

May 9, 1944.

R. E. WALKER

2,348,429

KNIFE

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Fig. 1

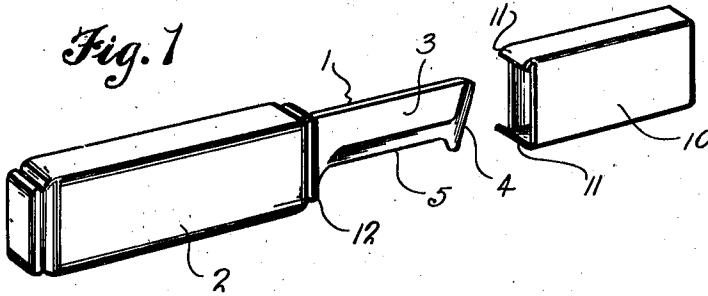


Fig. 2

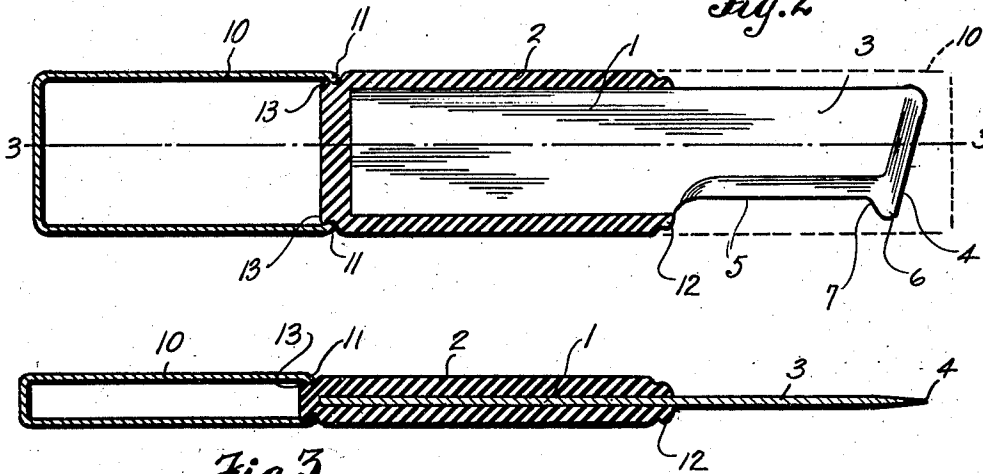


Fig. 3

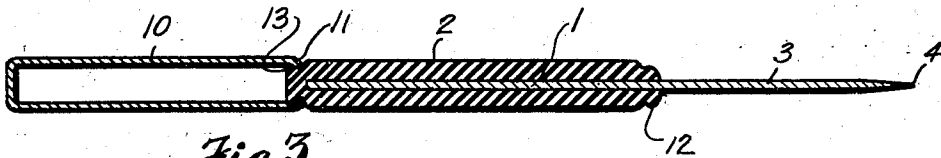


Fig. 4

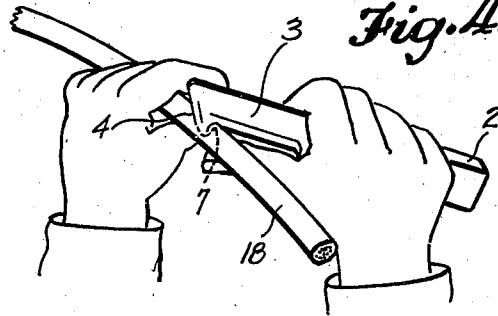


Fig. 5

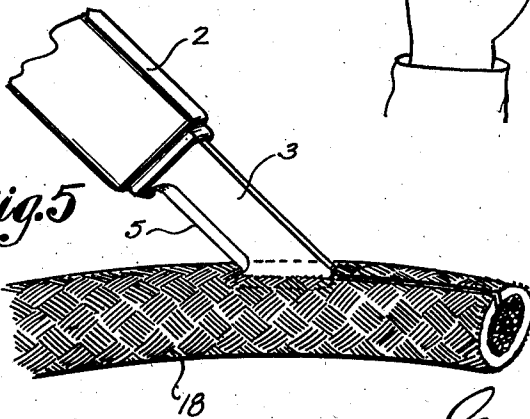


Fig. 6

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KNIFE

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1 Claim. (Cl. 30—151)

This invention relates to improvements in knives, and it has for its principal object to provide a novel type of knife, having a blade that is especially designed and shaped for the easy scoring, cutting and removal of the metal armor or sheathing, as well as the cutting of the inner layer of fireproof insulation of electric conductor cables, such as used in marine installations and in large power plants, and for doing other work incident to or in connection with the cutting, splicing or connecting of wires of such fire proof conductors.

More specifically stated, the objects of the present invention reside in the provision of a knife of the kind and for the purposes above stated, having a blade that is formed across its outer end with a sharpened edge, somewhat angularly inclined relative to the longitudinal direction of the blade, and formed with a sharpened lower longitudinal edge, terminating in a sharpened hook-like edge portion forming a seat; the inclined end edge being especially useful for the longitudinal splitting and for the shaving or skinning off of insulation along a wire, and the latter edge portion being especially useful for cutting the insulation circumferentially of a wire preparatory to the splitting and skinning operation.

Also, it is an object of the invention to provide the blade with a rounded point especially effective for the breaking of armor wires after they have been scored.

It is also an object of this invention to provide a knife of the above kind that has an insulated handle portion for protection of the user against shock when working on wires that have connection with a source of electricity.

Still further objects of the present invention reside in details of construction of the knife blade, in the relationship of its cutting edges, in its ball point and handle, and in the provision of a removably applicable blade-protective sheath or sleeve.

In accomplishing the above mentioned as well as other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawing, wherein—

Fig. 1 is a perspective view of a knife embodied by the present invention, showing the blade protecting sheath as withdrawn from about the blade.

Fig. 2 is a side view of the same, wherein the handle portion is shown in longitudinal section for purpose of better understanding, and the

sheath is applied to the handle as an extension thereof.

Fig. 3 is a sectional view on the line 3—3 in Fig. 2.

Fig. 4 is a perspective view, illustrating the use of the knife in scoring the armor for removal.

Fig. 5 is a perspective view, illustrating the use of the knife for longitudinally splitting the insulation of the cable.

Fig. 6 is a view showing the present type of blade embodied in a "pocket knife" handle.

Referring more in detail to the drawing—

In its present preferred form of construction, the knife comprises a blade body 1, of a suitable metal, for example a good grade of carbon tool steel. For ordinary use, this body would be approximately five and one-fourth inches long, one inch wide, and one-eighth inch thick. One end portion of the body, approximately three inches long, is encased in a handle portion 2, of insulating material, which may be any suitable plastic, rubber, wood, or other material that is non-conductive to electricity and otherwise suitable. The other end portion of the body constitutes the blade proper, and this is designated in its entirety by reference numeral 3. The handle would preferably be shaped to best fit the hand in use.

The blade 3 is formed across its outer end with a straight, sharpened edge 4, and this edge is at an acute angle of about 30° to the longitudinal or top edge of the blade body. The lower edge of the blade 3 is straight and is sharpened, as at 5, and this terminates, at its junction with the sharpened edge 4, in a downwardly directed round end projection 6 having a sharpened, concaved circularly curved seat 7 merging into the edge 5.

To protect the blade edges against damage when the device is not in use, I have provided a metal sheath, cap or sleeve 10, adapted to be applied over the blade, and having inturned edges 11 at its open end adapted to be snapped over shoulders 12 on the blade end of the handle forming portion 3. When this protective sheath is not in use as a protection for the blade, it may, if so desired, likewise be applied to shouldered end portions 13 at the other end of the handle portion.

This knife is especially designed for work on conductors that are armored. That is, they are encased in a woven metal sheath as has been indicated at 20 in Fig. 5. The sheath forming wires in modern ship building is an aluminum

alloy. In previous times, it was of light steel. Within the sheath is a hard fireproof insulating layer 21 and within this are the individually insulated conductor wires 22.

In using the knife to remove the metal armor or sheathing from a certain length of the cable, it is the usual procedure to first score the sheathing directly around the cable. This is done by holding the cable and knife as shown in Fig. 4. In this operation, the cable is seated in the sharpened seat 7 for easy and accurate scoring. After this scoring operation, the ball end 6 of the blade is used to break the wire strands or mesh of the armor at the score lines. Then a longitudinal cut, or line of scoring is made in that section of sheathing to be removed, and it is then broken or cut and opened up for easy removal. Then the insulation 21 may be cut lengthwise of the part from which the armor has been removed and the enclosed conductor wires drawn out; it being understood that a plurality of pairs of wires, each insulated, may be enclosed within the outer band of insulation of the cable. The length of insulation may be cut and removed from the cable. Longitudinal cutting is facilitated by using the knife as in Fig. 5.

It is also anticipated that a knife blade, with cutting edges in this relationship, may be mounted in the usual "pocket knife" handle, such a

blade being designated by numeral 20 in Fig. 6, and the handle being designated at 21.

Such knives may be made at a relatively small cost, and by their use, the work of removing insulation can be accurately and quickly accomplished. The size of such knives would be determined by the particular use, and may vary to some extent.

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

An insulation cutting and skinning knife of the character described comprising a blade body equipped with a handle at its inner end and having a sharpened longitudinal edge portion extending from the handle to its outer end, and having a straight sharpened edge across the end of the blade body inclined at an obtuse angle relative to the sharpened longitudinal edge, and there being an extension from the blade at the junction of the two sharpened edges; said extension having a rounded sharpened edge which merges directly with the sharpened edge at the end of the blade and merges into the sharpened longitudinal edge in a sharpened concave seat adapted to receive a cable thereagainst to facilitate the circumferential cutting of the insulation thereon.

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