

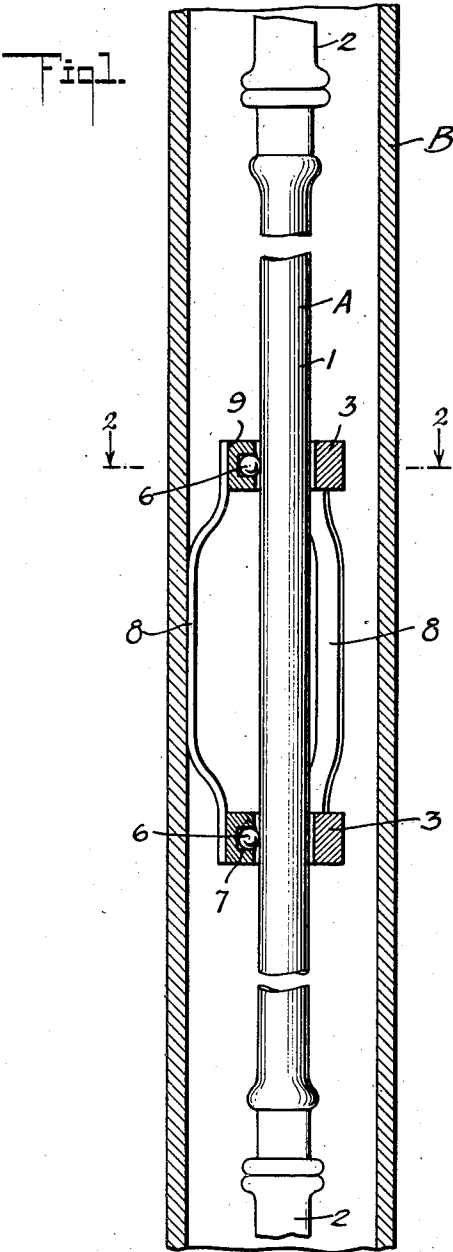
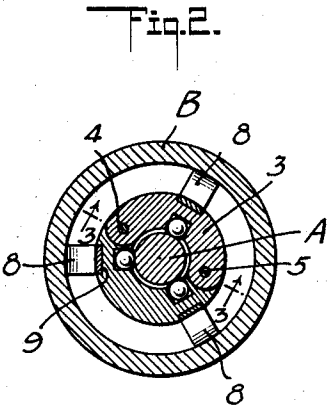
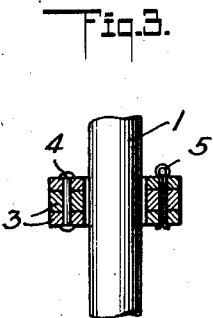
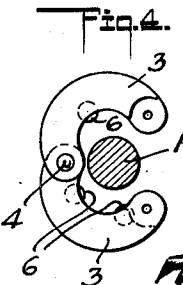
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SUCKER ROD ANTIFRICTION MEANS FOR WELL TUBING

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SUCKER-ROD ANTIFRICTION MEANS FOR WELL TUBING.

Application filed June 16, 1924. Serial No. 720,303.

To all whom it may concern:

Be it known that I, FRED B. VAUGHN, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Sucker-Rod Antifricition Means for Well Tubing, of which the following is a specification.

10 This invention is an attachment for a well tubing adapted to guide the sucker rod which reciprocates therein, so as to keep said rod from contact with the wall of the tubing, and thereby eliminate wear.

15 It is the object of the invention to provide guide mechanism having anti-frictional engagement with the sucker rod, whereby the latter may be reciprocated with minimum frictional resistance.

20 It is a further object of the invention to support the guide mechanism in a well tubing by frictional engagement therewith, and to provide for readily opening or locking the guide mechanism in closed position on a sucker rod, so as to expedite the removal and replacement thereof.

25 It is a still further object of the invention to provide a guide mechanism engaging the sucker rod at longitudinally spaced points, in order to maintain said rod in exact longitudinal alinement in the well tubing.

30 The invention will be understood from the following description of the accompanying drawings, in which,

35 Fig. 1 is a vertical section through a well tubing having a sucker rod adapted for reciprocation therein, and provided with the improved guide mechanism for the sucker rod.

40 Fig. 2 is a transverse section on the line 2—2 of Fig. 1.

Fig. 3 is a detail section on the line 3—3 of Fig. 2.

45 Fig. 4 is a plan view showing one of the collars of the guide mechanism in open position.

In accordance with usual practice, the sucker rod A is adapted to reciprocate in well tubing B, the sucker rod comprising lengths of rod 1 connected by couplings 2, and adapted to slide freely in the well tubing in normal spaced relation from the wall thereof.

55 Guide mechanism is frictionally held in the well tubing with the sucker rod slidable

therethrough, so as to hold said rod against transverse shifting and contact with the wall of the tubing, the said guide mechanism carrying anti-friction means for engagement with the reciprocating sucker rod. 60

The guide mechanism comprises a collar adapted to be swung open or locked in closed position around the sucker rod, with anti-friction means mounted in the bore of said collar and projecting beyond the same for 65 contact with the sucker rod, the said collar having yieldable supporting arms adapted to frictionally engage the wall of the well tubing for supporting the collar therein.

In the present embodiment of the invention the collar comprises semi-annular sections 3 having tongue and groove connections at each end, one of said connections having pivot means shown as a rivet 4 extending therethrough, to form a hinge joint 70 whereby the collar may be swung open as shown in Fig. 4, or may be swung to closed position with sucker rod 1 adapted for sliding movement through the bore of the collar, the swinging ends of the hinged collar sections being locked in closed position by a 75 cotter pin 5 received through their tongue and groove connection.

The anti-friction means mounted in the bore of the collar preferably comprises ball 80 bearings 6 journaled in square recesses 7 formed in the inner periphery of said collar, and having the edges of said recesses crimped over said ball bearings for holding the latter in place with the surfaces thereof 85 projecting beyond said collar into the bore of the same.

The supporting arms for the collar are shown as circumferentially spaced spring strips 8, one of said collars and the anti-friction means carried thereby being preferably mounted at each end of strips 8, with the ends of the latter received in recesses 90 9 formed in said collars.

The medial portions of the spring strips are outwardly curved for frictional engagement with the wall of the well tubing, so that the guide unit as thus described may be readily mounted in a well tubing at any 100 desired point.

The sucker rod sliding through the guide unit is spaced by the latter from the wall of the well tubing, with the anti-friction bearings in contact with said sucker rod, and the positioning of said anti-friction means 105 110

at the respective ends of arms 8 provides longitudinally spaced guides for the sucker rod, so as to maintain the same in exact longitudinal alinement in the well tubing.

5 The embodiment of my invention as thus described may have various changes in the construction, combination, and arrangement of parts without departing from the spirit of the invention.

10 I claim:

1. A guide for a sucker rod adapted to reciprocate in a well tubing, comprising axially split collars spaced axially in the tubing and arranged for reciprocation of the
15 sucker rod through the bores of said collars, anti-friction means rotatably mounted in said collars and projecting into the bores thereof for engaging the sucker rod, hinge connections for the split sections of the
20 collars, and circumferentially spaced yieldable arms fixed at their respective ends to the split sections of the respective collars so as to permit opening of the collars for lateral displacement from or engagement
25 with the sucker rod, said arms being adapted for frictional engagement with the well tubing when the collars are closed on the sucker rod.

2. A guide for a sucker rod adapted to
30 reciprocate in a well tubing comprising axially split collars spaced axially in the

tubing and arranged for reciprocation of the sucker rod through the bores of said collars, the walls of the bores of the collars having
35 recesses therein, anti-friction means mounted in said recesses and partially projecting beyond the walls of the bores of the collars for engaging the sucker rod, the edges of said recesses extending partially over the
40 projecting portions of the anti-friction means to prevent displacement thereof while permitting turning of said anti-friction
45 means, hinge connections for the split sections of the collars permitting opening of the collars for lateral displacement from or engagement with the sucker rod, tongue
50 and groove connections for the swinging ends of the split sections of the collars, removable locking means receivable through said tongue and groove connections, and
55 circumferentially spaced yieldable arms fixed at their respective ends to the split sections of the respective collars so as to permit opening of the collars, said arms being outwardly bowed at their medial portions for frictional engagement with the well tubing when the collars are closed on the sucker rod.

In testimony whereof I have affixed my signature to this specification.

FRED B. VAUGHN.