Jan. 28, 1930. T. P. NOVICK 1,745,310

PUMP ROD SWIVEL

Filed Sept. 23, 1927

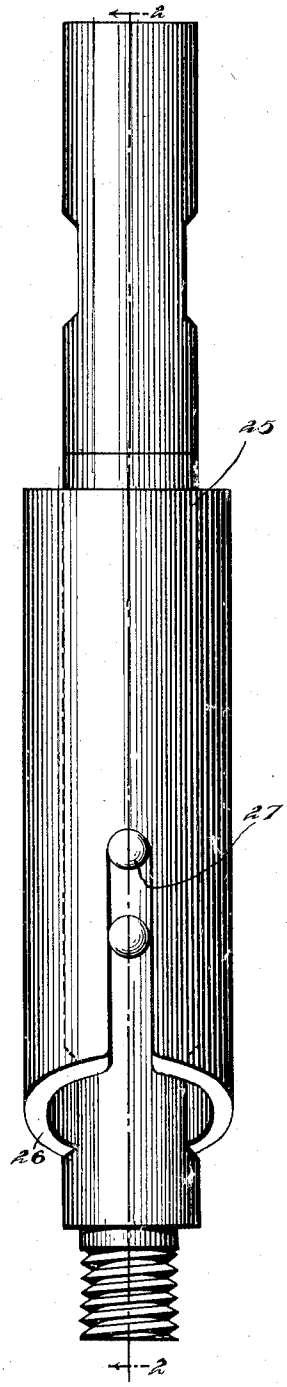


Fig. 1

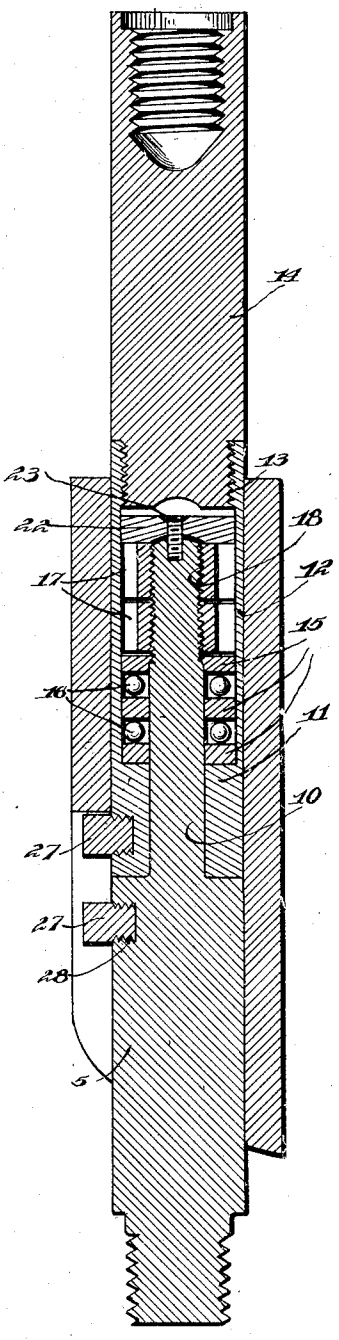
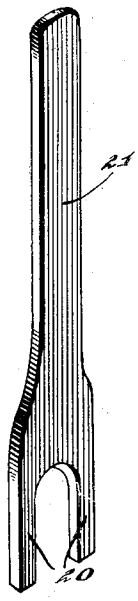


Fig. 2.

Fig. 4



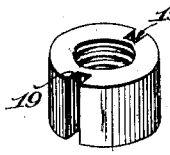


Fig. 3

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UNITED STATES PATENT OFFICE

THEODOR P. NOVICK, OF EL DORADO, ARKANSAS

PUMP-ROD SWIVEL

Application filed September 23, 1927. Serial No. 221,526.

My invention relates to pump rods and more particularly to a swivel connection to be interposed between the rigid pump rod of a deep well pump and its actuating cable.

An object of this invention is to provide a swivel connection of this character which will eliminate friction due to the pump plunger or cups tending to rotate in the pump barrel and thereby obviate breaking or parting of the pump rods.

A further object of the invention is to provide a swivel connection for sucker rods which may be locked to hold any pair of rod sections rigid when it is desired to break out the rod section at a predetermined point along the line of rods.

With the preceding and other objects and advantages in mind, the invention consists in the novel combination of elements, constructions and arrangement of parts to be hereinafter specifically referred to, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is an elevation of the invention;

Figure 2 is a longitudinal sectional view of the same;

Figure 3 is a perspective of an element embodied in the invention; and

Figure 4 is a perspective of a special wrench for assembling or disassembling the invention.

Referring to the invention in detail the numeral 5 designates a rod section having a reduced cylindrical extension 10 which passes through a central opening 11 in the lower end of a sleeve or barrel 12, the upper end of the latter having interior screw threads 13 to receive the threaded end of a sucker rod section 14.

A plurality of superimposed washers 15 received on the extension or stem 10 are positioned in the sleeve or barrel 12 and interposed between these washers is a plurality of bearing balls 16. The assembly of washers and bearing balls are retained in position by a pair of superimposed circular nuts 17 threaded upon the threaded extremity 18 of the extension or stem.

In order to apply or remove the nuts 17 the latter are provided with longitudinal grooves 19 at diametrically opposite points to receive the parallel prongs 20 of a wrench 21. Nuts 18 are held against accidental disengagement from the threaded end of the stem or extension by means of a disk 22 positioned within the upper end of the sleeve or barrel and having a central opening 23 through which a set screw 24, engaging the stem or extension, 10 passes.

In practice the rod section 5 is rigidly attached to the pump piston in the usual manner while the sucker rod section 14 is connected to the actuating cable in the usual manner. By interpositioning my improved swivel connection between the pump piston and cable the sucker rods are relieved of torsional strain incident to the piston resisting the effort of the torsional or spiral movement of the cable which usually occurs during the actuation of the piston.

The invention further provides a sleeve 25 for holding the section 5 and sleeve or barrel rigid when it is desired to rotate the string of rods to break a particular joint. As illustrated in Figures 1 and 2 the lower end of the sleeve is bevelled as at 26 and is further provided with a longitudinal slot 27 which opens upon the inner end of this bevelled part 26 and is adapted to engage laterally projecting studs 27 carried by the rod section and barrel respectively. It will be observed that this bevelled end upon contacting with the studs causes rotation of the sleeve and the lining up of the studs so that the latter will pass into the slot. These studs are threadedly engaged with threaded openings 28 in the rod section 5 and sleeve or barrel respectively.

Normally the section 5 and sleeve or barrel are permitted to swivel and thereby eliminate torsional strain on the pump or sucker rods. When, however, it is desired to break up a rod section the sleeve is slipped on the sucker rods to engage the studs in the slot 26, as illustrated in the drawings. With the sleeve in this position the section 5 and barrel are rigidly held in order to remove the nuts 17 to replace the bearing ball and washer assembly. When worn the rod section 14 is first removed and set screw 17 and nut retaining

member 22 attached. The wrench 21 is then engaged with the slots 19 and the nuts singly removed.

What is claimed is:

1. In combination a pair of longitudinal members arranged in end to end relation and swivelly connected together, longitudinally alined lateral studs projecting from the members, and a slotted sleeve slidable on the members and receiving the studs in the slot to lock the members against relative rotation.

2. In combination a pair of longitudinal elements rotatably connected together and having lateral studs projecting therefrom, and a locking sleeve slidable on the longitudinal elements and having one end bevelled and further provided with a longitudinal slot which opens upon the inner edge of the bevelled end whereby upon contact of the bevelled end with one of the studs as the sleeve is moved in the direction of the studs the sleeve will be rotated to dispose the studs within the slot and thereby lock the longitudinal members against relative rotation.

Signed at El Dorado in the county of Union and State of Arkansas this 19th day of September, A. D. 1927.

THEODOR P. NOVICK.