Aug. 8, 1961 J. F. FUNCIK 2,995,052

WIRE STRIPPER AND CUTTER

Filed Sept. 17, 1958

Fig.1

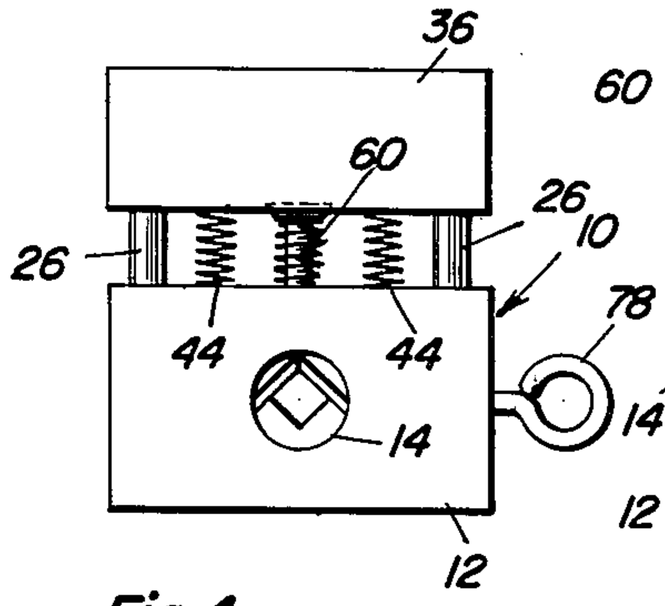


Fig.3

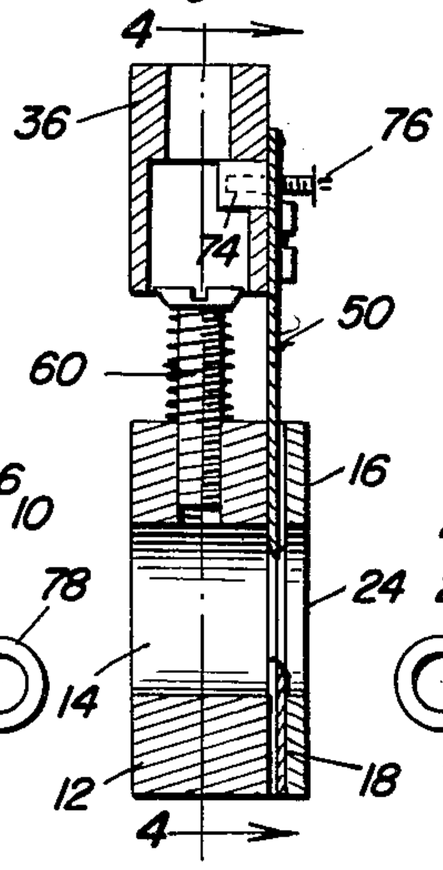


Fig.2

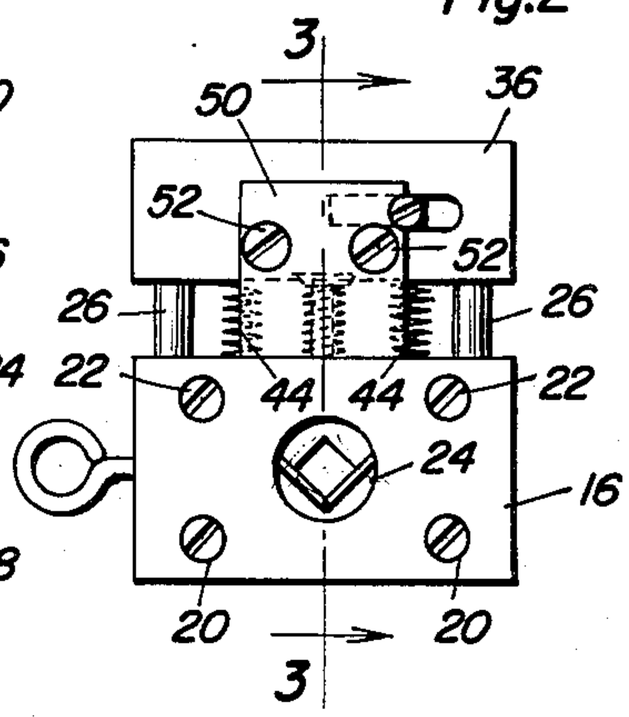


Fig.4

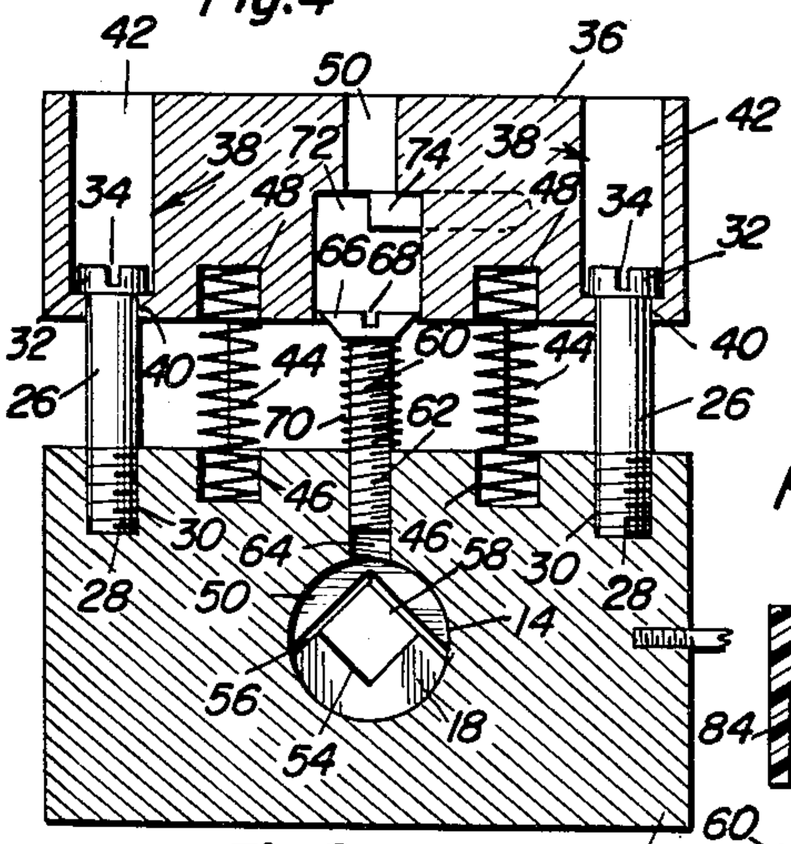


Fig.5

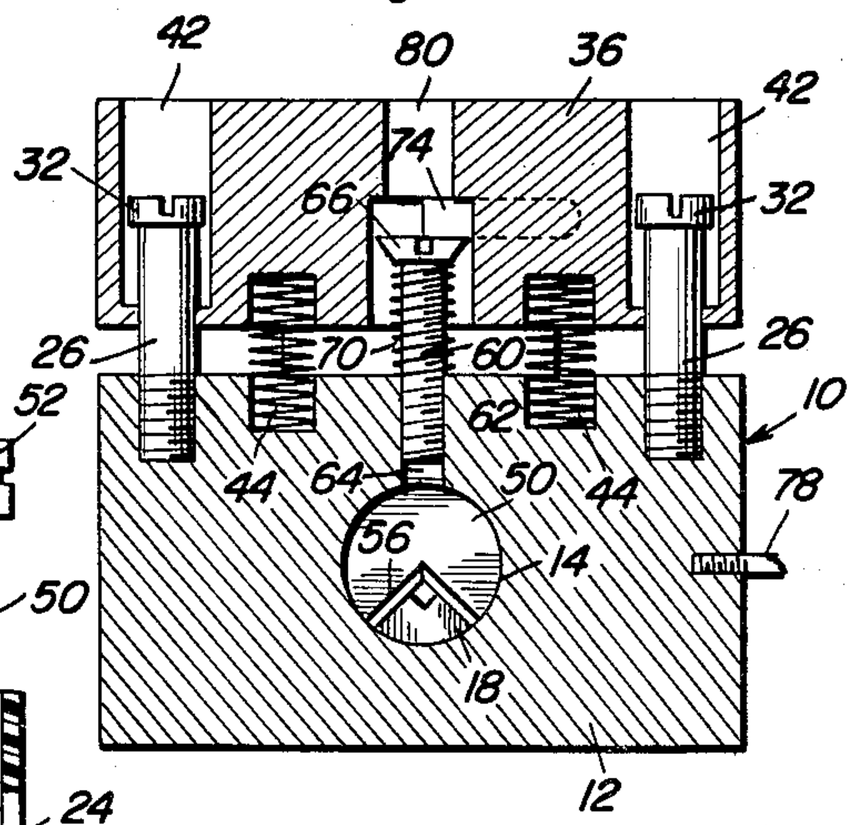


Fig.6

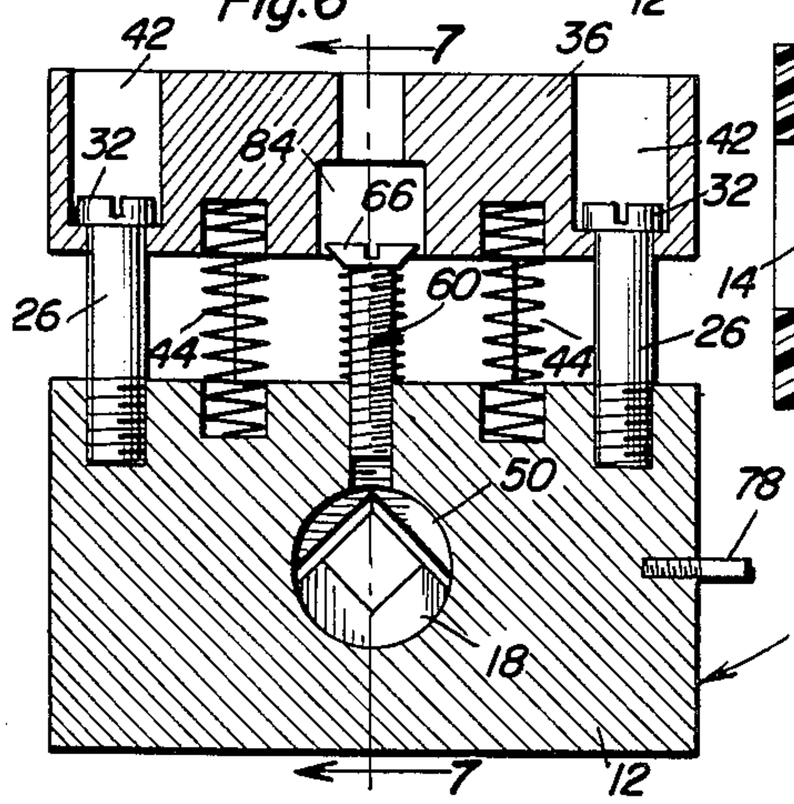
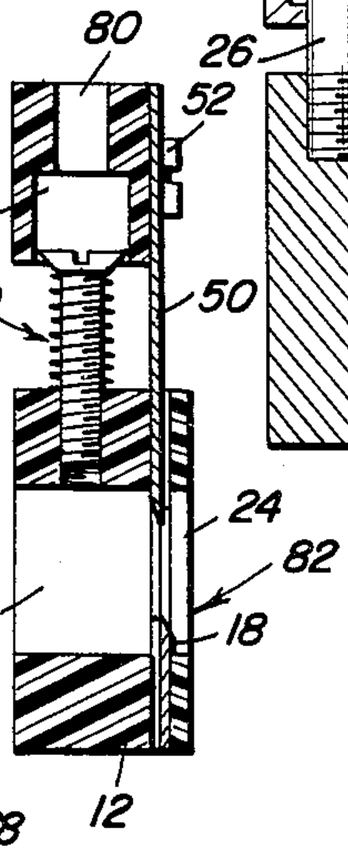


Fig.7



Jack F. Funcik

INVENTOR.

BY Clarence A. O'Brien and Harvey B. Jacobson

Attorneys

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WIRE STRIPPER AND CUTTER

Jack F. Funcik, 2521 Harvey Ave., Berwyn, Ill.

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This invention relates in general to new and useful improvements in electrician and technician tools, and more specifically to an improved wire cutter stripper.

During an electrician's daily routine, he must constantly cut wire to length and strip insulation from the ends of wires in order to make the necessary connections. While in the past there have been devised numerous types of wire cutters and strippers, the efficiency of these tools has been very questionable and the tools have been of sizes which prohibit their convenient handling.

It is therefore the primary object of this invention to provide an improved wire stripper and cutter which may be conveniently held in one's hand and which is so constructed whereby it may be adjusted for the particular size of wire to be stripped so that the insulation may be readily stripped from the wire and at the same assuring that the wire will in no way be damaged.

Another object of this invention is to provide an improved wire cutter and stripper, the wire cutter and stripper being extremely small and of a size to be held in one's hand whereby it may be easily manipulated in the use thereof and, when not being used, may be readily suspended from an electrician's belt or other part of his equipment.

Another object of this invention is to provide an improved wire stripper, the wire stripper including a fixed blade and a relatively movable blade, the two blades having cutting edges which are of a V-shaped outline and which are disposed in opposed overlapping relation whereby as the blades are moved together about the wire, the insulation of the wire will be substantially cut and when the wire is withdrawn from the tool, the insulation will be cleanly stripped therefrom.

Another object of the invention is to provide an improved wire cutter and stripper, the improved wire cutter and stripper being provided with an adjustable stop whereby it may be adjusted for stripping insulation from wires of various diameters and being provided with a movable stop element which cooperates with the stop thereof to permit the blades thereof to move into complete overlapping relation whereby the tool may be readily converted from a wire stripper for a particular diameter wire to a cutter for the same wire.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation shown and described, and accordingly reference is had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a front elevational view of the combination wire cutter and stripper which is the subject of this invention and shows generally the outline thereof;

FIGURE 2 is a rear elevational view of the combination wire cutter and stripper of FIGURE 1;

FIGURE 3 is an enlarged vertical sectional view taken substantially upon the plane indicated by the section line 3—3 of FIGURE 2 and shows the specific details of the components of the wire cutter and stripper;

FIGURE 4 is an enlarged longitudinal sectional view taken substantially upon the plane indicated by the section line 4—4 of FIGURE 3;

FIGURE 5 is an enlarged longitudinal sectional view similar to FIGURE 4 and shows the blade of the combination wire cutter and stripper in a wire stripping relation;

FIGURE 6 is a vertical sectional view similar to FIGURE 4, but through a modified form of tool, the tool being limited in use to a wire stripper; and

FIGURE 7 is a transverse vertical sectional view taken through the tool of FIGURE 6 substantially upon the plane indicated by the section line 7—7 of FIGURE 6.

Referring now to the drawings in detail, it will be seen that there is illustrated in FIGURES 1 through 5 inclusive, a combination wire cutter and stripper which is referred to in general by the reference numeral 10. The combination wire cutter and stripper 10 includes a base 12 which is generally rectangular in outline and in cross-section and which has extending transversely therethrough a wire receiving opening 14. The opening 14 is of a relatively large diameter and is much greater in diameter than the diameter of the wire for which the combination wire cutter and stripper 10 is intended.

Secured to the rear surface of the base 12 by means of a cover plate 16 is a first blade 18 which is fixed. The cover plate 16 is secured to the rear surface of the base 12 by means of a lower set of fasteners 20 which also pass through the blade 18, and an upper set of fasteners 22. The cover plate 16 has an opening 24 therethrough of the same size as the opening 14 and is aligned therewith.

Extending upwardly from the upper surface of the base 12 in generally spaced parallel relation is a pair of guides 26. The guides 26 are in the form of elongated fasteners having threaded lower portions 28 threadedly engaged in internally threaded bores 30 formed in the base 12. The fasteners 26 also have enlarged heads 32 which are provided with screw driver kerfs 34.

The wire cutter and stripper also includes an operator 36. The operator 36 is smaller than the base 12 in frontal outline, but has the same general cross-section as the base 12. Formed in the operator 36 are bores 38 which are aligned with the fasteners 26. The bores 38 include lower portions 40 of a size to receive the shanks of the fasteners 26 and upper portions 42 of a size to receive the heads 32.

The operator 36 is urged away from the base 12 by means of a pair of coil springs 44. The coil springs 44 are symmetrically located on opposite sides of the transverse center of the base 12 and have their lower ends seated in bores 46 in the upper part of the base 12. The upper ends of the springs 44 are seated in bores 48 formed in the lower part of the operator 36. Movement of the operator 36 away from the base 12 is restricted by engagement of the operator 36 with the heads 32 and the fasteners 26.

Secured to the rear surface of the operator 36 is a second blade 50. The second blade 50 is retained in place by means of fasteners 52 and overlaps the blade 18. As is best shown in FIGURE 3, the blades 50 and 18 are slightly offset. The cover plate 16 functions as a guide for the blades 50.

The blade 18, as is best shown in FIGURE 4, has an upwardly opening V-shaped cutting edge 54. The blade 50, as is also shown in FIGURE 4, has a downwardly opening V-shaped cutting edge 56 which is aligned with

the cutting edge **54**. Normally the cutting edges **54** and **56** are spaced apart a distance to form a very large diamond shaped opening **58** through which a wire to be cut or stripped may be passed.

In order to facilitate the use of the combined wire cutter and stripper **10**, there are provided stop means which includes a fastener which is referred to in general by the reference numeral **60**. The fastener **60** includes an externally threaded shank **62** which has the lower portion thereof threadedly engaged in an internally threaded bore **64** opening through the upper part of the base **12**. The fastener **60** also includes an enlarged head **66** having a screw driver kerf **68** formed therein to facilitate the adjustment thereof. Carried by the shank **62** between the head **66** and the upper surface of the base **12** is a coil spring **70** which serves to retain the fastener **60** in an adjusted position.

Formed in the lower part of the operator **36** is an enlarged bore **72** of a size to receive the head **68**. Slidably carried by the operator **36** in a manner best shown in FIGURES 2 and 3 is a stop element **74**. The stop element **74** is retained in place by the blade **50** and is provided with a projecting part **76** which may be gripped to slide the stop element **74** longitudinally of the operator **36**. Thus the stop element **74** may be selectively aligned with the head **66**.

In order that the combination wire cutter and stripper **10** may be readily carried, there is provided an eye bolt **78**. The eye bolt **78** may be used for the purpose of anchoring the combination wire cutter and stripper **10** to a chain or other type of fastener to facilitate the carrying of the wire stripper and cutter **10**.

In the use of the combination wire cutter and stripper **10**, when it is desired to strip insulation from a wire, the stop element **74** is positioned as is illustrated in FIGURE 4. Thus when the operator **36** is moved down toward the base **12**, the head **66** of the fastener **60** will engage the upper end of the bore **72** and limit downward movement of the blade **50** with respect to the blade **18**. By adjusting the position of the head **66**, the blades **18** and **50** may be adjusted to tightly engage the wire core while cutting the insulation therefrom. This provides for a clean stripping job without damaging the wire core. On the other hand, if it is desired to cut off the same wire, the stop element **74** is merely moved to an out-of-the-way position at which time the blades **50** and **18** are free to move in completely overlying relation so as to cut through the wire. Adjustment of the fastener **60** is obtained through a reduced extension **80** of the bore **72** which opens through the upper surface of the operator **36**.

Referring now to FIGURES 6 and 7 in particular, it will be seen that there is illustrated a wire stripper which is referred to in general by the reference numeral **82**. The wire stripper **82** is identical to the combination wire cutter and stripper **10** with the exception of the fact that the stop element **74** is omitted. In the omission of the stop element **74**, the projection part **76** will also be omitted and the guideway in which the stop element **74** is mounted will also be eliminated. Furthermore, in lieu of the bore **72**, the operator **36** will be provided with a bore **84** which is of a lesser length. The other alternative would be to provide a longer fastener **60**. Thus the head **66** of the fastener **60** always engages the upper end of the bore **84** to limit downward movement of the operator **36** relative to the base **12** at a point whereby the blades **50** and **18** are not in complete overlapping relation. It is, of course, possible to adjust the fastener **60** so that the blades **18** and **50** would be in complete overlapping relation so that the tool **82** could also function as a wire cutter. However, this would require the adjustment of the wire stripper **82** each time it were desired to either cut or strip a wire. This, of course, would not be feasible for practical purposes.

Inasmuch as the wire stripper **82** differs from the combination wire cutter and stripper **10** only in that the stop element **74** and its component parts have been eliminated, together with their function to permit the cutting of a wire, as well as the stripping thereof, with a single tool, it is believed that further description of the wire stripper **82** is not necessary.

From the foregoing, it will readily be apparent that there has been devised a very simple tool which may be used for the cutting or stripping of a wire, which tool is extremely small and may be readily held in one's hand and at the same time is efficient in its operation. Because of the extreme simplicity of the tool, which is the subject of this invention, it may be manufactured at a relatively low cost so as to be economically feasible. On the other hand, because of the particular construction of the tool, effective operation thereof is assured.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A tool for stripping insulation from wire, said tool comprising a pair of bodies, means slidingly interconnecting said bodies for movement toward and away from each other, a cutter blade carried by each of said bodies having cutting edges thereon disposed to cooperate with each other in cutting relation, one of said bodies having an opening formed therethrough extending laterally of the relative movement of said bodies, a cover plate secured to one side of said one body having an opening formed therethrough aligned with the opening in said one body, one of said blades secured to said other body extending toward and overlying portions of said one body with its cutting edges extending transversely of said opening, said cover plate securing said other blade in fixed relation to said one body between said one body and said cover plate, said cover plate and said body slidably guiding opposite sides of said one blade moving therebetween toward said other blade, means resiliently urging said bodies away from each other whereby these portions of said cutting edges will separate defining an opening therebetween, first stop means carried by said one of said bodies and engageable with said other body to limit the movement of the latter toward said one body, a second stop means carried by said other body, means mounting said second stop means for movement in alignment with said first stop means.

2. The combination of claim 1 wherein said first stop means comprises an extensible stop member.

3. The combination of claim 1 wherein said second stop means comprises a stop element slidingly disposed in said other body.

4. The combination of claim 1 wherein said cutting edges are substantially concave and in opposed relation to each other.

5. The combination of claim 1 including means limiting the movement of said bodies away from each other.

6. A tool for stripping insulation from wire, said tool comprising a pair of bodies, means slidably interconnecting said bodies for movement toward and away from each other, a cutter blade carried by each of said bodies having cutting edges thereon disposed to cooperate with each other in cutting relation, one of said bodies having an opening formed therethrough extending laterally of the relative movement of said bodies, a cover plate secured to one side of said one body having an opening formed therethrough aligned with the opening in said one body, one of said blades secured to said other body extending toward and overlying portions of said one body with its cutting edges extending transversely of said opening, said cover plate securing said other blade in

fixed relation to said one body between said one body and said cover plate, said cover plate and said body slidably guiding opposite sides of said one blade moving therebetween toward said other blade, means resiliently urging said bodies away from each other whereby portions of said cutting edges will separate defining an opening therebetween, first stop means carried by one of said bodies and engageable with the other body to limit the movement of the latter toward said one body.

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