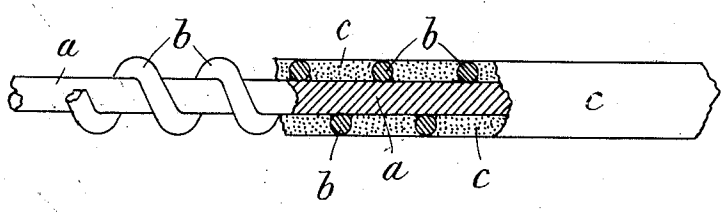
E. H. JONES.

ELECTRODE FOR ELECTRIC ARC SOLDERING.

APPLICATION FILED APR. 11, 1918.

1,312,254. Patented Aug. 5, 1919.



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UNITED STATES PATENT OFFICE.

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ELECTRODE FOR ELECTRIC-ARC SOLDERING.

1,312,254. Specification of Letters Patent. Patented Aug. 5, 1919.

Application filed April 11, 1918. Serial No. 227,914.

To all whom it may concern:

Be it known that I, ERNEST HENRY JONES, subject of the King of Great Britain, residing at 4 Grange road, Canonbury, London, England, have invented new and useful Improvements in Electrodes for Electric-Arc Soldering, of which the following is a specification.

In the specifications of my British Patent No. 21822 of 1914 I describe a method of coating electrodes for electric arc soldering by extruding the second class conductor covering upon the iron or mild steel wire. Experiments and practice have proved that however carefully the work is performed it is very difficult to insure a concentric coating of the covering material with uniform depth. Hence, in use, the wire being nearer the surface at some places than at others the arc breaks through at such places with the result that it is next to impossible to do good work with such electrodes.

My present invention has for its object a method of and means for coating electrodes by extrusion, dipping, or similar process whereby the defects referred to above are overcome.

According to my invention and as illustrated by the accompanying drawing, the wire *a* is wound with asbestos yarn *b* or other suitable con-conducting composition or material (that is to say the second class conductor) in the form of open spirals so as to leave room between the spirals for the reception of the fluid compound *c*. A non-conducting composition may be applied to the wire in open spirals while still moist and be subsequently dried before receiving the extruded covering materials, the composition being for example, extruded of a desired thickness upon the wire which is given a rotary and forward movement. The wire is guided through the extruding apparatus by the open spirals and receives a coating of the compound in a satisfactory concentric manner and alternatively the spirally wound wire when dipped into a non-conducting compound and the surplus thereof removed receives a satisfactory concentric coating of the compound.

Preferably the yarn is passed through a bath of silicate of soda or other suitable adhesive before it is wound on the wire so as to cause the yarn to adhere to the wire and form a key to which the fluid compound adheres. In some cases the adhesive bath may contain a suitable proportion of powdered aluminium or ferro silicon.

The fluid compound is, by preference, of a basic nature, (*i. e.*, an absence of silica), a sufficient amount of basic material being employed to neutralize the acid properties of the asbestos when used. A suitable compound or composition may consist of iron oxid 4 parts, fluor spar 1 part, felspar 4 parts, carbonate of soda 1 part, and sufficient lime to neutralize the silica present. In the example given about 4 parts of lime is satisfactory.

I claim:—

1. In the manufacture of electrodes for electric arc soldering, applying to the wire in open spirals a second class conductor of uniform section, and subsequently filling the spaces between the open spirals with a second class conductor compound, as set forth.

2. In the manufacture of electrodes for electric arc soldering, applying to the wire in open spirals asbestos yarn of uniform section which yarn has previously been passed through a bath of adhesive, and subsequently filling the spaces between the open spirals with a second class conductor compound, as set forth.

3. In the manufacture of electrodes for electric arc soldering, applying to the wire in open spirals asbestos yarn of uniform section which yarn has previously been passed through a bath of adhesive containing a proportion of powdered aluminium or ferro silicon, and subsequently filling the spaces between the open spirals with a second class conductor compound, as set forth.

4. An electrode for electric arc soldering comprising a wire, a winding of a second

class conductor of uniform section in open spirals affixed upon said wire, and a filling of a second class conductor compound in the spaces between the open spirals, as set forth.

5. An electrode for electric arc soldering comprising a wire, a winding of asbestos yarn of uniform section in open spirals affixed to said wire, and a filling of a second class conductor compound in the spaces between the open spirals, as set forth.

In testimony whereof I have signed my name to this specification.

ERNEST HENRY JONES.

Witness:
ARTHUR C. DOWNING.