J. B. DUNLAP.

SLIP JOINT FOR SUCKER AND PULL RODS.

APPLICATION FILED NOV. 23, 1914.

1,170,429. Patented Feb. 1, 1916.

FIG. 1.

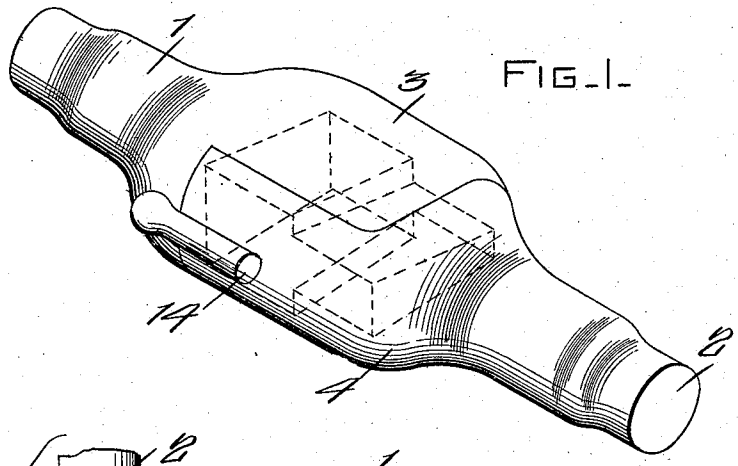


FIG. 3.

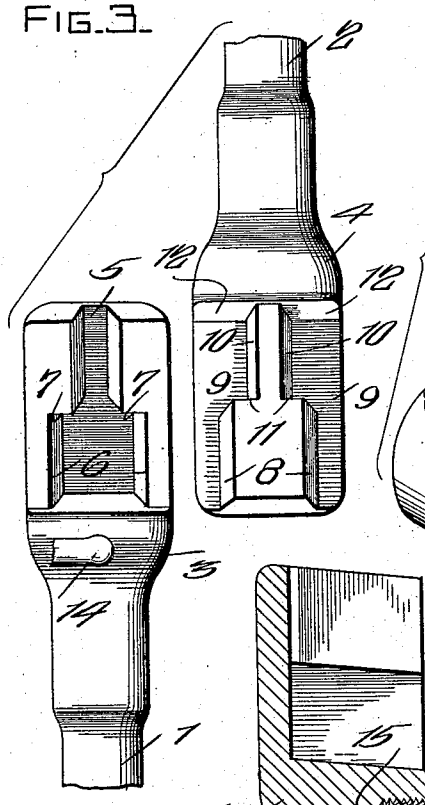


FIG. 2.

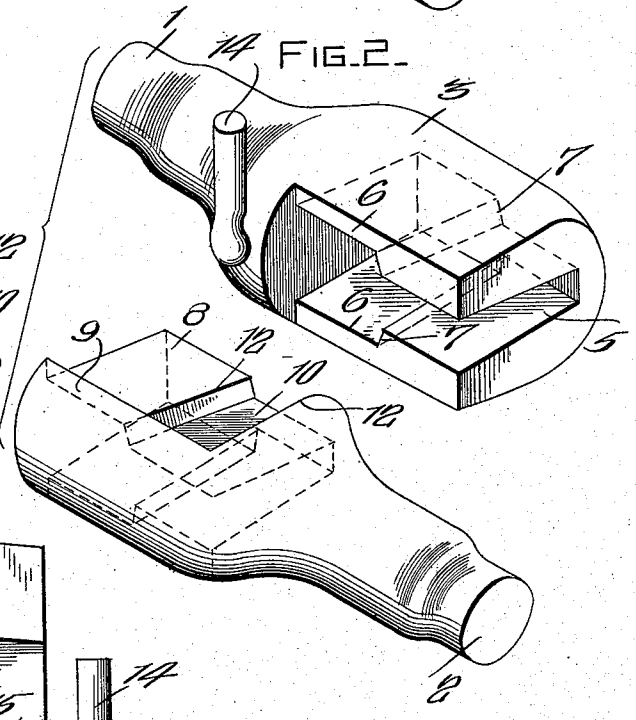
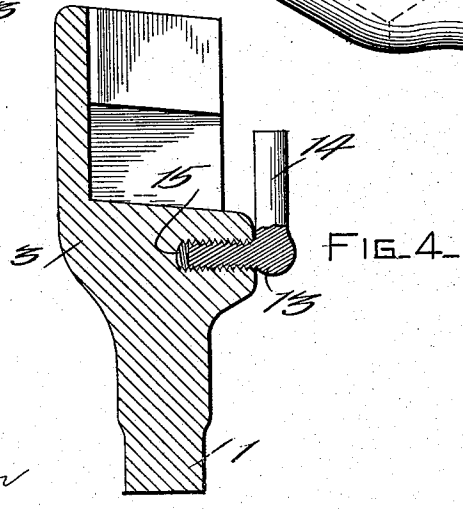


FIG. 4.



WITNESSES

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SLIP-JOINT FOR SUCKER AND PULL RODS.

1,170,429. Specification of Letters Patent. Patented Feb. 1, 1916.

Application filed November 23, 1914. Serial No. 873,509.

To all whom it may concern:

Be it known that I, JOSEPH B. DUNLAP, a citizen of the United States, and a resident of Tulsa, in the county of Tulsa and State of Oklahoma, have invented a new and useful Improvement in Slip-Joints for Sucker and Pull Rods, of which the following is a specification.

My invention is an improvement in slip joints for sucker and pull rods, and the invention has for its object to provide a joint of the character specified, so arranged that the rods may be connected directly by moving them laterally with respect to each other, and without the use of screw threads or the like, thus dispensing with the time necessary to screw or unscrew the rods and with the danger of stripping the threads, and with the liability of loose joints from worn threads.

In the drawings:—Figure 1 is a perspective view of the improved joint, Fig. 2 is a similar view with the elements separated, Fig. 3 is a side view with the elements separated, and Fig. 4 is a longitudinal section of one of the elements.

In the present embodiment of the invention the rods 1 and 2 to be connected are provided with heads 3 and 4, respectively, the said heads having interlocking mechanism for connecting the rods. The head 3 of the rod 1 is provided with a socket 5, the said socket opening laterally of the head as shown. The side walls of the socket 5 are not parallel with each other, but they diverge slightly from each other from within outward, and each side wall is rabbeted or cut away at the inner end of the socket as indicated at 6. The socket is thus enlarged transversely toward its inner end, and shoulders 7 are formed transversely of the head at the outer end of each enlargement, the said shoulders being at approximately half the depth of the socket. The head 4 is rabbeted on each face as indicated at 8, the rabbet extending from the side and end in such manner that a shoulder 9 is formed at the inner side of each of the rabbeted portions and extending longitudinally of the head and rod. The rabbeted portion at each side of the head is deepened from a point about half way toward the inner end to the inner end as indicated at 10, a shoulder 11 being formed transversely of the rib between the deepened portion and the outer portion. Enough of the head 4 is cut away at each side to cause that portion of the head to fit within the socket of the head 3, and the shoulders 11 contact with and fit against the shoulders 7 of the socket. The end of the head 4 fits against the inner end of the socket, and the shoulders 9 fit against the side edges of the socket.

The shoulders 12 which are formed at the inner end of the rabbets of the head 4 fit against the end of the head 3, and it will be evident that when the heads are fitted together in this manner they cannot move longitudinally with respect to each other, because of the engagement of the shoulders 11 with the flanges 7. The parts are shaped to fit closely so that there is merely an enlargement at the junction of the rods but slightly larger than the rods themselves. The only manner in which the heads can be disengaged is by moving them laterally, and a releasable latch is provided for preventing lateral movement. This latch is in the form of an angle rod consisting of portions 13 and 14 arranged at approximately a right angle with respect to each other, the portion 13 being threaded, and this threaded portion engages an internally threaded opening 15 in the head 3 at the side adjacent to the opening of the socket. The portion 14 is of a sufficient length to extend beyond the end of the socket, when the said portion is longitudinal with respect to the rods, and it will be evident that when the latch is turned in the position shown in Fig. 1, the heads cannot be disengaged by moving them laterally.

In use, with the parts separated they may be engaged by turning the latch transverse to the long axis of the rods, as shown in Fig. 2. The rods are now moved laterally with respect to each other to cause the rabbeted portion of the head 4 to enter the socket of the head 3, and since the side walls of the rabbeted portions 8 and 10 are inclined with respect to each other in the same manner as the side walls of the socket 5—6, the parts will fit easily into each other. After the parts have been engaged as above described, the latch is turned into the position of Fig. 1, thus locking the parts in engagement. When it is desired to release the rods, the latch is turned in the position of Fig. 2, and the heads may be moved laterally away from each other. As soon as

the shoulders 11 pass out of engagement with the shoulders 7 the disengagement is complete.

It will be evident from the description that the heads may be described as being provided one with a lateral recess or socket having its side walls undercut to form shoulders transversely of the head, and the other head having a tongue fitting within the socket and enlarged at its outer end to form shoulders transverse to the head and facing inwardly for engaging the shoulders of the socket, together with a latch for preventing disengagement of the heads. Because of the threaded engagement between the latch and the head 3, the latch may be turned tightly into contact with the head 4 to lock the latch in locked position as well as the heads.

I claim:—

A slip joint for sucker rods, comprising in combination with the rods each having a head at its inner end, the head of one rod having a socket opening at one side edge and at the outer end thereof, the side walls of the socket diverging from within outward, and the said side walls being recessed at the inner end of the socket to form at each side of the socket a shoulder transverse to the head and facing inwardly and extending to the side opening of the socket, the other head having its opposite faces rabbeted from the end and side of the head, and each rabbet being deepened at the inner end thereof from the sides to form at each side of the rabbeted portion a shoulder transverse to the head and facing inwardly, said rabbeted portion fitting within the socket and the transverse shoulders of the rabbeted portion engaging behind the transverse shoulders of the socket, the last-named head having between the inner side of each rabbeted portion and the body of the head a shoulder extending longitudinally of the head and adapted to fit against the adjacent side edge of the other head, and a latch for preventing lateral movement of the heads in a direction to release the rabbeted portion from the socket.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."