June 17, 1930. F. KROSTA 1,765,165

TOOL

Filed March 12, 1928

Fig. 1.

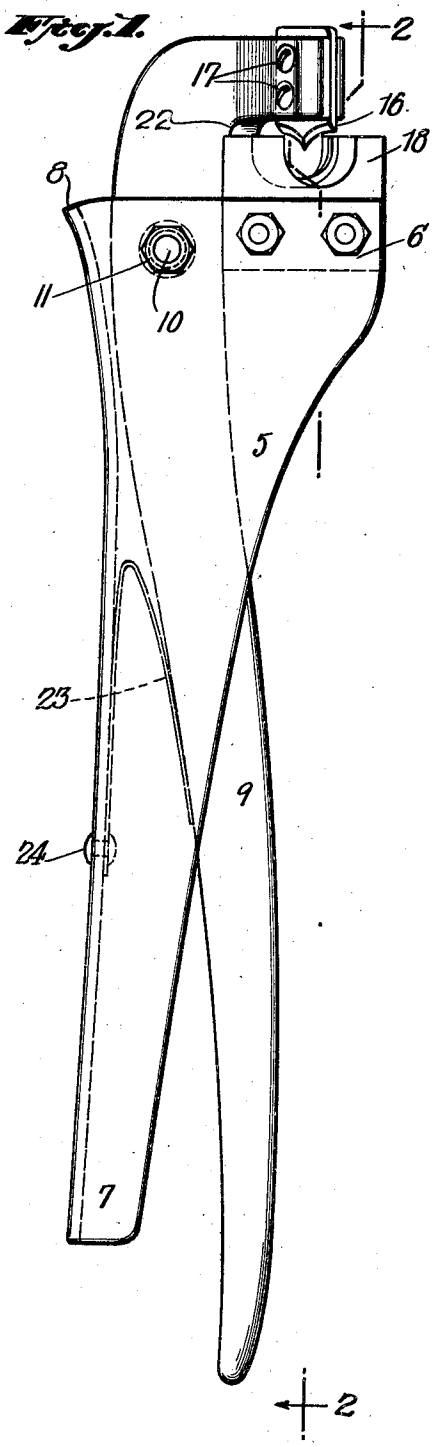


Fig. 2.

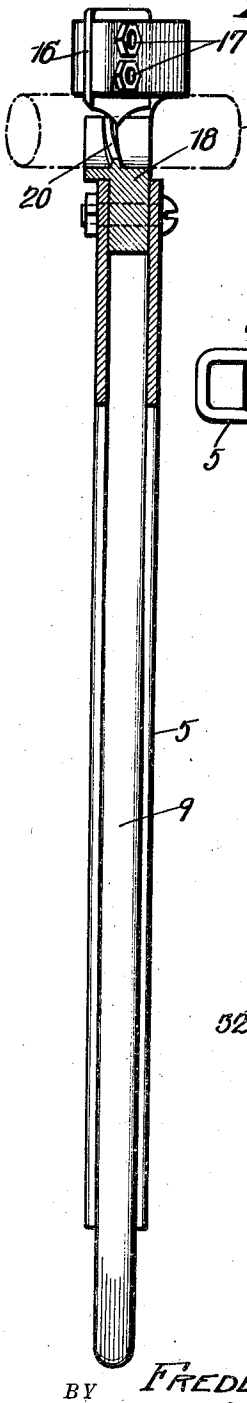


Fig. 3.

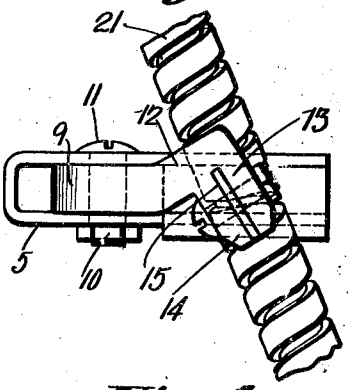


Fig. 4.

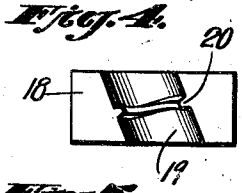
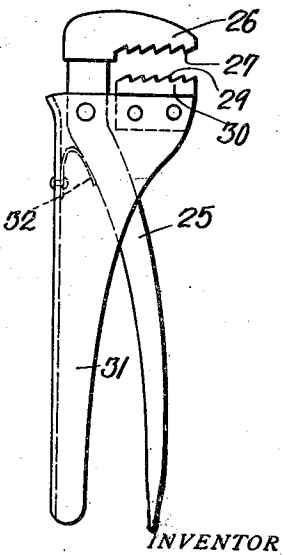


Fig. 5.



INVENTOR

FREDERICK KROSTA.

BY Irving L. McCathran

ATTORNEY

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REISSUED

UNITED STATES PATENT OFFICE

FREDERICK KROSTA, OF NEW YORK, N. Y.

TOOL

Application filed March 12, 1928. Serial No. 261,159.

This invention relates to cutting instruments and in particular to a tool on the order of a plier which is arranged to sever the strand of an armoured wire covering without injuring the wire.

A particular object of the invention is to provide a cutter, particularly adapted for the severing of one of the strands or convolutions of armoured cable, commonly known as BX and used to encase electric wires to prevent fire due to short-circuiting thereof.

It is well known in the electrical art that the cutting of the BX or armoured cable heretofore, has resulted in the cutting of the wires or piercing of the wire covering which is objectionable because it exposes the bare wire and provides a possibility for short circuiting when the wire has been placed in circuit.

A still further object of the invention is to provide a BX cutter in which a knife is positioned at substantially right angles to the convolution of the BX so that it will completely sever one of the convolutions and consequently permit the BX to be separated with a minimum of effort. Difficulty has been encountered heretofore in the cutting of the BX due to spiral winding thereof and a further object of my invention is to provide an anvil or bed upon which the BX is placed so that it will be held in the proper position relatively to the cutter so that the strand of the BX can be easily severed.

To enable others skilled in the art to fully comprehend the underlying features of my invention that they may embody the same in the various modifications in structure and relation contemplated, a drawing depicting a preferred form has been annexed as a part of this disclosure and in such drawing, similar reference characters denote corresponding parts throughout all the views, of which,

Figure 1 is a view in side elevation showing my improved cutter.

Figure 2 is a section taken on the line 2—2 of Figure 1 and illustrates how the anvil is provided with a concaved seat having a guide groove therein for the proper reception of the BX.

Figure 3 is a top plan view of the cutter, as illustrated in Figure 1, a piece of BX or armoured cable being shown in position ready for cutting.

Figure 4 is a top plan view of the anvil or seat showing the semi-circular receptacle formed therein for the holding of the BX and

Figure 5 is a modified view of a tool constructed after the same manner as my improved cutter, the same being particularly arranged for use as a wrench.

Referring to the drawing in detail, 5 indicates the holder which is made of heavy sheet metal or other suitable material and which is substantially U-shaped in cross section, the width of the holder decreasing from the top 6 thereof to the lower edge 7. The closed portion of the upper end of the holder is slightly flared as at 8 to permit free operation of the cutter arm 9, this cutter arm being pivotally supported as at 10 on a bolt 11 which passes through the side wall of the holder 5 and maintains therebetween in operable position, the cutter arm. The upper end of the cutter arm is bent as at 12 to overhang one side of the holder and is again bent at right angles as at 13 to said overhang to provide a slotted, cutter carrying end 14, the slot being indicated by the numeral 15 while the cutter itself is indicated by the numeral 16, the same being held in the end 14 through the medium of suitable screws 17, the upper end of the holder 5, at its open side is arranged to receive the supporting anvil 18. This anvil is provided in its upper face with an armoured cable receiving groove of semi-circular formation, the groove being indicated by the numeral 19 and being provided centrally with an upstanding ridge 20, the groove being disposed at an angle relatively to the anvil and the ridge 20 being arranged spirally so that a piece of armoured cable or BX 21 could fit therein in position so that the cutter 16 would be substantially in alignment and centrally thereof, that is, it is desired to cut one of the convolutions of

the BX or armoured cable and to have the knife enter it at its highest point. Therefore, it is evident that the knife will have to be disposed directly over the ridge 20 and will have to be central of the groove 19. It is quite evident that the ridge 20 will fit into one of the spiral grooves of the BX or armoured cable 21 and will be securely held in position so that the cutter 16 may pierce the shell thereof. In order that the movement of the cutter 16 may be limited, it will be noted that the upper end of the cutter arm 9 is provided with a slight offset portion 22 which is arranged to engage the anvil 18 and consequently limit the downward movement of the cutter 16 so that the same will just pierce the shell of the armoured cable and will not crush the wires nor break the protective coating formed thereon.

In order that the cutter arm may be held in position so that the cutter 16 is raised away from the anvil, I have provided between said cutter arm and the closed side of the holder 5, a leaf spring 23 which is secured through the medium of the rivets 24 to the holder, the free end thereof normally urging the cutter arm 9 to keep the cutter 16 in raised position relatively to the anvil.

It is quite evident, therefore, that I have provided a BX or armoured cable cutter which has few parts and one which permits the knife to be removed therefrom for sharpening and for adjustment. Also, due to the peculiar construction of the holder and the cutter arm, the maximum effort can be exerted by one gripping the lower end of the cutter arm and the holder because the fulcrum provided by the pivot pin 10 being near the point of work, will permit a greater leverage and consequently, more power.

It is also evident that I have provided in a tool of this character an anvil provided with a groove which will hold the BX in the proper position relatively to the cutter so that one of the convolutions thereof will be pierced without danger of crushing or piercing the wire covering.

It is evident also that my cutter construction may be arranged for use as a gripping wrench and to this end, as shown in Figure 5, I have employed a pivoted arm 25 of similar construction to the cutter arm 9 but which is arranged at its upper end to carry the jaw 26, the under side of which is provided with the serrations 27 which are arranged to cooperate with the serrations 29 formed on the fixed jaw 30 which is carried in the upper end of the holder 31. A suitable spring 32 cooperates with the holder and cutter arm to maintain the jaws 26 and 30 in their separated position.

Due to the construction also of this wrench, greater power may be exerted and also the necessity of adjustment of one of the jaws is eliminated.

It is evident, therefore, that I have provided a tool which is constructed of few parts, can be made up cheaply and can be used for a plurality of purposes.

The lower ends of the pivoted arms 9 and 25 may be sharpened to provide a screw driver end, if desired.

While I have illustrated and described my invention with some degree of particularity, I realize that in practice various alterations therein may be made. I therefore reserve the right and privilege of changing the form of the details of construction or otherwise altering the arrangement of the correlated parts without departing from the spirit of the invention or the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:—

A tool for cutting spirally wound armoured conduits comprising a holder, an anvil in the holder having a transverse groove disposed at an angle to the horizontal median line of the holder, a ridge formed in the groove and arranged to fit between the spiral turns of the conduit, an arm pivoted in the holder and having a slotted end overhanging the anvil, a piercing tool in the slot, the tool being arranged to cut one of the convolutions of the conduit at a right angle to said convolution, and an anvil engaging offset portion on the arm for limiting the piercing movement of said cutting tool.

In testimony whereof I affix my signature.

FREDERICK KROSTA. [L. S.]