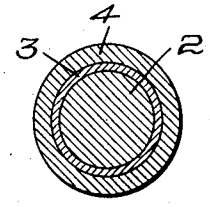
M. M. MERRITT.

ELECTROLYTICALLY COATED WIRE.

APPLICATION FILED OCT. 4, 1921.

1,405,535. Patented Feb. 7, 1922.




*Inventor:*
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# UNITED STATES PATENT OFFICE.

MATTHEW M. MERRITT, OF MIDDLETON, MASSACHUSETTS, ASSIGNOR TO MERRITT METALS COMPANY, OF SALEM, MASSACHUSETTS, A CORPORATION OF MAINE.

## ELECTROLYTICALLY-COATED WIRE.

1,405,535. Specification of Letters Patent. Patented Feb. 7, 1922.

Original application filed October 7, 1919, Serial No. 329,000. Divided and this application filed October 4, 1921. Serial No. 505,371.

*To all whom it may concern:*

Be it known that I, MATTHEW M. MERRITT, a citizen of the United States, and a resident of Middleton, county of Essex, State of Massachusetts, have invented an Improvement in Electrolytically-Coated Wire, of which the following description, in connection with the accompanying drawings, is a specification, like characters on the drawings representing like parts.

This invention pertains to improvements in electrolytically coated wire. It is among the objects of the invention to provide a wire having a copper exterior shell of a superior quality.

This application is a divisional of my application Serial No. 329,000, filed October 7, 1919, and allowed July 7, 1921, which is a divisional of my application Serial No. 290,152, filed April 15, 1919, which matured into United States Patent No. 1,322,494, dated November 18, 1919, to which reference should be made for the preferred apparatus and method used in connection with the production of the preferred form of wire to which this application is specifically directed.

In the drawing which forms part of this specification, the figure is a cross-section of a preferred form of electrolytically coated wire.

Referring to the drawing and to the preferred form of my invention selected for illustrative purposes, I have shown a wire 2, which may be of aluminum and which, as described in my United States Patent No. 1,322,494 above referred to, has its surface treated, preferably, in such a way as to remove the oxide on the surface thereof and preferably to deposit a film of foreign substance thereon to serve as an oxide-excluding medium over the surface of the aluminum and to provide a surface thereto other than aluminum which will readily take in a satisfactory manner the deposit of copper or other metal during subsequent electro-deposition. The oxide-excluding medium is preferably tin and is illustrated in the drawing by the ring 3, of which the thickness is greatly exaggerated so that it will show clearly in the drawing. This oxide-excluding medium, preferably of tin, may be applied by a combined deoxidizing and tinning operation by treating the surface of the aluminum wire with a mixture of muriatic acid, water and tin chloride. The interposition of the coating of oxide-excluding medium between the aluminum and the copper shell 4 minimizes that galvanic deterioration of these metals which normally arises where, in the presence of even a trace of moisture, copper and aluminum are permitted to come into contact or even into close proximity.

Where the wire forming the core is of ferrous material, the exterior coating corresponding to the coating 3 may be an electrolytic, alkaline copper deposit, the exterior deposit forming the wire 4 being electrolytic acid copper.

While I have shown in the drawing and described rather specifically preferred forms of my invention, it will be understood that considerable changes may be made without departing from the scope of my invention, which is best defined in the following claim:

Wire comprising, in combination, a core of ferrous material and an exterior coating including adjacent the iron an electrolytic, alkaline copper deposit and an exterior electrolytic acid copper deposit.

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

MATTHEW M. MERRITT.