G. L. McKAIN.

WIRE LINE CUTTING DEVICE.

APPLICATION FILED MAY 23, 1917.

1,403,470. Patented Jan. 10, 1922.

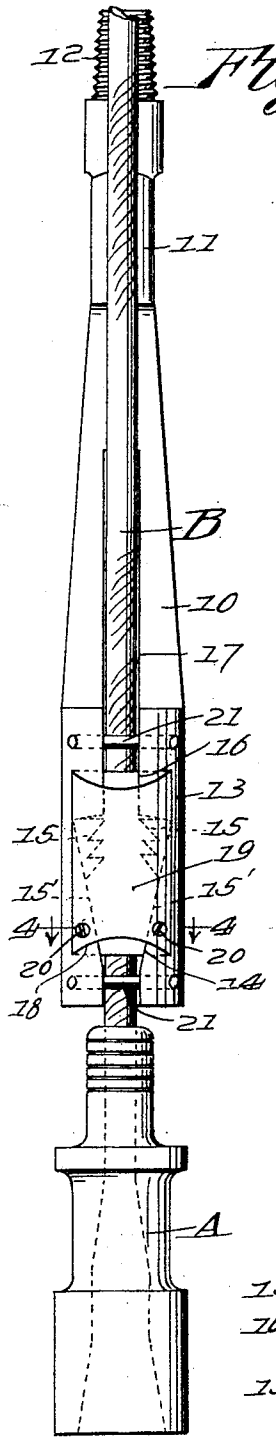


Fig. 1.

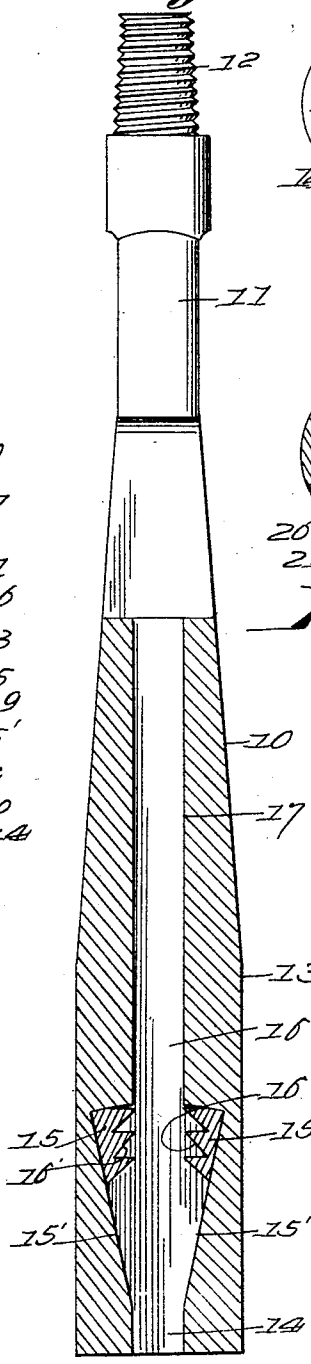
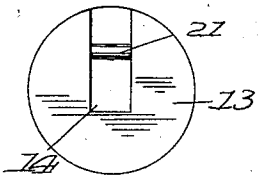


Fig. 2.



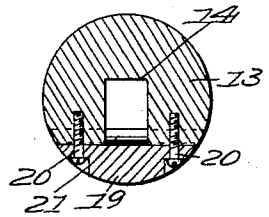


Fig. 4.

Fig. 3.

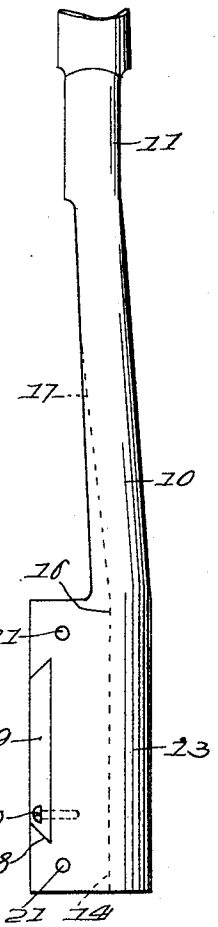


Fig. 5.

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WIRE-LINE-CUTTING DEVICE.

1,403,470. Specification of Letters Patent. Patented Jan. 10, 1922.

Application filed May 23, 1917. Serial No. 170,490.

To all whom it may concern:

Be it known that I, GEORGE LEONARD McKAIN, a citizen of the United States, residing at Parkersburg, in the county of Wood and State of West Virginia, have invented certain useful Improvements in Wire-Line-Cutting Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

The invention relates to a cutting device and more particularly to the class of cable cutters for use by gas and oil well fishermen.

The primary object of the invention is the provision of a cutting device of this character wherein in event that the drilling tool becomes stuck within the ground in the boring of a hole therein and it necessitates the cutting of the drilling cable or line from the tool, said cutting device can be operated for severing the cable or line so that an appliance can be used for the removal of the drilling tool with dispatch.

Another object of the invention is the provision of a cutting device of this character wherein the cutting members are mounted therein in a novel manner so as to bite into the cable or line when the cutting device is applied thereto to assure the cutting loose of the line from the drilling tool.

A further object of the invention is the provision of a cutting device of this character wherein the housing for the cutting members is closed so as to protect the cutting members and thereby exclude dirt and cavings from the housing in the use of the cutting device.

A still further object of the invention is the provision of a cutting device of this character which possesses simplicity in construction, durability, efficiency and is economical in manufacture.

With these and other objects in view the present invention consists in the features of construction, combination and arrangement of parts as will be hereinafter fully described, illustrated in the accompanying drawing and pointed out in the claims hereunto appended.

In the accompanying drawing:

Figure 1 is an elevation of a drilling tool and its cable or line showing the cutting device constructed in accordance with the invention applied thereto;

Figure 2 is a vertical longitudinal sectional view through the cutting device;

Figure 3 is an end elevation;

Figure 4 is a sectional view on the line 4—4 of Figure 2; and

Figure 5 is a fragmentary side elevation of a cutting device.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail (A) designates a chuck or head adapted for receiving a drilling tool or designed for use in drilling holes within the ground and said chuck or head is of the ordinary well known construction having fastened therein the drilling cable (B) which as usual is made from steel and in event of the drilling tool becoming stuck which necessitates the cutting of the cable the cutting device is employed as hereinafter described.

The cutting device comprises a body including a tapering shank (10) which is disposed at a slight angle and terminates in a straight end portion (11) formed with a threaded lug (12) for the detachable engagement of the body with a handle or reach rod of any approved type.

On the opposite end of the shank (10) is a head (13) which is preferably of a circular formation in cross section and is provided with a substantially triangular shaped recess (14) for receiving a pair of opposed cutting members (15), each formed with a series of cutting teeth (16′) and these members are slidable on the angular walls (15′) of the recess (14) so as to approach and recede from the cable (B) in the movement of the device.

Formed in the shank (10) longitudinally thereof for a distance of the same is a channel or groove (16) for receiving and guiding the cable (B) and this groove or channel opens into the wider end of the recess (14) while at the small end of the recess is a slot or groove (17) which also opens into the recess and through the outer free end of the head (13) the slot or channel (17) being designed to also receive the cable (B) when the same is trained through the head in event that it is desired to cut the cable from the drilling tool head or chuck.

Formed in one side of the head is a dove-tail seat (18) which constitutes an opening for access to the recess (14) and removably engaged in this seat is a cover plate (19) which is correspondingly shaped to said seat and is removably held fast therein through the medium of screws (20), the plate when in the seat being designed to close the recess (14) to exclude dirt and cavings therefrom which would necessarily interfere with the movement of the cutting members (15) and thereby impair the successful operation of the cutting device for the severing of the cable (B) when the occasion requires.

Bridging or straddling the grooves or channels (16) and (17) beyond the point of the dove-tail seat (18) in the head (13) are cross pins (21) which constitute guides for the cable (B) when trained through the recess (14) in said head (13) of the cutting device and in this manner said cable is held in proper position for the positive engagement of the cutting members (15) therewith on the movement of the cutting device in one direction to assure the severing of the cable to free the same from the drill tool head or chuck.

In the use of the cutting device, assuming that the drill tool has become stuck within the ground in the formation of a hole therein and it is desired to cut the cable (B) from the chuck or head (A) the said device is slipped on to the cable (B) and upon the movement of the device toward the chuck or head (A) the cutting members (15) will freely ride over the cable (B) without biting thereinto and when the device has reached the point at which the cable is to be cut on retrograde or reverse movement of said cutting device the teeth (16) of the cutting members (15) will bite into the cable (B) and when a pull is exerted upon the cutting device the said cutting members will move in the direction of the restricted end of the recess (14) and thereby be forced into the cable for the severing thereof and thereby freeing the cable from the tool head or chuck.

From the foregoing it is thought that the construction and manner of operation of the device will be clearly understood and therefore a more extended explanation has been omitted.

What is claimed is:

1. A wire line cutter having a member provided with a head and shank, the head being formed with a tapering recess, a plurality of multi-edged cutters in said recess freely slidable upon the tapered walls thereof.

2. The apparatus of claim 1 in which the edges of said cutters are non-uniform in height.

3. The apparatus of claim 1 in which the cutters are non-pivoted.

4. The apparatus of claim 1 in which the cutters are oppositely directed.

5. A wire line cutter having a body member provided with a head and shank, the head being formed with a tapering recess, a plurality of cutters in said recess freely slidable upon the tapered walls thereof, and means for preventing said cutters from tipping during cutting including a plurality of cutting edges on said cutters.

6. In combination in a wire line cutter, cutting knives having a plurality of cutting edges, the plane containing the cutting edges and the plane of the side of the cutters opposite the cutting edges being non-parallel.

7. In combination in a wire line cutter, a plurality of non-pivoted, flangeless multi-edged cutters.

8. In a combined wire line knife and bumper, a member provided with a head and shank, the head being formed with a recess, a plurality of cutting knives slidably mounted in said recess, and means for removing said cutters laterally from said recess.

In testimony whereof I affix my signature.

GEORGE LEONARD McKAIN.