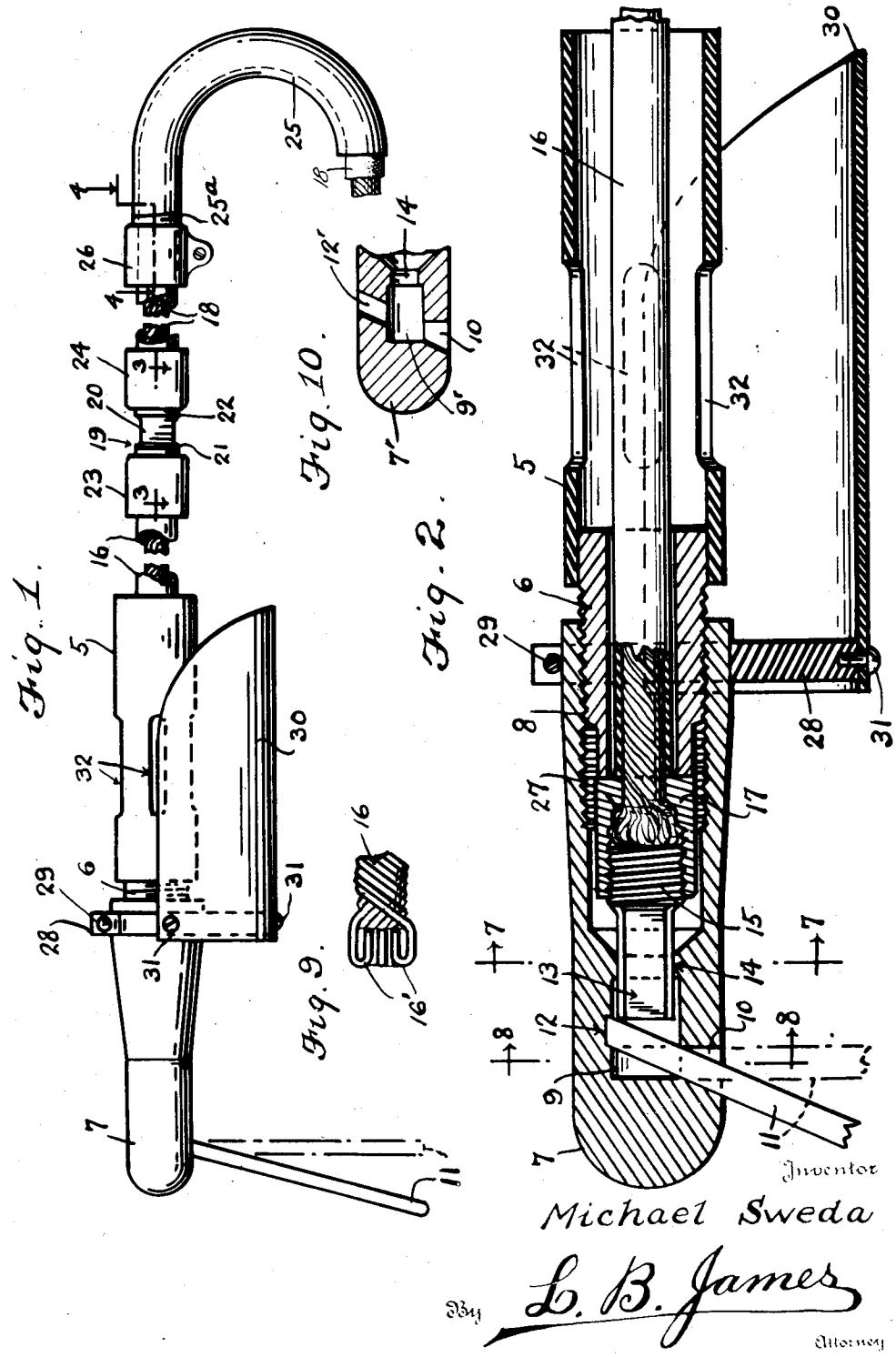
May 24, 1938. M. SWEDA 2,118,274

SHIELDED ELECTRODE HOLDER

Filed Oct. 21, 1936 2 Sheets-Sheet 1



May 24, 1938. M. SWEDA 2,118,274

SHIELDED ELECTRODE HOLDER

Filed Oct. 21, 1936 2 Sheets-Sheet 2

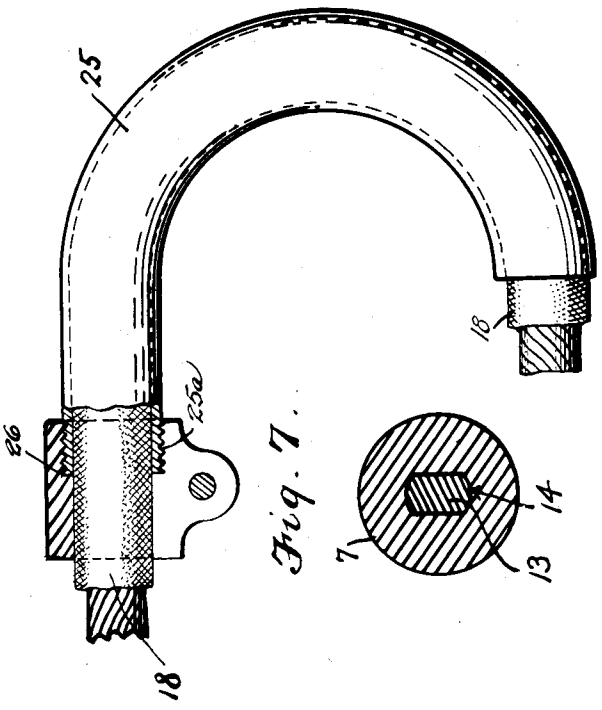


Fig. 7.

Fig. 8.

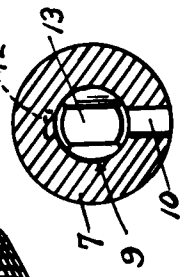


Fig. 6.

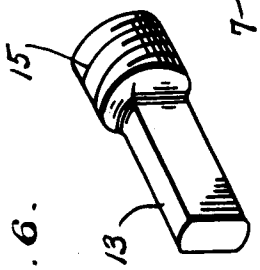


Fig. 4.

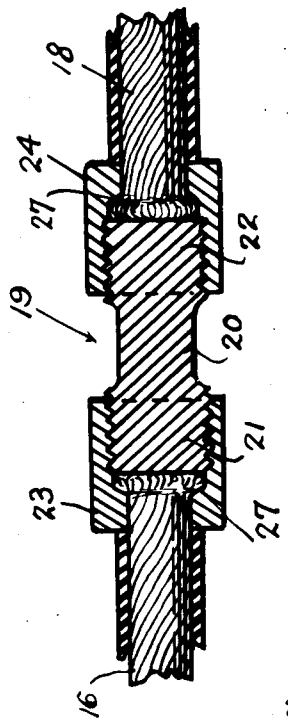
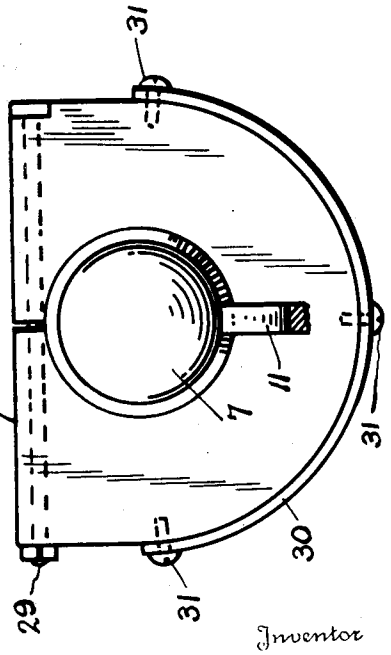


Fig. 3.

Fig. 5.



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SHIELDED ELECTRODE HOLDER

Michael Sweda, Youngstown, Ohio

Application October 21, 1936, Serial No. 106,860

1 Claim. (Cl. 219—8)

This invention is an improvement in electrode holders, and consists of a shield equipped holder of novel construction.

An object of the invention is to provide in an electrode holder an improved handle construction.

A further object of the invention is to provide electrode holders equipped to accommodate rods of various sizes, and to secure the electrode at any one of several different angles.

Still another object of the invention is to provide a completely insulated electrode holder which will not arc at any point on the holder except where desired, namely at the point of electrical contact with the electrode.

Also it is an object of the invention to provide a ventilated handle for the electrode holder, together with an efficient heat shield assembly for the handle.

The objects of the invention also include that of providing novel connections between conductor elements of the electrode holder.

The invention, its objects and advantages will be more apparent from the following detailed description, when read in connection with the accompanying drawings, wherein:

Fig. 1 is a side elevational view of my improved electrode holder.

Fig. 2 is an enlarged longitudinal sectional view therethrough.

Figs. 3 and 4 are detail sectional views taken on the lines 3—3 and 4—4, respectively of Fig. 1.

Fig. 5 is a front elevational view of the holder.

Fig. 6 is a perspective view of a conductor rod.

Figs. 7 and 8 are detail sectional views taken substantially on the lines 7—7 and 8—8 respectively of Fig. 2.

Fig. 9 is a side view of the end of one of the cables showing the manner of bending its extremities.

Fig. 10 is a detail sectional view of the forward end of a modified form of head.

Referring to the drawings by reference numerals, it will be seen that in the preferred embodiment thereof, the electrode holder comprises a handle 5, preferably cylindrical and of suitable insulating material. Handle 5 may have a smooth exterior, as shown, or have external ribs to provide better purchase when the handle is gripped for turning.

At one end the handle 5 is suitably provided with an externally threaded nipple or extension 6 on which is screwed a head 7.

Head 7 is preferably of the shape shown, is socketed as illustrated, and is made from porcelain or any insulating material. Ventilating slots 32 are provided in the handle as shown.

At the open end of the head 7 are provided internal threads 8 to complement the nipple 6 as shown.

At the inner end of the head 7 is a small diameter portion 9 into which is insertable through an opening 10,—one end of the electrode 11. Laterally displaced from opening 10 is a recess 12 in the wall of portion 9 for receiving the inserted end of the electrode when it is desired to position the latter at an obtuse angle relative to the holder.

A conductor rod 13 has a sliding fit with a restricted diameter portion 14 of head 7 as shown in Figs. 2 and 7. At one end said rod is provided with an enlarged threaded head 15.

A section 16 of a conductor cable has loosely engaging one end thereof a coupling sleeve 17, internally threaded as shown and adapted to be threaded on the head 15 of the conductor rod 13 to couple said rod and cable section together and in electrical connection one with the other, as hereinafter referred to.

A second cable section 18 is electrically connected with the cable section 16 through the medium of an improved connection 19.

Connection 19, as shown in Fig. 3 consists of a rod 20 of conductive material having threaded ends 21, 22, with which are screw threadedly engaged coupling sleeves or sockets 23, 24, sleeve 23 serving to electrically connect cable 16 to rod 20, and sleeve 24 serving to electrically connect rod 20 and an end of cable section 18.

A suitable tubular cable guide 25 having its inner end threaded as at 25a is connected to the aforesaid second cable section 18 through the instrumentality of a coupling sleeve or socket 26, said cable guide being preferably of hook shape to prevent that portion of the cable adjacent the handle and passing therethrough from twisting and kinking when operating the electrode holder.

It will be noted that coupling sleeves or sockets 17, 23, 24 and 26 are identical in construction, each having the inner end of its socket frustro-conical as at 27.

Further each cable end has the strands of the cable spread, as clearly shown. Thus as a coupling sleeve is tightened the strand spreaded end is forced to wedge itself into the inner frustro-conical end of the coupling socket to insure a positive and efficient connection between a cable end and its associated coupling sleeve, as will be clear from a consideration of either Figures 2, 3 or 4.

For the holder there is also provided a front head shield 28, in the form of a plate constructed from suitable insulating material and suitably apertured to receive the end of head 7 as shown best in Figs. 2 and 4. A suitable tie rod 29 is employed for clamping the shield on the head.

Also a second heat shield 30 substantially semi-cylindrical in cross section is disposed at the underside of handle 5 and extends upwardly at opposite sides of said handle as shown. At one end shield 30 is secured to the edge of front shield 28 at intervals by screws or the like 31.

Shields 28 and 30 together with slots 32 serve to prevent heating of the handle.

With the parts assembled as shown in Fig. 2 it will be seen that the inserted end of electrode 10 is clamped with head 7 by screwing home the nipple or handle extension 6. Handle extension or nipple 6 abutting at its inner end coupling socket 17 will cause the latter, together with conductor rod 13 to move as a unit inwardly of the head 7 and toward the left in Fig. 2 to engage rod 13 with the inserted end of electrode 10.

Rod 13 thus cooperates with the end wall of socket portion 9 to secure electrode 10 at substantially right angles to head 7, and with recess 12 to secure said electrode at substantially an obtuse or oblique angle to said head.

In Fig. 9 of the drawings the cable 16 which is preferably of the conventional strand type has its extremities separated and turned inwardly as indicated at 16'. Through the instrumentality of this structure the cable when jammed by the connecting elements thereof will not only tend to spread but will resist axial stress against separation from its connections should they become loosened.

The head 7' illustrated in Fig. 10 of the drawings is formed of any suitable material and is provided with portions 9' and 14' and opening 10 similar to like portions heretofore referred to, the head being so modified as to provide an opening 12' in alignment with the opening 10 to permit the electrode 11 to extend therethrough. This structure permits use of an electrode of any length and also adjustment thereof relative to the head.

Having thus described the invention what is claimed as new is:

An electrode holder including a hollow head having a lateral opening for the insertion of an electrode, a conductor rod slidably mounted in said head and having its forward end adapted to engage the electrode, a handle screwed into the rear end of said head, a sleeve screwed on the rear end of the rod, said sleeve extending rearwardly of the rod and having a reduced rear end, and a cable passing through said handle and the rear end of said sleeve, said cable having an enlarged forward end filling the wider open part of the sleeve and forced by the sleeve into close contact with the rod, said handle engaging the rear end of the sleeve to force the rod into close contact with the electrode.

MICHAEL SWEDA.