No. 709,400. Patented Sept. 16, 1902.

J. A. FITZPATRICK.

ROD COUPLING.

(Application filed Mar. 20, 1902.)

(No Model.)

Fig. 4.

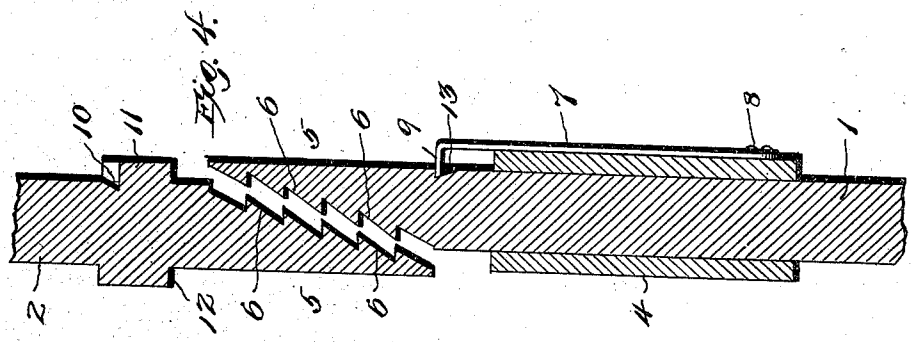
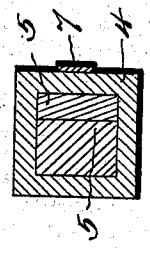


Fig. 3.



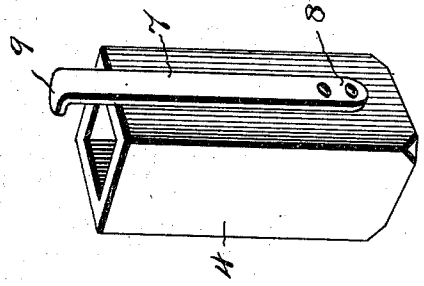
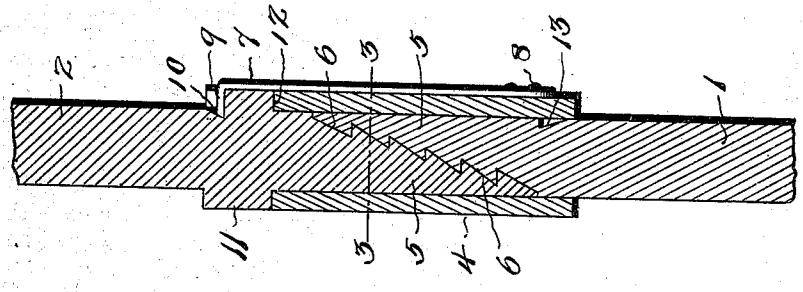


Fig. 5.

Fig. 2.



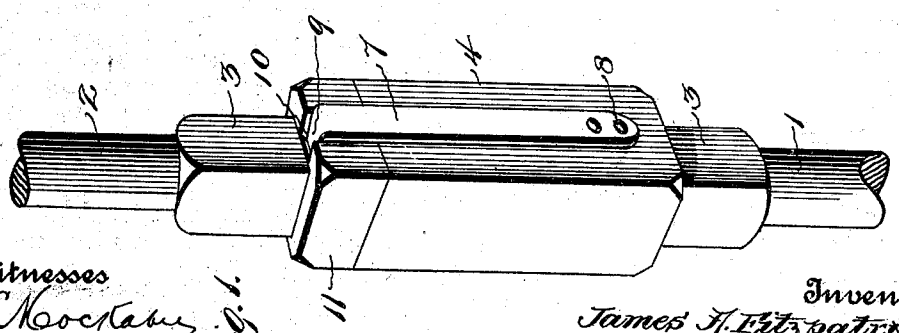


Fig. 1.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES ANDREW FITZPATRICK, OF BAKERSFIELD, CALIFORNIA.

ROD-COUPLING.

SPECIFICATION forming part of Letters Patent No. 709,400, dated September 16, 1902.

Application filed March 20, 1902. Serial No. 99,230. (No model.)

To all whom it may concern:

Be it known that I, JAMES ANDREW FITZPATRICK, a citizen of the United States, residing at Bakersfield, in the county of Kern and State of California, have invented certain new and useful Improvements in Rod-Couplings, of which the following is a specification.

This invention relates to rod-couplings, and has special reference to that type of couplings which are designed to effect a detachable or separable connection between the sections of sucker-rods such as are employed with pumps for deep oil-wells.

In the operation of deep oil-wells it is frequently necessary to remove the pumps for cleaning, thus requiring the uncoupling of the sucker-rod at each joint, and inasmuch as these joints are usually of the screw type considerable difficulty is frequently experienced in the coupling and uncoupling of the rod-sections.

The present invention contemplates an improved construction of coupling which obviates the objections to the ordinary screw-joint while at the same time materially expediting the removing of the sucker-rod from the well and also avoiding the possibility of the rod becoming uncoupled while in the well, as sometimes happens in the use of the screw-jointed rods.

With these and many other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential features involved in the construction of the coupling or joint are necessarily susceptible to some modifications without departing from the spirit or scope of the invention, but the preferred embodiment thereof is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of two adjoining sections of a sucker-rod coupled together by the improved joint contemplated by the present invention. Fig. 2 is a sectional view of the coupling with the sections coupled. Fig. 3 is a cross-sectional view on the line 3 3 of Fig. 2. Fig. 4 is a sectional view showing the rod-sections uncoupled, with the coupling-sleeve retained in its inactive position by the fastening-spring carried thereby. Fig. 5 is a detail in perspective of the slidable coupling-sleeve.

Like numerals of reference designate like and corresponding parts in the several figures of the drawings.

While the invention is necessarily applicable for use in connection with rods or shafting of different kinds, still it possesses special utility as a connection between the sections of a sucker-rod for oil-well or similar pumps. So for the purposes of illustrating the invention there is shown in the drawings two adjoining sections of a sucker-rod connected together by the improved joint or coupling.

The numerals 1 and 2 designate, respectively, the separate rod-sections, whose adjoining or contiguous end portions 3 are of an angular shape or form in cross-section, so as to hold to a positive sliding movement thereon a correspondingly cross-sectionally angular slidable coupling-sleeve 4, which will be presently more particularly referred to.

The separate rod-sections 1 and 2 at their point of connection are provided with matching beveled ends 5, which when in register constitute what might be properly termed a "scarf-joint," and the inclined faces of said beveled ends 5 are formed with a continuous series of interlocking angular teeth 6, which extend transversely across said inclined faces and are of substantially the same shape or formation as ordinary ratchet-teeth. The teeth 6 on the inclined face of one rod-section are preferably reversely related to those of the other rod-section, so that when the beveled ends of the two rod-sections are matched the shoulders of the teeth of the separate sections will be in opposition, thus effecting a strong and positive interlocking joint connection between the two rod-sections. When the teeth of the two sections are thus interlocked, the same are firmly held together by the coupling-sleeve 4, which when slid to an active position over the matching portions of the rod-sections completely houses the joint, and thus effectually prevents separation of the sections. Axial movement or turning of the slidable coupling-sleeve is prevented by reason of the cross-sectionally-angular form

thereof and the corresponding shape of the matching ends of the rod-section, and said coupling-sleeve is locked in an active position over the joint through the medium of a fastening latch or spring 7. This fastening latch or spring consists of a single length of spring metal secured fast at one end, as at 8, upon the exterior of the sleeve and provided at one end beyond one end of the sleeve with a laterally-deflected engaging hook 9, adapted to engage in a keeper-notch 10, formed in one edge of an annular abutment-collar 11, provided upon one of the rod-sections, preferably the section designated by the numeral 2.

The annular abutment-collar 11 provides an annular shoulder 12 about the rod-section 2, against which one end of the sleeve 4 abuts when locked in its active position over the joint. With the parts coupled as described it will be obviously impossible for the rod-sections to become separated while either in or out of the well until the engaging hook 9 is drawn out of engagement with the notch 10 and the sleeve 4 slid back upon the rod-section 1 carrying the same.

When the sleeve 4 is slid back upon the rod-section 1, the same is preferably temporarily held in its inactive position by the fastening latch or spring 7. This may be accomplished by simply providing the rod-section 1, on one side thereof, with a retaining-notch 13, into which the engaging hook 9 springs when the sleeve is slid back from over the joint. While this prevents the coupling-sleeve from slipping off the rod, at the same time it is held in position for being slid directly over the joint when the two rod-sections are again coupled.

From the foregoing it is thought that the construction and the many advantages of the herein-described rod-coupling will be readily apparent without further description, and it will be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

Having thus described the invention, what I claim as new, and desire to secure by Letters Patent, is—

In a rod-coupling of the class described, the combination with the rod-sections having matched interlocking toothed ends, one of said sections being further provided with an annular abutment-collar having a keeper-notch, and the other rod-section being further provided with a retaining-notch, a coupling-sleeve slidable upon the rod-sections and arranged to cover the joint, and a fastening-latch having a permanent connection with the coupling-sleeve and provided beyond one end of the latter with an engaging hook adapted to respectively engage in the separate notches.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES ANDREW FITZPATRICK.

Witnesses:
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