E. P. WINDLE.

CLAMPING DEVICE FOR DEEP WELL DRILLING TOOLS.

APPLICATION FILED OCT. 14, 1912.

1,089,302. Patented Mar. 3, 1914.

Fig. 1.

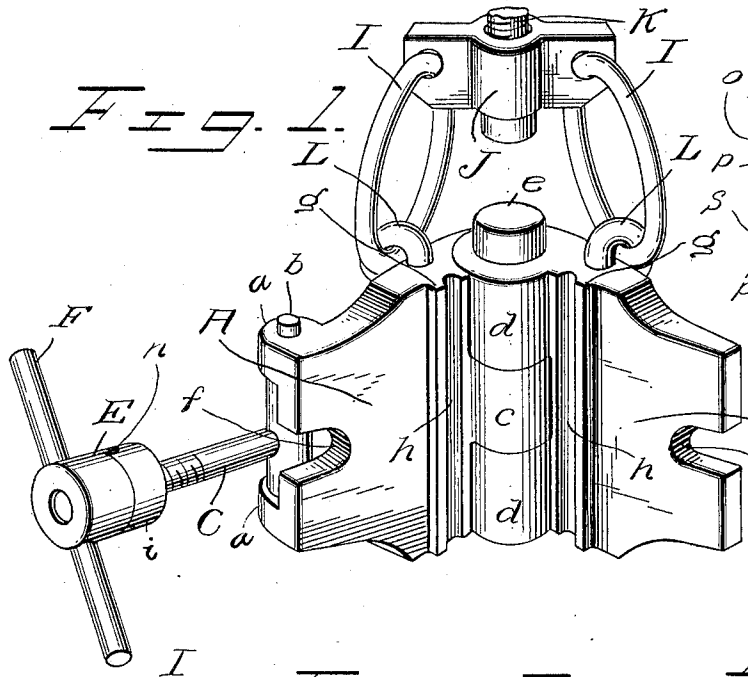


Fig. 5.

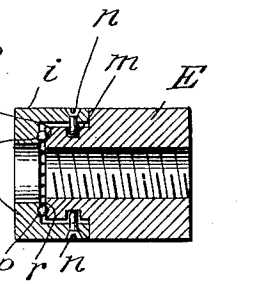


Fig. 2.

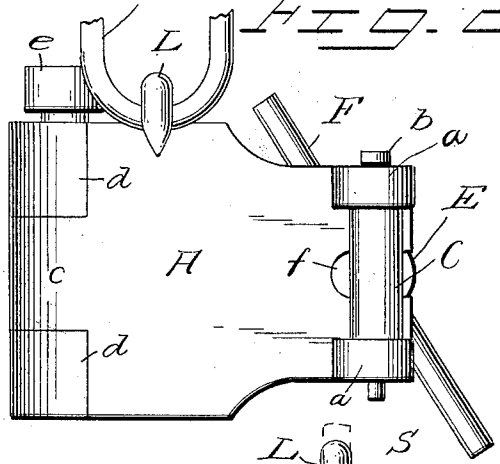


Fig. 3.

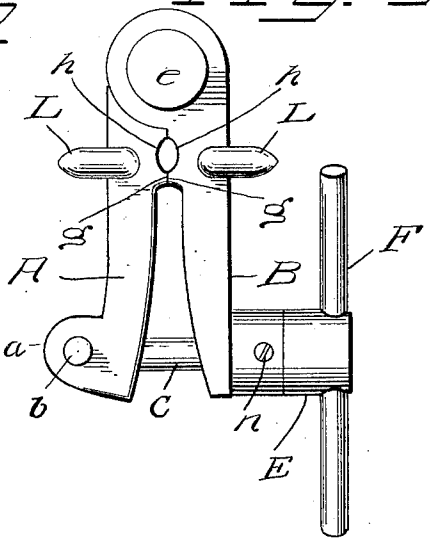
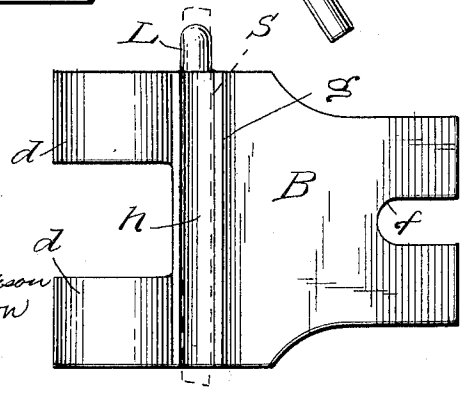


Fig. 4.



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CLAMPING DEVICE FOR DEEP-WELL-DRILLING TOOLS.

1,089,302. Specification of Letters Patent. Patented Mar. 3, 1914.

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To all whom it may concern:

Be it known that I, EDWARD P. WINDLE, a citizen of the United States, residing at Independence, in the county of Montgomery and State of Kansas, have invented a certain new and useful Clamping Device for Deep-Well-Drilling Tools, of which the following is a specification.

This invention relates to devices for holding or clamping the wire line used with the drilling tools employed in drilling oil, gas, and deep water wells, and it has for its object to provide a simple, durable, and comparatively inexpensive clamp which is adapted to be expeditiously operated to securely clamp the wire and to accomplish this without injuring the wire or distorting or bending the same, and it consists in the parts and combinations of parts hereinafter described and claimed.

In the accompanying drawings forming a part of this specification, Figure 1 is a perspective view of my improved wire clamping device with its jaws opened to receive the wire. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view. Fig. 4 is a side elevation of one of the jaws showing the face thereof. Fig. 5 is a detail sectional view of the lever nut and its washer.

Similar letters refer to similar parts throughout all the views.

Referring to the drawings A represents one of the jaws of the clamping device and B the other jaw. The jaw A is formed at its outer or free end with laterally extending lugs or ears *a* having registering perforations to receive a headed pin *b* which forms a hinge pin for a T-headed bolt C, the purpose of which will be hereinafter explained. The jaw A is also formed with a central perforated ear *c* at its opposite end adapted to fit between similar ears *d* formed at the top and bottom of the end of the jaw B in order to form a hinge joint or connection between the jaws when a hinge pin *e* is inserted. The outer or free ends of the jaws are formed with slots or recesses *f* to receive the headed bolt C, said bolt having its head somewhat elongated and perforated to permit of the passage of the pin *b*, and its free end threaded to receive the lever nut E. As clearly shown in Fig. 3, the jaws diverge gradually toward their free ends and adjacent the hinge pin *e* and parallel therewith a shoulder *g* is formed on the contiguous face of each jaw in which a groove *h* is formed. These grooves are, substantially, half circular in cross-section, with perfectly smooth and unbroken faces from end to end, and register in position so as to form a straight, continuous opening between the jaws when they are in their closed or clamping position. By reason of the construction described the liability of injuring the wire line by crimping or distorting the same is obviated.

The shoulders *g* do not meet or come in contact when the clamp is in use, thereby enabling the use of wire lines or cables of different diameters. Also they insure long life to the clamp since they may be cut or ground away to adapt the clamp to wires or cables which have become reduced by use, or when the grooves themselves are so worn from use that a firm hold cannot be had on the cable.

It will be noted that the jaws are not weakened by reason of the formation of the grooves *h* therein, since no material part of the body portion thereof is removed in forming the grooves.

The headed bolt C is employed to clamp the jaws on the wire line, this being accomplished by a lever handle F preferably cast or otherwise made integral with the nut E, which is run on the threaded end of said bolt C. The nut E is reduced at one end to receive a cap or cup-shaped washer *i* having an end opening for the passage of the bolt, and said nut is formed with a body groove *m* to receive the ends of the screws *n* to secure the washer against longitudinal movement on the nut, but permitting it to turn freely thereon. The end of the nut is formed with a groove *o* to receive the balls *p* and a corresponding groove *r* is formed in the flange *s* of the cup or cup-washer, whereby a ball bearing is formed between the nut and washer.

The clamp is adapted for connection with the links I of the swivel J of a temper screw K (a portion only of which is shown), by means of hooks L cast or otherwise formed integral with the jaws A, B, there being one hook at each side and located directly in line with the grooves *h*, whereby the line of draft in adjusting the wire line will be in the same vertical plane as the plane of suspension of the clamp.

In operation, the wire line S, indicated in dotted lines, Fig. 4, is passed between the jaws and into the grooves and the jaws

closed thereon. The bolt C is then swung into the slot in the end of jaw B and the lever handle F turned to run the nut onto the bolt, causing the end of the washer to engage the end of the jaw B. The further turning of the handle lever draws the jaws toward each other until the wire line is firmly clamped between them. It will be noted that the location of the grooves *h* adjacent the pin *e* and at a distance from the ends of the jaw where the power is applied insures greater pressure on the wire line and binds the same firmly in place.

It frequently happens in the operation of drilling oil and other wells that the links used to suspend the tools become twisted in the swivel and thus shorten the distance on one side between the swivel and the clamp and causing or permitting the jaws to "creep" out of line or to hang unevenly, which results in injury to the wire line. With a clamp constructed as above and having its hinge connection accurately fitted and adjusted the jaws cannot creep or get out of line but will maintain an even bearing on the wire at all times.

Having thus described my invention what I claim is:

1. A clamping device for the wire lines or cables of well drilling tools, comprising hinged jaws, each having a shoulder parallel with and adjacent their fulcrum pin and each of said shoulders having a straight, continuous, longitudinally extending groove formed therein to receive the wire line, whereby the wear of the grooves or the lines may be compensated by reducing the shoulders.

2. A clamping device for wire lines of well drilling tools, comprising hinged jaws each having a shoulder parallel with and adjacent to their fulcrum pin, said shoulders having longitudinally extending straight, continuous grooves formed therein, and means for drawing said jaws into their clamping position.

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

EDWARD P. WINDLE.

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