June 4, 1929. W. O. PARKER 1,715,425

CABLE WRENCH

Filed April 5, 1928

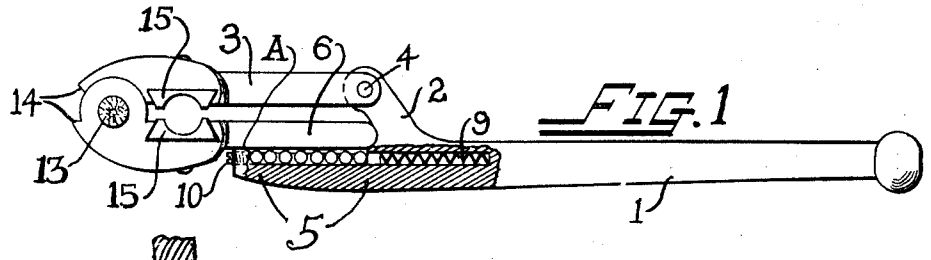


FIG. 1

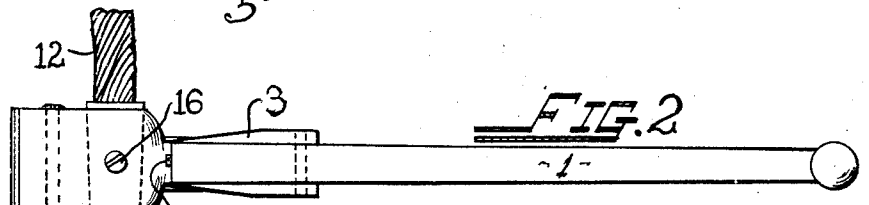


FIG. 2

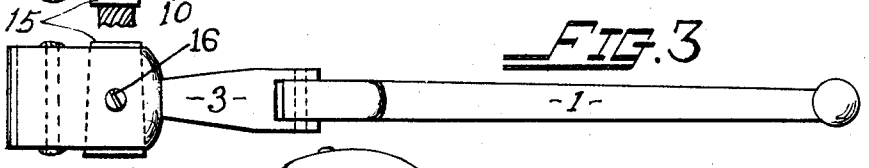


FIG. 3

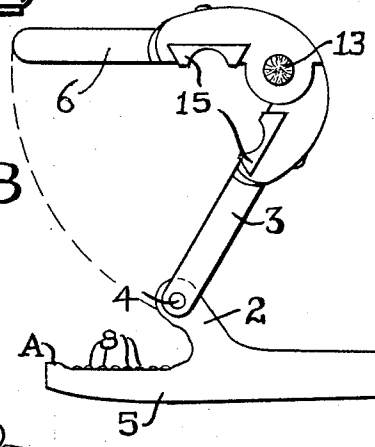


FIG. 4

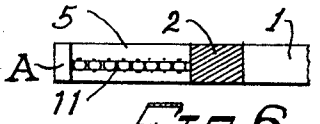


FIG. 6

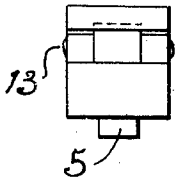


FIG. 8



FIG. 7

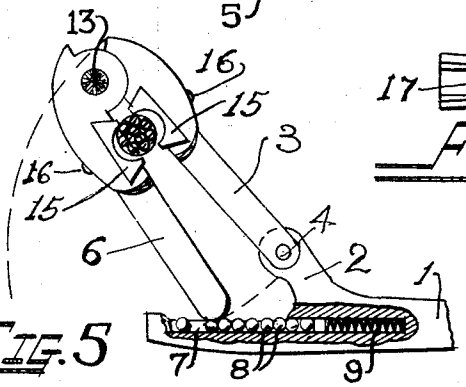


FIG. 5

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UNITED STATES PATENT OFFICE.

WILLIAM O. PARKER, OF TOPEKA, KANSAS.

CABLE WRENCH.

Application filed April 5, 1928. Serial No. 267,656.

My invention relates to a cable wrench.

The object of my invention is to provide a wrench to re-twist steel cables.

A further object of my invention is to provide a wrench having removable jaws as means to conform to cables of different diameter.

A still further object of my invention is to provide a wrench that will automatically increase its gripping tension while twisting the cable.

A still further object of my invention is to provide a non-frictional arrangement to close the jaws of a wrench.

A still further object of my invention is to provide a wrench that will automatically lock the jaws when closed to snug engagement in the crotch of the bifurcation of the lever.

A still further object of my invention is to provide a bracing means for the lever to relieve excess tension at the pivot connection of the handle to its respective jaw member.

These and other objects will hereinafter be more fully explained, reference being had to the accompanying drawings forming a part of this specification, wherein like characters will apply to like parts throughout the different views.

Referring to the drawings:

Fig. 1 is a plan view, partly in section.

Fig. 2 is a transverse view of Fig. 1.

Fig. 3 is an opposite transverse view to Fig. 2, parts removed for convenience of illustration.

Fig. 4 is a plan view of the wrench in an extreme open position.

Fig. 5 is a plan view of the wrench in the operation of closing the jaws, said view being partly in section, and the outer portion of the lever removed.

Fig. 6 is an inside view of the ball bearing leg, parts removed for convenience of illustration.

Fig. 7 is a plan view of the cable gripping member, showing the slot.

Fig. 8 is an end view of Fig. 2.

My invention herein disclosed consists of an arrangement for a wrench, having a lever 1 that is bifurcated at one end thereof. The leg 2 of the bifurcation is adapted to pivotally engage one of the jaw members 3 as at 4. The leg 5 of the bifurcation functions as a brace member contacting the other jaw member 6, as at A, when the jaws are closed as shown in Fig. 1; and simultaneously therewith the outer end of the said jaw member 6 moves to transverse alignment with the pivot point 4, relative to the longitudinal axis of the lever, and when so positioned the jaw members are locked together and the tension imposed thereby does not tend to rock the jaws at the pivot point 4.

Axially positioned in the leg 5 is a ball race 7; said race is of sufficient length to receive a plurality of balls 8 and a recoil spring 9, the spring functioning as means to retract the balls toward the outer end of the race. As a means to close the race, I have provided a stud 10 threadedly engaging in the outer end thereof, by which means the balls and spring may be removed and replaced. Longitudinally positioned on the inner side of leg 5 is a slot 11, through which a portion of the balls will extend as contact means for the free end of the jaw member 6 as a ball bearing feature when the wrench is being closed on a cable 12, as shown in Figs. 2 and 5.

The said jaw members are hingedly connected as at 13, the same being similar to a rule joint, having stops 14 on each member to prevent excess outward rocking. Housed within each of the jaw members and within close proximity to the hinge joint is a cable gripping member 15, having a smooth seat to receive the steel cable, by which means mutilation of the strands of the cable is eliminated; said gripping members are in parallelism to each other and dovetailed longitudinally and transversely for snug engagement when positioned as shown in Fig. 2. As a means to prevent retraction, a screw 16 threadedly engages in each of the jaw members, the inner end of which extends through a longitudinally positioned slot 17, as shown in Fig. 7, by which means the said gripping members are secured from retraction.

It will be understood that the proper time for applying my wrench, herein disclosed, is when the cable is pendently supporting a line of tools in an oil well, the tools being free to revolve, and the weight of which tends to unwind the cable, and being flexible and capable of unwinding, the point of the tool is made to contact at different points radially in the bottom of the well. Should the winding of the cable fail to function for the purpose, the tools are partially elevated, and the wrench is applied to the cable in the manner herein described as a twisting means, by revolving in one direction until the strands of the cable are normally twisted to their orig-

inal or normal degree; and after being so treated, the process of drilling will continue in the usual rotation required for the tools.

It will further be understood that should the line of tools in the well bind or fail to respond to the rotary movement in twisting the cable, a swivel is provided as a connecting means for the cable to the tools; therefore, the twisting of the cable will not be prevented, as the bearing of the cable over the headblock sheave and other pulleys or drums employed, is free to rotate under the tension imposed by the wrench.

Such modifications may be employed as lie within the scope of the appended claims.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a cable wrench, a lever having a bifurcation at one end thereof, a pair of jaw members hingedly connected, one of the jaws pivotally engaging with the outer end of one leg of the lever bifurcation, the other jaw member slidably engaging on the other leg of the lever bifurcation as closing means for the jaws.

2. In a cable wrench, a bifurcated lever and a pair of hingedly connected jaws, the outer end of one of the jaw members pivotally carried by one leg of the lever bifurcation, a ball bearing arranged in the other leg of the lever bifurcation to engage with the free end of the other jaw member as closing means for the jaws, a cable seat carried by each of the jaw members in parallelism.

3. In a cable wrench, a lever having one end bifurcated, one leg of the bifurcation in alignment with the shaft of the lever, the other leg laterally extending, a slotted ball race axially positioned in the first mentioned leg, a recoil spring and balls positioned in the race, the balls partially exposed through the slot and tensioned toward the outer end by the spring, a pair of jaws hingedly connected, and a pair of cable gripping members removably arranged, there being one attached to each of the jaws in parallelism and working relation to each other, the said jaws being pivotally carried and clamped together by rocking the lever to engagement with the free member of the jaw, the ball bearing reducing the friction when the clamp is closed.

4. In a cable wrench, in combination, a pair of jaws hingedly connected, a grip member detachably carried by the inside wall of each of the jaws and in close proximity to the hinge, a lever pivotally attached to one of the jaw members, and a ball bearing positioned in the lever in working relation to the pivot engagement of the grip member and the lever, so that by rocking the ball bearing to engagement with the other jaw member, the said jaws are closed rigidly, for the purpose described.

5. In a cable wrench, a pair of jaw members hingedly connected, and a cable gripping member dove-tailed in each of the jaw members and in working relation to each other, a lever being bifurcated at one end, one leg of the bifurcation being shorter than the other and pivotally engaging the outer end of one member of the jaw, the long leg of the bifurcation having a ball bearing arranged longitudinally therein to engage with the outer end of the member of the jaws as the jaws are rocked to engagement with a cable, the outer end of the long leg of the bifurcation to bear on the jaw in close proximity to the cable gripping means as tensioning means to move the last said jaws toward the other while the cable is being twisted, through the medium of the lever.

In testimony whereof I affix my signature.

WILLIAM O. PARKER.