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C. A. RADCLIFFE

2,868,049

WIRE STRIPPER

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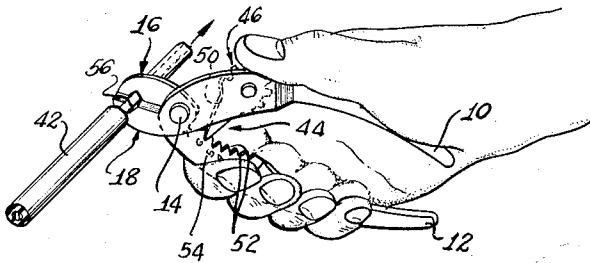


Fig. 1

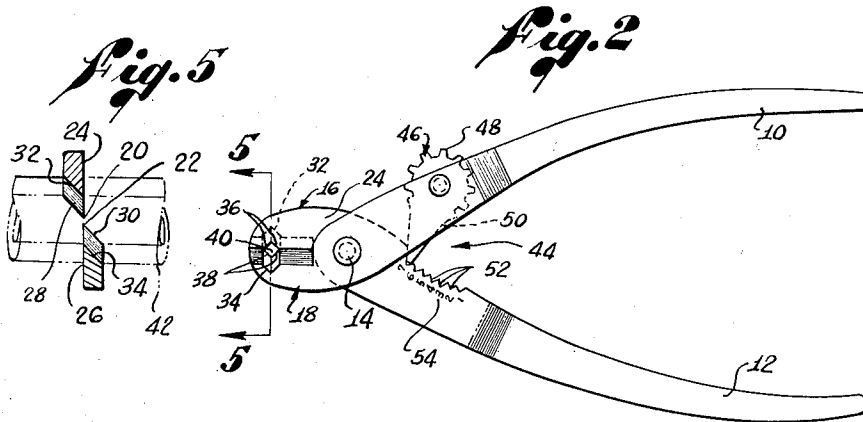


Fig. 2

Fig. 5

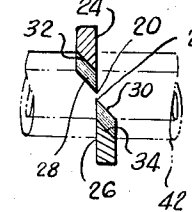


Fig. 6

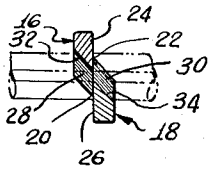


Fig. 3

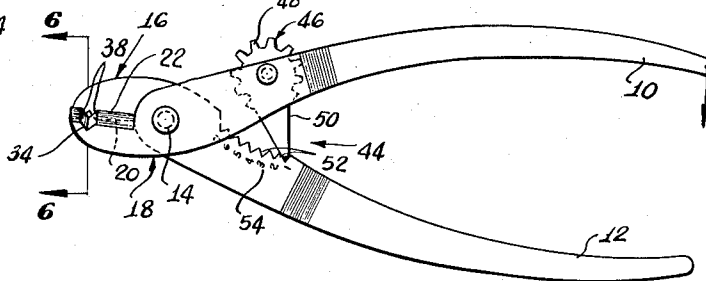
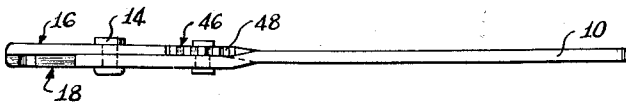


Fig. 4



INVENTOR.
CHARLES A. RADCLIFFE

BY

Forrest Hilly
ATTORNEY

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WIRE STRIPPER

Charles A. Radcliffe, Los Angeles, Calif., assignor to The Plomb Tool Company, Los Angeles, Calif., a corporation of California

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3 Claims. (Cl. 81—9.5)

This invention relates to a plier-type tool for stripping insulation from electric wires and particularly to an adjustable wire stripping tool of this character.

An object of the invention is the provision of a plier-type wire stripping tool which is readily and accurately adjustable to accommodate wires of different sizes.

Another object of the invention is the provision of a plier-type wire stripping tool of the character described embodying novel adjusting means which may be quickly and easily preset by one finger of the hand holding the tool and wherein the adjusting means are locked in their pre-set position during use of the tool.

A further object of the invention is the provision of an adjustable, plier-type wire stripping tool which is relatively simple in construction and use and inexpensive to manufacture.

Other objects, advantages and features of the invention will become readily apparent from the ensuing description wherein reference is had to the annexed drawings, in which:

Figure 1 is a view in perspective of the present wire stripping tool in use;

Figure 2 is an enlarged side elevation of the present wire stripping tool showing the adjusting means embodied therein in one extreme position of adjustment;

Figure 3 is a view similar to Figure 2 showing the adjusting means of the tool in its other extreme position of adjustment;

Figure 4 is a top plan view of the present wire stripping tool;

Figure 5 is an enlarged section taken along line 5—5 of Figure 2; and

Figure 6 is an enlarged section taken along line 6—6 of Figure 3.

Referring first to Figures 2—6, the present wire stripping tool comprises a pair of curved handles 10 and 12 which are pivotally connected by a pin 14. The forward ends of the handles are integrally formed with jaws 16 and 18 that are moved toward one another by pivoting of the handles 10 and 12 together.

Jaws 16 and 18 have cutting edges 20 and 22 extending radially from the pivotal axis of the handles 10 and 12 and defined by the intersection of opposing inner surfaces 24 and 26 and beveled inner edge surfaces 28 and 30 on the jaws. As may be seen most clearly in Figures 5 and 6, the opposing, inner surfaces 24 and 26 of the jaws are substantially parallel and slide over one another when the jaws are closed to their limiting position of Figure 3.

Formed in the beveled edge surfaces 28 and 30 of the jaws, intermediate the ends of the cutting edges 20 and 22, are aligned V-shaped notches or grooves 32 and 34. The intersection of the side walls of these grooves, defining the apex of the V to which the grooves conform, parallel the beveled edge surfaces 28 and 30 of the jaws as shown.

The grooves 32 and 34 extend through the inner surfaces 24 and 26 of the jaws, the intersections of these inner surfaces and side walls of the grooves forming angu-

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lated cutting edges 36 and 38. In any position of the handles 10 and 12 between the limiting positions of Figures 2 and 3, the angulated cutting edges 36 and 38 of the two jaws define a substantially square aperture 40, as shown, for receiving a wire 42 (Figure 1).

The aperture 40 has maximum size when the handles 10 and 12 are separated to their position of Figure 2, the aperture becoming smaller by movement of the handles toward one another to their position of Figure 3. Indicated at 44 are adjusting means which may be pre-set to establish a predetermined size to the aperture 40, that is, a predetermined spacing between the opposite sides of the aperture.

Adjusting means 44 comprise a pawl or stop 46 on the inner surface of handle 10 adjacent the forward end of and pivotally connected to the latter handle. As may be seen most clearly in Figure 4, the forward ends of the handles 10 and 12 are coplanar with their respective jaws so that the pivoted pawl is in the plane of the handle 12. Rearwardly of these forward end portions, the handles are offset toward one another so that the rear hand grip portions of the handles are coplanar, as shown. Pawl 46 includes a generally circular portion 48 concentric with its pivotal axis, the periphery of which circular portion projects beyond the outer edge of handle 10, and is formed with teeth, as shown. Projecting radially from the circular portion 48 of the pawl is a tapered extension or tooth 50 terminating in a relatively pointed end.

The pointed end of extension 50 is adapted to be selectively positioned in one of a series of V-shaped notches 52 cut in the inner edge of handle 12. Handle 12 may be inscribed with a series of numbers 54, each identifying one of the notches. As shown, the notches 52 lie substantially along an arc and are so formed that engagement of extension 50 in notch number 7 limits closure of the jaws 16 and 18 to the position of Figure 2, corresponding to the maximum size of the aperture 40. Engagement of the extension in notch number 1 limits closure of the jaws 16 and 18 to the position of Figure 3, corresponding to the minimum size of the aperture 40. Finally, engagement of the extension in the remaining notches numbered 2 through 6 establish predetermined, gradually increasing sizes of the aperture 40.

In practice, the notches 52 are so formed that the various aperture sizes obtained by engagement of the pawl extension in the several notches correspond to the diameters of the conductors 56 in wires 42 of different selected sizes. Each aperture size obtained with the tool will be made slightly greater than its corresponding conductor diameter, so that the tool may be used to cut the insulation on a wire and then slid along the conductor to strip the insulation therefrom without cutting into the conductor.

The manner of using the tool is believed obvious from the foregoing description. Thus, the tool is grasped as illustrated in Figure 1. As shown, the stop 46 is positioned for convenient engagement of the circular portion 48 of the stop 46 by the thumb of the hand grasping the tool. While maintaining the handles slightly separated, the stop is pivoted by the thumb to align its extension 50 with one of the notches 52 corresponding to the size of the conductor in the wire to be stripped.

The wire is then placed between the jaws 16 and 18 of the tool, in alignment with the V-shaped notches 32, 34 therein, after which the jaws are closed, by squeezing the handles 10 and 12 together. The angulated cutting edges 36 and 38 on the jaws sever the insulation of the wire during this closure of the jaws. If necessary, the tool may be swung about the wire to accomplish complete severance of the insulation. Actual stripping of the insulation is now effected by relatively sliding the tool along the conductor 56 in the wire. The conductor

56 is not cut during this severing and stripping operation due to limiting of closure of the jaws about the wire by the stop 46.

If it is desired to cut completely through the wire, including the conductor therein, the stop 46 may be swung to an inoperative position wherein it does not engage the handle 12 to limit closure of the jaws.

Various modifications in design and arrangement of parts will be apparent within the scope of the following claims.

I claim:

1. In a plier-type tool of the character described, a pair of pivotally connected handles movable toward and away from one another, cooperating, adjustable stops means including a pivotal pawl on one handle engageable with the other handle for limiting closure of the handles, said other handle having a series of notches for selectively receiving the pawl and restraining the latter against pivotal movement, said pawl being pivotally adjustable when the handles are opened to disengage the pawl from the other handle for engagement of the pawl in a selected one of said notches upon subsequent closing of the handles, the radial spacing between said notches and the pivotal axis of the pawl being different in any given relative positioning of the handles whereby different predetermined minimum handle spacings are obtained by selective engagement of the pawl in said notches, said pawl having a portion projecting beyond the side of said one handle remote from the other handle, said projecting portion of the pawl being substantially circular, concentric with the pivotal axis of the pawl, and serrated for pivotal adjustment of the pawl by the thumb of a hand grasping the tool.

2. In a plier-type tool of the character described, a pair of crossed handles, means connecting said handles for pivotal movement toward and away from one another, a pivotal pawl on the inner side face of one handle, said pawl having a tooth extending beyond the inner edge of said one handle and toward the inner edge of the other handle, said inner edge of the other handle having a series of notches for selectively receiving said tooth and restraining the latter against pivotal movement, said pawl

being pivotally adjustable when the handles are separated for engagement of said tooth in a selected one of said notches upon subsequent closing of the handles whereby to limit closing of the handles, the radial spacing between said notches and the pivotal axis of the pawl being different in any given relative position of the handles whereby different predetermined minimum handle spacings are obtained by selective engagement of said tooth in said notches, said pawl having a portion projecting beyond the outer edge of said one handle in every position of engagement of said pawl in said notches to enable pivotal adjustment of the pawl by the thumb of a hand grasping the tool.

3. In a plier-type tool of the character described, a pair of crossed handles, means connecting said handles for pivotal movement toward and away from one another, a pivotal pawl on the inner side face of one handle, said pawl having a tooth extending beyond the inner edge of said one handle and toward the inner edge of the other handle, said inner edge of the other handle having a series of notches for selectively receiving said tooth and restraining the latter against pivotal movement, said pawl being pivotally adjustable when the handles are separated for engagement of said tooth in a selected one of said notches upon subsequent closing of the handles whereby to limit closing of the handles, the radial spacing between said notches and the pivotal axis of the pawl being different in any given relative position of the handles whereby different predetermined minimum handle spacings are obtained by selective engagement of said tooth in said notches, said pawl having a serrated portion projecting beyond the outer edge of said one handle in every position of engagement of said pawl in said notches to enable pivotal adjustment of the pawl by the thumb of a hand grasping the tool.

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