

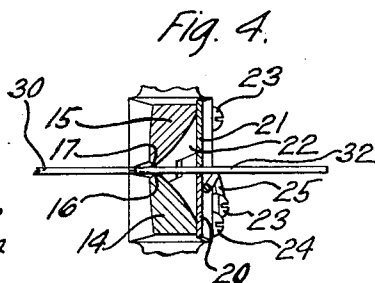
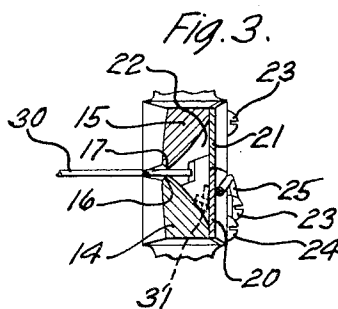
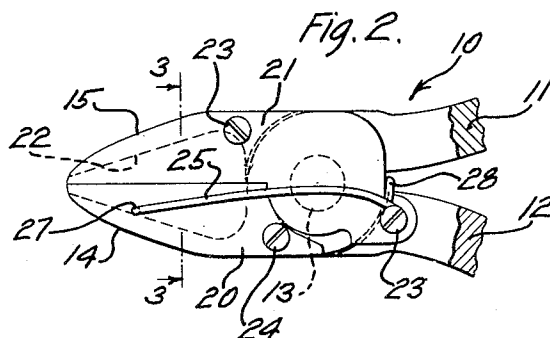
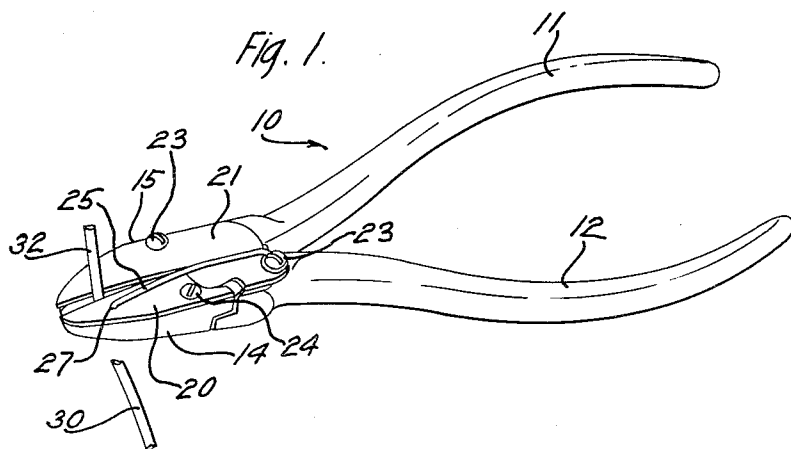
June 14, 1932.

E. WELHAVEN

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TOOL

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UNITED STATES PATENT OFFICE

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TOOL

Application filed August 9, 1930. Serial No. 474,146.

This invention relates to tools, and more particularly to guarded wire cutters.

The primary object of this invention is to provide a simple and effective guard for tools.

5 In accordance with the general features of this invention there is provided, in one embodiment thereof as applied to a wire cutter of known construction, a guarding and retaining device comprising two aligned elements secured to the side faces of the respective cutter jaws opposite to the cutting edges thereof, one of the elements being resiliently mounted. The arrangement is such that the inner adjacent edges of the elements are in abutting relation upon completion of a cutting operation when the severed end of the wire is less than the width of the jaws, thereby retaining the severed end of the wire within an enclosure formed by the jaws and the elements and preventing it from flying with possible injury to an operator. When the severed end of the wire is greater than the width of the jaws it extends between and from the adjacent edges of the elements, and when severed it is retained between the resiliently mounted and relatively stationary elements until the jaws are separated.

Other objects and advantages of this invention will more fully appear from the following detailed description, taken in connection with the accompanying drawing, wherein

Fig. 1 is a perspective view of a wire cutter embodying the guarding and retaining device of this invention, showing a severed length of wire held by the guarding and retaining device;

Fig. 2 is an enlarged side view of the guarded jaw end of the wire cutter shown in Fig. 1 with the jaws closed;

Fig. 3 is a vertical section taken on the line 3—3 of Fig. 2 illustrating the severing, guarding, and retaining of a comparatively short length of wire, and

Fig. 4 is a vertical section similar to Fig. 3 illustrating the severing and retaining of a length of wire extending across and from the jaws of the cutter.

As shown in the drawing, the numeral 10 represents a wire cutter of a standard known construction having the usual handles 11

and 12 which are pivoted at 13 (Fig. 2) and provided respectively with lower and upper opposed recessed jaw ends 14 and 15 having straight cutting edges 16 and 17, respectively, at their left sides (Figs. 3 and 4). At their inner sides the cutting edges 16 and 17 extend in the usual manner angularly downwardly and upwardly respectively, to the right sides of the jaws, as clearly shown in Figs. 3 and 4. Secured to the sides of the jaws 14 and 15 opposite to the cutting edges 16 and 17 are comparatively thin metal guarding and retaining elements 20 and 21, respectively, lying close to and shaped to conform to the jaws, and when the cutting edges thereof are engaged, meeting in abutting relation as shown in Fig. 2, in alignment with the cutting edges, thus forming with the surfaces of the jaws an enclosure 22 to be referred to hereinafter. The element 21 is fixed to the face of the jaw 15 and the handle 12 by screws 23 so that no relative movement between the handle 12, the jaw 15 and the element 21 occurs, while the element 20 is pivotally carried upon the face of the jaw 14 by means of a screw 24. A suitably tensioned spring 25 is mounted on the handle 12 by means of the screw 23, which secures one end of the element 21 to the handle 12. The left end of the spring 25, as viewed in Figs. 1 and 2, is formed with an angular arm which is entered in an aperture in the corresponding end of the element 20 as indicated at 27, while the opposite end of the spring is formed at an angle and engages a surface of the handle 12 surrounding the pivot 13, as indicated at 28 (Fig. 2). It will be apparent that with the spring 25 under tension, such that the long arm thereof will tend constantly to move in a clockwise direction about the screw 23 secured to the handle 12, the element 20 will follow, pivoting about the screw 24, thus providing a resiliently mounted element which will always tend to move toward the adjacent element 21.

In the operation of the wire cutter 10 equipped with the guarding and retaining elements 20 and 21 as hereinbefore described and when used for severing the end of a wire 30, the length of which is less than the width

of the enclosure 22 formed between the inner sides of the cutting edges 16 and 17 and the corresponding sides of the elements 20 and 21, it is only necessary for the operator to separate the jaws 14 and 15 in the usual manner in this type of cutter and insert the end of the wire to be severed between the cutting edges, as shown in Fig. 3, and thereafter close the jaws. This separation of the jaws 14 and 15 will be sufficient to also separate the elements 20 and 21 even though a slight movement of the element 20 toward the element 21 is effected by the action of the spring 25. When the jaws 14 and 15 are separated and a wire 30, the diameter of which for severing is within the capacity of the cutter 10, is inserted therebetween for severing and closed upon the wire before the actual severing thereof, the resiliently mounted element 20 will move about its pivot 13 and engage the opposite element 21 as shown in Fig. 3 and complete the enclosure 22. When the severing pressure is exerted upon the jaws 14 and 15 the end of the wire 30 will be severed and fly across the enclosure 22 and strike the inner sides of the engaged elements 20 and 21 and then fall to the bottom of the enclosure, as indicated in dotted outline at 31. In this operation of severing a short piece of wire 31 the elements 20 and 21 serve as an effective guard and prevent the severed wire end 31 from flying free of the cutter and possibly injuring the operator or other person nearby. Also in some instances, depending upon the purpose of severing the short pieces of wire 31, or the value of the material of which the wire is composed, it may be desirable to retain the severed wire ends in the cutter enclosure 22 so that they may be used or salvaged.

In the case of severing an end of the wire 30 which is greater than the width of the jaws 14 and 15 and which extends outwardly from the guarding and retaining elements 20 and 21, the wire is mounted between the cutting edges 16 and 17 and the elements as shown in Figs. 1 and 4 and the element 20 will be spaced from the element 21 a distance corresponding to the diameter of the wire after the jaws have been closed thereupon, but will be resiliently engaged therewith so that the wire is gripped and retained between the opposed elements 20 and 21. Upon severing pressure being exerted on the jaws 14 and 15 the wire 30 will be severed and a severed portion 32 extending between and from the opposed edges of the elements 20 and 21 will still be retained therebetween by the resiliently mounted element 20 and until the jaws are separated.

Although this invention has herein been disclosed and described in connection with a wire cutter of a standard known construction, it is clear that it may have a more general application and also that modifications

can be made without departing from the spirit and scope of the appended claims.

What is claimed is:—

1. In a wire cutter, a pair of relatively movable jaws having cooperating cutting edges, each of the jaws being formed and cooperating when closed to provide a recess at one side thereof, and enclosure elements carried by the jaws and arranged to cooperate with the recess formed by the jaws when closed to provide a complete enclosure for retaining short lengths of wire severed by the jaws.

2. In a wire cutter, a pair of relatively movable jaws having cooperating cutting edges, each of the jaws being formed and cooperating when closed to provide a recess at one side thereof, cooperating enclosure elements carried by the jaws and abutting the recessed sides thereof, one of the elements being pivotally mounted, and resilient means for urging the pivotal element toward the other element to provide in cooperation with the other element and the surfaces of the recess a complete enclosure for retaining short lengths of wire severed by the jaws.

3. In a wire cutter, a pair of relatively movable jaws having cooperating cutting edges, each of the jaws being formed and cooperating when closed to provide a recess at one side thereof, cooperating aligned enclosure elements carried by the jaws and abutting the recessed sides thereof, one of the elements being pivotally mounted, and resilient means for urging the pivotal element toward the other element to provide in cooperation with the other element and surfaces of the recess a complete enclosure for positively retaining short lengths of wire severed by the jaws, said elements also cooperating to grip and retain therebetween relatively long lengths of wire severed by the jaws.

In witness whereof, I hereunto subscribe my name this 31st day of July, A. D., 1930.
EDWARD WELHAVEN.