Oct. 16, 1945. R. C. MORFORD 2,387,169

ELECTRODE HOLDER

Filed Aug. 13, 1943

Fig. 1.

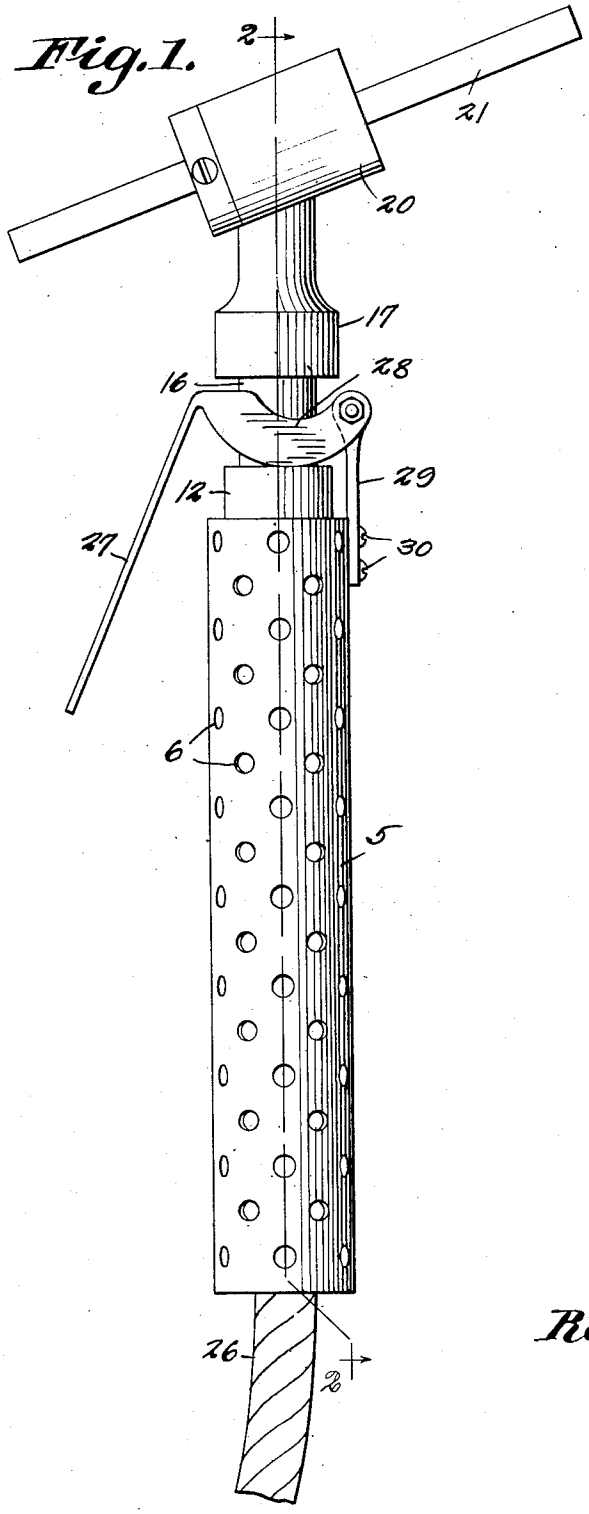
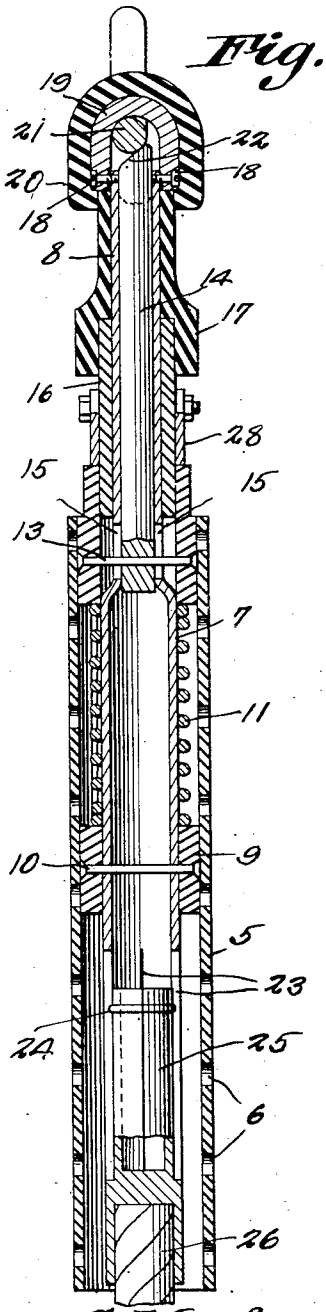


Fig. 2.



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Patented Oct. 16, 1945

2,387,169

UNITED STATES PATENT OFFICE

2,387,169

ELECTRODE HOLDER

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Application August 13, 1943, Serial No. 498,557

2 Claims. (Cl. 219—8)

This invention relates to electrode holders used in electro-welding apparatus.

An important object of the invention is to provide an electrode holder having an adjustable head, whereby the electrode held therein may be disposed at various angular positions with respect to the handle, thereby adapting the device for a particular use.

Another object of the invention is the provision of an electrode holder wherein the electrical elements thereof are completely insulated, eliminating any possibility of injury to the operator, due to arcing.

A further object of the invention is to provide a holder which will grip electrodes of various sizes, eliminating the necessity of making changes in the electrode holder head, to adapt the holder for gripping large and small electrodes.

A still further object of the invention is to provide an electrode holder wherein the handle thereof is ventilated to prevent heating of the handle which results in discomfort to the user.

Another important object of the invention is to provide a swivel connection between the handle and the electric cable connected therewith, thereby permitting ready turning of the handle without twisting the cable.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein described, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:

Figure 1 is an elevational view of an electrode holder constructed in accordance with the invention.

Figure 2 is a longitudinal sectional view through the holder taken on the line 2—2 of Figure 1.

Referring to the drawing in detail, the reference character 5 designates the handle of the electrode holder, which is constructed of fiber material having insulating qualities. The handle which is tubular in formation is provided with a plurality of ventilating openings, so that air may pass freely through the handle to cool the same.

Mounted within the handle is the tubular body portion 7 which is constructed of copper material, and is of a length to extend throughout substantially the entire length of the handle 5, in spaced relation therewith, providing a passageway for air to circulate through the handle. One end of the tubular body portion 7 is reduced in diameter and extends an appreciable distance beyond one end of the handle 5, the reduced portion of the body portion 7 being indicated by the reference character 8. A sleeve indicated at 9, and which is constructed of insulating material, is secured to the tubular body portion 7 at a point intermediate the ends thereof, as by means of the bolt 10, which passes through the sleeve and body portion 7, as clearly shown by Figure 2 of the drawing. This sleeve 9 also provides a stop for one end of the coiled spring 11, the opposite end of the coiled spring engaging the fiber sleeve 12 which is positioned between the body portion 7 and handle 5, insulating the handle from the body portion 7. A bolt indicated at 13 extends through the fiber sleeve 12 and extends through an opening in the copper plunger 14 that is disposed within the reduced portion 8 of the tubular body portion 7. Elongated openings 15 are formed in the reduced portion 8 of the tubular body portion 7, and accommodate the bolt 13, with the result that the plunger 14 may move longitudinally of the handle and tubular body portion 7. Disposed within the fiber sleeve 12, is a fiber tube 16 which is of a length to extend into the cap 17, constructed preferably of rubber, to insulate the elements of the holder against the electric current passing through the holder.

The cap 17 also encases the end of the reduced portion 8 of the tubular body portion 7, leaving a small portion of the reduced portion 8 exposed to receive the pivot pins 18 that extend through the adjustable head 19 that in turn is covered with rubber insulating material indicated at 20. These pins permit of pivotal movement of the adjustable head so that the electrode which is indicated at 21 and which is held within the adjustable head, may be moved to various angular positions.

The outer end of the copper plunger 14 is beveled as at 22 to set up a binding action with the electrode which is held within the head of the holder.

One end of the body portion 7 is split and formed with an annular groove 23 to receive the annular enlargement 24 of the split cable connector 25. It will be noted that due to this construction, the member 25 may swivel within the open end of the body portion 7, to the end that the cable indicated at 26, and which is extended into one end of the member 25, will be prevented

from twisting, when the electrode holder is in use.

The reference character 27 designates the operating trigger, and as shown the trigger is formed with a curved end 28 that has pivotal connection with the bracket 29 that is secured to the handle 5, by means of the screws 30. The curved portion 28 of the trigger rests on the upper edge of the fiber sleeve 12, and when the trigger is pressed downwardly or towards the handle 5, the fiber sleeve 12 will be moved rearwardly, moving the plunger 14 away from the electrode held within the head 19. The electrode may now be removed and replaced by a larger electrode, should it be desired to use a larger electrode with the holder.

When the trigger 27 is released, it is obvious that the spring 11 will force the sleeve 12 outwardly, with the result that the top of plunger 14 will again be moved to contact the electrode positioned within the adjustable head 19.

What is claimed is:

1. An electrode holder comprising a hollow handle, a tubular conductor having a reduced end mounted within the hollow handle, an insulating sleeve secured on the conductor and adapted to insulate the handle from the conductor, said reduced end having elongated openings, an insulating sleeve disposed between the conductor and handle at a point adjacent to the inner end of the reduced end of the conductor, a plunger held within the reduced end of the conductor, a pin extending through said sleeve, elongated openings and plunger, an expansible spring disposed between said sleeves and adapted to normally urge the plunger outwardly, a trigger pivotally connected with the handle, said trigger having curved portions engaging one of the sleeves and adapted to move the sleeve and plunger associated therewith inwardly against the action of said spring, and a head into which the outer end of the plunger extends clamping an electrode.

2. An electrode holder comprising an insulated handle, a tubular conductor disposed within the handle, a plunger operating within the tubular conductor, one end of said plunger being beveled, an open-ended head tiltably mounted on one end of said tubular conductor and into which the beveled end of the plunger extends, said plunger adapted to clamp an electrode between the beveled end thereof and head, and means for urging the plunger into said head.

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