June 24, 1930. J. C. GARROTT 1,766,070

SUCKER ROD GUIDE

Filed July 5, 1927

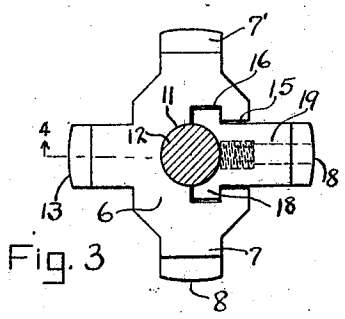


Fig. 3

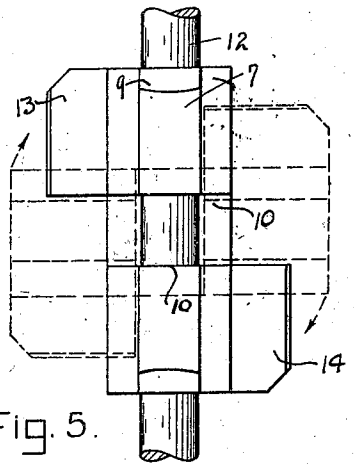


Fig. 5.

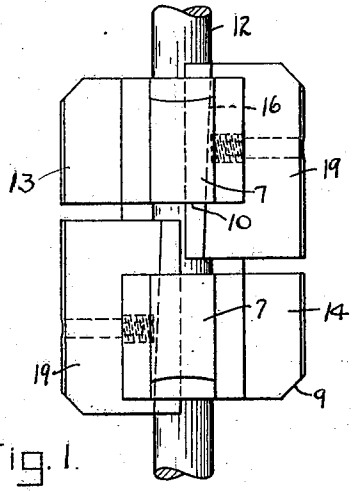


Fig. 1.

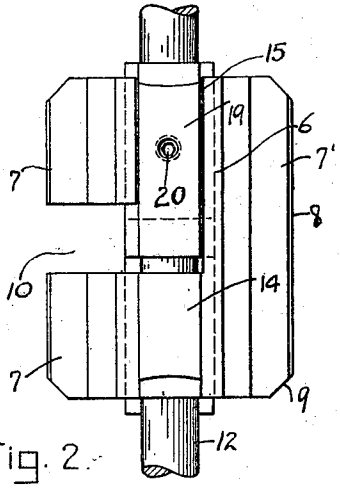


Fig. 2.

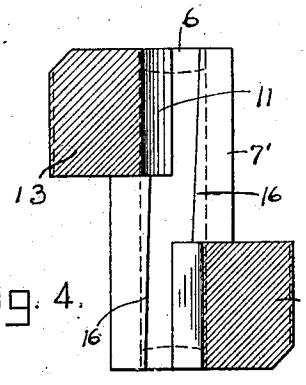


Fig. 4.

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By Jesse R. Stone

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Patented June 24, 1930 1,766,070

UNITED STATES PATENT OFFICE

JOHN C. GARROTT, OF HOUSTON, TEXAS

SUCKER-ROD GUIDE

Application filed July 5, 1927. Serial No. 203,377.

My invention relates to sucker rod guides for use on sucker rods in deep well pumping.

It is the purpose of the invention to provide a device to be mounted upon the pump rod and act to space the rod from the tubing in such manner as to reduce the wear between the rod and tubing.

It is desired to form the guide of metal of a different degree of hardness from that of the tubing so that wear between the parts will be reduced to a minimum.

It is an object of the invention to construct a metal guide adapted to be easily mounted upon the sucker rod at any desired point, and to be secured firmly in position with a minimum of manipulation.

Referring to the drawing herewith, Fig. 1 is a side elevation of my guide shown in position mounted on a rod.

Fig. 2 is a side elevation thereof taken at right angles to the view shown in Fig. 1.

Fig. 3 is a top plan view.

Fig. 4 is a vertical section through the body of the guide with the wedge blocks removed.

Fig. 5 is a side elevation of the body showing how it is manipulated to mount it on the rod.

Like numerals of reference are employed to designate like parts in all the views.

The body of my guide is formed so that when the wedge blocks are in place, the guide will be approximately cross shaped in plan view as shown in Fig. 1. Said body 6 has two opposite longitudinal ribs 7 and 7′ projecting radially and having their outer sides rounded at 8 to engage the pump tubing. The ends of the ribs are beveled at 9 to assist in guiding the device past the joints of the tubing.

The rib 7 has a transverse slot 10 therein extending inwardly past the center of the body to pass the longitudinal channel 11 for the sucker rod 12.

There are also two opposite short ribs 13 and 14. The rib 13 extends from one end downwardly even with the upper side of the transverse slot 10, and the opposite rib 14 extends from the lower end upwardly to the lower side of said slot 10.

The body of the guide, on the sides opposite the short ribs 13 and 14, is open at 15 to receive the rod 12, and on each side of the opening 15 are longitudinal grooves 16, which, as shown in Fig. 1, are cut in the body from the center of the rod toward the opening 15 sufficiently to receive the morticed ends 18 of the wedge blocks 19.

Said grooves 16 are inclined inwardly and the morticed keys 18 of the wedge blocks are tapered inwardly on their outer sides so as to force said blocks toward the rod when said blocks are moved inwardly in said grooves.

The blocks 19 are formed of sufficient thickness to place their outer bearing surfaces 8 at the same distance from the rod 12 as are the sides 8 of the other ribs. The blocks are long enough to reach approximately into contact with the inner ends of the short ribs 13 and 14 with which they register longitudinally.

In assembling the guide on the rod, the body 6 may have the wedge blocks removed and the guide mounted, as shown in Fig. 5, upon the rod 12. This is done by placing the guide transversely against the rod as indicated in dotted lines in Fig. 5 so that the body may be positioned to allow the rod to move into the bottom of the transverse slot (see Fig. 2). When in this position, the guide may be swung as indicated by the arrows in Fig. 5, bringing the guide into the full line position.

The wedge blocks 19 may then be inserted from each end, as shown in Figs. 1 and 2, and driven tightly so as to wedge the body immovably against the rod 12, holding the rod firmly by frictional engagement. Set screws 20 may be employed on each wedge to assure that the wedge blocks remain firmly fixed.

When thus mounted, the ribs and blocks on the guide will bear against the tubing and prevent contact of the rod with the tubing. The guide is preferably made of bronze or some good bearing metal, so that little friction will be set up between the parts, and the tubing and rod will have little wear upon them.

This construction has the advantage of being simple in form, and easily mounted, and adapted for long use without danger of failure.

What I claim as new is:

1. A sucker rod guide comprising a rigid body having a longitudinal channel centrally thereof for the rod, two opposite radial guide ribs, one of which has a transverse slot midway thereof extending to said channel, short ribs on said body at right angles to said guide ribs, one at one side of said slot, and the other on the opposite side, said channel being open beyond said short ribs to admit said rod, and wedge blocks to clamp said body to said rod.

2. A sucker rod guide comprising a rigid body having a longitudinal channel centrally thereof for the rod, two opposite radial guide ribs, one of which has a transverse slot midway thereof extending to said channel, short ribs on said body at right angles to said guide ribs, one at one side of said slot, and the other on the opposite side, said channel being open beyond said short ribs, to admit said rod, there being inclined grooves in said body, and wedge blocks having morticed engagement in said grooves to clamp said body on said rod.

3. A sucker rod guide comprising a rigid body having a longitudinal channel centrally thereof for the rod, two opposite radial guide ribs, one of which has a transverse slot midway thereof extending to said channel, short ribs on said body at right angles to said guide ribs, one at one side of said slot, and the other on the opposite side, said channel being open beyond said short ribs to admit said rod, and means to close the open sides of said channel and clamp said body to said rod.

4. A sucker rod guide comprising a rigid body having a longitudinal channel to receive said rod, opposite ribs on said body, one of which has a transverse rod receiving slot leading to said channel, short ribs on opposite sides of said body, one at the upper end and one at the lower end, said channel being open laterally in line with said short ribs to receive said rod, and means to close said channel, clamp said body to said rod, and form a wear portion for said guide.

5. A sucker rod guide comprising a rigid body having a longitudinal channel to receive said rod, opposite ribs on said body, one of which has a transverse rod receiving slot leading to said channel, short ribs on opposite sides of said body, one at the upper end and one at the lower end, said channel being open laterally in line with said short ribs to receive said rod, and a wedge block slidable in grooves in said body to wedge said body frictionally on said rod.

6. A sucker rod guide comprising a body member formed with a longitudinal rod-receiving channel and a transverse slot connecting with said channel, said channel being open on one side above said slot and on the opposite side below said slot, and wedge blocks formed to slide into and close said openings, and wedge said body member to said rod.

7. A sucker rod guide comprising a body member formed with a longitudinal rod-receiving channel and a transverse slot connecting with said channel, said channel being open on one side above said slot and on the opposite side below said slot, said slot being adapted to receive said rod transversely of said channel after which said body may be moved into position to receive said rod longitudinally of said channel, and means to thereafter engage said body frictionally to said rod.

8. A sucker rod guide comprising a body member with a central rod-receiving channel, radial ribs on said body, one of said ribs extending from one end short of the middle of said body, and the opposite one extending from the other end short of the middle, and wedge blocks slidable in grooves aligned with said ribs to wedge said body to said rod.

In testimony whereof I hereunto affix my signature this 30th day of June, A. D. 1927.

JOHN C. GARROTT.