Jan. 10, 1956 W. W. SCHOENWALD 2,729,996

ELECTRICIAN'S HAND TOOL

Filed July 3, 1953

Fig. 1

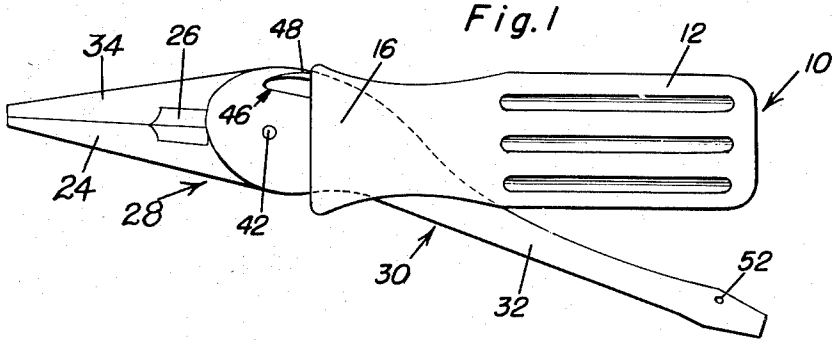


Fig. 2

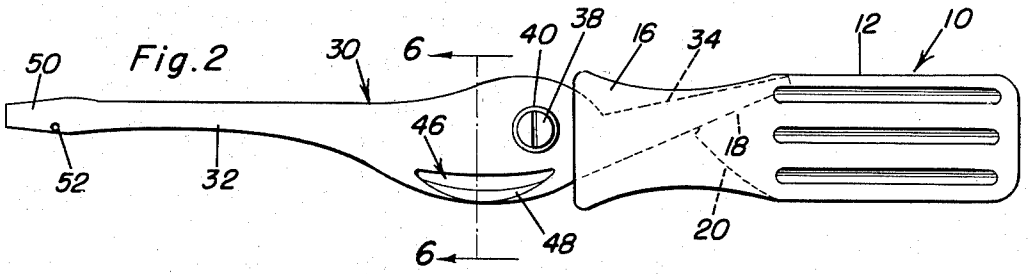


Fig. 3

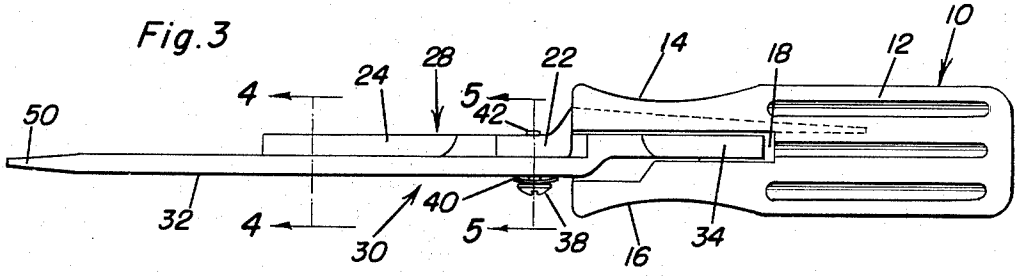


Fig. 4

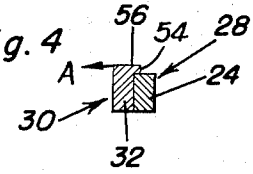


Fig. 5

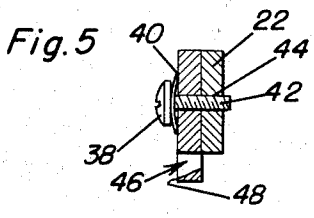


Fig. 6

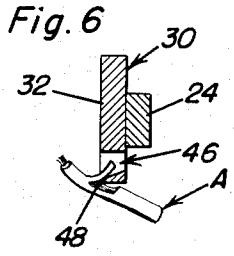
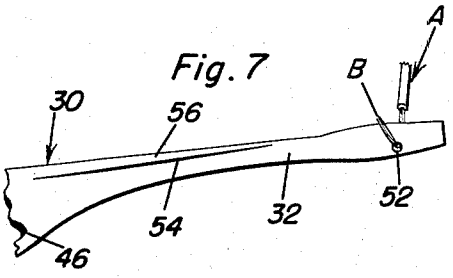


Fig. 7



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ELECTRICIAN'S HAND TOOL

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2 Claims. (Cl. 81—51)

The present invention relates to small hand tools and equivalent implements, generally speaking, and has more particular reference to a readily convertible multipurpose tool which is especially, but not necessarily, designed and, therefore, adapted for handy and practical use by telephone linemen, electricians and the like.

As will be evident from the drawings and the specification conjointly considered the stated tool is capable of serving in various ways and may be treated as a pair of pliers, a screw driver, a wire cutter, and insulation stripping knife for current-conducting wires, thus providing a unique structural entity whose component parts are capable of handy and consolidated use and making it possible to overcome the necessity of owning and handling four or more different or distinct tools.

Briefly summarized, the preferred embodiment of the tool is characterized by a primary handle, a first implement fixed on and projecting beyond one end of said primary handle, an auxiliary handle pivotally mounted on said first implement, said auxiliary handle being opposed to and swingable toward and from said primary handle and being provided on one end with a second implement opposed to and swingable in a plane toward and from said first implement.

Further novelty is predicated on the aforementioned construction wherein the stated implements each is characterized by a jaw with the two jaws cooperating in proper coplanar alignment and providing a pair of pliers, the other end of the auxiliary handle being merely reduced in cross-section and flattened and suitably tapered to wedge-shaped form so that it has the added function of a screw driver blade.

More specifically, the invention appertains to a multipurpose instrumentality which is singularly unique and is characterized by a primary handle of appreciable cross-section having its outward end centrally and longitudinally bifurcated, the furcations and the intervening space providing a fork-like sheath, a first implement embodying a first jaw and a shank, the latter in alignment with and fixedly joined to the outer end of one furcation, an auxiliary handle superimposed against and pivoted to said shank and foldable in part into said sheath, said auxiliary handle having an offset second jaw opposed to, coplanar with and movable toward and from said first jaw, said primary handle having a first recess in one side aligned with and constituting a pocket-like extension of said sheath, said second jaw being wholly foldable into an out-of-the-way position in said extension.

Other objects, features and advantages will become more readily apparent from the following description and the accompanying sheet of illustrative drawings.

In the drawings, wherein like numerals are employed to designate like parts throughout the same:

Figure 1 is a side elevational view of an electrician's simplified multipurpose hand tool or instrumentality constructed in accordance with the principles of the invention

and showing what may be simply identified as a pair of pliers;

Figure 2 is a side elevation of the same tool with the components slightly rearranged and with the auxiliary handle in alignment with the main handle and locked and thus serving as a screw driver;

Figure 3 is a top plan view of the structure seen in Figure 2;

Figures 4 and 5 are sections on the transverse lines 4—4 and 5—5 of Figure 3, looking in the direction of the arrows;

Figure 6 is a section on the line 6—6 of Figure 2, looking in the direction of the arrows; and,

Figure 7 is a fragmentary perspective view of one end portion of the auxiliary handle or "screwdriver" showing how it may be used for wire bending or twisting purposes.

Referring now to the drawings with reference numerals and lead lines, it will be seen that the over-all tool is characterized by two handle units, broadly speaking, one handle unit being identified as the primary handle and having a jaw equipped member fixed thereon and the other handle unit having a jaw fixed on one end thereof with the jaw portions hinged or pivoted so that they may be swung toward and from each other to function, generally speaking, as a pair of pliers.

More particularly, the primary handle is denoted by the numeral **10** and this takes the form of a stock which may be of either appropriate light-weight metal or commercial plastics, the same resembling, in general appearance, what may be recognized as a so-called screw driver handle **12**. The outer end of the handle is forked. More specifically, this is hereinafter described as a handle which is bifurcated, the opposed spaced parallel furcations or fork arms being denoted by the numerals **14** and **16**. These arms with the intervening space define what may be conveniently called a sheath. At the inner end or "crotch" portion of the sheath and opening through one side (the top in Figs. 1 to 3) of the primary handle is a pocket-like extension of the sheath defined by the inclined stop shoulder. This extension pocket is best shown in Figure 3 and it is denoted by the numeral **18**. There is a similar recess or pocket-like extension on the diametrically opposite or bottom side of the handle which functions as a clearance pocket and is denoted by the numeral **20**. An integral complement of the primary handle unit is here designated as an implement. More specifically, this implement comprises a shank **22** (see Figure 3) which is integral with the handle and slightly offset and, therefore, in substantial alignment with the space of the sheath. This shank has a screw-threaded hole therein and terminates in an aligned jaw **24** which as shown in Figure 1 has a bevelled portion on its jaw surface defining one part of a wire cutter, as at **26**. The implement, that is, the jaw and shank combined, is unitarily denoted by the numeral **28**. Thus, the handle unit **10** is made up of a hand grip or handle which is forked with one of the arms of the fork carrying implement **28** and with the latter fashioned into a shank **22** and an aligned jaw **24**. these being in axial alignment with the sheath.

The other handle unit is denoted generally by the numeral **30** and this is pivotally mounted intermediate its ends and overlaps and is consequently superimposed against the shank **22** and cooperates with the jaw **24**. One end portion of this unit is fashioned into an auxiliary handle **32** and the other end portion, which is shorter, is fashioned into a jaw **34** which conforms to and cooperates with the jaw **24** and is, therefore, coplanar and aligns therewith in the manner shown the best in Figure 1. This jaw **34** also has a bevelled cutter **26** and the two features **26—26** form a wire cutter and the two jaws **34** and **24** form pliers-jaws. The two handles are thus hinged or

pivoted and provide the operating levers for the jaws 24 and 34. The pivot takes the form of a screw the head of which is denoted at 38 in Figure 5 and which is screwed through a hole provided in the junctural portion between the portions 32 and 22. There is a concavo-convex or spring washer 40 which surrounds the shank and is interposed between the head 38 and supplies the desired tension. It will be noticed that the free end of the shank at 42 is screwed through a hole also provided therefor in the aforementioned shank 22. Thus, the screw is actually carried by and rotates with the auxiliary handle 32 which handle is swingable so that it is allowed to be converted from the position shown in Figure 1 to the position shown in Figures 2 and 3. As it swings in one direction, it tightens the screw in the hole 44 and when swung in the opposite direction, it loosens the screw but only very slightly, of course. This "in" and "out" screw action between the parts serves to bind them together and to assist in locking them in the screw driver position seen in Figures 2 and 3 and loosens the hinged joint when the "pliers" come into play. The slot 46 (seen best in Figure 2) has an edge portion chamfered or bevelled and thus sharpened and provides a cutting blade 48 which is used for stripping insulation from the conductor wire A as shown, for example, in Figure 6. The outer end of the handle 32 is bevelled and wedge-shaped as at 50 and provides what is conveniently referred to as a screw driver. This also has a hole 52 therein which may be used by passing the wire B therethrough (as shown in Figure 7) for purposes of twisting and bending the wire as is required in looping wire requirements by electricians, telephone linemen and others. The insertion of the wire in the hole of the screw driver blade and the turning of the blade will make the loop to be wrapped around screws. The knife edge is toward the side with the rivet or screw head. When used as pliers, the knife edge is shielded by folding into the recess means provided in the aforementioned sheath, that is the space 18 between the fork arms 14 and 16. The tool is locked in open position in the form of a screw driver not only by the spring tensioned and take-up action of the screw as brought out in Figure 5, but also because of the stop shoulder 54 provided by-way-of-the rib 56 on the auxiliary handle 32 as shown in Figures 4 and 7 and again in Figure 3. When the handles are in the position shown in Figure 1, the jaws 24 and 34 serve as a pair of pliers. When the auxiliary handle 32 is in alignment with the primary handle 10 and latched as shown in Figures 2 and 3, a screw driver is provided. This is, therefore, a unique utility tool of a multipurpose character.

With further reference to the optional "screwdriver" (Figs. 2, 3 and 4), note Fig. 4 in particular for here it will be seen that the shoulder 54 overhangs the jaw 24. Now, then, in order to shift back to the "pliers" the user must part the handle 32 by manually forcing it from right to left, as at A, against the tension of washer 40. This clears the shoulder and affords the necessary release action, whereupon 32 may now be swung from left to right (Figs. 2 and 3) to assume the position seen in Fig. 1.

From the foregoing, the construction and operation of the device will be readily understood and further explanation is believed to be unnecessary. However, 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 shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed as new is as follows:

1. A hand tool comprising a primary handle of appreciable cross-section having its outward end centrally and longitudinally bifurcated, the furcations and the intervening space providing a fork-like sheath, a first implement embodying a first jaw and a shank, the latter in alignment with and fixedly joined to the outer end of one furcation, an auxiliary handle superimposed against and pivoted to said shank and foldable in part into said sheath, said auxiliary handle having an offset second jaw opposed to, coplanar with and movable toward and from said first jaw, said primary handle having a first recess in one side aligned with and constituting a pocket-like tension of said sheath, said second jaw being wholly foldable into an out-of-the-way position in said extension, and said primary handle having a second recess in a side opposite to said first named side and providing a second extension of said sheath and said auxiliary handle being foldable in part into said second extension.

2. A hand tool comprising a primary handle of appreciable cross-section having its outward end centrally and longitudinally bifurcated, the furcations and the intervening space providing a fork-like sheath, a first implement embodying a first jaw and a shank, the latter in alignment with and fixedly joined to the outer end of one furcation, an auxiliary handle superimposed against and pivoted to said shank and foldable in part into said sheath, said auxiliary handle having an offset second jaw opposed to, coplanar with and movable toward and from said first jaw, said second jaw being selectively and fully foldable into said sheath, said auxiliary handle having a lengthwise stop shoulder, said auxiliary handle being also swingable to a position alongside of and into overlapping contact with the first jaw, and one edge of said first jaw being releasably engageable with said stop shoulder, whereby said auxiliary handle may be latched and firmly held in outwardly projecting axial alignment with said primary handle.

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