until they get muddy. The
pulley piston motion is one-half of the tool
motion.

The arrangement of the enclosed spring 90
takes care of drilling with wire line as the
weight is carried by the spring throughout
the drilling stroke.

It is thought from the foregoing descrip-
tion that the advantages and novel features 95
of the invention will be readily apparent.

It is to be understood that changes may be
made in the construction and in the combi-
nation and arrangement of the several parts
provided that such changes fall within the 100
scope of the appended claim.

Having thus described my invention, what I claim as new is:—

In a device of the class described, a mast, a cylinder supported at the upper end thereof, said cylinder having its upper end open and its lower end closed, a sleeve slidably arranged in the cylinder having its upper end open and its lower end closed, a piston having its lower part fitting in the sleeve and its upper end forked, a pulley carried by the forked end of the piston, a spring in the lower part of the sleeve on which the lower end of the piston rests, a pump, a conduit connecting the pump with the lower end of the cylinder, a drum rotatably supported by the lower part of the mast, a cable having one end connected with the drum and said cable passing over the pulley and actuating means for the drum and the pump.

In testimony whereof I affix my signature.

HAROLD PEARSALL.

25

30

35

40

45

50

55

60

65