

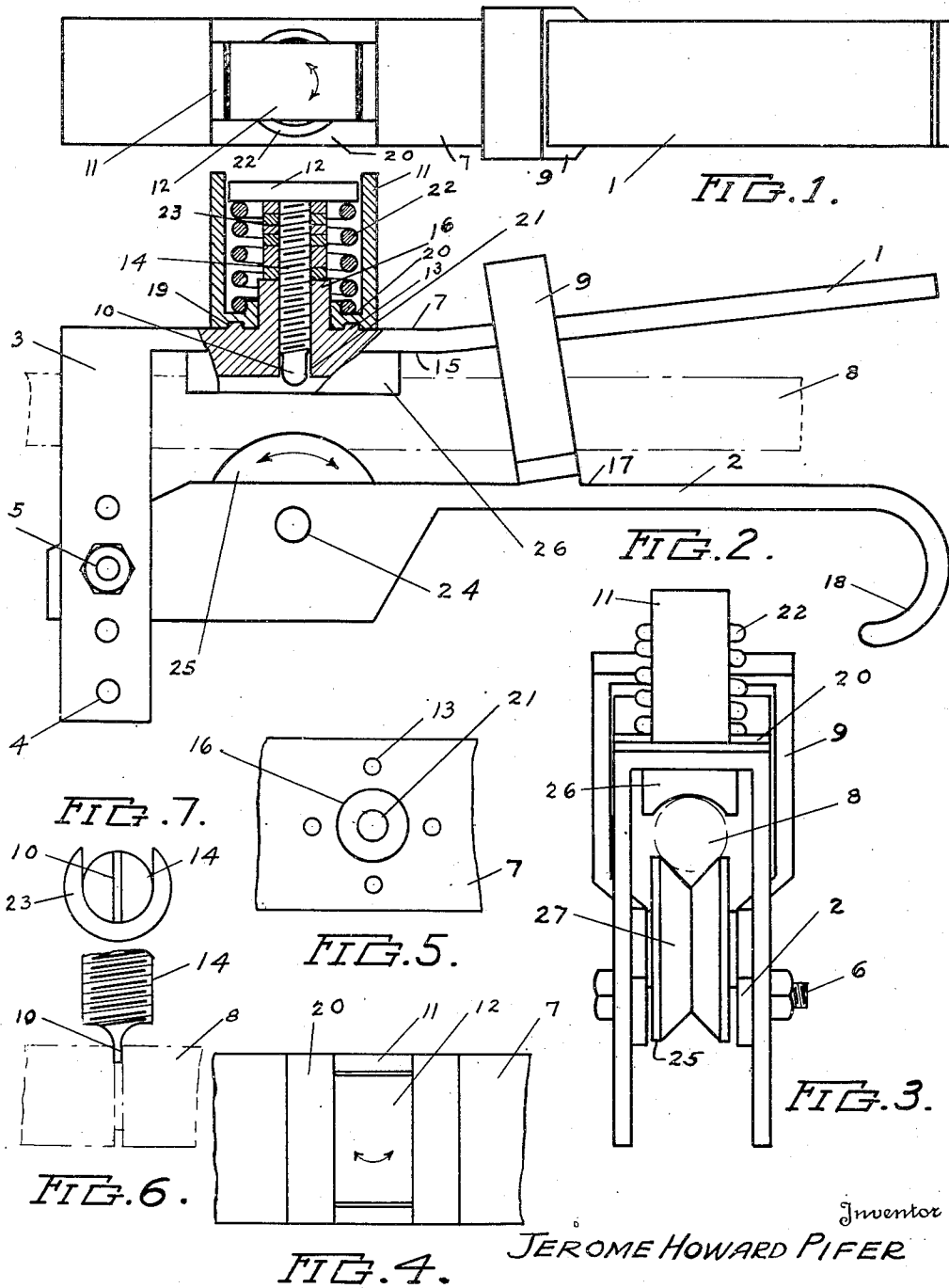
April 26, 1949.

J. H. PIFER

2,468,407

ELECTRICAL MARINE CABLE SLITTING DEVICE

Filed July 3, 1944



Inventor

JEROME HOWARD PIFER

By Howard J. Whelan.

Attorney

UNITED STATES PATENT OFFICE

2,468,407

ELECTRICAL MARINE CABLE SLITTING DEVICE

Jerome Howard Pifer, Pasadena, Md.

Application July 3, 1944, Serial No. 543,387

2 Claims. (Cl. 30—91)

1

This invention refers to wire cutters and more particularly to device for removing the outer insulated and armored coverings on electrical conductors. It has among its objects to provide a device that will be capable of cutting the insulated and armored coverings of wires transversely and longitudinally in a selective and controlled manner. Another object is to have the device arranged for facile and expeditious use and convenient for one-man operation. A further object is to provide a tool that will permit the stripping of wire and covered conductors of variable sizes and types and having arrangements for adjusting the device to meet such conditions. Still another object is to have the device of simple and light construction suitable for portable employment.

Other objects will become apparent as the invention is more fully set forth.

The usual methods employed in the field for removing the insulated and armored coverings of cables are somewhat crude, as they involve the use of knife tools that cut into the armor and insulation in a rather rough manner that frequently does irreparable damage to the wire or conductors themselves while at the same time taking considerable time and the services of plural operators. In this invention, the device in practical use is operated by a single mechanic who proceeds methodically with its knife to cut through each individual layer of covering whether it be rubber, paper, canvas or metal with a peripheral stroke, and then draws the knife longitudinally through each layer, to open it up ready for removal. The knife is adjustable so its depth of cut will be proportional to the thickness of the covering to be removed.

In order to illustrate the invention, drawings have been made of an example of the device to indicate one of the forms in which it may be constructed. In the drawings:

Figure 1 is a plan view of the electrical marine cable skinning device embodying the device,

Figure 2 is a side elevation of the device shown in Figure 1, with parts broken away to show the knife in position for longitudinally cutting the cable armor,

Figure 3 is a front end elevation of the device shown in Figure 1,

Figure 4 is a plan view of the knife rotating frame, positioned to transversely cut the cable armor,

Figure 5 is a plan view of the jaw portion showing the projecting studs,

Figure 6 is a front elevation of the cutting knife used with this device, and

2

Figure 7 is a bottom view of the knife and washer.

Similar reference characters refer to similar parts throughout the drawings.

The device consists primarily of a clamp, knife and manipulating handles. The clamp consists of two arms, an upper 1 and a lower 2 adjustably connected to each other. The upper arm is formed like an L with its short leg 3 perforated with a number of holes 4 arranged above each other. The lower arm has a single hole 5 adapted to register with the holes 4, one at a time, with a bolt 6 passing through both arms to hinge them together and allow them to form a jaw and swing towards each other like the arms of a conventional nut cracker. The upper arm 1 is bent at an angle from the jaw portion 7 with respect to the lower arm to keep the arms spread away from each other while they are being used on a cable 8. The lower arm 2 has an inverted U-shaped guard 9 mounted on it which when assembled encompasses the upper arm 1 and prevents it from opening excessively, as well as forming a guide therefor. This keeps the parts united together aligned and convenient to handle. A knife 10 serves to cut the coverings. The knife is held on a screw-threaded member 14 arranged to screw through the upper arm 1 at collar 16, to raise or lower the knife 10 to or away from the underside 15 of the arm 1. The guard 9 is disposed angularly on the lower arm upper surface 17, which is relatively flat throughout its length. The lower arm is formed with a hooked end 18 to enable the user to pull on it longitudinally when desirable, and also form a more convenient grip when closing and tightening the clamp on the cable. The screw threaded member 14 has a square headed top 12 mounted on it, with its edges so aligned that it indicates the angular position of the knife. A frame 11 is loosely mounted on the upper arm and is rectangular in form so as to form a lock around the square head 12 when set on the upper surface 7 of the upper arm 1, with the studs 13 projecting up from the latter into holes 19 arranged in the bottom plate 20 of the frame 11. These studs and holes hold the frame in positions 90 degrees apart. The knife 10 is supported on a screw threaded member 14 that screws into a threaded collar 16 in the upper arm 1. It passes freely through a central hole 21 in the bottom 20 of the frame 11. A coil spring 22 keeps a tension between the underside of the head 12 and the bottom plate 20. The frame has to be raised up off the studs to allow it to be turned. When the frame is turned,

3

it also turns the head of the member 14. After the head is turned to the proper position desired, the frame under the tension of the coil spring 22 falls back on to the studs and locks the member and head in that position. This keeps the knife immovably placed in the tool when set for use. Washers 23 of various thickness are preferably placed on the screw threaded member 14 to control the adjustment of cutting knife 10.

The jaw half of the lower arm 2 is enlarged and drilled to receive the shaft 24 of a concaved grooved pulley 25 adapted to straddle and hold the cable 8 laid on it to be cut. The upper arm 1 has a corresponding curved saddle-block 26 disposed to engage the upper peripheral portion of the cable. This saddle-block registers above the pulley so the cable will be held securely between them. The knife 10 projects through the saddle-block to contact the cable covering, and is adjustable on the screw thread member to suit the depth of cut in the covering to be slit. The adjustment afforded by the holes 4 enables the jaws to be increased or decreased in spacing to suit the size of the cable, without tightly gripping same.

The operation of the tool is as follows: The user lays the selected portion of the cable tangentially in the indented groove 27 of the pulley or roll 25, after the bolt 6 has been located in the selected hole 4 and hole 5 to suit its size. Then the upper and lower arms 1 and 2 are pressed together so the saddle-block 26 will exert a pressure on the upper periphery of the cable. The knife is then adjusted and directed to cut concentrically into the covering of the cable. The operator twists or then bodily rotates the tool concentrically about the cable, adjusting the knife from time to time when needed to make it cut deeper. When the first covering is concentrically cut through, the knife is loosened and turned longitudinally, with the cable set in the grooves of the saddle-block and pulley periphery as before. The knife is then adjusted to cut into the covering at the line of the cut, previously made and drawn towards the end of the cable to cut and open up the cylinder of covering left by the transverse cutting. This slit cylinder of covering is opened by the hands of the operator radially and removed from the cable. The second covering is then cut and removed in the same way. This is repeated until the coverings are all removed and bare cable is reached. The knife used on the member 14 may be integral therewith or separable therefrom to suit its particular use and conditions. This is accomplished in any conventional manner. The advantages derived through the use of this device are:

- (1) The tool is quickly assembled on the cable.
- (2) One operator is necessary for assembling and operating the tool on a cable.
- (3) It may be used on any type of conductor, electrical or otherwise, that has plural coverings.
- (4) It requires comparatively little effort to operate.
- (5) It does work accurately and without danger of damaging the coverings or conductor unnecessarily, because it is adjustable to suit the work, in several ways.

4

- (6) It takes very little room and has desirable features of portability.
- (7) It performs two or plural operations without removal from the cable being required in between each operation.
- (8) It does its work expeditiously.
- (9) Its cutting knife is arranged to be out of contact with the operator who might be endangered or injured thereby.
- (10) Its parts are readily accessible for repair or inspection.
- (11) It may be used on a large range of cable or conductor sizes.
- (12) It avoids an excessive waste of material that it cuts, by limiting the cutting definitely to the extent that is required.

While but one general form of the invention is shown in the drawings and described in the specifications, it is not desired to limit this application for patent to this particular form or in any other way otherwise than limited by the scope thereof, as it is appreciated that other forms of construction could be made that would use the same principles and come within the scope of the appended claims.

Having thus described the invention what is claimed is:

1. A cable skinner comprising in combination, a pair of arms operably disposed one above the other and pivotably connected so as to operate to and from each other, a saddle block on one of said arms conforming with the contour of the cable with which the skinner is associated, a roll on the other arm aligned with said block so as to hold the cable pressed between them when the arms are brought together, a knife, threaded means for adjustably mounting said knife on said saddle block whereby said knife may protrude beyond said saddle different amounts, a frame on the arm having said saddle block, cooperating means between said frame and the arm on which it is mounted for selectively positioning said frame on said last mentioned arm in either of two positions at right angles, and interlocking means between said frame and knife whereby the knife moves with the frame in either of its positions to permit cutting of the cable along a transverse path or a longitudinal path.

2. A cable skinner as set forth in claim 1, the interlocking means between said frame and said knife consisting of a square head connected with said knife and cooperating with the square inner walls of said frame.

JEROME HOWARD PIFER.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
1,866,095	Foley	July 5, 1932
2,300,087	Anello	Oct. 27, 1942
2,347,956	Lansing	May 2, 1944