May 17, 1927. 1,628,926

C. F. SHORT

ELECTRODE HOLDER

Filed Nov. 23, 1925

Fig. 1.

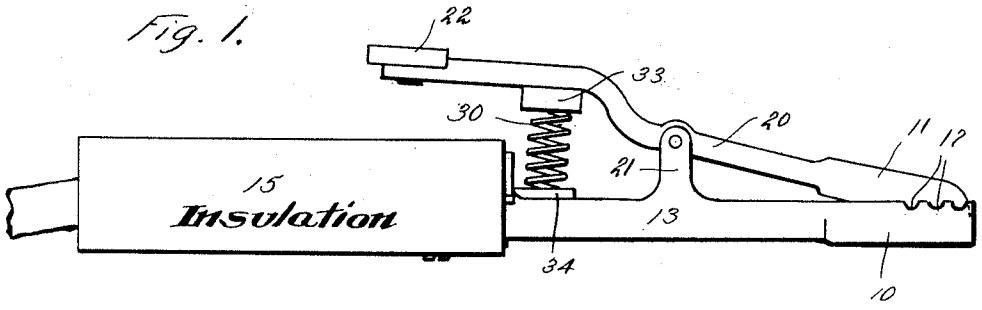


Fig. 2.

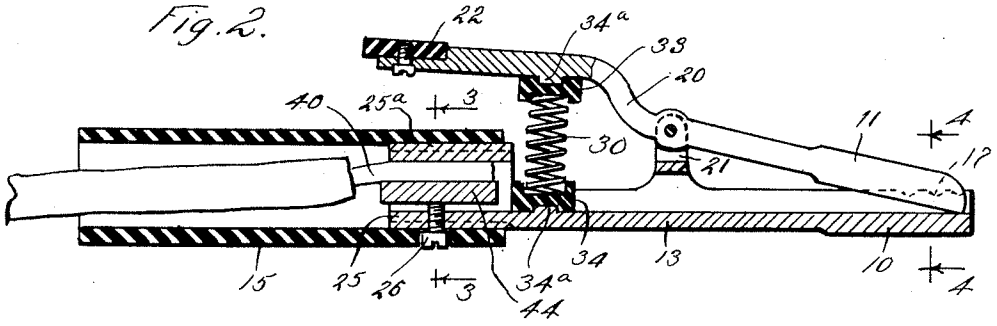


Fig. 3.

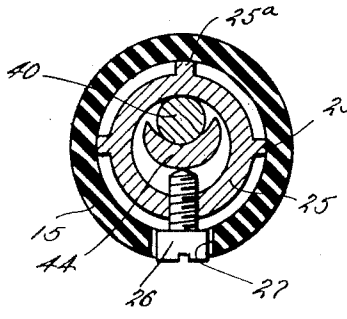
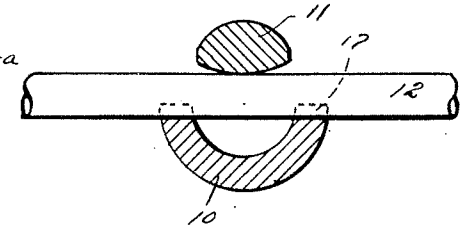


Fig. 4.



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CLIFFORD F. SHORT, OF NORTH LONG BEACH, CALIFORNIA.

ELECTRODE HOLDER.

Application filed November 23, 1925. Serial No. 70,834.

This invention has to do with an electrode holder suitable for use in electric welding and it is an object of the invention to provide a simple, effective, improved device of this character.

It is an object of my present invention to provide an electrode holder which is simple, practical and convenient to use.

Another object of my invention is to provide an electrode holder with an actuating spring insulated so that it is not affected by the heat of welding.

Another object of my invention is to provide various improvements in the structural features of devices of this character.

Another object of the invention is to provide an improved means of gripping or engaging an electrode.

A further object of the invention is to provide means whereby the handle is kept cool through circulation of air through it.

The various objects and features of my invention will be best and more fully understood from the following detailed description of a typical preferred form of the invention, throughout which description reference is had to the accompanying drawings in which:

Fig. 1 is a side elevation of the device provided by this invention;

Fig. 2 is a longitudinal sectional view of the device;

Fig. 3 is an enlarged detailed transverse sectional view of the device taken as indicated by line 3—3 of Fig. 2; and

Fig. 4 is an enlarged detailed transverse sectional view of the device taken as indicated by line 4—4 on Fig. 2 showing an electrode in place in the device.

The device provided by this invention is intended primarily for use in holding an electrode during an electric welding operation, and comprises, generally, two co-operating jaws 10 and 11 for holding an electrode 12, a body 13 to which the jaws are connected, a handle 15 in connection with the body and means for operating the jaws.

The jaw 10 which may be considered the main jaw of the device, is formed at the outer end of the body 13. The main jaw 10 is semi-circular in cross sectional configuration and is provided at opposite points in its edges with notches 17 for receiving electrodes.

The jaw 11 may be considered a clamping jaw and is carried on the forward arm of a lever 20 pivotally connected with the body 13. The jaw 11 is comparatively narrow and is located between the spaced side parts of the jaw 10 so that the electrode is gripped on one side at two spaced points by the two spaced side parts of jaw 10, and at the other side at a single point by the jaw 11. With this construction the jaws will always hold the electrode firmly. The lever 20 is shown mounted between two spaced parts 21 projecting upwardly from the upper side of the body 13. The other end of the lever 20 extends rearwardly to a point opposite the handle 15 where it is provided with a knob 22 which the operator depresses to open jaw 11.

The handle 15 is tubular in form and is formed of insulating material, for instance fibre, or the like. The handle 15 slidably fits over a plurality of spaced ribs 25^a on the exterior of a tubular part 25 at the inner end of the body 13, the handle and body being held together by a set screw 26 which extends through an opening 27 in the handle and screw threads into the part 25 of the body. With this construction the handle is open at both ends so that air can circulate through it to prevent it from becoming overheated.

The means provided for operating the jaws includes a spring 30 arranged under compression between the rearwardly extending arm of a lever 20 and the body 13. The spring is preferably a helical spring arranged under compression between the arm of the lever and the body. In accordance with my invention the spring 30 engages the arm of the lever through a block 33 of insulating material and engages the body 13 through a block 34 of insulating material. The blocks 33 and 34 may be securely connected to the arm and body, respectively and may be recessed to receive the ends of the spring in the manner clearly shown in Fig. 2 of the drawings. The blocks 33 and 34 may be mounted on lugs 34^a projecting from the arm and body as shown in Fig. 2 of the drawings.

The tubular part 25 at the inner end of the body 13 and which extends into the handle, is adapted to receive an electrical conductor 40. The insulated conductor extends inwardly through the handle 15. The end of the conductor from which the insulation has been removed extends into the tubular part 25 of the body. A clamp plate 44

is arranged in the tubular part 25 and engages the conductor, the clamp plate being actuated to clamp the conductor tightly against the wall of the part 25 by means of set screw 26. By this construction direct electrical connection is made between the body 13 and the conductor 40. The set screw 26 serves not only to hold the conductor in connection with the body but also to hold the handle on the body.

The body 13 is integral with the main jaw 10 and is preferably semi-circular in cross sectional configuration to correspond generally to the shape of the jaw. This shaping of the body is advantageous as it provides for a rigid, durable construction including a comparatively small amount of material and having a large radiating surface.

In using the device the operator depresses the knob 22 to open the jaws so that an electrode 12 can be placed between them. With the electrode placed between the jaws and the device properly connected in an electrical circuit through the conductor 40, the operator proceeds with the welding operation in the manner familiar to those skilled in the art. The spring 30 which normally holds the jaws tightly on the electrode is substantially removed from the jaws and is insulated from the parts which it operates through the blocks 33 and 34. With this construction the spring will remain in condition and will not be overheated. Further, the handle 15 being tubular, formed of fibre, or the like, and connected with the body only through the ribs, remains cool. It is to be noted that the construction which I have provided is particularly simple and inexpensive, and that the various parts are arranged so that the device is simple and convenient to operate.

Having described only a typical preferred form of my invention I do not wish to limit myself to the specific details set forth, but wish to reserve to myself any changes or variations that may appear to those skilled in the art or fall within the scope of the following claims.

Having described my invention, I claim:

1. An electrode holder including two pivotally connected jaws, one of the jaws being semi-circular in cross section and having notches at opposite points in its edges.

2. An electrode holder including, two pivotally connected jaws, a tubular handle of insulating material, and a connection between the handle and one of the jaws including a tubular part in connection with said jaw to receive a conductor and a plurality of spaced ribs extending longitudinally of said part and supporting the handle.

3. An electrode holder including, a body, an arm pivotally connected with the body, cooperating jaws at the outer ends of the body and arm, a spring between the inner ends of the body and arm, means insulating the spring from the body and arm, a tubular part at the inner end of the body, spaced ribs on the tubular part, and a tubular handle of insulating material carried on the ribs.

4. An electrode holder including, a body having a tubular part at its inner end, an arm pivotally connected with the body, jaws at the outer ends of the body and arm, one of the jaws being semi-circular in cross section, a spring under compression between the inner ends of the arm and body, blocks of insulating material insulating the spring from the body and arm, spaced ribs on the tubular part, a tubular handle carried on the ribs, and a set screw holding the handle in place and extending into the tubular part to hold a conductor.

In witness that I claim the foregoing I have hereunto subscribed my name this 29th day of October 1925.

CLIFFORD F. SHORT.