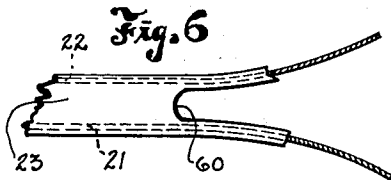
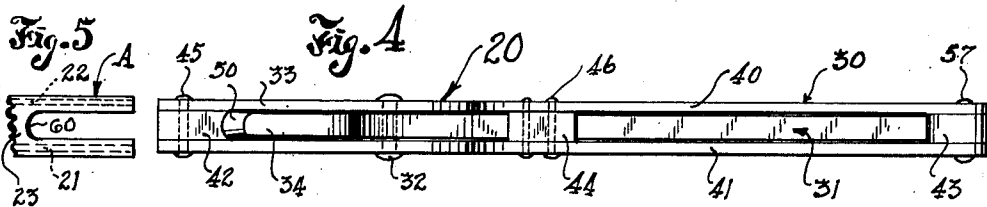
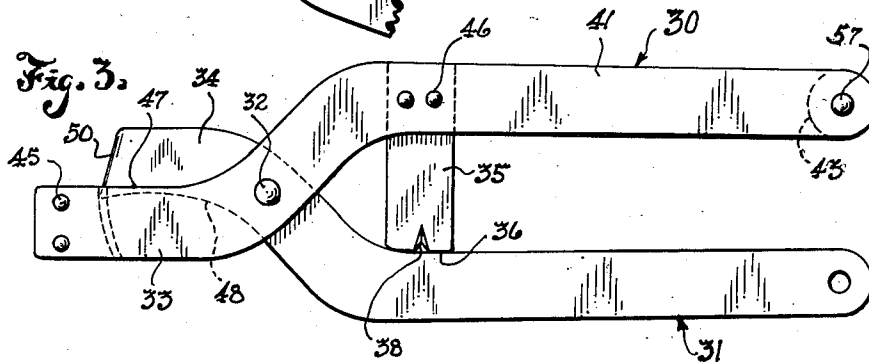
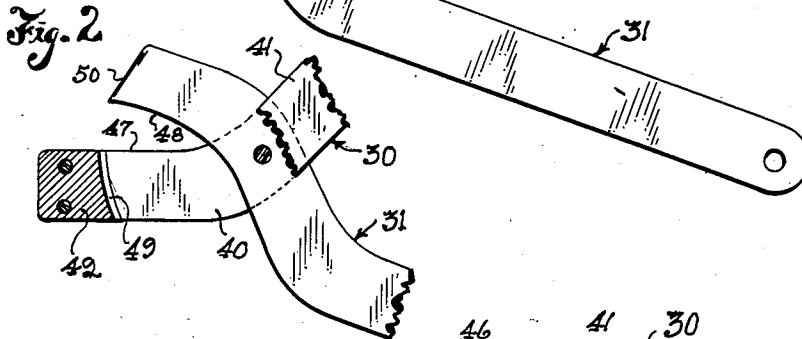
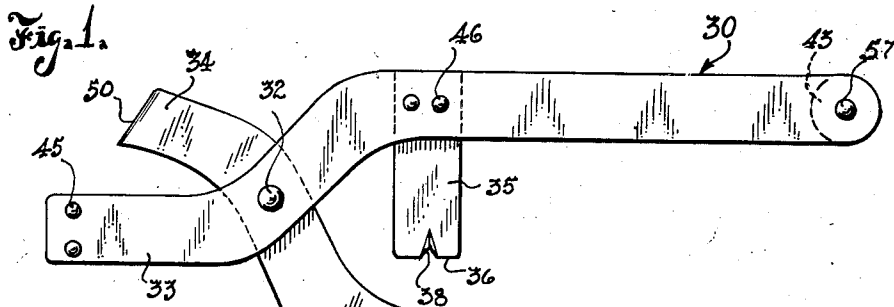


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WIRE CLIPPER AND STRIPPER
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WIRE CLIPPER AND STRIPPER

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1 Claim. (Cl. 30—229)

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This invention relates, in general, to wire cutters adapted for advantageous employment in the conditioning and stripping of ends of electrical transmission wire and is particularly concerned with a wire cutter and conditioner for twin lead transmission wire presently being employed as antenna lead in wire for television and FM radio receivers.

The conventional twin lead transmission wire presently being employed on antenna arrangements for television sets has presented new problems for the efficient and advantageous conditioning of the ends of such twin lead wires so that they may be conveniently connected to conventional terminal posts. The prior art wire cutters and strippers could not be advantageously employed for the purpose contemplated by the subject device since conventional tools of this character are employed for merely direct cutting and stripping of single wires while the present twin lead wire is designed so that the two wires are separated and are parallel in a single plane and are held in this separated position, for example, by a polyethylene, or the like, composition to provide proper insulation to the wires.

It is recognized that in the prior art numerous attempts have been made to provide a universal wire cutter and stripper incorporating the features of the subject device and efforts have been made to overcome the various deficiencies found in such prior art structures, but to the best of the applicant's knowledge the prior art structures have had only limited success, and have been accorded only limited commercial recognition. It is believed that this fact results from apparent deficiencies of the prior art structures particularly with respect to their non-adaptability for universal application to twin lead transmission wire and their expensive construction which so greatly increased the cost as to seriously handicap sales acceptance.

The present improvements in wire cutters, particularly characterized as having features advantageously applicable to the conditioning and stripping of twin lead transmission wire in a manner contemplated by this invention, are directed to simplify their construction and their mode of operation. Moreover, the present device seeks to employ conventional parts wherever necessary and expedient, thereby to effect a substantial reduction in cost over prevailing types of wire cutters of this general class.

Accordingly, an object and accomplishment of the invention is to provide a wire cutter designed and adapted to condition twin lead trans-

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mission wire including the removal of excess insulation normally disposed between the wires thereby to separate the wires and yet provide these wires with sufficient insulation, and in addition, providing a stripper for removing a predetermined desired amount of the insulation normally disposed on the separated wires, thereby exposing a predetermined amount of the wire for advantageous connection to terminals, the contemplated wire cutter being also adapted to cut the wire.

A further object and accomplishment of the invention is to provide a wire cutter particularly designed and adapted for advantageous employment in conditioning the ends of twin lead transmission wire, as aforesaid, and which shall have a novel and compact arrangement of parts wherein said parts can be readily assembled and serviced.

The invention seeks, as a further object and accomplishment, to provide a wire cutter as contemplated herein and characterized by an arrangement of parts to more advantageously and satisfactorily perform the function required of it and adapted to provide a compact unit which will successfully combine the factors of structural simplicity and durability, and yet be economical to manufacture.

An important object and accomplishment of the invention is to provide a wire cutter particularly and advantageously applicable for employment in conjunction with twin lead transmission wire, said wire cutter being particularly characterized in its simple but sturdy construction and in its convenient fool-proof and safe operation.

Another particular object and accomplishment of the invention is to provide a wire cutter as contemplated herein by co-relating and especially designing the various elements thereof, thereby there shall be cooperation between said improved elements as will best serve the purpose of providing an efficient wire cutter and conditioner for twin lead transmission wire and capable of being manufactured at low cost and yet giving the maximum of service in use.

Additional objects, features and advantages of the invention disclosed herein will be apparent to persons skilled in the art after the construction and operation are understood from the within description.

It is preferred to accomplish the various objects of the invention and to practice the same in substantially the manner as hereinafter more

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fully described and as more particularly pointed out in the appended claim.

With the above and other incidental objects in view, the invention has other marked improvements and superiorities which radically distinguish it from presently known structures, these improvements in the invention residing in the novel construction and the cooperating function of the parts thereof, the combination of parts and the arrangement thereof, as illustrated in the drawing and which will be more fully described hereinafter and particularly pointed out in the appended claims.

In the accompanying drawing on which there is shown preferred embodiments of the invention,

Fig. 1 is a side elevational view of a wire cutter and stripper embodying the features of the present invention, this view illustrating the open position of the jaws of the cutter;

Fig. 2 is a fragmentary elevational view of the jaws of the cutter with parts thereof shown in section to more clearly illustrate the construction thereof;

Fig. 3 is a side elevational view of the wire cutter and stripper depicted in Fig. 1 and illustrating the relative disposition of the parts when the jaws are in their closed position;

Fig. 4 is a top plan view of the wire cutter and stripper depicted in Fig. 3;

Fig. 5 is an elevational view depicting end portions of the conventional twin lead transmission wire and illustrating the cut or bite taken by the wire cutter contemplated herein; and

Fig. 6 is an elevational view of the twin lead transmission wire showing the end portions of the wire exposed as a result of the operation of the stripper portion of the wire cutter contemplated herein.

The drawing is to be understood as being more or less of a schematic character for the purpose of illustrating or disclosing typical or preferred forms of the improvements contemplated herein and in the drawing like reference characters identify the same parts in the several views.

As one possible example of advantageous employment of the contemplated wire cutter and stripper, reference is made to the drawing, particularly Figs. 4, 5 and 6, wherein there is illustrated the especially designed wire cutter and stripper assembly with which the invention is particularly concerned and designated in its entirety by the numeral 20 as being illustrated in its operation with conventional 300 ohm twin lead transmission wire designated in its entirety by the letter A.

The illustrated twin lead transmission wire A may comprise two wires 21, 22 held in a parallel position and separated a predetermined distance by means of suitable insulation 23 which may be of a polyethylene, or the like, composition. When it is sought to connect the end portions of the wire to terminals it is necessary to remove the central portions of the insulation 23 as shown in Fig. 5, thereby having two individual wires. Thereafter, it may be desirable to remove a portion of the remaining insulation to expose the wires as illustrated in Fig. 6 for the purpose of making connections with terminals.

Particular attention is directed to the cut or bite, taken by the contemplated wire cutter and stripper 20, this particular shape and design providing numerous advantages which will be hereinafter more fully described in the operation of the device.

Suffice it to say, since the invention is not par-

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ticularly concerned with the precise construction of the illustrated twin lead transmission wire, it will not be further described in detail, and it is deemed sufficient for all intentions and purposes herein contained to show only portions thereof adjacent to and cooperating with the wire cutter and stripper 20 contemplated herein. It is to be understood that details of construction of such twin lead transmission wire may be modified to suit particular conditions or to satisfy the engineering genius of various competitive manufacturers, and we do not wish to be limited to the precise construction of these elements as set forth, except where such construction particularly relates to or is concerned with the invention contemplated herein.

Having thus described, by way of example, a possible adaptation of the wire cutter and stripper 20 as contemplated herein and having described the general environment surrounding the adaptation, the specific construction and cooperating functions of the parts of said wire cutter and stripper assembly with which the invention is particularly concerned, will now be described in detail.

In the exemplary embodiment of the invention depicted in Figs. 1, 2, 3 and 4, the wire cutter and stripper assembly 20 with which the present invention is particularly concerned comprises, in general, two handles 30 and 31 pivotally interconnected by means of a pivot pin 32 and each handle respectively having bent end portions 33 and 34 terminating to define jaws adapted for wire cutting operations, said handle 30 being provided with a stop 35 having end portions 36 adapted to engage portions of the handle 31 to restrict movement of the handle 31 during operation of the device, the end portions 36 of the stop 35 being provided with a wire stripper blade 38 operable when the jaws are in their closed position as shown in Fig. 3.

According to the construction of the present invention the handle 31 is formed of a single piece of a suitable metal to define the shape as shown while the handle 30 is formed of two identical spaced metal pieces 40 and 41 which have operatively disposed therebetween portions of the handle 31 as shown. The side pieces 40 and 41 of the handle 30 are held in their spaced relationship as shown in Fig. 4 by means of spacers 42, 43 and portions 44 of the stop 35. Suitable rivets as at 45, 46 and 47 effectively hold the respective spacers and the side pieces 40 and 41 in their respective operative position.

Particular attention should be directed to Fig. 2 wherein there is illustrated the specific construction of the jaws of the contemplated wire cutter. It can be seen that the respective cutting edges are 47 and 48. Moreover, the spacer 42 is provided with an arcuate surface 49 complementary to the rounded nose 50 of the jaw 34 and having as its center point the axis of the pivot pin 32.

Attention is invited to the arcuate shape of the cutting edges 48 which has particular significance in the fact that when the device is employed for cutting the insulation 23 of the twin lead wire A the inner portions of the jaw start the cutting operation and, as the cutting proceeds, the outermost portion will begin cutting through the insulation, and finally, the cutting will proceed from both ends toward the center portion. This action facilitates ease in cutting and prevents chafing of the insulation.

It is notable that the entire wire cutting tool

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is hardened with the exception of the spacer 42. The cutting edges 47 and 48 of the wire cutting jaws may be sharpened by merely rubbing a sharpening tool across the edges of the jaws.

In operation the device may be employed as a wire cutter, this operation being effected by placing the wire across the cutter blades and closing the jaws. Further operation contemplated by the device is the removing of excess insulation 23 of twin lead transmission wire disclosed in Fig. 5. This operation being effective to separate the end portions into two separate wires each having some insulation remaining on the wires to provide an effective seal. When it is desired to secure the loose separated ends of the wires to respective terminals, it is necessary to perform a third operation contemplated by the subject tool, that is to say, stripping the remaining insulation from the wire a predetermined distance to expose the wire for securement to respective terminals. This operation is accomplished by placing the wire in the cutter blade and closing the jaws to a position as shown in Fig. 3 and thereafter pulling the wire through the stripper blade which action will strip off the remaining insulation and expose the wires.

An important feature of the present invention is the particular manner by which the contemplated wire cutter is operative to remove the excess insulation from twin lead transmission wire. In Figs. 5 and 6 it can be seen that the innermost end of the bite or cut defines a curved surface 60 which prevents further tearing of the insulation. In prior art devices it is necessary to make two cuts parallel to the wires and thereafter to make a cross cut which will leave a square cut with probable tears in the corners thereof which, when strain is placed upon them, will tend to tear further which has been found objectionable for television installations.

From the foregoing disclosures it may be observed that we have provided an improved combination wire cutter and stripper which effectively fulfills the objects thereof as hereinbefore set forth and which provides numerous advantages which may be summarized as follows:

1. Structurally simple, efficient and durable;
2. Economical to manufacture and readily adaptable to mass production manufacturing principles; and
3. The provision of a combination wire cutter and stripper designed and adapted to condition twin lead transmission wire including the removal of excess insulation normally disposed between the wires thereby to separate the wires and yet provide a stripper for removing a predetermined desired amount of insulation normal-

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ly disposed on the separated wires, thereby exposing a predetermined amount of the wire for advantageous connection to terminals, the subject wire cutter also being adapted to cut the wire.

While we have illustrated a preferred embodiment of our invention, many modifications may be made without departing from the spirit of the invention, and we do not wish to be limited to the precise details of construction set forth but wish to avail ourselves of all changes within the scope of the appended claim.

We claim:

A wire cutter adapted for cutting twin-lead wire, comprising a first handle means formed by two one-piece planar members defining longitudinally extending spaced side pieces, a second handle means formed by a one-piece planar member and having a portion thereof disposed between said spaced side pieces and pivotally connected thereto for pivotal action therebetween, spacers fixedly disposed between said side pieces one at each end thereof and one adjacent the central regions thereof to maintain the side pieces in spaced relationship, said centrally disposed spacer being fixedly secured to said spaced side pieces of said first handle means rearwardly of the pivot axis and defining an elongated member extending transversely of the longitudinal axis of said wire cutter, and the extended end being adapted to engage a portion of said second handle means thereby to restrict closing movement of the handles during the operation of the wire cutter, the spaced side pieces adjacent the front end thereof defining therebetween a pair of cutting edges, said second handle means at said front end thereof defining concave cutting edges cooperating with said first mentioned cutting edges and terminating in a convexly rounded nose portion, and the spacer disposed adjacent the cutting end of said wire cutter having a forwardly concave arcuate cutting surface arranged to cooperate with said convexly rounded nose portion for the cutting operation.

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