J. M. MILLER.

ROPE SWIVEL SOCKET.

APPLICATION FILED MAY 26, 1922.

1,432,117. Patented Oct. 17, 1922.

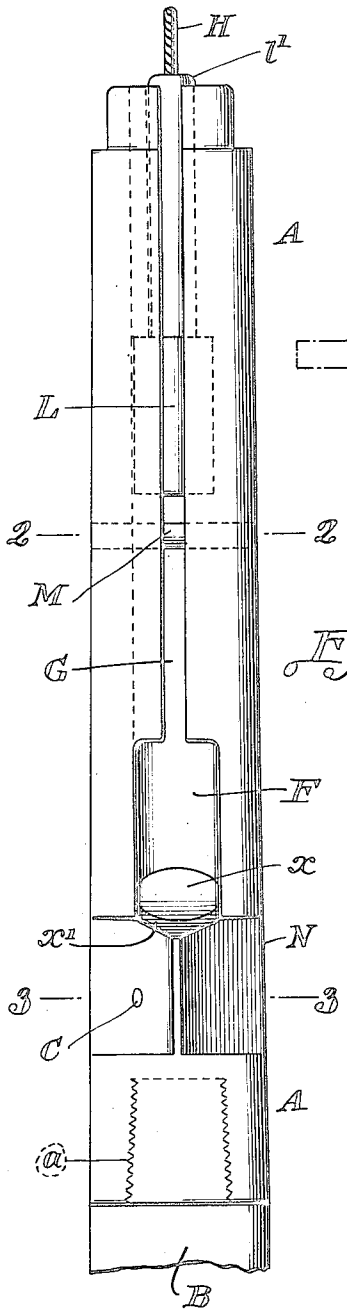


Fig. 1.

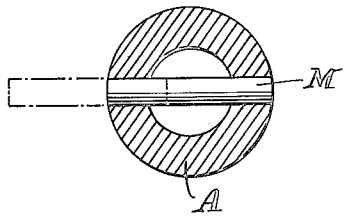


Fig. 2.

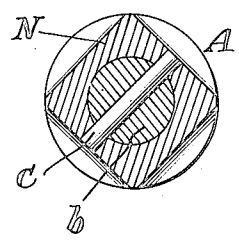


Fig. 3.

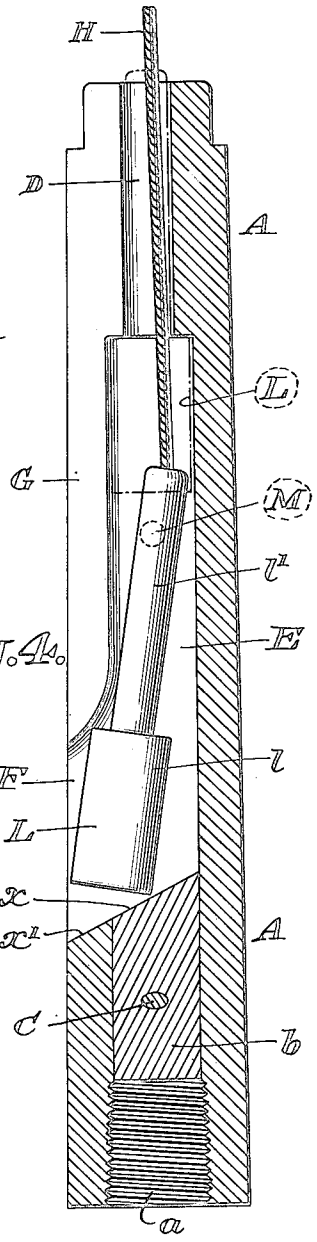


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES M. MILLER, OF NEWPORT, OKLAHOMA.

ROPE SWIVEL SOCKET.

Application filed May 26, 1922. Serial No. 563,897.

To all whom it may concern:

Be it known that I, JAMES M. MILLER, a citizen of the United States, residing in Newport, in the county of Carter, State of Oklahoma, have invented certain new and useful Improvements in Rope Swivel Sockets, of which the following is a specification.

This invention relates to a device employed for connecting the rope, cable or line of an oil well drilling outfit to the drilling tool.

Ordinarily the tool is detachably connected with a socket member to which the line is connected by means of a swivel member attached to the end of the line. Usually the rope is threaded through the socket member and the swivel member is attached to the end of the rope and then drawn into the socket and fitted at the upper end thereof. After this the socket member is secured to the tool. When the swivel member becomes worn and it is desirable to renew it, it has been necessary to detach the tool in order that the swivel member may be withdrawn.

According to my invention, I provide means whereby the swivel member may be withdrawn from the socket or inserted therein while the drilling tool is attached to the socket.

In carrying out my invention, I provide a hollow socket member which is formed in its upper portion with a hole or bore through which the rope extends and which is adapted to receive the stem of a swivel member. This bore in the upper part of the socket member communicates with a chamber of larger diameter in which the larger part of the swivel member is contained, and which is formed with a side opening through which the swivel member can be withdrawn or inserted. The socket is formed with a slot extending from its upper end to the top of the side opening of the swivel chamber through which the rope may be withdrawn or inserted laterally. The bottom wall of the swivel chamber is inclined downwardly and outwardly so that when the swivel member is dropped or lowered it may be guided outwardly from the socket. When in use the swivel member is held in the upper part of the socket by a pin or cross piece and at this time there is no danger of the swivel leaving the socket, but when the pin is withdrawn, the swivel may be lowered and withdrawn from the socket very quickly.

In the accompanying drawings:

Figure 1 is a front elevation of a rope swivel socket embodying my invention.

Figure 2 shows a section on the line 2—2 of Figure 1.

Figure 3 shows a section on the line 3—3 of Figure 1.

Figure 4 is a longitudinal vertical section of the device.

The cylindrical socket member A is formed in its lower portion with a screw threaded socket *a* for the tool B which is thus detachably connected with the socket. The lower part of the socket A above the threaded part *a* may be solid or it may be hollow and closed by a plug *b* held in place by a pin C. The socket member is squared at N to receive a wrench in the usual way. The upper end portion of the socket member is formed with a longitudinal bore D which communicates at its lower end with a swivel chamber E of larger diameter. This chamber extends from the lower or inner end of the bore D to the top of the plug *b* and the lower part of the chamber communicates with a side opening F extending to the outside of the socket. The side wall of the socket is formed with a slot G which extends from the upper end of the socket to the top of the side opening F. The rope on line H is attached to the swivel member L in any suitable way and may be introduced into the chamber E through the side opening F. The swivel member L comprises a cylinder *l* and a stem *l'* of smaller diameter. The stem is adapted to enter the bore D as indicated in Figure 1 and when in use the swivel member is held in the upper part of the socket by a cross piece or pin M.

It will be observed that the slot G is narrower than the swivel member, so that the swivel member cannot become detached from the socket when in operative position. When in this position the device operates in the usual way. Heretofore it has been usual to introduce the swivel member through the lower end of the socket before attaching the drilling tool thereto and it has also been usual, when it is desired to remove the swivel member to replace it by a new one, to detach the drilling tool and withdraw the swivel member endwise through the socket member. This is a tedious and unnecessary operation and is remedied by my invention. By merely withdrawing the pin M the swivel

member L may be lowered in the manner indicated in Figure 2 and will be guided by the inclined surfaces x and x' outwards through the side opening F. At the same time the rope H may be withdrawn sidewise through the slot G. It is of course understood that the rope or line H is very long, and this provision for withdrawing it sidewise from the socket is an important feature of my invention. When the device is in use the rope or line H is held above the socket as shown in Figure 1.

I claim as my invention:

1. A rope swivel socket comprising a socket member having a swivel chamber communicating with a side opening and having a slot extending from this opening to the extreme upper end of the socket member; a swivel member mounted in the swivel chamber and held therein when in use above the side opening of the socket and a rope for suspending the swivel member in the swivel chamber and which is movable sidewise from the swivel member through the slot therein.

2. A rope swivel socket comprising a socket member having a swivel chamber having a side opening and formed with a lower inclined wall extending from the inner end of the swivel chamber outwards, said socket member being also formed with a slot in its side extending from the side opening to the extreme upper end of the socket member in combination with a swivel member held in operative position in the socket above the side opening therein.

3. A rope swivel socket comprising a socket member having a swivel chamber and a bore of smaller diameter above the swivel chamber, in combination with a swivel member having a body portion held in operative position in the swivel chamber and having a stem extending into the bore above the swivel chamber.

4. A rope swivel socket comprising a socket member having a swivel chamber, a slot in its side wall and a side opening for the insertion and withdrawal of a swivel member and having a bore in its upper portion of relatively small diameter, in combination with a swivel member having a body portion arranged within the swivel chamber and a stem extending into the bore of the socket above the swivel chamber.

In testimony whereof, I have hereunto subscribed my name.

JAMES M. MILLER.