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J. D. LISCOMB

2,715,769

WIRE CUTTING AND RETAINING NIPPER

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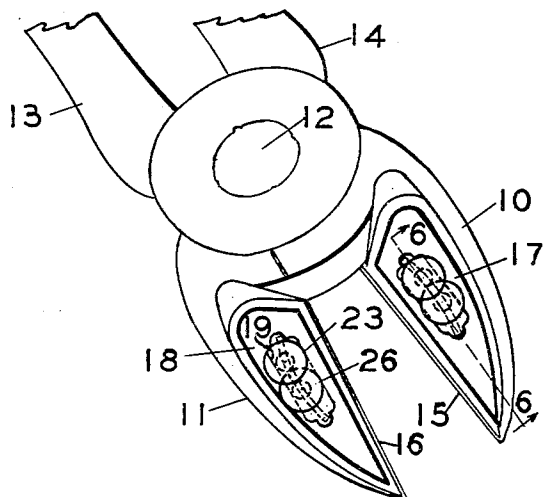


FIG. 1.

FIG. 2.

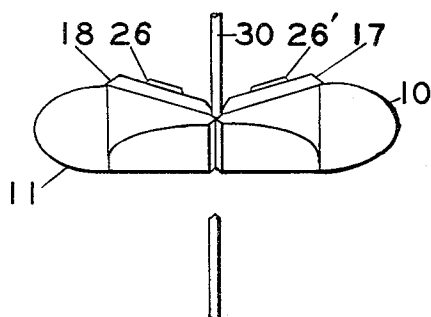
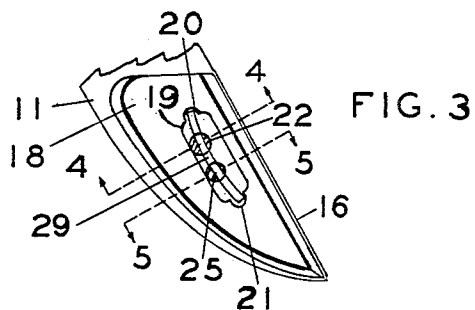


FIG. 3.

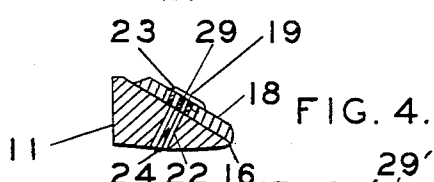


FIG. 4.

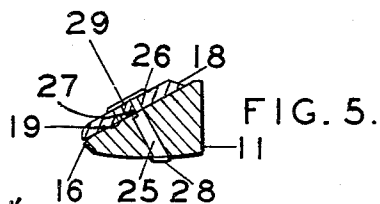


FIG. 5.

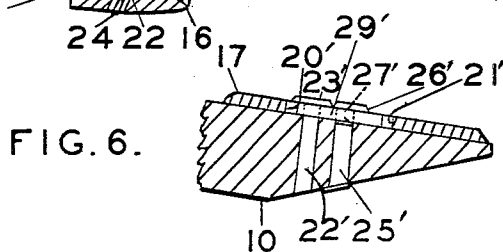


FIG. 6.

INVENTOR.
JEROME D. LISCOMB.
BY *Harold B. Flood*
ATTORNEY.

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WIRE CUTTING AND RETAINING NIPPER

Jerome D. Liscomb, Indianapolis, Ind.

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4 Claims. (Cl. 30—124)

The present invention relates to a wire-retaining nipper, and is particularly concerned with the provision of a wire-cutting tool so constructed and arranged that, when the tool is used to cut an end from a wire, or the like, the severed piece will be gripped and held by the tool until the jaws of the tool are intentionally separated, whereupon the severed piece will immediately be released.

A further object of the invention is to provide simple but effective means to mount wire-retaining devices on the jaws of such a tool for resiliently-resisted movement in a direction transverse with respect to the cooperating edges of the tool, whereby such a severed wire end will be resiliently gripped and retained by such means.

Further objects of the invention will appear as the description proceeds.

To the accomplishment of the above and related objects, my invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that change may be made in the specific construction illustrated and described, so long as the scope of the appended claims is not violated.

Fig. 1 is a perspective view of a nipper constructed in accordance with the present invention;

Fig. 2 is an end elevation thereof, showing the nipper in use immediately after severing an end from a wire;

Fig. 3 is a plan view of one jaw and its associated parts, certain parts being broken away for clarity of illustration;

Fig. 4 is a transverse section taken substantially on the line 4—4 of Fig. 3 and looking in the direction of the arrows;

Fig. 5 is a similar section taken substantially on the line 5—5 of Fig. 3 and looking in the direction of the arrows; and

Fig. 6 is a section taken substantially on the line 6—6 of Fig. 1 and looking in the direction of the arrows.

Referring more particularly to the drawings, it will be seen that I have illustrated a nipper comprising a pair of cooperating jaws 10 and 11 pivotally associated, as at 12, and continuing in manipulating handles indicated at 13 and 14. As is customary, the jaw 10 is provided with a sharpened edge 15 for cooperation with the sharpened edge 16 of the jaw 11, said jaw edges moving in a common plane, as is suggested in Fig. 2.

An anvil 17 is mounted on the jaw 10 and an anvil 18 is mounted on the jaw 11, said anvils being resiliently held with their adjacent edges in substantial registry with the sharpened edges 15 and 16 of the respective jaws, but being movable, against such resilient resistance, away from said edges to a limited degree.

The two anvils are of corresponding construction and are correspondingly mounted on their respective jaws; and therefore only one will be described in detail. The anvil 18 is formed with a slot 19 elongated in the direction of extent of the edge 16 of its jaw 11, and provided, at its opposite ends, with extensions 20 and 21 of reduced

width. A rivet 22, whose stem has a transverse dimension less than that of its slot 19, passes through said slot and is seated in a bore penetrating the jaw 11, said rivet having a head 23 overlying the anvil 18 and being retained in the jaw bore through the medium of a wedge 24 driven between the rivet furcations, as is most clearly shown in Fig. 4.

A second rivet 25 penetrates the slot 19 at a point spaced from the rivet 22 in the direction of length of the slot, and said rivet 25 extends through a bore in the jaw 11 and is secured therein in any suitable manner as, for instance, by peening its lower end, as indicated at 28 in Fig. 5 or by splitting the rivet and driving a wedge thereinto in the manner illustrated in Fig. 4. The rivet 25 is provided with a head 26 which overlies the anvil 18; and, within the region of the slot 19, the rivet 25 is provided with a laterally opening slot 27 for a reason which will become apparent.

A leaf spring 29 is disposed in the slot 19 with its opposite ends received, respectively, in the slot extensions 20 and 21, the thickness of the spring corresponding substantially to the width of the slot extensions. As is most clearly seen in Figs. 3, 4, and 5, the spring 29 is disposed between the furcations of the rivet 22, and lies in the slot 27 of the rivet 25.

The parts are so proportioned and designed that, when the adjacent edge of the anvil 18 substantially registers with the sharpened edge 16 of the jaw 11, the remote wall of the slot 19 will engage the rivets 22 and 25, while the spring 29 will be slightly flexed and will bear, at its ends, against the walls of the slot extensions 20 and 21 nearer the edge 16. Thus, the spring resiliently tends to hold the anvil 18 with its corresponding edge in substantial registry with the sharpened jaw edge; but the anvil is free to move, either bodily or pivotally, against the tendency of the spring 29 away from such registry and toward the opposite side of the jaw 11.

As has been said, the anvil 17 is similarly mounted on the jaw 10, being provided with a slot having extensions 20' and 21' penetrated by rivets 22' and 25' having heads 23' and 26', the rivet 22' being bifurcated and the rivet 25' being slotted as at 27' for cooperation with a spring 29'.

When the jaws 10 and 11 are moved together upon a wire disposed between them, their edges 15 and 16 will cooperate to cut the wire. The corresponding edges of the anvils 17 and 18 will engage the protruding end portions 30 of such a wire as the jaw edges engage the wire; and as the jaw edges progress through the wire to sever the same, the anvils 17 and 18 will be forced outwardly away from said cooperating edges, whereby said anvils will exert a squeezing force upon the protruding wire portion as the jaw edges bite their way through the wire. Thus, when the end 30 is severed from the wire, it will be retained between the resiliently-urged anvils 17 and 18, in the manner suggested in Fig. 2.

I claim as my invention:

1. A wire-retaining nipper comprising a pair of pivotally-associated jaws, the adjacent edges of which are sharpened, an anvil for each jaw, each anvil being formed with a slot elongated in a direction substantially parallel with its associated jaw edge, means penetrating each such slot, fixedly engaging the associated jaw, and overlying the associated anvil to retain said anvil on its jaw, the portion of such means disposed in said slot having a dimension less than that of said slot in a direction transverse relative to said edge whereby said anvil is free for limited movement in a direction transverse relative to said edge, and a leaf spring disposed in each slot, each spring engaging its anvil and said means and being flexed to resist movement of its anvil away from the sharpened edge of its associated jaw.