

Aug. 20, 1935.

A. J. TRAVIS

2,011,883

OIL PUMP

Filed April 18, 1934

2 Sheets-Sheet 1

Fig. 1.

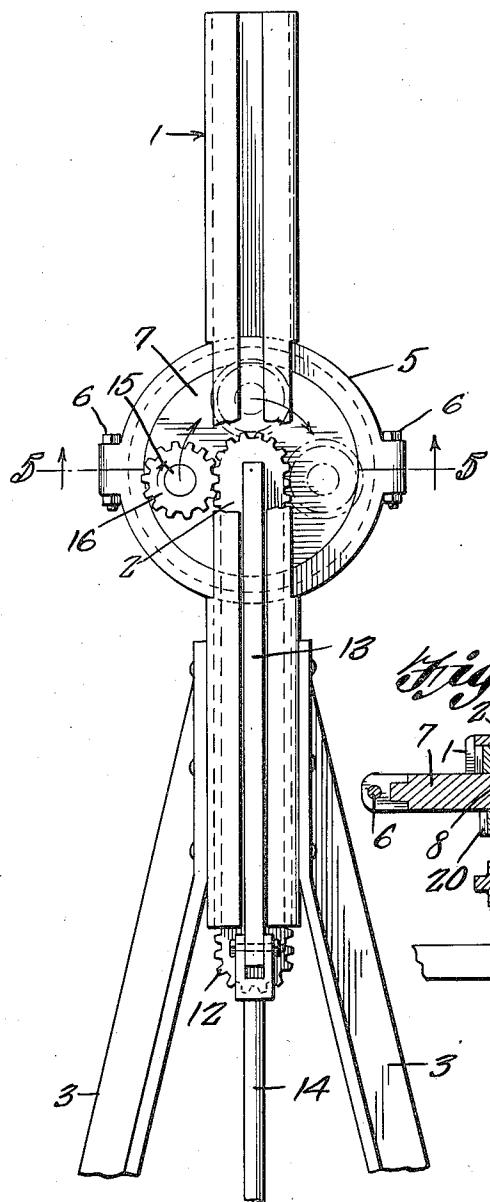


Fig. 2.

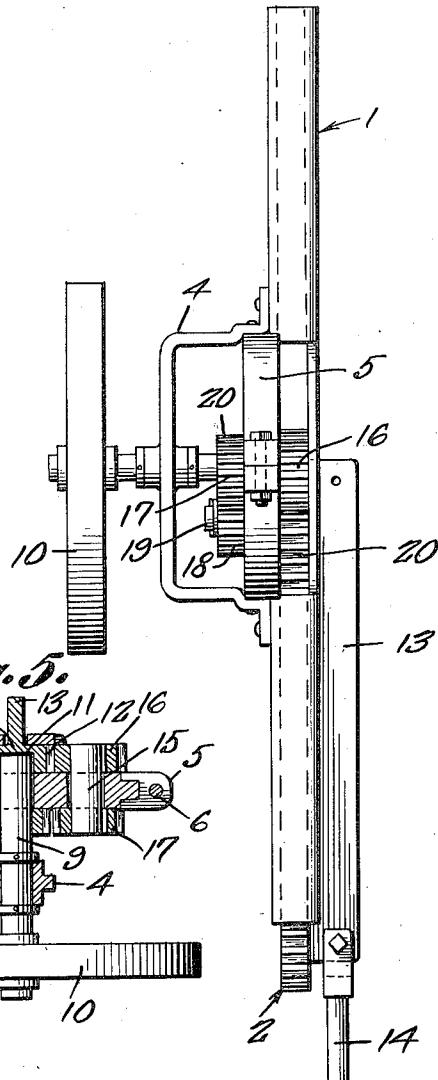
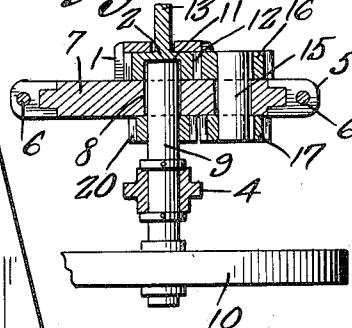


Fig. 5.



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2 Sheets-Sheet 2

Fig. 3.

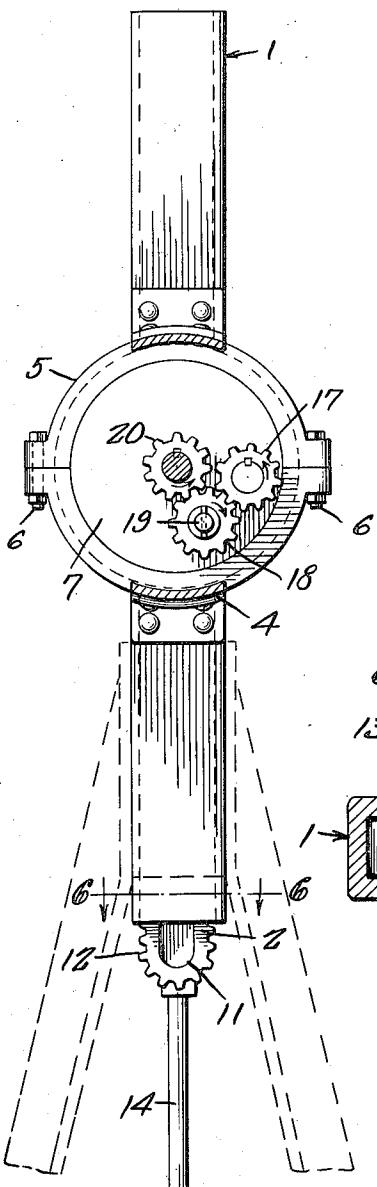


Fig. 4.

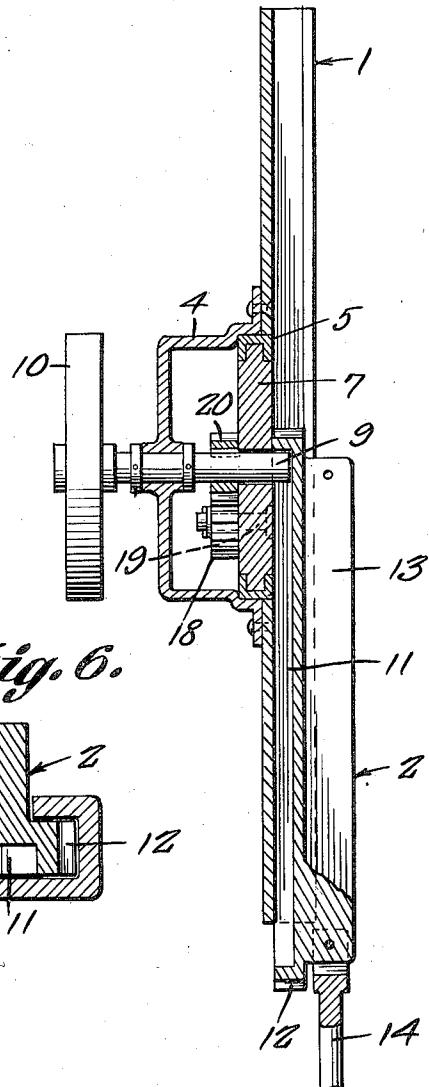
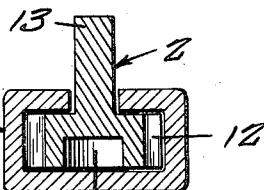


Fig. 6.



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UNITED STATES PATENT OFFICE

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OIL PUMP

Alvin J. Travis, Gray, Okla., assignor of five twenty-fourths to J. L. Stump, seven twenty-fourths to Oda Sutton, and four twenty-fourths to O. A. Sutton, all of Hardesty, Okla.

Application April 18, 1934, Serial No. 721,233

1 Claim. (Cl. 74—31)

This invention relates to a pump operating mechanism or jack especially adapted for actuating oil well pumps and has for the primary object, the provision of a device of the above stated character whereby power delivered from a power source in a rotary motion may be converted into a reciprocatory motion with minimum friction and loss in power and further provides a device which may be easily and quickly set up for operation either in horizontally or vertically arranged positions and is capable of successfully operating a series of pumps.

With these and other objects in view this invention consists in certain novel features of construction, combination and arrangement of parts to be hereinafter more fully described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which

Figure 1 is a rear elevation illustrating a pump operating mechanism constructed in accordance with my invention.

Figure 2 is a side elevation illustrating the same.

Figure 3 is a view similar to Figure 1, partly in section.

Figure 4 is a vertical sectional view illustrating the device.

Figure 5 is a sectional view taken on the line 5—5 of Figure 1.

Figure 6 is a sectional view taken on the line 6—6 of Figure 3.

Referring in detail to the drawings, the numeral 1 indicates a frame for slidably supporting a bar or beam 2 and may be arranged vertically or horizontally with respect to a well and when arranged vertically it is supported by legs 3, as shown in the drawings. To support the frame 1 horizontally any other suitable carrying means therefor may be provided. The frame 1 is in the form of a channeled member and carries a bracket 4 which forms a support for a bearing 5 of the sectional type, wherein the sections are detachably connected, as shown at 6. The bearing 5 rotatably supports an annular disc or plate 7 provided with a concentrically arranged opening 8 to receive a power shaft 9, the latter being suitably journaled to the bracket 4 with a bull wheel 10 secured to one end thereof. The other end of the shaft 9 projects into an elongated groove 11 formed in one face of the rack bar 2 so that the latter may slide freely within the frame 1 and be limited in its endwise movements. The rack bar has formed upon opposite edges and its ends

teeth 12 and also formed upon one face thereof is a rib 13 extending substantially the full length of the rack bar and operating between the guides of the frame and projecting beyond one side of said frame to which may be connected the reciprocating element 14 of a pump or, if desired, pump connections in the form of slidable rods or cables may be connected to the ends of the rib so that the device may be made to successfully operate a series of pumps.

A shaft 15 is journaled to the disc 7 and arranged concentrically thereof and laterally of the opening 8 and has secured to its ends pinions 16 and 17. The pinion 16 meshes with the teeth of the bar or beam 2 while the pinion 17 meshes with an idle pinion 18 journaled to a stub shaft 19 carried by the disc 7 and arranged eccentrically thereof and meshes with a pinion 20 secured to the power shaft. The disc is free to rotate in the bearing 5 so that the pinion 16 may be caused to walk or ride about the ends of the beam or bar 2 when the latter reaches the end of either of its endwise movements so that the pinion 16 may mesh with the teeth arranged on either edge of said beam or bar. Power is delivered to the bull wheel 10 in any suitable manner causing rotation of the shaft 9 and the latter drives the pinion 16 through the pinions 18 and 17, causing a reciprocation of the bar or beam within the frame 1. The frame is cut away so that the disc 7 may lie in close proximity to the grooved face of the beam or bar 2 and permit the pinion 16 to mesh with the teeth of said bar or beam.

Having described the invention, I claim:

A device of the character described comprising a channeled frame providing throughout the length thereof spaced guides, a bracket secured to the frame and located intermediate the ends of the latter, said frame having an opening located opposite to the bracket, a sectional annular bearing rotatably supported by the bracket and the walls of the opening, a plate supported by the bearing, a rack bar having teeth on the sides and ends thereof and slidable in the frame and provided with a groove disposed next to the plate, a drive shaft journaled to the bracket and extending through the plate and entering the groove of the bar and arranged concentrically of the plate, gear means between the shaft, plate and the teeth of the rack bar, and a flange on the rack bar and operating between the guides of the frame and adapted for connection to a pump.

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