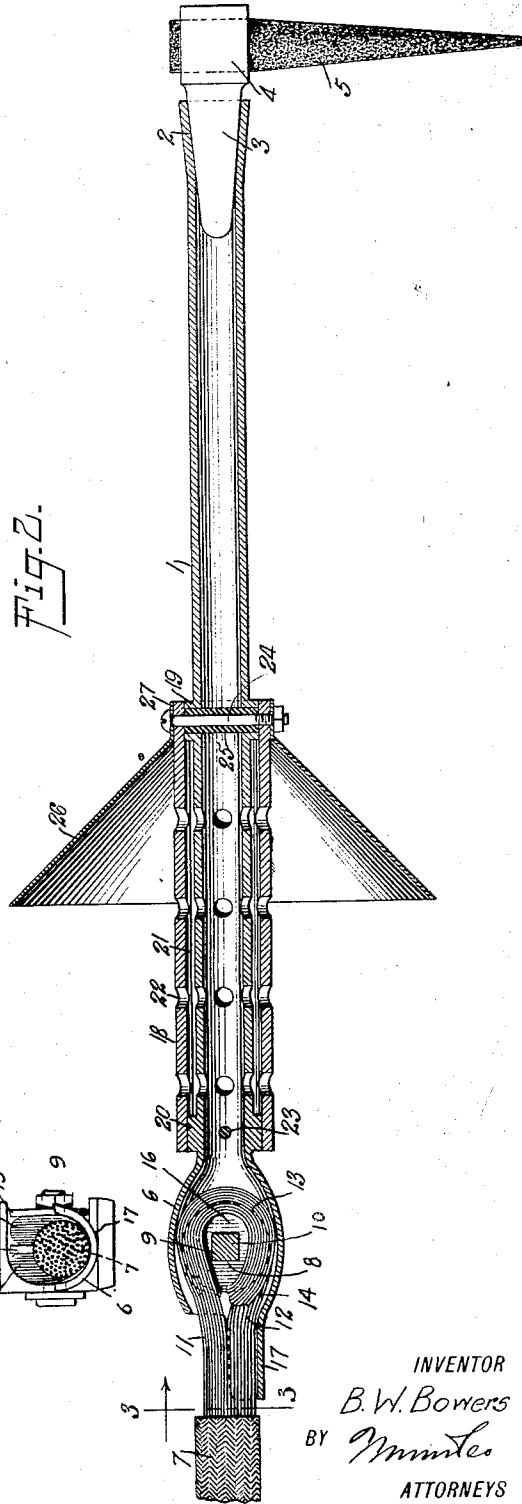
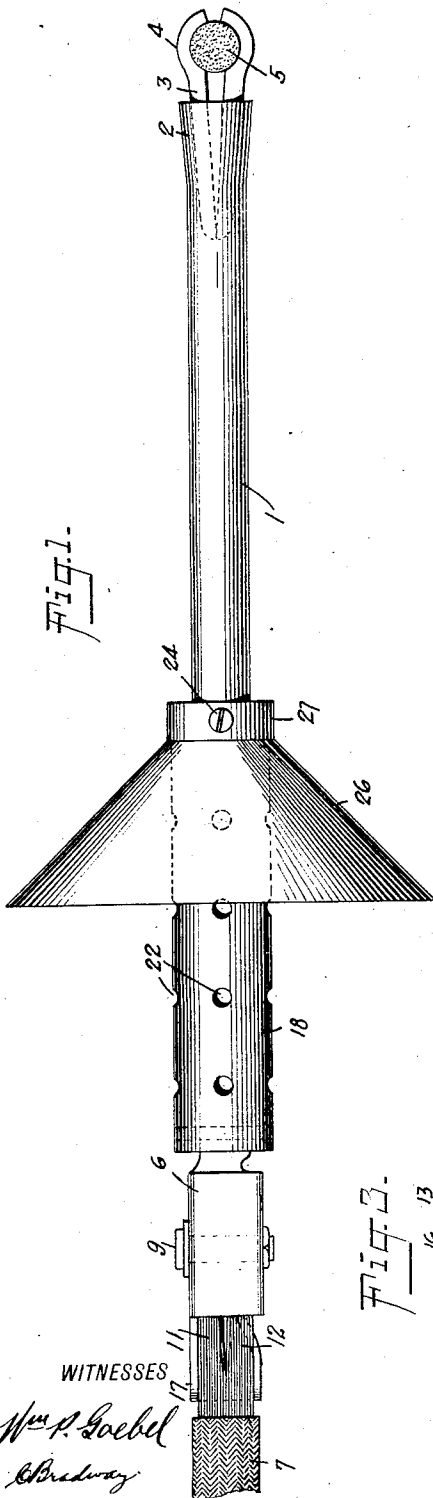


B. W. BOWERS.
WELDING ELECTRODE.
APPLICATION FILED JUNE 27, 1918.

1,296,358.

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UNITED STATES PATENT OFFICE.

BENTON WEISER BOWERS, OF EASTON, PENNSYLVANIA.

WELDING-ELECTRODE.

Specification of Letters Patent.

Patented Mar. 4, 1919.

1,296,358.

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To all whom it may concern:

Be it known that I, BENTON W. BOWERS, a citizen of the United States, and a resident of Easton, in the county of Northampton and State of Pennsylvania, have invented a new and Improved Welding-Electrode, of which the following is a full, clear, and exact description.

This invention relates to carbon electrode holders for electric arc welding, and the general object of the present invention is to improve the construction of devices of this character so as to be reliable and efficient in use, comparatively simple and inexpensive to manufacture, and so designed that the operator can handle the holder with more comfort and safety by reason of certain novel features of design.

A more specific object of the invention is the provision of an electrode holder having improved means at one end for clamping the cable thereto, and improved means at the opposite end for receiving the electrode clamp, as well as a novel form of handle and a shield associated therewith, the shield and handle being so constructed as to reduce heating to a minimum.

With such and other objects in view, the invention comprises various novel features of construction and arrangement of parts which will be set forth with particularity in the following description and claims appended hereto.

In the accompanying drawings which illustrate one embodiment of the invention and wherein similar characters of reference indicate corresponding parts in all the views,

Figure 1 is a plan view of the electric welding tool;

Fig. 2 is a longitudinal section thereof; and

Fig. 3 is a transverse section on the line 3-3, Fig. 2.

Referring to the drawing, 1 designates a tubular body of metal, which may be cast or otherwise formed, and one end is expanded so as to provide an inwardly tapering socket 2 to receive the tapered shanks 3 of the clamps 4 that hold the carbon electrode 5. By this arrangement a good electrical connection can be obtained between the body and electrode, and a few taps of a hammer are sufficient to effectively tighten the clamps. The rear end of the body is formed with a cupped extension 6 for accom-

modating the bared wires of the supply cable 7. The member 6 has a squared hole 8 to receive a bolt 9 which has a squared shank at 10, so that the bolt cannot turn. The strands of the cable are divided into two groups 11 and 12 and one group is bent downwardly to form an eye 13, Fig. 2, and the other group bent upwardly to form an eye 14, which eyes lie within the cupped member 6 and surround the bolt. On the bolt are washers 15 and 16 to insure a better clamping action on the strands of the cable. This manner of connecting the cable with the holder 1 eliminates the necessity of soldering, which is objectionable for currents of high amperage, and furthermore, the joining herein shown reduces heat to a minimum. The member 6 has a curved lip 17 which supports the cable so as to relieve excessive strain on the joint and prevent wear.

The body 1 is provided with a handle 18 which is formed of a tube of insulating fiber of suitable length, and the ends fit around peripheral flanges 19 and 20 on the body 1. In other words, the handle 18 is of larger diameter than the diameter of the body 1, so that an annular air space or chamber 21 is formed between the body 1 and handle 18. Apertures 22 are bored in the handle and body 1 so as to provide for free circulation of air. The handle is secured at one end by a fiber pin 23 which passes through the body 1 and the handle. The opposite end of the handle is held in place by a bolt 24 which is covered by a sleeve 25 of insulation, whereby the bolt is insulated from the tubular body.

On the inner end of the handle is a conical sheet metal shield or guard 26 which has a flange 27 at its central opening to fit around the handle 18, said guard being fastened to the handle by the bolt 24. As the bolt 24 is insulated from the body piece 1, the guard will be also insulated. The shield 26 intercepts the heat radiated from the welding arc and deflects it laterally. In actual practice it is found that a conical guard keeps considerably cooler than a guard which is in the form of a plate set transversely to the axis of the holder.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have de-

scribed the principle of operation, together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as fall within the scope of the appended claims.

Having described my invention, I claim as new and desire to secure by Letters Pat-

ent:

1. A device of the class described comprising a tubular body expanded at one end, an electrode extending substantially transversely to the axis of the body, and means for holding the electrode attached to the body and for permitting the electrode to be adjusted through three hundred and sixty degrees, said means comprising a pair of clamping members tapered to fit in the expanded end of the body and having projecting portions shaped to embrace the electrode.

2. A device of the class described comprising a body piece, means for clamping an electrode thereto, a handle in the body piece, a cup-shaped member extending from the body piece, means for clamping a supply cable to the said member, and a curved lip extending outwardly from the said member to form a support for the cable.

3. A device of the class described including a body piece, means for clamping an electrode thereto, a handle, a cup-shaped member extending outwardly from the handle, a bolt passing through the member, and a cable having a group of wires curved in one direction around the bolt and another group curved in the opposite direction, said curved wires being clamped in the said member by the bolt.

4. A device of the class described comprising a tubular body member, means at one end for holding an electrode, means at the opposite end for connection with a cable, there being ventilating apertures in the last-mentioned end, a tubular handle of insulation fastened around the apertured end of the body member and forming therewith an air chamber communicating with the said apertures, the handle being provided with ventilating apertures, and means for fastening the handle to the body member.

5. A device of the class described comprising a tubular body member, means at one end for holding an electrode, means at the opposite end for connection with a cable there being ventilating apertures in the last mentioned end, a tubular handle of insulation fastened around the apertured end of the body member and forming therewith an air chamber communicating with the said apertures, the handle being provided with ventilating apertures, means for fastening the handle to the body member, and a conical shield fastened to the inner end of the handle and expanding toward the rear of the latter.

6. A device of the class described comprising a tubular body member having spaced peripheral flanges and apertures in the portions between the flanges, a tubular handle of insulation surrounding the apertured portion of the body member and having its ends fastened to the flanges, said handle being provided with apertures whereby air can circulate through the body member to keep the same cool.

7. A device of the class described comprising a tubular body member having spaced peripheral flanges and apertures in the portions between the flanges, a tubular handle of insulation surrounding the apertured portion of the body member and having its ends fastened to the flanges, said handle being provided with apertures whereby air can circulate through the body member to keep the same cool, and a shield disposed over the inner end of the handle.

8. A device of the class described comprising a tubular body member having spaced peripheral flanges and apertures in the portions between the flanges, a tubular handle of insulation surrounding the apertured portion of the body member and having its ends fastened to the flanges, said handle being provided with apertures whereby air can circulate through the body member to keep the same cool, a shield disposed over the inner end of the handle, and a bolt passing through the member, handle and shield and insulated from the body member.

BENTON WEISER BOWERS.