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WIRE CUTTER

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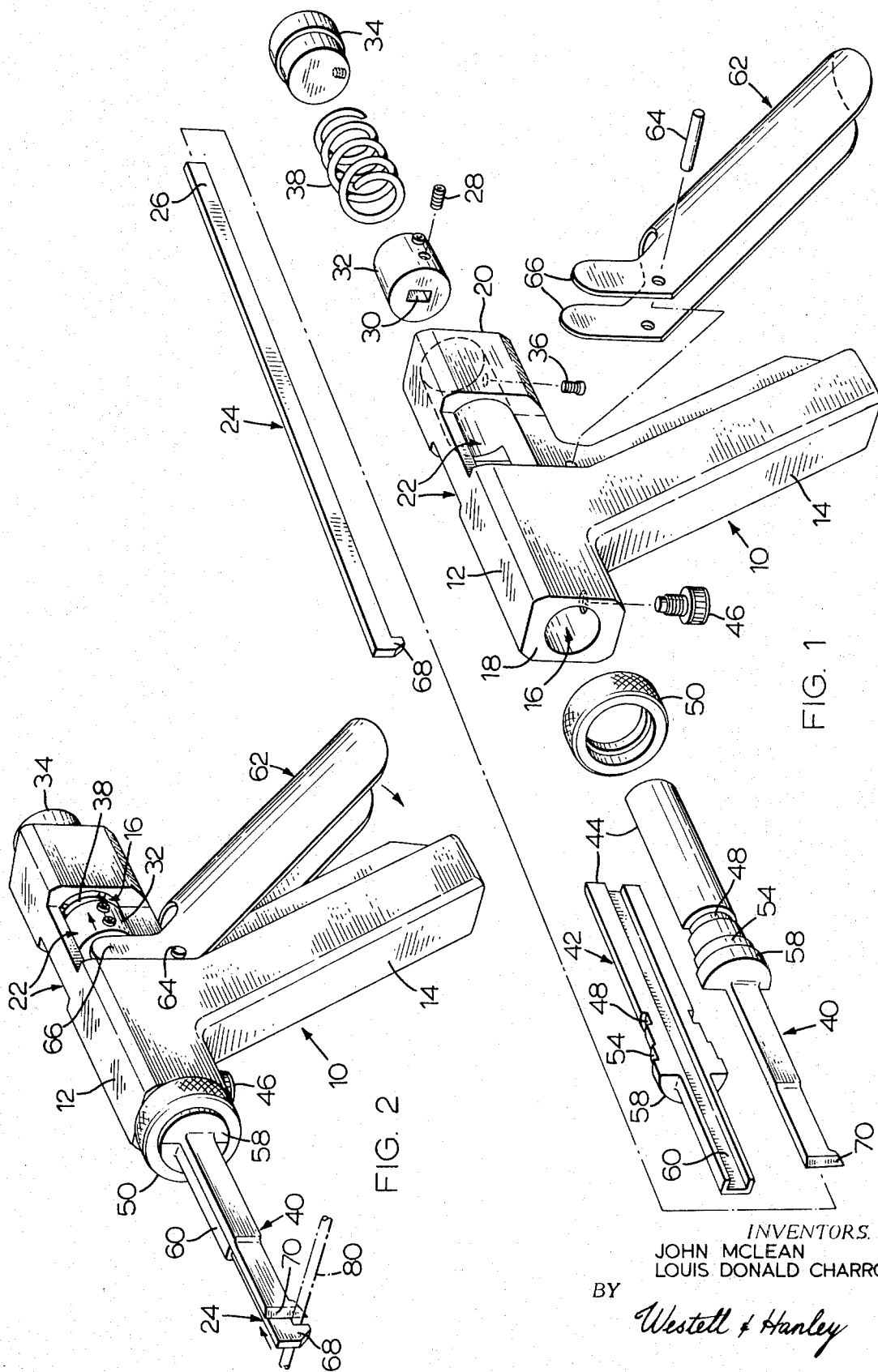


FIG. 1

FIG. 2

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## 3,718,971 WIRE CUTTER

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2 Claims

### ABSTRACT OF THE DISCLOSURE

A wire cutter in which a pair of laterally abutting blade members with offset cutting jaws are slidable one along the other and also rotatable as a unit about their common axis to alter the shearing plane of the jaws with respect to the main body of the tool.

The present invention relates to a tool for cutting wire strands and the like.

For wiring which is relatively inaccessible, such as banjo straps in electronic switching equipment, it is difficult to position a cutting tool to shear the wire in a plane normal to its axis in order to prevent distortion of the wire.

The present invention provides a tool which gives improved manipulation for normal shearing of wires by having the blades rotatable as a unit about their common axis to alter the shearing plane of jaws with respect to the main body of the tool.

An example embodiment of the invention is shown in the accompanying drawings in which:

FIG. 1 is an exploded perspective view of the cutting tool; and

FIG. 2 is a perspective view of the assembled tool of FIG. 1.

The cutting tool as shown in the drawings comprises a main body member 10 having a barrel 12 with an integral stock or handle 14 projecting laterally and rearwardly from the barrel. Barrel 12 has an axial bore 16 accessible at the forward end 18 and the rearward end 20 of the barrel and also accessible transversely by a pair of recesses 22 located rearwardly of handle 14 and exposing the bore.

A longitudinally movable elongated blade member 24 of rectangular cross-section is inserted into bore 16 through forward end 18 of barrel 12 and the base 26 of the blade is secured by a pair of set screws 28 in a slot 30 of a bushing 32 which is slidable axially in bore 16. A plug 34, secured in bore 16 at rearward end 20 of barrel 12 by a set screw 36, acts to retain a compression return spring 38 located in the bore between bushing 32 and the plug.

An elongated stationary blade member 40 of rectangular cross-section, and a blade guide 42, each having an enlarged base 44 of semi-circular transverse cross-section, laterally abut one another to form a split cylinder which is slidable into bore 16 through forward end 18 of barrel 12. Cylindrical base 44 is held, freely rotatable, in the bore by a knurled screw 46 threaded into barrel 12 and engaging an annular recess 48 in the cylindrical base. A knurled retaining ring 50 is press fitted on a circumferential shoulder 54 and abuts against a further shoulder 58 on base 44 adjacent shoulder 54. Blade member 24 is slidable in a longitudinal channel 60 in blade guide 42 and the flat side of blade member 24 abuts laterally against the flat side of blade member 40.

A lever 62 of the first order is pivotally mounted by a fulcrum pin 64 on body member 10 adjacent handle 14 and the lever has a pair of upwardly projecting wings

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66 which lie in recesses 22 and engage bushing 32 against the action of compression spring 38. In its normal position of rest lever 62 extends rearwardly away from handle 14 and is shaped to be gripped manually and moved against the handle.

The end of movable blade member 24 extending from barrel 12 is hooked to form a cutting jaw 68 which is offset laterally from the axis of the blade member. Jaw 68 cooperates with an offset cutting jaw 70 similarly formed on the adjacent end of stationary blade member 40, both jaws 68 and 70 being flush with the interfacial plane of blade members 24 and 40.

In the operation of the example embodiment a wire 80 to be severed is located between cutting jaws 68 and 70 of the device, as seen in FIG. 1 of the drawings. To obtain a distortion-free shear, wire 80 should be positioned normal to the interfacial plane between blade members 24 and 40. To accomplish this, blades 68 and 70 are oriented by rotating ring 50 which turns cylindrical base 44 on its axis and blade members 24 and 40 on their common longitudinal axis. When blade members 24 and 40 are in the proper position with wire 80 between cutting jaws 68 and 70, handle 14 and lever 62 are squeezed together to move jaw 68 towards jaw 70 by the action of wings 66 bearing against bushing 42 and working against the action of compression spring 38. As cutting jaws 68 and 70 are moved together in this manner, wire 80 will be severed at right angles to its axis.

It will be appreciated that cylindrical base 44 could be in one piece with blade member 40 extending from it and channel 60 located within the base. With this construction, shoulder 58 could be enlarged to act as a knurled ring to replace ring 50 for turning the cylinder.

I claim:

1. A tool for cutting wire strands and the like, comprising:

a body member having a barrel with a longitudinal bore and a handle projecting laterally from the barrel;

a pair of elongated blade members located in the bore and projecting therefrom, each of the blade members carrying an offset cutting jaw, one blade member being longitudinally stationary and the other blade member being longitudinally slidable along the stationary blade member to close and open the cutting jaws, the stationary blade member carrying a cylindrical base having a longitudinal passage therethrough, the slidable blade member being slidable through the passage in lateral abutment with the stationary blade member, the blade members being rotatable together in the bore about the bore axis and means releasably to lock the cylindrical base in any position of rotation within the bore, the slidable blade member carrying abutment means;

a lever pivotally mounted on the body member and bearing against the abutment means whereby on pivotal movement of the lever the cutting jaws of the blade members are closed, the abutment means comprising a bushing located within the bore and accessible to the lever through recesses in the body member exposing the bore, and a compression spring bearing against the bushing and against a plug fixed in that end of the bore opposite the end from which the blade members project.

2. A tool for cutting wire strands and the like, comprising:

a body member having a barrel with a longitudinal bore and a handle projecting laterally from the barrel;

a pair of elongated blade members located in the bore and projecting therefrom, each of the blade mem-

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bers carrying an offset cutting jaw, one blade member being longitudinally stationary and the other blade member being longitudinally slidable along the stationary blade member to close and open the cutting jaws, the stationary blade member carrying a cylindrical base having a longitudinal passage there-  
5 through, the slidable blade member being slidable through the passage in lateral abutment with the stationary blade member, the cylindrical base being split longitudinally, the blade members being ro-  
10 tatable together in the bore about the bore axis, and means releasably to lock the cylindrical base in any position of rotation within the bore, the slidable blade member carrying abutment means, and includ-  
15 ing a retaining ring circumscribing the cylindrical base and located outside the barrel for use in rotat-  
ing the blade members about their common axis; and

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a lever pivotably mounted on the body member and bearing against the abutment means whereby on piv-  
otal movement of the lever the cutting jaws of the blade members are closed.

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