

June 8, 1948.

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2,443,043

ELECTRODE HOLDER

Filed Sept. 6, 1947

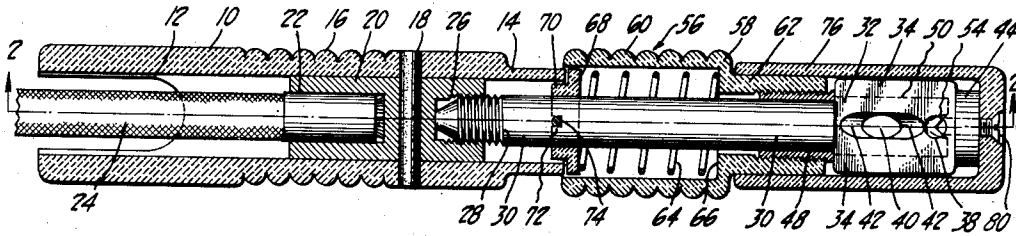


FIG. 1

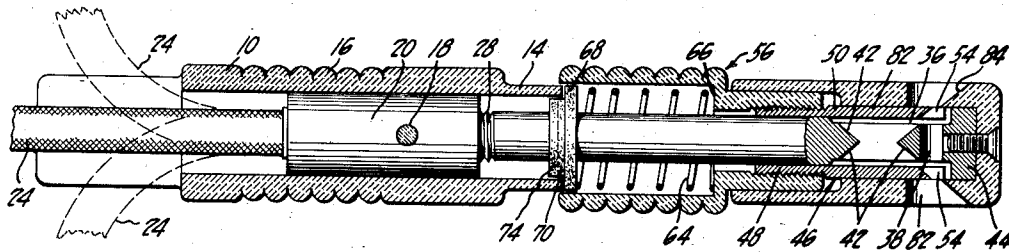


FIG. 2

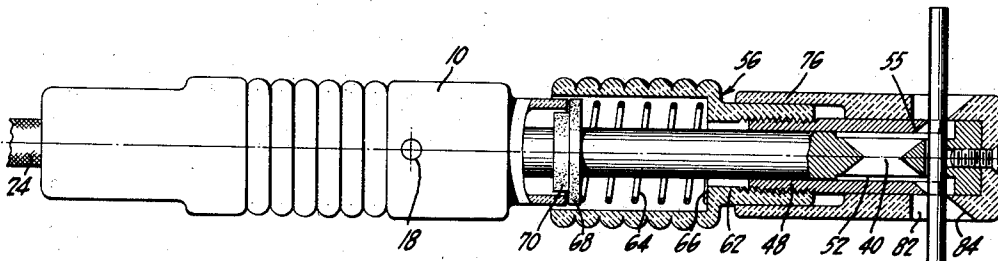


FIG. 3

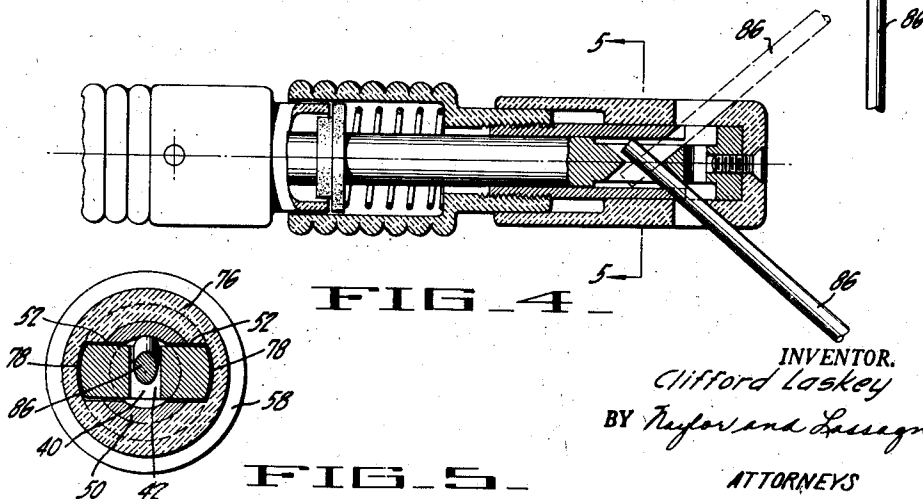


FIG. 4

FIG. 5

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2,443,043

ELECTRODE HOLDER

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Application September 6, 1947, Serial No. 772,511

8 Claims. (Cl. 219—8)

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This invention relates to electrode holders, and more particularly to a welder's electrode holder.

An object of the invention is to provide an electrode holder constituting an improvement over those holders presently known by virtue of its simplified structure and ease and efficiency of operation.

Another object of the invention is to provide an electrode holder having its electrical conducting elements fully insulated from its external surfaces during all positions and phases of operation.

A further object of the invention is to provide an electrode holder which may be readily disassembled for purposes of repair, inspection, and the like.

Other objects and advantages of the invention will be apparent from the following description taken in conjunction with the drawing forming part of the specification, and in which:

Figure 1 is a view in longitudinal cross-section of the electrode holder embodying the invention;

Figure 2 is a view taken along lines 2—2 of Figure 1;

Figure 3 is a view of the device with an electrode carried thereby, showing one position of use of said electrode;

Figure 4 is another view of the device showing another position of use of an electrode carried thereby; and

Figure 5 is a view in transverse section of the electrode holder, taken along lines 5—5 of Figure 4.

Referring to the drawing for more specific details of the invention, the electrode holder is comprised of a tubular member or grip 10 of suitable insulating material having a pair of oppositely disposed U-shaped slots 12 at one end thereof, a reduced diametral portion 14 at the other end thereof, and a corrugated portion 16 for gripping purposes. Secured within the tubular member 10, as by a pin 18 of insulating material, is a coupling member 20 of conducting material having in one end thereof a smooth-bored socket 22 for the reception and frictional engagement therein of the end of an electrical cable 24, and in the other end thereof a threaded socket 26 for the engagement therein of the threaded end 28 of a shaft 30. The shaft 30 has integral therewith an electrode receiver or head 32 having laterally extending ears 34 and oppositely disposed milled flat surfaces 36, said head being provided with welding rod apertures 38 and 40, the latter being preferably oval in form and having sharply defined angularly inclined edges 42

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forwardly and rearwardly of said aperture and at both sides of the head 32. The head 32 has integral therewith a cylindrical boss 44.

A slidable electrode engaging member 46 comprising an externally threaded portion 48 sleeved on the shaft 30 and a portion 50 having opposed slots 52 for the reception of the ears 34 of the head 32 is provided with oppositely disposed V-shaped notches 54 and angularly inclined surfaces 55 leading inwardly therefrom for a purpose hereinafter described. A slidable trigger sleeve, indicated generally at 56, of suitable insulating material, and comprising a large diametral portion 58 provided with external corrugations 60 for gripping purposes and an internally threaded smaller diametral portion 62 in engagement with the threaded portion 48 of the slidable member 46, is yieldingly urged away from the tubular member or grip 10 by means of a spring 64 maintained in compression between an internal shoulder 66 of the trigger sleeve 56 and a washer 68, said washer being provided with an annular ring 70 extending into the forward end of the tubular member 10 and having oppositely disposed slots 72 for the reception of a pin 74 passing through the shaft 30. The spring 64, being maintained between the washer 68 and the shoulder 66, urges the trigger sleeve to the right, thus urging the forward end of the threaded portion 48 of the slidable member 46 into engagement with the ears 34 of the head 32.

A cap 76 of suitable insulating material having oppositely disposed guideway slots 78 for the reception of the ears 34 of the head 32 is sleeved over the slotted portion 50 of the slidable member 46 and the smaller diametral portion 62 of the trigger sleeve 56 and is secured to the cylindrical boss 44 by means of a screw 80. The cap 76 is provided with oppositely disposed apertures 82 in alignment with the aperture 38 of the head 32, each of said apertures 82 being provided with an angularly inclined wall 84, and each wall 84 being substantially parallel with the edge 42 of the aperture 40 nearest thereto and the edge 42 the farthest removed therefrom.

The electrode holder is operative in the following manner. If it is desired to secure a welding rod 86 in the holder at a right angle thereto, as shown in Figure 3, the operator grasps the corrugated portion of the trigger sleeve 56 with one hand, while normally gripping the corrugated portion 16 of the tubular member 10 with the other, and pulls the trigger sleeve downwardly, or to the left as viewed in the drawing, against the action of spring 64 to withdraw the notched end of the

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slidable member 45 from between the aperture 33 of the head 32 and the apertures 82 of the cap 76, whereupon the end of rod 86 is inserted through said apertures. The trigger sleeve 56 is then released to allow the spring 64 to move said sleeve and slidable member 45 to the right to engage the notches of the slidable member 45 with the rod 86, thus fixedly clamping said rod between the slidable member and the wall of aperture 38.

If it is desired to secure the rod 86 in the holder at an oblique angle for overhead use, as indicated in Figure 4, the trigger sleeve is moved to the left sufficiently to allow the rod to be inserted through either of the apertures 82 in the cap and into the aperture 40 in the head 2, and, upon the release of the sleeve 56, the rod will be fixedly clamped against the angularly inclined wall 84 of aperture 82 and the adjacent angularly inclined wall 42 of aperture 40 by the undercut or angularly inclined surface 55 of the V-shaped notch 54 therebetween.

Regardless of the orientation of the rod in the holder, it may be readily released therefrom by moving the trigger sleeve to the left to bring the slidable member out of engagement with the rod and by inverting the holder to allow the rod to fall free. During any such manipulation of the device, as during all other uses thereof, the U-shaped slots 12 in the end of the tubular member provide for a freedom of movement of the device with respect to the cable 24, as indicated by the two dotted outline positions of the cable in Figure 2.

From the foregoing description of the electrode holder and its operation, it will be seen that I have provided a device of this type having its electrical conducting elements fully insulated during all phases of use of the device, and, further, that the electrode holder lends itself to a rapid and easy disassembling for purposes of repair or inspection. In order to fully disassemble the elements of the device, it is necessary only to disengage the threaded end 28 of shaft 30 from the threaded bore 26 of the tubular member 10, tap the pin 74 out of its aperture in shaft 30, slide the trigger sleeve 56 and slidable member 45 off of the free end of shaft 30, disengage the threadably connected portions 62 and 48 of said sleeve 56 and member 46, and remove the screw 80 to disengage the cap 76 from the boss 44.

While a structural embodiment of the invention has been shown and described, it is to be understood that the electrode holder shown is subject to modification within the spirit of the invention and the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. A welder's electrode holder comprising a shaft forming an electrical conductor, an electrode receiver also forming an electrical conductor carried thereby and having at least one aperture therethrough, an insulating cap for the receiver and having at least one aperture in the wall thereof so arranged that an electrode may be passed through said aperture and into the aperture of the receiver, an electrode engaging member slidably sleeved on said shaft and extending between said cap and said receiver, a trigger sleeve having a coupling connection with said electrode engaging member, spring means associated with said shaft and trigger sleeve adapted to urge said sleeve and electrode engaging member in one direction to cause the latter to interrupt communication between said

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apertures, said trigger sleeve being yieldably movable in the opposite direction to withdraw said electrode engaging member from between said apertures.

2. A welder's electrode holder comprising a shaft and an electrode receiver carried thereby adjacent one end thereof, both shaft and receiver forming an electrical conductor, at least one aperture in said receiver, an insulating cap for the receiver, at least one aperture in the wall of said cap so arranged that an electrode may be passed through said aperture and into the aperture of the receiver, an electrode engaging member slidably sleeved on said shaft and extending between said cap and said receiver, a double diametral trigger sleeve of insulating material having the smaller diametral portion thereof extending between said cap and said electrode engaging member and having a releasable connection with the latter, said larger diametral portion defining with said shaft an annular space therebetween, a spring under compression within said space and having one end thereof seated on an internal shoulder of said trigger sleeve between the larger and smaller diametral portions thereof and the other end in pressing engagement with a seat member secured to said shaft, said spring being adapted to urge said trigger sleeve and electrode engaging member in one direction to cause the latter to interrupt communication between said apertures, and said trigger sleeve being manually movable in the opposite direction against the action of said spring to withdraw said electrode engaging member between said apertures.

3. The combination as set forth in claim 2 together with a grip of insulating material secured to the end of said shaft and extending between said shaft and said trigger sleeve, said grip having means therein forming an electrical connection between said shaft and an electrical cable.

4. The combination as set forth in claim 3, wherein said means forming said electrical connection comprises a double socket member fixedly secured within said grip, said shaft being secured within one end of said member and said electrical cable being secured in the other end thereof.

5. A welder's electrode holder comprising a shaft forming an electrical conductor, an electrode receiver also forming an electrical conductor carried thereby and having an aperture therethrough, an insulating cap for the receiver and having an aperture in the wall thereof obliquely disposed forwardly of the aperture in said receiver, each of said apertures having the forward wall thereof angularly inclined so as to be in substantially parallel alignment, an electrode engaging member slidably sleeved on said shaft and extending between said cap and said receiver, a trigger sleeve having a coupling connection with said electrode engaging member, spring means associated with said shaft and trigger sleeve adapted to urge said sleeve and electrode engaging member in one direction to cause the latter to interrupt communication between said apertures, said trigger sleeve being yieldably movable in the opposite direction to withdraw said electrode engaging member from between said apertures.

6. The combination as set forth in claim 5, wherein said receiver is provided with a second aperture in oppositely disposed relation to the aperture of the cap, said electrode engaging member being adapted to normally interrupt full

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communication between said second aperture and the aperture in said cap.

7. The combination as set forth in claim 6, wherein said cap is provided with a second aperture oppositely disposed to said second receiver aperture and said other cap aperture and having an inclined forward wall symmetrical to that of said other cap aperture, said first receiver aperture having each half of the forward and rearward walls angularly inclined from the center thereof away from the axis of the aperture so that each of said half-wall surfaces is substantially parallel to at least one of the forward walls of the cap apertures.

8. The combination as set forth in claim 7, wherein the electrode engaging member is provided with a pair of oppositely disposed notches in the leading edge thereof so arranged as to be

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engageable with an electrode passed through a cap aperture and into a receiver aperture, each of said notches having an undercut wall at the inner end thereof substantially parallel with the forward wall of the cap aperture adjacent thereto.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,811,156	Sadler -----	June 23, 1931
1,928,517	Varnier -----	Sept. 26, 1933
2,288,994	Del Bene -----	July 7, 1942
2,372,251	Checkos -----	Mar. 27, 1945