

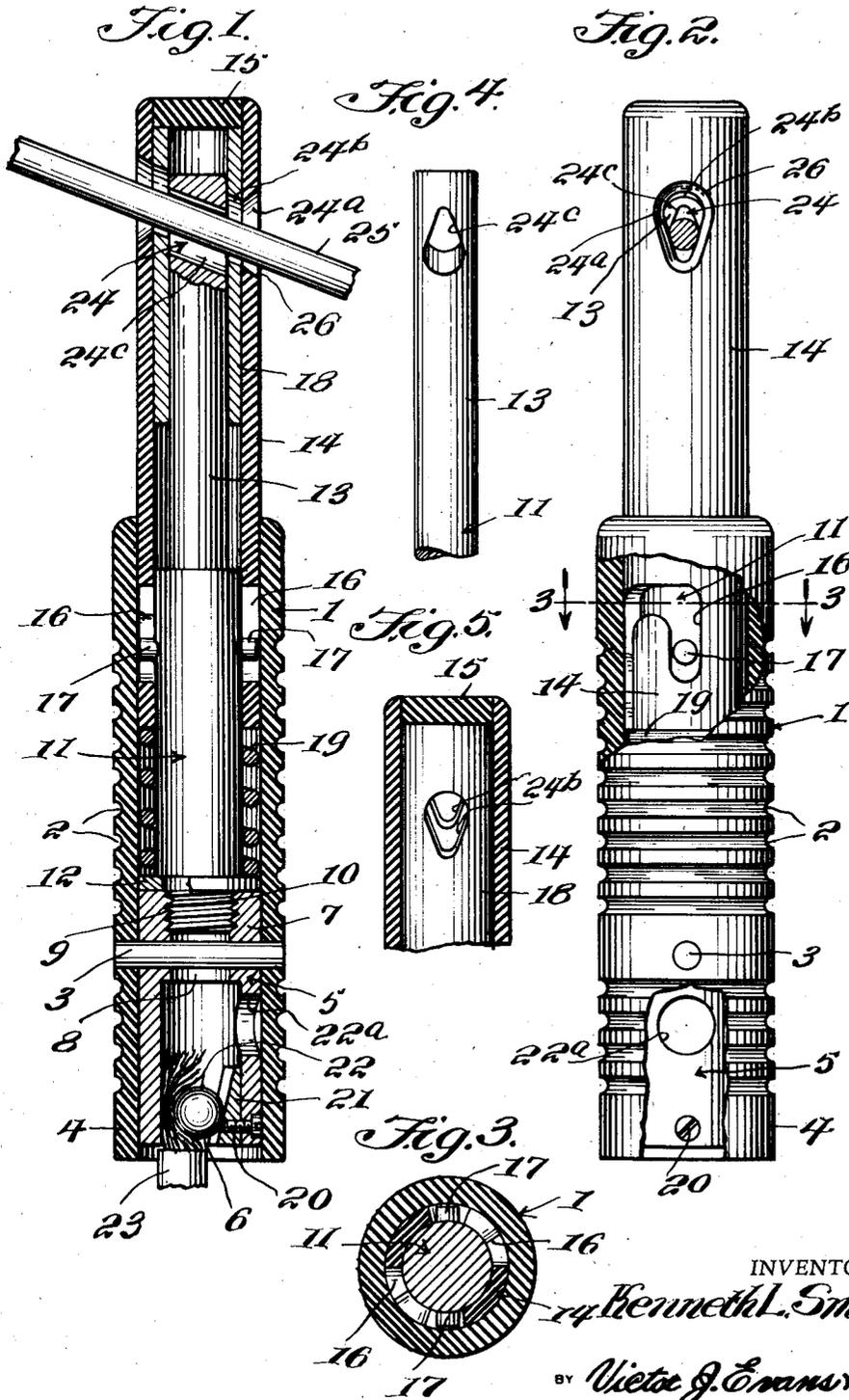
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WELDING ELECTRODE HOLDER

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# UNITED STATES PATENT OFFICE

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## WELDING ELECTRODE HOLDER

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5 Claims. (Cl. 219—8)

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My present invention, in its broad aspect, has reference to improvements in electric holders for welding operations and is designed to provide a fully insulated holder wherein the point of contact between the conductor and the electrode has a large area, thereby preventing heating which often results from the high resistances incident to small areas of contact between a conductor and an electrode, also my device embodies improved means for connecting the power cable to the holder, and improved means for providing a quick detachable, but firm connection between the holder and electrode, and the parts of my device give ready access to the interior of the holder for cleaning and inspection, and the holder is sturdy, practical and efficient in operation.

Other and equally important objects and advantages of my invention will be apparent from the following description and drawings, and it is pointed out that changes in form, size, shape, materials and construction and arrangement of parts is permissible and with in the purview of my broad inventive concept, and the scope of the appended claims.

In the drawings, wherein I have illustrated a preferred form of my invention—

Figure 1 is a longitudinal section;

Figure 2 is a side elevation partly broken away to show the slot and pin connecting the relatively telescoping and slidable parts;

Figure 3 is a transverse section on the line 3—3 of Figure 2;

Figure 4 is a detail of the conductor bar or core with the upwardly and inwardly tapered oval clamping opening; and

Figure 5 is a sectional detail of the insulating slidable holder member which telescopes into the handle.

In the drawings wherein like characters of reference are used to designate like or similar parts—

The numeral 1 designates the elongated, cylindrical, hollow handle of my holder which is formed of suitable insulating material, which may be a plastic or the like. The handle is exteriorly grooved as at 2 to provide a firm grip. Attached by a suitable transverse insulating pin 3 in the base 4 of the handle is the cylindrical hollow cable attaching block 5 which may be formed of brass, copper or the like, and has an open lower end 6 and a relatively heavy top end 7 provided with an axial bore 8 which is partially threaded as at 9. Threaded into the bore 8 is the boss 10 on the lower end of the elongated conductor bar 11, and a washer 12 is disposed between the base of the bar and the block 5. The conductor bar

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has a reduced upper end 13, and slidably mounted between the bar and the handle—telescoping into the handle—is the insulating holder element 14 which has a cap 15 at its top end and a bayonet slot 16 in its side adjacent its lower end in which fit the transverse pins 17 on the conductor bar whereby limited sliding movement is permitted between the holder 14, and the handle and conductor bar 11 and the conductor bar is completely enclosed in the handle and holder. A sleeve element 18 is fixed in the top of the holder, and a spring 19 is disposed about the conductor bar and presses upon the washer 12 and the base of the holder to normally maintain the holder extended.

Attached by a screw 20 at the base of the block 5 is a grooved wedge shaped plate 21 providing a track for the ball 22 which wedgingly engages the end of the electric cable 23 to quick detachably hold the cable connected with the block 5 whereby the cable may be connected or disconnected by the operator whenever required and on the job without special tools or the like. An opening 22a is formed in the wall of the block above the ball 22, into which the ball may seat.

The holder 14, the sleeve 18 and the end of the conductor bar are provided with oval, or egg-shaped openings which are angularly inclined and adapted to register to form an inclined passage or opening 24 through my device when the holder is pressed in, thereby to receive there-through the electrode 25. It will be noted that the edges of openings 24a in the walls of the holder are inclined inwardly and downwardly, as shown in Figure 2, and this also is true of the openings 24b in the sleeve 18, but the edges of the openings 24a are beveled as at 26. The opening 24c in the conductor bar has its sides inclined inwardly and upwardly—that is, the reverse from openings 24a and 24b, see Figure 4, whereby not only an extensive contact area is provided between the conductor bar and sleeve with the electrode, but by reason of the shape of the openings and their relative disposition, a firm clamping action is provided on the electrode 25 when the holder and sleeve are moved out or extended to the operative position by the spring 19. It will be noted that all parts are fully insulated, and that there are no protuberances or projections, and that the device is simple, sturdy and practical.

From the foregoing, it is believed that the operation and advantages of my invention will be apparent, but it is again emphasized that interpretation of the scope thereof should only be con-

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clusive when made in the light of the subjoined claims.

I claim:

1. A holder for electrodes, comprising a hollow insulating handle, a hollow insulating holder element telescoping into the handle and mounted for limited sliding movement, annular grooves in the exterior surface of said holder to provide a hand grip thereon, said holder being open at both ends to permit the passage of the holder through one end, and the passage of the cable through the other, a conductor block fixed in the bottom end of the handle, an elongated conductor bar fixed to the block and extending into the holder element, the holder element having an internal sleeve, a closed end and an open end through which the conductor bar extends, the holder element, the sleeve and the conductor bar having openings with restricted ends and adapted to register to receive an electrode therethrough, said openings being angularly disposed to mount the electrode at an angle to the holder and a spring normally pressing the holder to extended position with respect to the handle.

2. The invention as defined in claim 1 wherein the holder has bayonet slots in its walls, and pins are carried by the conductor bar and fitting in the slots to limit the movement of the holder with respect to the handle.

3. The invention as defined in claim 1 wherein a stop washer is carried between the block and conductor bar, and the spring bears against the washer and holder.

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4. The invention as defined in claim 1 wherein the openings in the holder, sleeve and conductor bar are substantially oval-shaped with narrowing walls adjacent one end, to provide an extensive contact area, and relatively reversed as to the positions of the narrow ends to clamp against the contact bar to fix the same in position.

5. The invention as defined in claim 1 wherein the block is hollow to receive the cable and has a threaded bore to engage a threaded boss on the conductor rod, and wherein a transverse pin fixes the block to the handle and the conductor bar has a reduced end formed with the electrode opening, and an enlarged part between which the handle and the holder is slidably mounted.

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