

1,384,489.

Patented July 12, 1921.

Fig. 1.

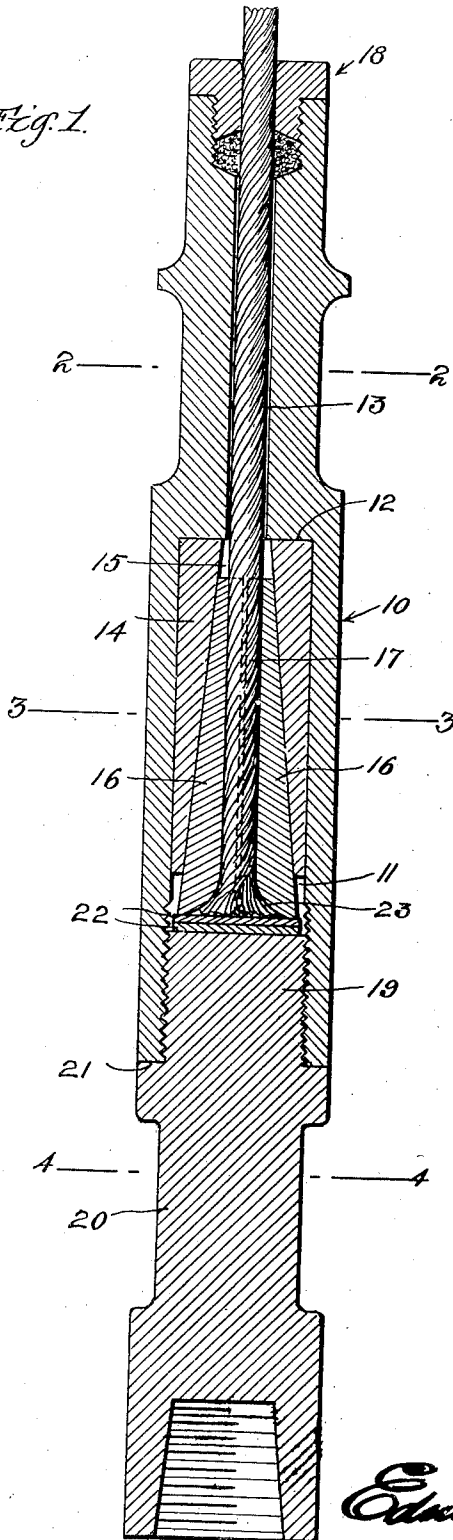


Fig. 2.

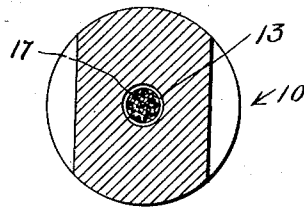


Fig. 3.

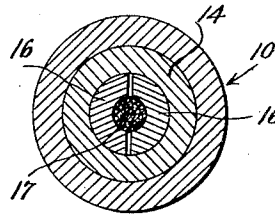
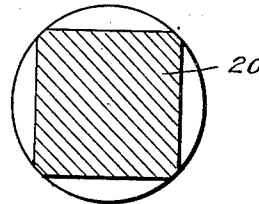


Fig. 4.



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ROPE-SOCKET.

1,384,489.

Specification of Letters Patent.

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Application filed September 13, 1920. Serial No. 409,754.

To all whom it may concern:

Be it known that I, WILLIAM D. SHAFFER, a citizen of the United States, residing at Santa Paula, in the county of Ventura and State of California, have invented new and useful Improvements in Rope-Sockets, of which the following is a specification.

My invention relates to rope sockets, which are particularly adapted to be secured to the end of a wire cable, to be used in connection with oil well drilling tools or casings.

The object of my invention is to provide a simple, durable and efficient means for rapidly securing the rope socket to the end of a cable, and which when desired may be readily and quickly removed from the same.

Another object of my invention is to provide a means for securing the socket to the cable end without the use of molten metal or other means, whereby a fire is necessary for this process, thereby eliminating all danger of explosion occurring by an ignition of the gaseous fumes which may be adjacent to the well.

Other objects will appear in the following description, will be pointed out in the claim and embodied in the accompanying drawings, in which:

Figure 1 is a vertical section through a rope socket illustrating my invention as applied thereto.

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1.

Fig. 3 is a transverse section taken on the line 3—3 of Fig. 1.

Fig. 4 is a transverse section taken on the line 4—4 of Fig. 1.

In carrying out my invention 10 represents a socket body, which is provided at its lower end with a bore 11 extending upwardly therein for a suitable distance and terminating to form a shoulder 12. Another bore 13 of smaller diameter than bore 11 extends through the upper end of the body 10, and communicates with the bore 11 and is centrally disposed therewith.

Mounted in the bore 11 and adapted to rest against the shoulder 12 is a bushing 14, which is provided with a centrally disposed tapering bore 15, the contracted end of which lies adjacent the shoulder 12 and communicates with the bore 13. A plurality of cone slips 16 are adapted to be pro-

jected into the bore 15 and to grip the end of the cable 17.

The cable 17 passes through the bore 13 and is gripped by the cone slips 16, and in order that no sand or other foreign matter may be permitted to enter into the joint between said cone slips and the bore of bushing 14, the top end of the socketed body 10 is provided with a packing gland 18.

The bore 11 of the socket body 10 is internally threaded at its lower end to receive the threaded shank 19 of a subjoint 20, said subjoint being provided with a shoulder 21 adapted to abut against the lower end of said socket body in the usual manner. The inner end of shank 19 is adapted to rest against the lower ends of the cone slips 16 and engage with the same to wedge them in the bore 15 in clamped relation around the cable end, and in order to provide an anti-frictional contact between these ends, as well as to provide for an adjustment of the degree of pressure of the cone slips on the cable end, a plurality of disk shims 22 are interposed between the same.

The bore formed by the cone slips 16 is flared as at 23 to receive the frayed out end of cable 17, as clearly shown in Fig. 1 of the drawings.

In assembling the cable in clamped relation with the socket body, the gland 18 is loosened and the cable end is then passed through bore 13. The cone slips 16 are placed around the cable end and are then inserted into the bore 15 of bushing 14. The shank 19 is then screwed up against the cone slips which forces them upwardly into bore 15 and causes them to contract and grip the cable end tightly and to be locked firmly and positively in such gripping relation. In order to regulate the degree of firmness of grip of the cone slips around the cable, as well as to compensate for variation in the diameter of cables used, and at the same time to permit the subjoint 20 at all times to be firmly shouldered against the socket body, any desired number of the shim disks 22 may be inserted between the shank 19 and the lower end of said cone slips.

By the foregoing described construction it will be obvious that the cone slips will at all times and under all conditions be held firmly and in an unyielding gripping relation with the cable end, and that when it

is desired to disconnect the cable end from the socket body it will be only necessary to remove the subjoint from the socket body which will permit the cone slips to drop out 5 of the socket 15 and expand.

What I claim is:

A rope socket, comprising a body member provided with a bore, cone slips adapt-

ed to grip a cable end mounted in said bore, a shank threaded into said bore, and shims 10 interposed between the lower ends of said cone slips and said shank.

In witness that I claim the foregoing I have hereunto subscribed my name this 22nd day of August, 1920.

WILLIAM D. SHAFFER.