March 10, 1925. 1,528,988

B. H. PLATTS ET AL

JOINT FOR SUCKER RODS AND PULL RODS

Filed June 19, 1922

Fig. 1.

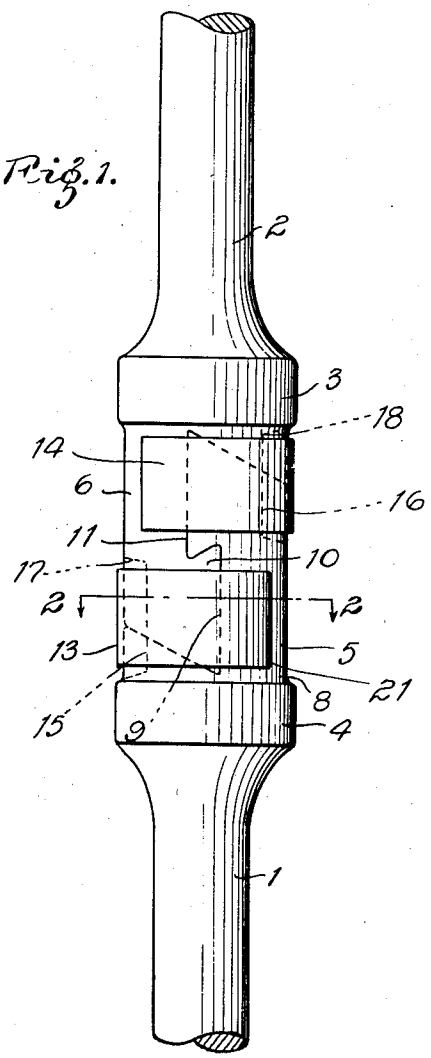


Fig. 2.

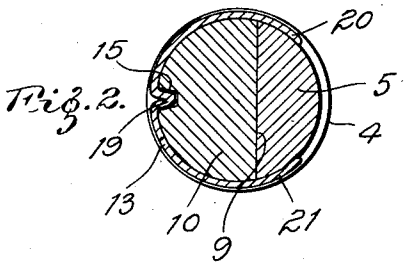


Fig. 3.

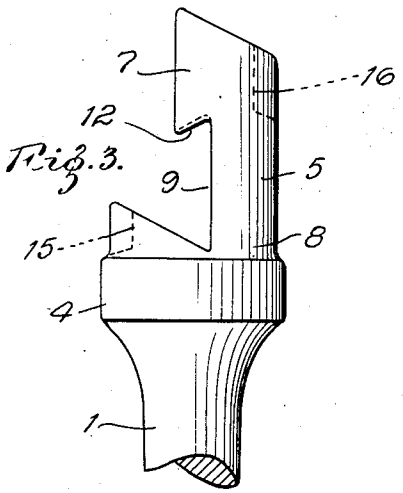
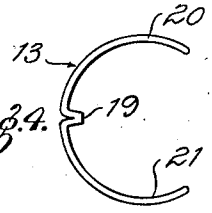


Fig. 4.



Inventors:
Benjamin H. Platts.
Robert M. Pease.
By Elliott & Shumen
Attorneys

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UNITED STATES PATENT OFFICE.

BENJAMIN H. PLATTS, OF ST. LOUIS, AND ROBERT M. PEASE, OF WEBSTER GROVES, MISSOURI.

JOINT FOR SUCKER RODS AND PULL RODS.

Application filed June 19, 1922. Serial No. 569,401.

To all whom it may concern:

Be it known that BENJAMIN H. PLATTS and ROBERT M. PEASE, citizens of the United States, residing, respectively, in the city of St. Louis and in Webster Groves, and State of Missouri, have invented new and useful Improvements in Joints for Sucker Rods and Pull Rods, of which the following is a specification.

This invention relates to a joint for sucker rods or pull rods such as used in connecting rod sections in sinking or operating wells. It is customary to employ screwthreads in constructing such joints, but the use of screwthreads has many objections. The general object of the present invention is to provide a serviceable joint which is devoid of threads, the parts of which can be very readily formed and which can be interlocked together to form the joint without special tools and without necessitating the employment of skill in connecting the parts.

Further objects of the invention will appear hereinafter.

The invention consists in the novel features, and in the general combination of parts to be particularly described hereinafter, all of which contribute to produce a simple and efficient joint for sucker rods or pull rods. A preferred embodiment of our invention will be particularly described in the following specification, while the broad scope of our invention will be pointed out in the appended claims.

In the drawing—

Figure 1 is a side elevation of a joint embodying our invention and showing short portions of the adjacent ends of the rod sections which are connected by the joint;

Figure 2 is a cross-section through the joint taken on the line 2—2 of Figure 1;

Figure 3 is a side elevation of one of the heads of the rod sections representing the same disconnected; and

Figure 4 is a plan showing means which we may employ for preventing any possibility of disconnection of the interlocking heads from each other.

In the drawing, 1 and 2 represent two rod-sections having heads 3 and 4 which are connected by means of our joint. The heads 3 and 4 are upset; that is to say, they are of enlarged diameter with respect to the rod-sections 1 and 2. Figure 3 shows one of the heads disconnected from the other. This head has a spur 5 which extends longitudinally with the axis of the rod and a similar spur 6 is formed on the head 3. We provide these spurs with means to enable the heads to be interlocked by a relative movement of the heads in a direction transverse to the longitudinal axis of the rod; that is to say, by a movement in a lateral direction. This interlocking is effected on the adjacent faces of the spurs 5 and 6 it being understood that when the spurs are interlocking, they overlie each other. On the outer end of the spur 5, we provide a transverse dove-tail tongue 7 and near the root 8 of this spur, we provide a transverse dove-tail groove 9. The opposite spur 6 is similarly formed with a transverse dove-tail tongue 10 and a transverse dove-tail groove 11. The side face 12 of the dove-tail tongue 7 is slightly inclined so that this tongue 7 tapers in a transverse direction. This is not essential but it assists in producing a firm interlocking of the two spurs, it being understood that the tongue 10 of the spur 6 is similarly tapered. When it is desired to interlock the heads 3 and 4, it is simply necessary to place the narrow end of the tongue 7 in the wide end of the groove 11 and then give the heads a relative lateral movement; that is to say, a relative movement in a direction transverse to the axis of the rod. If the tongues and grooves are properly constructed, the joint may be made tight by a few hammer strokes on one of the heads. Heads interlocked in this way will produce a serviceable joint which in many situations may be used without tending to become disconnected.

If it is desired to prevent any possibility of the heads 3 and 4 having lateral movement with respect to each other, we may provide additional means to prevent this. Any suitable means may be used for this purpose, but we prefer to provide a key-ring or a pair of key-rings such as the spring-rings 13 and 14 illustrated. Each head is provided with means for securing these spring-rings in place. This means may consist of a pair of grooves 15 and 16 placed on opposite sides of the head. When the spurs are put together, the groove 15 of the head 4 aligns with a similar groove 17 in the head 3 and likewise the groove 16 aligns with a similar groove 18 in the head 3. The key-rings or spring-rings 13 and 14 each have an

inward offset dog or key 19 which is received in its corresponding groove, and operates as a key to prevent movement of one of the heads laterally with respect to the other. Each ring is formed of spring metal and presents two arms 20 and 21 (see Figure 4) which extend around to the opposite side of the heads and keep the ring from becoming displaced. The dogs 19 of the rings should fit snugly in the grooves so as to prevent any slight movement. The sides of these dogs 19 and the grooves are preferably slightly tapered as indicated.

What we claim is:—

1. In a joint for sucker rods or pull rods, the combination of a pair of heads, each having a spur projecting longitudinally with the axis of the rod, said spurs overlying each other and having means on their adjacent faces for interlocking the spurs together by a relative movement of the heads in a direction transverse to the axis of the rod, each of said heads having a groove on the outer side thereof, and a spring key-ring having a key engaging each groove, each spring-ring having a portion extending around to the opposite side of the heads to secure the same to the heads, and operating to prevent lateral movement of the heads with respect to each other.

2. In a joint for sucker rods or pull rods, the combination of a pair of heads having means for interlocking the same together by a movement of one of the heads relatively to the other in a direction transverse to the axis of the rod, said heads having longitudinal grooves formed on the opposite and outer faces thereof located so as to align with each other when the heads are interlocked together, and a spring key-ring having a key received in the groove to prevent relative lateral movement of the heads and having arms extending around the heads so as to prevent the spring-ring from being disengaged from the heads.

In testimony whereof, they have hereunto set their hands.

BENJAMIN H. PLATTS.
ROBERT M. PEASE.