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FULL-ROD COUPLING.

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To all whom it may concern:

Be it known that I, Eli Hensley, a citizen of the United States, residing in Wild Horse District, county of Osage, and State of Oklahoma, have invented certain new and useful Improvements in Pull-Rod Couplings, of which the following is a specification.

This invention relates to an improved coupling for the end of the rod sections comprising rod lines such as are used in operating oil well pumps from a central power house.

It has heretofore been the practice to unite these rod sections by means of clamps, in which the ends of the rods are rigidly secured, by means of bolts, and to pivot each clamp to a swinging view, which oscillates as the rod line is reciprocated. It has been found, however, that the slight but constant bending of the rods adjacent such clamps, due to the arcurate movement of the swinging supports, finally results in the rods breaking off.

The primary object of the present invention is to provide cheap, practical and efficient means for coupling the ends of the rod sections in such a way as to permit the necessary pivotal movement so as to prevent the rods from being broken by the swinging of the aforesaid supports, and an incidental object is to provide a coupling of such a nature that the broken and discarded rod sections which are to be found scattered along existing rod lines may be utilized.

With the above ends in view, I have devised a special universal coupling link to which both the rod sections and the swinging support may be pivotedly attached, thus forming a coupling.

In order that the invention may be readily understood, reference is had to the accompanying drawings forming a part of this specification, and in which:

Figure 1 is a perspective view illustrating a general arrangement or lay out in which my invention can be advantageously employed;

Figure 2 is a perspective view of a combination clamp used to connect the rod sections with my universal link;

Figure 3 is a perspective view of the universal link itself; a fragment of one of the supporting devices being shown as attached thereto; and

Figure 4 is a plan view illustrating the manner in which my improved universal link may be employed in connection with that type of support known as a "hold-over".

Referring to the drawings in detail, I designate a power house containing a suitable source of power by means of which a reciprocating movement is imparted to the rod line, such line being shown as comprising sections 2 of suitable length, and connected at the distant end to the operating lever 3 of a suitable pumping jack which is attached to the pump rod 4 in the usual, or any desired way.

My improved universal link is designated in its entirety by the reference numeral 5, and as clearly shown in Figures 3 and 4, comprises a plate provided with four holes or openings therethrough arranged preferably as the four corners of a diamond. Three of these holes a, b, c, are preferably larger than the other hole d, for a purpose hereinafter to be explained.

Serving to connect the rod sections 2 with the universal link 5 are combination clamps, 80 designated in their entirety by the reference numeral 6, and shown in perspective in Figure 2. Each of these clamps comprises a pair of blocks x and y having corresponding grooves formed in their adjacent faces and held together by means of bolts 7, four of such bolts being shown. The grooves in the blocks, when the blocks are assembled, form three parallel sockets. The middle one of these sockets receives the end of a rod section 2, while the two outside sockets are adapted to receive the ends of a U-shaped loop or shackles z.

It will be understood that in assembling the rod line the shackles z are passed through the openings, such as a and e, in the universal link 5, as indicated in dotted lines in Figure 3, and the ends of the shackles are then inserted in the outermost sockets in the combination clamps and the bolts tight ened up, thus forming an effective coupling. It will be noted, however, that the adjacent rod sections are capable of a pivotal movement relative to each other and to the universal link 5, by reason of the engagement of the loops or shackles z in the holes of the link.

As is customary in oil well pumping, the rod line is supported by what are known as "hold-ups" and "hold-downs", the former being used on level stretches or on hills, and the latter being employed where there is a
depression in the surface of the ground. In Figure 1, the reference numeral 8 designates the swinging rod or support of a "hold-down", and the lower end of this rod is bifurcated, as shown at 9 in Figure 3, so as to straddle the universal link 5, and is pivotally connected with such link by means of a pin or bolt 10 extending through the opening 4 thereof.

The upper end of the rod 8 is preferably provided with a T-head or cross bar 11 on which it is pivotally supported in a suitable frame 12.

Similarly, the "hold-up" comprises a swinging bar or rod 13 having a bifurcated upper end which is adapted to be pivotally connected with the hole d in my universal link, when the link is used in reverse position from that in which it is employed in connection with a "hold-down". The rod 13 of the "hold-up" is pivotally mounted so as to be capable of swinging movement, such mounting being shown in the present instance as comprising a T-head or cross bar 14 supported on a suitable base 15.

In Figure 4 I have illustrated my improved link as it appears when employed in connection with what is known as a "hold-over". "Hold-overs" are used when it is necessary to make a bend in the rod line so as avoid some obstruction. In Figure 4 I have shown two rod sections 2 connected with the holes a and c of the link 5 by means of combination clamps, as shown in Figure 2, and I have shown a third combination clamp with its shackle engaging the hole b, such third clamp being connected with a rod 2e which is pivotally connected with a post 16 or other fixed abutment in any suitable way, as by bending around the same as indicated at 2f. Thus the rod sections 2 are held out of alinement with each other by means of the tire rod 2e and it becomes possible to make a bend in the rod line so as to avoid an obstruction.

It will thus be seen that I have provided a universal link 5 which can be employed either in connection with "hold-ups", "hold-downs" or "hold-overs", and I have so connected the rod sections with this universal link by means of combination clamps, that they can partake of pivotal movement relative thereto and are thus prevented from bending and becoming broken.

It is therefore thought that the many advantages of my improved universal link and rod coupling will be fully appreciated by those skilled in the art without further discussion.

What I claim is:

1. The combination with a swinging support, of a link carried thereby and comprising a plate having a plurality of perforations, and rod sections pivotally connected with said plate by means passing through some of said perforations.

2. The combination with a pair of rod sections, of a clamp and shackle secured to each rod section, a plate having perforations through which said shackles pass, a swinging support pivotally connected with said plate.

3. The combination with a rod line of a universal link comprising a plate having four perforations therein, one of said perforations being adapted to receive a pivot pin for connecting said plate with a swinging support, and the others of said perforations being adapted to receive loops connected with rod sections whereby said universal link may be employed, according to the perforations used, either in connection with hold-ups, hold-downs, or hold-overs.

In testimony whereof I affix my signature.

ELI HENSLY.