Feb. 29, 1944. J. E. PAULSON 2,342,966

ELECTRODE HOLDER

Filed Jan. 22, 1943

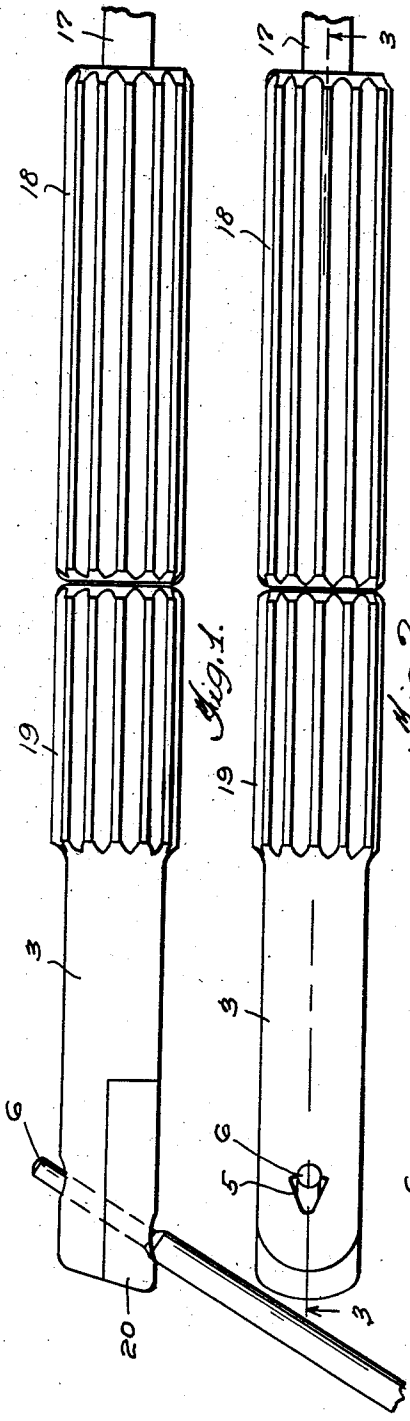


Fig. 1.

Fig. 2.

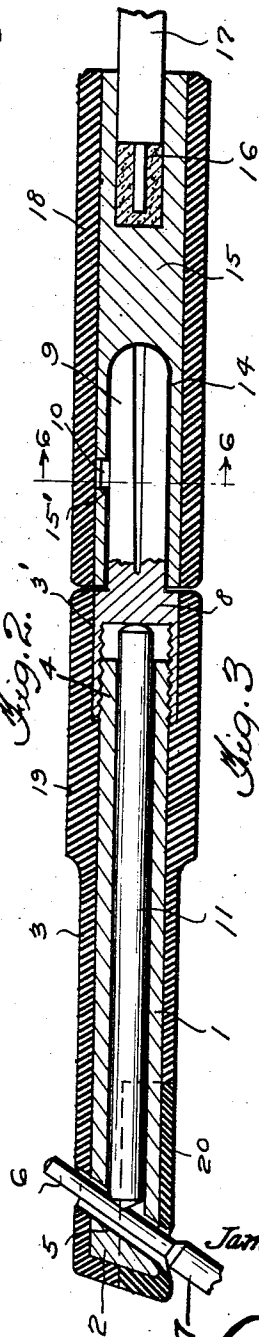


Fig. 3

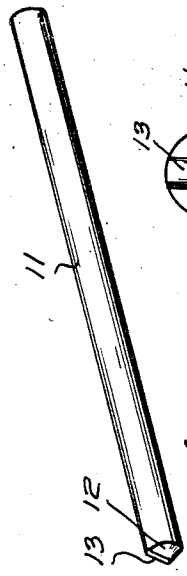


Fig. 4.



Fig. 5.

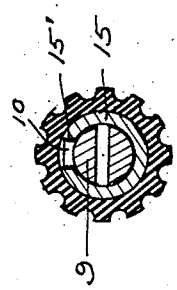


Fig. 6.

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ELECTRODE HOLDER

James Edward Paulson, Long Beach, Calif.

Application January 22, 1943, Serial No. 473,241

2 Claims. (Cl. 219—8)

My invention relates to improvements in electrode holders, the principal object in view being to provide a simply constructed, safe device of this character, in which an electrode may be easily and quickly secured and which involves a minimum number of parts and is inexpensive to manufacture.

Other and subordinate objects are also comprehended by my invention, all of which, together with the precise nature of my improvements, will be readily understood when the succeeding description and claims are read with reference to the drawing accompanying and forming part of this specification.

In said drawing:

Figure 1 is a view in side elevation of my improved holder, in its preferred embodiment,

Figure 2 is a view in plan.

Figure 3 is a view in longitudinal section taken on the line 3—3 of Figure 2,

Figure 4 is a view in perspective of the clamping member detached,

Figure 5 is a view in front end elevation of said member, and

Figure 6 is a view in transverse section taken on the line 6—6 of Figure 3.

Reference being had to the drawing by numerals, in the illustrated embodiment thereof, my improved holder comprises an elongated, substantially tubular, socket member 1 having a closed leading end 2, a covering sheath 3 of insulation having an enlarged axial rear end bore 3' therein, and a threaded nipple forming rear end 4 extending part way into said bore 3'. Adjacent to the front end of the socket member 1 is a transverse bore 5 oblique to the axis of the member and extending through the sheath 3. The bore 5 is V-shaped transversely and tapers forwardly of the socket member 1 so that the shank 6 of the usual electrode 7 inserted through said bore may be wedged forwardly in the bore to hold the same firmly in the socket member.

Means for wedging the shank 6 in said bore and thereby clamping the same in the socket member 1 is provided as follows:

Threaded onto the rear end 4 of the socket member 1 is a cap type coupling 8 fitting into the bore 3' and having an axial tail shank 9 longitudinally split and resilient for compression of the divided parts thereof toward each other and provided on one side thereof with a radial lug 10.

A rod-like electrode clamping member 11 is confined loosely in the socket member 1 by the coupling 8 and includes a conical front end 12 adapted to enter the bore 5 and designed to be thrust against the electrode shank 6 by turning of the coupling 8 against the rear end of the clamping member so that said shank is wedged forwardly in the bore 5. The end 12 is provided with an oblique radial groove 13 in its face inclined in correspondence with the bore 5 and which fits part way around the shank 6 to provide for maximum bearing surface between the end 12 and said shank 6.

The shank 9 of the coupling 8 is designed to fit with a snap action in a front end, axial socket 14 in a cylindrical adapter 15 connected at its rear end, as shown at 16, to the usual power line 17 and covered by a sheath 18 of insulation material. For this purpose a radial slot 15' is provided in the adapter 15 into which the socket 14 opens and into which the lug 10 snaps when the tail shank 9 is shoved into said socket. The sheath 3 of the socket member 1 has an enlarged rear end portion 19 and said portion together with the sheath 18 are of the same diameter and longitudinally fluted to facilitate gripping by the hand in assembling and disassembling the parts. As will be understood, the socket member 1, coupling 8 and clamping member 11 are, as in the case of the adapter 15, formed of conductive material. The end of the shank 9 and bottom of the socket 14 may be rounded to eliminate sharp edges.

The sheath 3 is longitudinally split from its front end and also circumferentially in the rear of the bore 5 to provide on the under side of the sheath an inset section 20 in said sheath where said sheath is most affected by the heat from the electrode 6 so that said section may be replaced without replacing the entire sheath.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the subjoined claims.

What I claim is:

1. An electrode holder comprising a substantially tubular socket member of conductive material having a closed leading end and a tail end, a covering sheath of insulation material, and a transverse bore extending therethrough adjacent said closed end and oblique to the axis of the member and for insertion of the shank of an electrode therethrough, an adapter having a conductor connected to an end thereof,

means to connect the tail end of the socket member to the other end of said adapter comprising a coupling rotatable on said tail end to feed the same forwardly of the socket member, means to clamp said shank in said bore operative by such forward feed of said coupling, and a telescopic snap action connection between said adapter and coupling.

2. An electrode holder comprising a substantially tubular socket member of conductive material having a closed leading end and a tail end, a covering sheath of insulation material, and a transverse bore extending therethrough adjacent said closed end and oblique to the axis of the member and for insertion of the shank of an electrode therethrough, an adapter having a conductor connected to an end thereof, means to connect the tail end of the socket member to the other end of said adapter comprising a coupling rotatable on said tail end to feed the same forwardly of the socket member, and means to clamp said shank in said bore operative by such forward feed of said coupling, said last means comprising a rod-like member having a grooved front end for engagement with said shank loosely mounted in said bore for movement in said socket member into engagement with said shank.

JAMES EDWARD PAULSON.