Oct. 27, 1942. T. P. ANELLO 2,300,087

ELECTRIC MARINE CABLE STRIPPER

Filed Oct. 4, 1941

Fig. 1

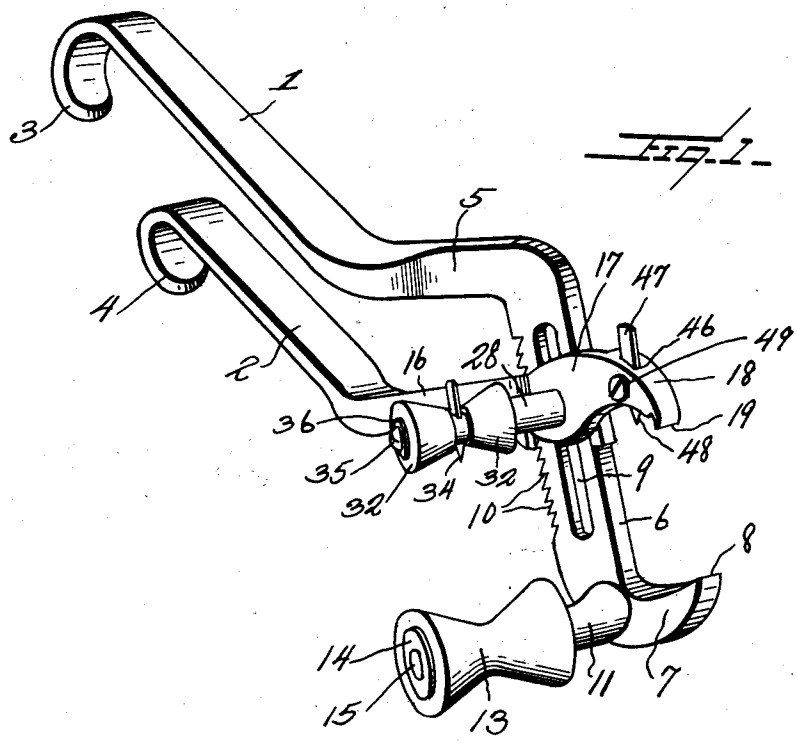



Fig. 2

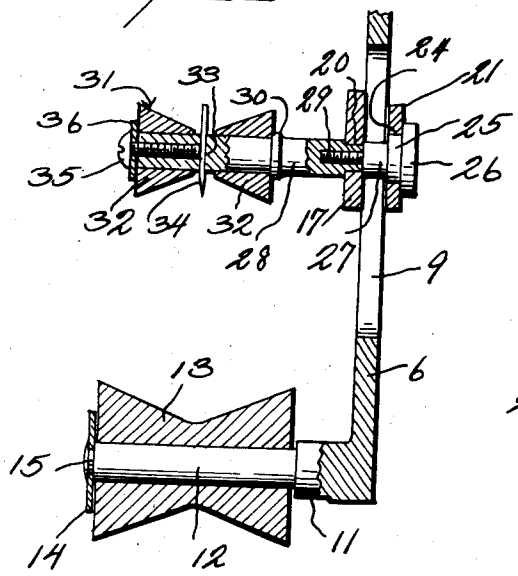



Fig. 3

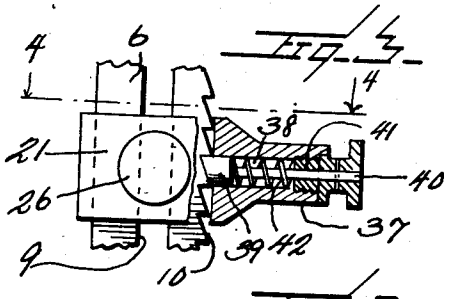
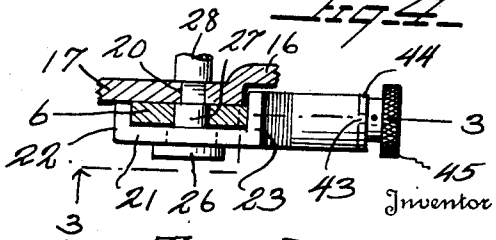



Fig. 4




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## ELECTRIC MARINE CABLE STRIPPER

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Application October 4, 1941, Serial No. 413,687

5 Claims. (Cl. 30—91)

This invention relates generally to tools for use by electricians and pertains particularly to a tool for stripping marine electric cables of the armor or protective sheath with which they are covered.

The present stripping tool is designed primarily for use in working upon marine electric cables and it has for its primary object to provide a tool which can be readily adjusted to the diameter of the cable and also to the thickness of the covering sheath which is to be cut and removed so that the cutting and removal of such sheath may be effected easily and with a minimum expenditure of effort.

Another object of the invention is to provide a plier type insulation or sheath cutting and stripping tool having a cutting knife and a novel means associated therewith for maintaining the knife centered on the cable while the tool is in use.

Another object of the invention is to provide a plier type insulation stripping tool which is designed to hold an insulated cable and to cut the insulation around the same and also to hold the cable in a centered position with respect to a pointed knife to facilitate drawing the knife lengthwise of the cable so that the insulation can be cut along a straight line and at a desired depth which will avoid damaging inner insulation coverings of the cable wires.

A further object of the invention is to provide a tool of the character stated which, when the two relatively movably parts are adjusted to the diameter of the cable, will be locked so as to maintain the cutting tool against reverse movement.

Another object of the invention is to provide a tool of the character stated which is designed to provide a pair of gripping jaws by means of which an edge of the covering sheath to be removed from the cable, can be conveniently grasped to be stripped off of the cable.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing, it being understood, however, that the invention is not to be considered as limited by the specific illustration or description but that such illustration and description constitute a preferred embodiment of the invention.

In the drawing:

Fig. 1 is a view in perspective of the plier type stripping tool of the character embodying the present invention.

Fig. 2 is a sectional view taken longitudinally of the longitudinally slotted arm in a plane extending axially of and passing through the guiding rollers, parts of the roller supporting shaft being in elevation.

Fig. 3 is a view partly in section and partly in elevation of the movable jaw securing pawl, the section being taken substantially on the line 3—3 of Fig. 4.

Fig. 4 is a sectional view taken substantially on the line 4—4 of Fig. 3.

Referring now more particularly to the drawing it will be seen that the present tool has two handles, one of which is indicated by the numeral 1 and the other by the numeral 2. The handle 1 at its free or rear end is turned to form the loop 3 and a similar loop, indicated by the numeral 4, is formed at the rear end of the handle 2. These loops form a stop means against which the hand can bear when pulling on the tool to prevent the hand from slipping off of the handles.

The top handle, which will be referred to as the fixed handle, merges at its forward end in the slightly obliquely directed shank 5 which extends upwardly or away from the top of the handle. At its forward end this shank merges into a relatively long arm portion 6 which is disposed substantially at right angles to the length of the shank and is directed downwardly or away from the under side of the handle and shank. This arm terminates in the forwardly and upwardly curving jaw 7 which has a relatively sharp gripping edge 8.

The arm 6 is relatively wide in the direction of the length of the handle of the tool as shown and it has formed therethrough the relatively long slot 9. The back edge of the arm is also provided with a number of ratchet teeth 10 through a length substantially equaling the length of the slot 9.

Upon that side of the arm 6 which would be to the right of the user of the tool there is formed at the end of the arm or adjacent the beginning of the curvature of the jaw 7, the laterally extending stud 11 which is formed integral with the axle shaft 12. This axle 12 has rotatably mounted thereon the centrally constricted double cone roller 13 which is secured in place in a suitable manner as, for example, by the use of a washer 14 mounted upon a reduced stud at the outer end of the axle 12 as indicated at 15, and maintained in position by swaging the end of the stud in the manner shown.

The handle 2, which will be referred to as the movable or shiftable handle, is integrally formed

with a shank portion 16 which extends slightly obliquely therefrom away from the top side of the handle, similarly to the shank 5. This shank at its forward end is integral with a relatively wide plate 17 which is drawn off at its forward end to provide the movable jaw 18 which terminates in a sharp gripping edge 19 which is in opposed relation with the edge 8 of the fixed jaw 7.

As is clearly shown these jaws also have curved opposed inner surfaces and between these curved surfaces the body of a cable is received when cutting around the cable through the insulation, in the manner hereinafter stated.

The plate 17 lies against and extends across the right hand side of the arm 6 and it has an aperture 20 formed therethrough which alines with the slot 9 of the arm.

For the purpose of adjustably maintaining the moveable jaw in position against the side of the arm 6, there is provided a sliding yoke plate 21 which positions against the side of the arm opposite from the plate 17 and which has at opposite edges the guide flanges 22 and 23 which engage across the two edges of the arm, the flange 23 being disposed across the ratchet teeth 10.

The yoke plate 21 has an aperture 24 in which is fitted the reduced portion 25 of a head 26 which forms an integral portion of one end of the stud 27 which extends through the slot 9 of the arm and alines with the aperture 20 in the plate 17.

Positioned co-axially with the stud 27 is a shaft 28 which is secured in a suitable manner to the end of the stud 27 so as to extend to the right from the plate 17 as shown in Figures 1 and 2. Any suitable means may be employed for securing the stud 27 and the shaft 28 in axial alinement but there is here shown a screw 29 forming an integral axial extension of the stud 27, which threads into a suitably formed bore in the adjacent end of the shaft 28.

The shaft 28 has a collar 30 formed thereabout to maintain in position thereon a centrally constricted roller, indicated generally by the numeral 31, which comprises two cone portions 32 mounted upon the shaft 28 with the smaller or apical ends in opposed relation.

The shaft 28 is provided, at a point to lie midway between the opposed ends of the cones 32, with a transverse passage 33 designed to receive a pointed knife 34, the point of which is directed toward the longitudinal center and the narrowest portion of the roller 13.

The outer end of the shaft 28 is provided with a suitable threaded bore to receive a binding screw 35, the inner end of which engages the knife 33 and secures it firmly in position. This screw also functions to hold in position a retaining washer 36 which keeps the outer cone 32 in position. The inner cone 32 is maintained in place by engagement against the collar 30 of the shaft 28.

In order to hold the movable plate 17 in position the yoke 21 has formed integrally with the flange 23, the guide post 37 through which is formed a bore or passage 38. Within this bore 38 there is slidably positioned a pawl 39 which has a stem 40 which extends outwardly away from the ratchet piece 10 which the pawl engages. Threaded in the outer end of the bore 38 is a retaining screw 41 through which the stem 40 passes and this screw maintains in position within the bore, the spring 42 which constantly urges the pawl toward the rack.

Upon the outer end of the post 37 there is formed a key 43 and this engages in a suitable notch in the flange portion 44 of a knurled head 45 in which the outer end of the stem 40 is secured. It will thus be seen that spring 42, in urging the pawl 39 inwardly, draws the head 45 against the outer end of the post so as to maintain the key in locking connection with the head and thus prevent the pawl from turning out of its operative position. It will of course be understood that the pawl is so positioned that it will slide over the ratchet piece 10 when the movable handle 2 and the plate 17 are forced toward the fixed jaw 7 but will engage a tooth of the rack and hold the plate 17 from outward movement away from the fixed jaw when the handles are grasped and the movable jaw is oscillated.

The movable jaw 18 is provided with a slot 46 which opens through the curved inner side or inner face of the jaw. This slot receives a knife 47 which has its cutting point 48 projecting beyond the curved inner face of the jaw toward the opposite or fixed jaw. This knife is maintained in fixed position by the set screw 49 which is threaded into a suitable opening in the movable jaw for contact with the side of the knife.

The present tool may be conveniently used for cutting the outer covering or sheath from electric marine cable of the basket weave type having a lead armor. In the use of the tool the first step is to release the pawl 39 by pulling it outwardly by means of the head 45 so as to allow the movable jaw to slip back or away from the fixed jaw, if necessary, to permit the cable to be introduced between the jaws. The pawl may then be reengaged with the teeth of the rack so that when the jaws are forced together they will be held in the position to which they are moved and in so forcing the jaws together the point of the cutting knife 47 will be forced into the cable covering. The tool is then turned around the cable while pressing the cutting blade in lightly so as to cut a ring around the cable through the cable shield.

After the circular cut has been made through the woven shield the cable is removed from between the jaws and is located between the rollers 13 and 31 and the jaws again moved toward one another until the point of the knife 34 engages the shield whereupon by grasping the handles of the tool the latter may be drawn lengthwise of the cable to cut the shield from the circular cut to the end of the cable. The points 8 and 19 of the jaws may then be used to grip the shield so as to strip it from the cable.

In removing the lead sheath from the cable it will be understood that the same procedure is followed as above described, it being understood, of course, that the knives will be adjusted so as to avoid cutting too deep into the lead sheath and damaging the wires of the cable.

In the foregoing it will be readily understood that the device herein described provides a handy and efficient tool for removing the woven shield and the lead sheath from marine electric cables without danger of damaging the cable wires.

What is claimed is:

1. A tool of the character stated comprising a pair of pivotally coupled jaw members, means facilitating the movement of one of said jaw members along a straight path relative to the other jaw member, an operating handle connected with each jaw member, means for locking said jaw members against separatory movement after the said one of the jaws has been moved

along said path towards the other member, a laterally extending shaft carried by each jaw member, said shafts having spaced parallel relation, a roller supported upon each shaft, and a knife disposed adjacent the transverse center of one roller and directed toward the other roller.

2. A tool as set forth in claim 1 in which said rollers are in the form of double cones having the apical ends opposed and the said knife is located at the transverse center of one roller.

3. A tool of the character stated comprising a handle having an angularly extending arm at one end, said arm terminating in a reversely bent portion forming a fixed jaw, said arm having a longitudinally extending slot therethrough, a series of rack teeth carried by the arm in a line extending lengthwise thereof, a second handle, a plate forming an integral continuation of one end of the handle and disposed adjacent one side of the arm across said slot, said plate being extended to form a jaw, said jaws having curved opposed faces, a pivot stud secured to said plate and extending through the arm slot to provide a sliding and pivotal connection with the arm, a spring pressed jawl carried by said plate for sliding engagement with the rack teeth, said pawl functioning to secure the movable jaw against movement away from the fixed jaw, and a knife carried by one of said jaws and having a cutting edge extending from the curved face thereof.

4. In a tool as set forth in claim 3, a shaft carried by each jaw and extending laterally therefrom, a roller supported upon each shaft, said rollers being centrally constricted, and a knife extending transversely through the constricted portion of one roller and through the supporting shaft and having a pointed end directed toward the constricted portion of the other roller.

5. A tool of the character stated comprising a handle having a shank at one end, an arm forming an integral continuation of the shank and extending substantially at right angles to the length of the handle, said arm having a slot extending lengthwise thereof, a second handle having a substantially parallel relation with the first handle and having an integral shank at one end, a plate forming an integral part of said shank and disposed across the slotted portion of said arm, said arm having an edge provided with a series of rack teeth, means extending through said slot and engaging said plate for slidably and pivotally coupling the plate to the arm, a shaft secured to and extending laterally from said plate, a pair of cones rotatably supported on said shaft and having their apical ends in opposed relation, a knife extending transversely through said shaft between said cones and having a pointed cutting end, a shaft carried by said arm adjacent the free end thereof and extending laterally in parallel relation with the first shaft, and a roller carried by the second shaft and having a constricted central portion, said knife point being directed toward the constricted portion of the said roller.

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