Aug. 8, 1950 V. E. SAUTER 2,518,074

CABLE CUTTER

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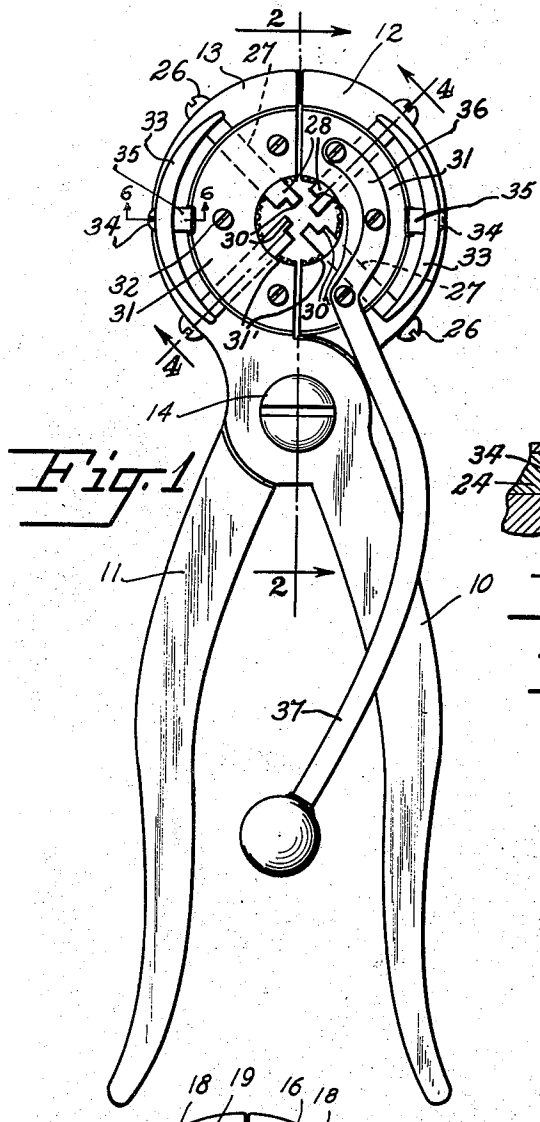


Fig. 1

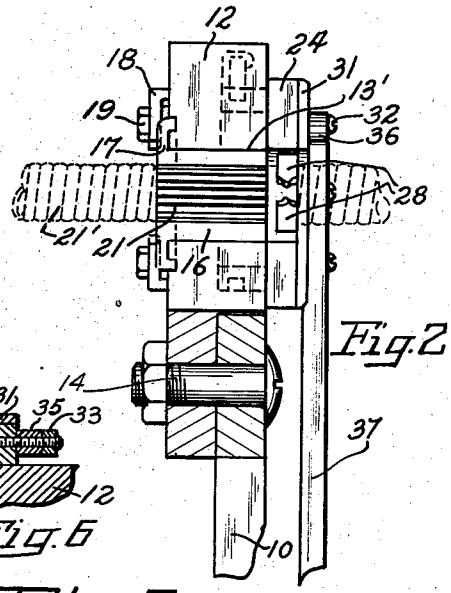


Fig. 2

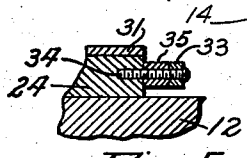


Fig. 6

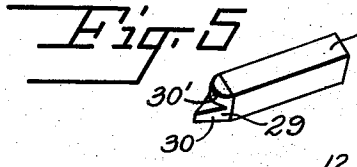


Fig. 5

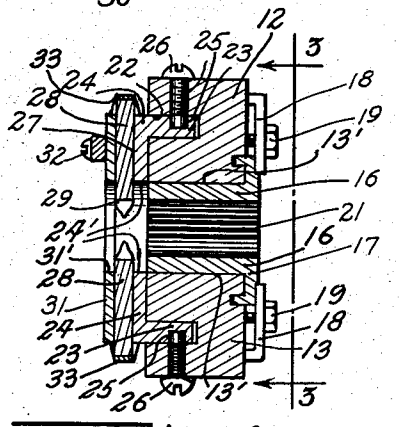


Fig. 4

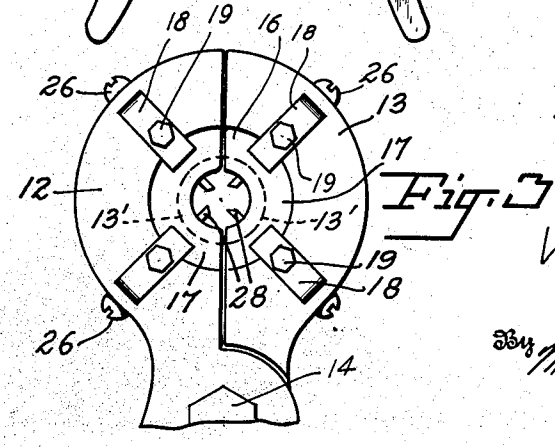


Fig. 3

Inventor

VIRGIL E. SAUTER

By McMorrow, Berman and Davidson

Attorneys

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CABLE CUTTER

Virgil E. Sauter, Schenectady, N. Y.

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3 Claims. (Cl. 30—91)

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My invention relates to improvements in cable cutters.

An important object of the invention is to provide a cable cutter adapted particularly for use with heavy armored cable, whereby the armor can be readily severed completely from the insulated wires contained therein, without cutting or damaging such insulation or wires.

A further object of the invention is to provide a device of the above mentioned class having means for tightly gripping the cable while the armor is being severed therefrom.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevation of a cable cutter embodying the invention,

Figure 2 is a vertical section taken on line 2—2 of Figure 1, part broken away,

Figure 3 is a fragmentary side elevation showing the opposite side of the device as shown in Figure 1,

Figure 4 is a sectional view taken on line 4—4 of Figure 1,

Figure 5 is an enlarged perspective view of a cutter removed, and,

Figure 6 is a fragmentary section taken on line 6—6 of Figure 1.

In the drawings, where for the purpose of illustration is shown a preferred embodiment of the invention, the numerals 10 and 11 designate the handles of a pair of crossed tongs or pliers, including opposed cable gripping jaws 12 and 13. The jaws 12 and 13 are provided in their inner opposed faces with semi-circular notches or recesses 13'. The crossed pliers are pivotally connected by means of a pin or bolt 14, as shown. Arranged within the recess 13' of each jaw is a semi-circular sleeve section or lining 16, having a radially extending semi-circular flange 17, engaging the outer side of its associated jaw. Each sleeve section is secured to the associated jaw by means of L-shaped clamping dogs 18 and screws 19, extending through openings in the dogs, and engaging in screw threaded openings in the jaws 12 and 13. The inner semi-circular surfaces of the sleeve sections 16 are provided with axially extending corrugations 21, as shown, to aid in gripping the armored cable 21; when it is arranged axially between the sleeve sections 16 of the opposed jaws.

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The inner side of each of the jaws 12 and 13 is provided with an annular recess 22, for slidably receiving an axially extending annular extension or flange 23 of a relatively thin flat semi-circular cutter carrying segment or plate 24. The flange 23 of each plate 24 is provided with an external annular groove 25, slidably receiving the inner ends of guide screw 26, secured to the jaws 12 and 13 and arranged radially therein. The guide screws 26 hold the plates 24 against axial movement, but permit them to turn freely about the axis of the jaws. The inner sides of the plates 24 slidably engage the adjacent inner sides of the jaws 12 and 13, as shown. Each plate 24 has a central semi-circular recess or notch 24', in axial alignment or registration with the adjacent recess 13', Figure 4. Each plate 24 is further provided in its outer side with a pair of angularly spaced radial rectangular grooves 27, slidably receiving elongated cable cutters 28, which are preferably rectangular in transverse cross section. The inner portions of the cutters 28 project radially inwardly of the corrugations 21, and the cutters are beveled at their inner ends as at 29, for forming sharp leading cutting points 30. The ends 29 of the cutters are further ground to form blunt stop elements or shoulders 30', radially inwardly of the cutting points 30, and the blunt shoulders 30' limit the radial penetration of the cutting points 30 into the cable 21.

The cutters 28 are maintained in the grooves 27 by semi-circular cover plates 31, secured to the outer sides of the plates 24 by screws 32, as shown. The cover plates 31 have central circularly curved recesses 31', in registration with the recesses 24', to allow the passage of the cable between the sleeve sections 16. Arcuate shaped stiff leaf springs 33 are suitably rigidly secured at their centers to the outer peripheries of the jaws 12 and 13, by means of screws 34 and spacers 35, or the like. The springs 33 are diametrically oppositely arranged, and their outer free ends engage the outer ends of the cutters 28 and bias the same radially inwardly.

The screws 32 carried by the jaw 12 also serve to rigidly secure an inner arcuate extension 36 to the outer face of the adjacent cover plate 31, and the extension 36 carries a curved generally longitudinal handle 37, spaced from the handles 10 and 11, and used for turning the cutter carrying plates 24 about the axis of the jaws 12 and 13.

In use, the handles 10 and 11 are spread apart to open the jaws 12 and 13. The armored cable 21 is introduced between the jaws and tightly clamped between the corrugated sleeve sections

16, when the handles 10 and 11 are pulled together. The handle 37 is turned for turning the plates 24, and the points 30 of cutters 28 gradually cut through the outer armor of the cable, under the influence of springs 33. The blunt shoulders 30' are so formed that when the points 30 have severed the cable armor, the shoulders 31' will engage the outer surface of the armor and further inward radial movement of the cutters 28 is prevented. Thus, the cable wires or their insulation will not be cut by the points 30. The handles 10 and 11 are of course held closed while the handle 37 is turned so that the cable cannot slip while being cut.

It is to be understood that the form of the invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of the invention or the scope of the subjoined claims.

What is claimed is:

1. A cutting tool for armored cable and the like, comprising a pair of crossed pivotally connected pliers including opposed gripping jaws to engage the cable for holding the same against turning, the jaws having annular recesses formed in their adjacent sides, cutter carrying plates rotatably mounted upon the sides of the jaws having the recesses and having parts slidably secured within the recesses to guide the plates as they rotate, the plates being provided with radial grooves, cable armor cutters slidably mounted within the radial grooves and extending radially inwardly of the jaws and having their inner ends beveled to form a cutting point and blunt shoulders to limit the depth to which the cutters may penetrate the cable, leaf springs secured to the plates radially outwardly of the cutters to bias the cutters radially inwardly, and a handle connected to one of the plates for rotating the plates and cutters.

2. A cutting tool for armored cable and the like, comprising a pair of crossed pivotally connected pliers including opposed gripping jaws having semi-circular recesses in their opposed faces and annular recesses in their inner sides, opposed corrugated sleeve sections mounted within the semi-circular recesses and constructed and arranged to receive the cable for holding it against turning, cutter carrying plates slidably mounted upon the inner sides of the jaws and including axially extending arcuate flanges engaging in the annular recesses and having grooves, screws mounted upon the jaws and extending into the last-named grooves to prevent axial movement of the plates while permitting them to be turned, radially arranged cutters mounted upon the plates and extending inwardly of the inner surfaces of the corrugated sleeve sections and constructed and arranged to engage the cable to sever the armor therefrom, and a handle connected to one of the plates for turning the plates and cutters.

3. A cutting tool for armored cable and the like, comprising a pair of crossed pivotally connected pliers including opposed gripping jaws to engage the cable for holding the same against turning, the jaws having annular recesses formed in their adjacent sides, cutter carrying plates rotatably mounted upon the sides of the jaws having the annular recesses and having parts slidably secured within said last named recesses to guide the plates as they rotate, the plates being provided in their outer sides with radial grooves, cable armor cutters slidably mounted within the radial grooves and extending radially inwardly of the jaws and having cutting points, leaf springs secured to the plates and engaging the cutters to bias them radially inwardly, cover plates secured to the outer sides of the cutter carrying plates to cover the radial grooves and cutters, and a handle secured to one cover plate for rotating the cutters with respect to the jaws.

VIRGIL E. SAUTER.

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The following references are of record in the file of this patent:

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