United States Patent [19]

Horrocks

[11] **3,831,274**

[45] **Aug. 27, 1974**

[54] **JACKET STRIPPER**

[75] Inventor: **Raymond G. Horrocks,** Parkview, Ohio

[73] Assignee: **The Scott & Fetzer Company,** Cleveland, Ohio

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[52] **U.S. Cl.** **30/90.4,** 30/294, 30/314

[51] **Int. Cl.** **B21f 13/00**

[58] **Field of Search** 30/90.4, 286, 294, 90.1, 30/289, 314, 317

[56] **References Cited**

UNITED STATES PATENTS

1,268,997	6/1918	Pruett	30/294
1,642,625	9/1927	Norton	30/286 UX
2,098,123	11/1937	Wood	30/90.4
2,398,979	4/1946	Vaughan	30/90.4
2,636,245	4/1953	Stout	30/294
2,691,822	10/1954	Vaughan	30/90.4
3,162,945	12/1964	Stabs	30/90.4
3,230,620	1/1966	Embleton	30/294
3,365,798	1/1968	Cunningham	30/294
3,486,228	12/1969	James	30/294

FOREIGN PATENTS OR APPLICATIONS

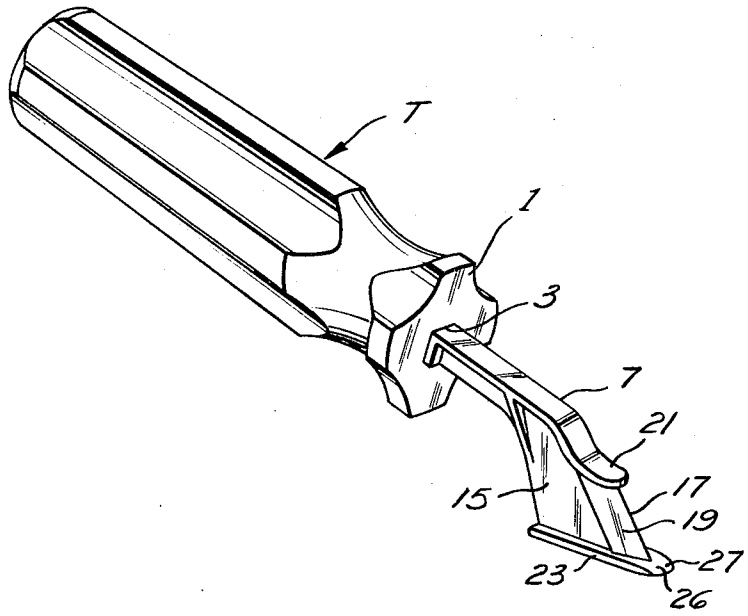
343,987	2/1960	Switzerland	30/90.4

Primary Examiner—Al Lawrence Smith
Assistant Examiner—J. T. Zatarga
Attorney, Agent, or Firm—Watts, Hoffmann, Fisher & Heinke Co.

[57] **ABSTRACT**

A tool for use in stripping an insulating jacket from an electrically conductive cable includes a plastic handle and a cast high speed steel stripper. The stripper includes a shank embedded in the handle, a blade having a cutting edge, a foot and a guard.

1 Claim, 5 Drawing Figures



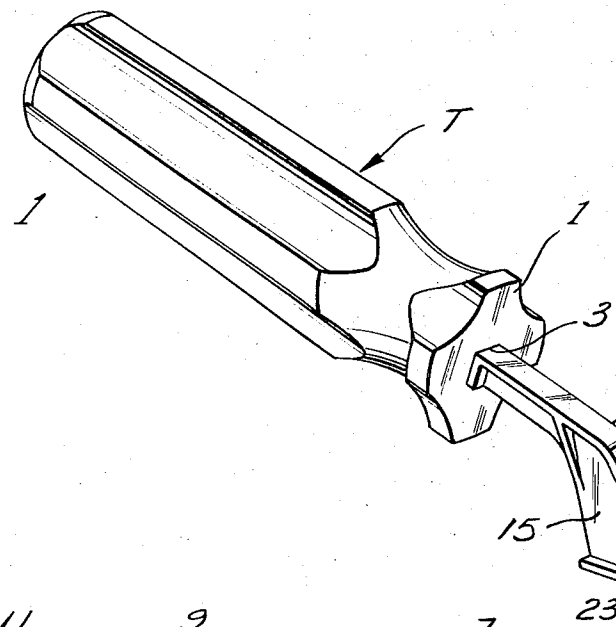


Fig. 1

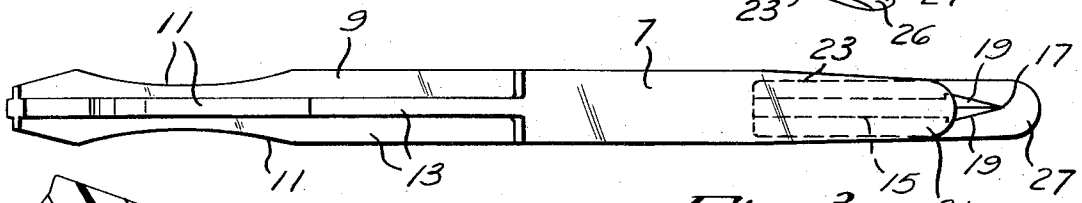


Fig. 3

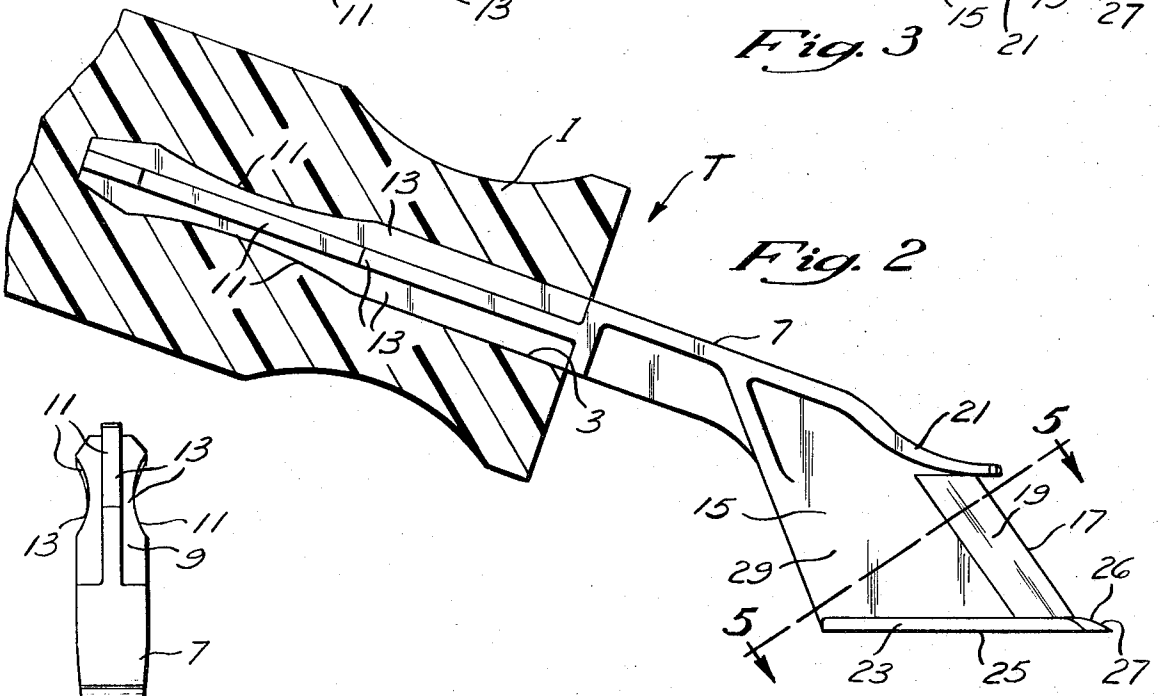


Fig. 2

Fig. 4

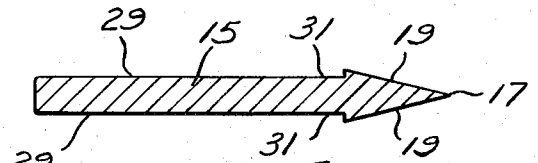


Fig. 5

JACKET STRIPPER

BACKGROUND OF THE INVENTION

The prior art most nearly pertinent to this invention and known to me is U.S. Pat. No. 2,398,979 to Vaughan, No. 3,230,620 to Embelton and No. 3,486,228 to James.

While numerous attempts have been made heretofore to provide hand tools for slitting various materials ranging from tapes to roofing and including the insulation covering on cables, none of the proposed tools with which I am familiar has been entirely satisfactory particularly as regards simplicity and permanence of structure, cost of construction and safety and certainty of operation. For example, the tool of U.S. Pat. No. 2,398,979 is costly to make because of the machine work required to provide the parts and the hand work necessary to assemble them and, furthermore, is dangerous to workmen due to the exposed cutting edges. The tool of U.S. Pat. No. 3,230,620 is costly to make and assemble and is subject to clogging. The tool of U.S. Pat. No. 3,486,228 is quite unsuited to slitting cable insulation and is unnecessarily costly because of the size and arrangement of parts and is dangerous to use because of the exposed cutting edges.

SUMMARY OF THE INVENTION

The present invention provides a hand tool for slitting cable jackets composed of insulating, semiconducting or mechanical rubber material, or any other suitable material which can be slit by a hand tool. The tool can be made inexpensively for the handle may be made by injection molding plastic material and the slitter may be made by casting high speed tool steel and by the investment, or lost wax process. The slitter and handle may be readily assembled by forcing the shank of the slitter into a hole in the handle or, preferably, by heating the end of the shank and then pushing the shank into the hole thereby causing the plastic material thereof to soften and fill the interstices in the shank. The slitter has a double bevel cutting edge which may be made sharp by grinding. The sides of the blade are recessed to minimize the frictional contanct therewith of the material being slitted. The slitter includes a narrow foot along the bottom edge of the blade having a rounded leading end, a top surface which slopes slightly upwardly and rearwardly to the cutting edge and a plane bottom surface projecting a short distance on each side of the blade, for example, approximately equal to the thickness of the blade.

BRIEF DESCRIPTION OF THE DRAWINGS

The present invention will be better understood by those skilled in the art by reference to the accompanying drawings in which:

FIG. 1 is a perspective view of a preferred form of the present invention;

FIG. 2 is a side elvational view partly in section of the tool of FIG. 1;

FIGS. 3 and 4 are, respectively, a top plan view and an end elevation view of the slitter of FIG. 2; and

FIG. 5 is a fragmentary sectional view taken on line 5—5 of FIG. 2.

The tool T of FIG. 1 consists of handle 1 which is preferably composed of plastic material, for example, cellulose acetate. Handle 1 may be made by injection molding and is provided with a longitudinal axial opening 3 for the shank of the slitter 7.

The slitter 7 is preferably composed of high speed tool steel and may be made by casting, as by the investment or lost wax method.

The slitter 7 consists of a shank 9, preferably cruciform in cross section, and with the edges 11 of the ribs 13 thereof being of varying widths to form uneven surfaces and to insure that the handle and slitter will remain in assembled relation. The handle and slitter may be readily assembled simply by inserting the shank 9 in the longitudinal opening 3 in the handle 1, by driving force when the opening is not large enough to admit the shank freely, or by heating the end of the shank of the slitter to a dull red color and then pushing the shank into the hole in the handle. Such heating will cause the plastic material to flow into the interstices of the shank and to shrink and tightly grip it when cold.

The portion of the slitter 7 which projects from handle 1 is provided with a blade 15 having a leading cutting edge 17 formed by double beveled surfaces 19. A portion 21 of the shank projects beyond the adjacent end of the cutting edge to serve as a guard against injury of the user by accidental contact with the cutting edge 17.

The edge of the blade 15 opposite the shank is provided with a narrow foot 23 having a plane bottom surface 25 and a rounded end 27 projecting beyond the adjacent end of the cutting edge 17. This foot is approximately three times as wide as the blade is thick, i.e., the foot projects approximately as far on each side of the blade as the thickness of the blade. The upper surface 26 of the leading end 27 of the foot 23 slopes upwardly at a small angle, for example, about 20 to a point close to the adjacent end of the cutting edge 17. The function of this upward slope is to elevate slightly the jacket on the cable and direct it toward the cutting edge.

The side surfaces 29 of the blade rearwardly from the beveled surfaces 19 are recessed on each side as is better shown at 31 in FIG. 5 for the purpose of minimizing the friction of the material being slit with the sides of the blade.

The plane surface 25 of the narrow foot 23 makes a narrow plain area of contact with the cable within the jacket regardless of the diameter of the cable. As a result the tool may be used with cables of a wide range of diameters without making one or two line contacts with the cable and thereby possibly damaging the cable.

The manner of use of a tool embodying the present invention will be readily understood by those skilled in the art but may be briefly described as follows: The end 27 of foot 23 of the tool is inserted between a cable and the insulating jacket which is around the cable and which is to be slitted. The tool is moved longitudinally of the cable causing the sloping surface 26 of the foot to elevate slightly the jacket as the tool is moved forwardly and direct it against the cutting edge 17 which slits the jacket as the tool is moved forwardly. The beveled edges 19 direct the jacket away from the recessed side surfaces 31 of the blade without the creation of any substantial friction.

Having thus described this invention in such full, clear, concise and exact terms as to enable any person skilled in the art to which it pertains to make and use the same, and having set forth the best mode contem-

plated of carrying out this invention, I state that the subject matter which I regard as being my invention is particularly pointed out and distinctly claimed in what is claimed, it being understood that equivalents or modifications of, or substitutions for, parts of the invention may be made without departing from the scope of the invention as set forth in what is claimed.

I claim

1. A tool for slitting an insulating jacket on an electrically conductive cable comprising a handle composed of plastic material and a slitter composed of cast high speed tool steel and having a shank fixedly embedded in the handle, the slitter having a blade projecting from the free end of the shank and having a double beveled,

downwardly and forwardly inclined cutting edge and side surfaces recessed rearwardly of said beveled surfaces, said slitter including a guard projecting forwardly above the upper end of the cutting edge and a foot at the lower edge of the blade, said foot having a plane bottom surface, a rounded leading end projecting just beyond the cutting edge and an upper surface sloping upwardly and rearwardly to the bottom end of the cutting edge at an angle of about 20° to the bottom surface of the foot, said fott projecting laterally beyond each side of the blade a distance approximately equal to the thickness of the blade.

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