July 8, 1958 H. R. WATSON 2,842,017

HAND WIRE STRIPPER

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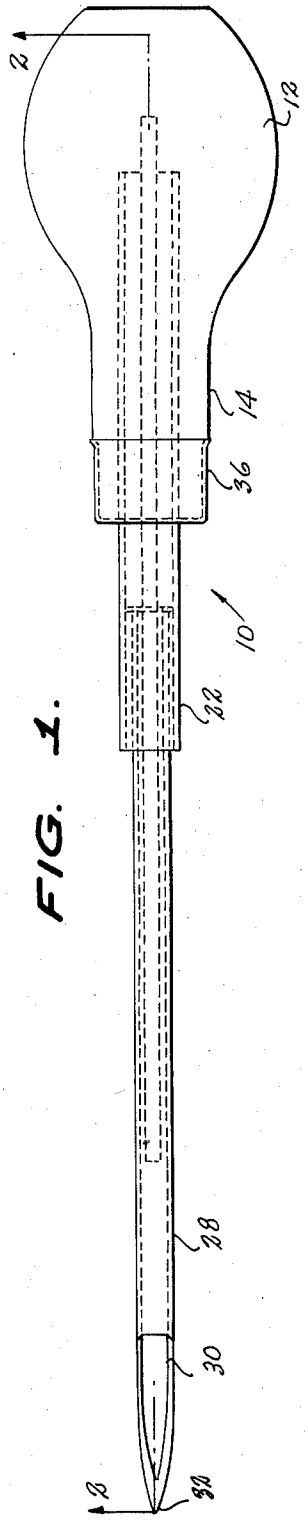



FIG. 1.

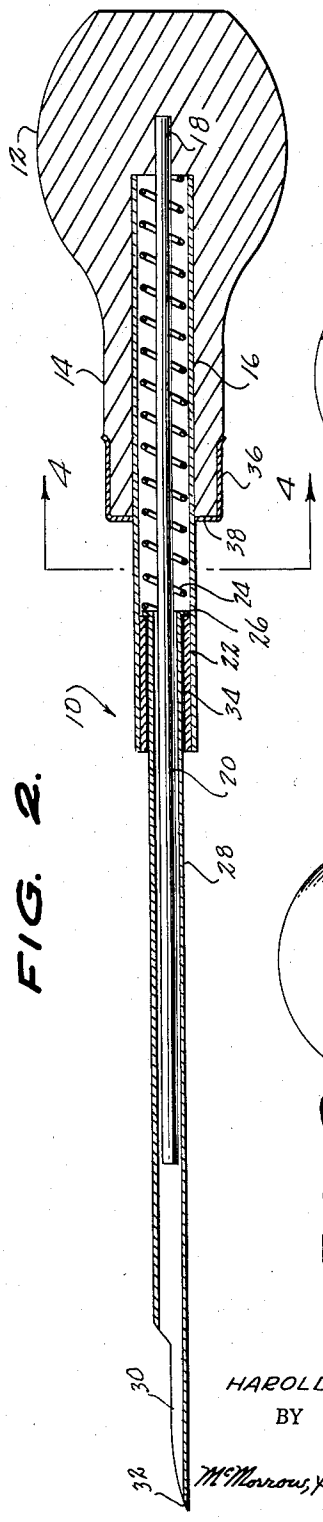



FIG. 2.

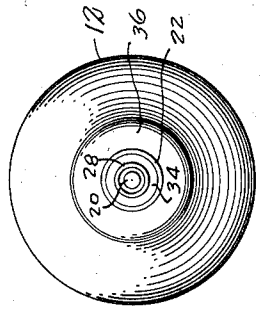



FIG. 3.

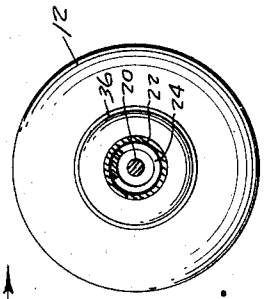



FIG. 4.

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# HAND WIRE STRIPPER

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4 Claims. (Cl. 81—9.5)

This invention relates to tools and, more specifically, the present invention pertains to manually operated tools for extracting a wire from a shielded cable.

One of the primary objects of this invention is to provide a hand tool for terminating the metal woven shield of a jacketed conductor or wire of the type generally utilized in electrical installations.

Another object of this invention is to provide a hand tool of the type referred to above for terminating the metal woven shield of a jacketed conductor, an operation known in this art as "pigtailing," without fraying the stranded shielding and without damaging the insulation of the wire.

A further object of this invention is to provide a hand tool as described above, the tool being noncomplex in construction and assembly, inexpensive to manufacture, and durable in use.

Other and further objects and advantages of the present invention will become more manifest from a consideration of the following specification when read in conjunction with the annexed drawing, in which:

Figure 1 is a top plan view of the hand tool constructed in accordance with the teachings of the present invention;

Figure 2 is a longitudinal cross sectional view of the tool shown in Figure 1, taken on the horizontal plane of line 2—2 of Figure 1, looking in the direction of the arrows;

Figure 3 is a front elevational view of the tool; and

Figure 4 is a detailed cross sectional view, partly in elevation, taken on the vertical plane of line 4—4 of Figure 2, looking in the direction of the arrows.

Referring now more specifically to the drawing, reference numeral **10** designates a hand tool constructed in accordance with the instant invention. As illustrated, the tool **10** includes an elongated bulbous handle member **12** having a forwardly extending neck portion **14** of reduced diameter. The neck portion **14** is provided with an elongated axially extending bore **16** which terminates at its inner end in a second bore **18** of reduced diameter. The bore **18** receives therein the inner end of an elongated rod **20** which projects therefrom through and beyond the forward end of the neck **14**. One end of an elongated substantially hollow tubular element is inserted within the bore **16** in concentric relation relative to the rod **20**. As is seen in Figures 1 and 2, the tubular element **22** projects beyond the forward end of the neck **14** for a distance shorter than the longitudinal axis of the rod **20**. The reference numeral **24** designates an elongated helicoidal spring which is disposed within the hollow tubular element **22**. As is clearly seen in Figure 2 of the drawing, one end of the helicoidal spring **24** abuts against the inner end of the bore **16**, and the other end of the spring **24** engages against the outwardly turned radial flange **26** carried on the inner end of an elongated substantially hollow tubular member **28**. For reasons to become more apparent below, the tubular member **28** is mounted for reciprocation on the rod **20**. The other



or outer end of the tubular member **28** is cut away to form an arcuately shaped wall **30** which terminates in a point **32**.

The helicoidal spring **24** is under compression and thus constantly tends to urge the tubular member **28** for movement in a direction away from the handle **14**. To prevent the displacement of the tubular member **28** from within the hollow tubular element **22**, a cylindrical sleeve **34** is press fit within the outer or forward end of the tubular element **22**. The flange **26** abuts against the inner end of the sleeve **34** when the tubular member **28** is in its furthermost extended position.

To prevent damage to the forward end of the neck **14**, a cap **36** having a central aperture **38** is mounted thereover, the aperture **38** receiving the elongated tubular element therethrough.

Having described the tool of the present invention in detail the operation thereof is set forth below.

As is well known in the art, most shielded conduits are provided with an outer shield beneath which is positioned a woven metallic shield. The woven metallic shield encases the wire insulating material. Now when it becomes necessary for terminating the shield, the outer shield is cut back from one end of the conductor to the desired point. Thereafter, the pointed end **32** of the tool **10** is inserted between the insulating material and the woven metallic shield, the arcuate wall **30** and the forward end of the tubular member **28** receiving therein the conductor and the insulating material immediately adjacent thereto. As the wire and its associated insulation is received within the tubular member **28**, the wire or conduit will engage against the outer end of the rod **20**.

In carrying out these operations, it is preferable that the arcuate wall **30** be disposed on the upper side of the conduit. With the tool in this position, the operator now bends the tool **10** downwardly causing the pointed end **32** to penetrate through the woven metallic shield.

The operator now grasps the hollow tubular member **28** between his fingers and rotates the tubular member **28** around its longitudinal axis thereby enlarging the penetration of the woven metallic shield. After the opening made by the penetration is large enough to receive therethrough the conductor and its insulator, the operator now holds the tubular member **28** stationary and moves the handle member toward the pointed end. This causes the rod **20** to move relative to the tubular member **28** thereby forcing the conductor outwardly of the tubular member **28** and expels the same through the opening formed in the metallic woven shield.

Having described and illustrated one embodiment of this invention in detail, it will be understood that the same is offered merely by way of example and that the invention is to be limited only by the scope of the appended claims.

What is claimed is:

1. A hand tool for pigtailing a shielded conductor comprising an elongated hollow tubular member having an end portion thereof cut away and terminating in a point, a rod mounted for reciprocation within said tubular member, said rod having one of its ends projecting beyond the other end of said tubular member and its other end being normally disposed within said tubular member adjacent to but spaced from said pointed end, and resilient means constantly tending to urge said rod and tubular member for movement away from each other.

2. A hand tool for pigtailing a shielded conductor comprising a handle having one end of an elongated rod fixedly secured thereto, an elongated tubular member having a pointed end and mounted for reciprocation on

said rod, resilient means carried on said handle and engaging the other end of said tubular member, said resilient means constantly tending to urge said tubular member for relative movement away from said handle, and means for limiting said movement.

3. A hand tool as defined in claim 2 wherein said resilient means comprise a helicoidal spring surrounding said rod, said helicoidal spring having one of its ends abutting against said handle and the other end thereof engaging against the other end of said tubular member.

4. A hand tool for pigtailing a shielded conductor comprising a bulbous handle member having a neck portion projecting away therefrom, said neck portion having an elongated bore extending inwardly from the forward end thereof, an elongated tubular element disposed within said bore and extending forwardly of the forward end of said neck portion, an elongated cylindrical rod, said rod having one of its ends disposed within said tubular element coaxially therewith, means fixedly securing said one end of said rod to said handle, the other end of said tubular member extending beyond the other end of said tubular element, an elongated substantially cylindrical sleeve fixedly secured to the other end of said tubular element, an elongated substantially hollow tubular member mounted for reciprocation within said sleeve and having a pointed outer end, said tubular member having an outwardly turned radial flange at its other end adapted to engage against the inner end of said sleeeve when said hollow tubular member has been moved to its maximum extended position away from said handle, and a helicoidal spring disposed within said spring abutting against the inner end of said bore and the other end of said spring engaging against said flange, said spring constantly tending to urge said hollow tubular member for movement towards its maximum extended position.



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