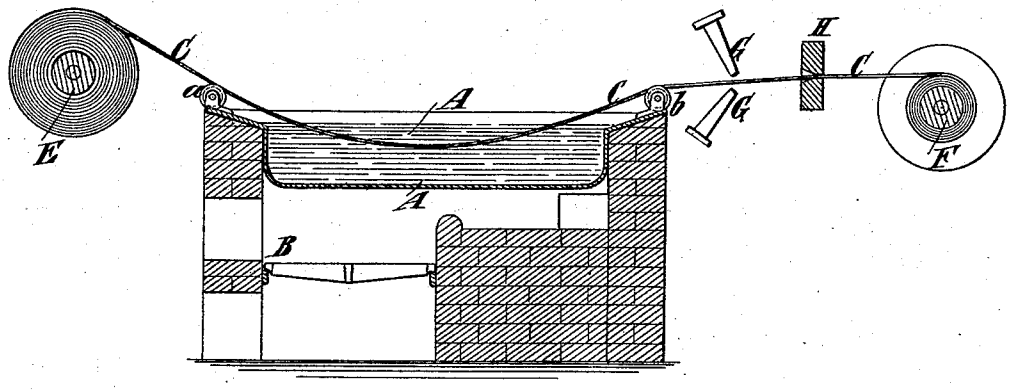
(No Model.)

T. EGLESTON.

PROCESS OF MAKING ELECTRIC CONDUCTORS.

No. 286,796. Patented Oct. 16, 1883.



Witnesses.

Ed. L. Moran

C. L. Sundgren

Inventor

Thomas Egleston

by his Attorneys

Brown & Brown

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

THOMAS EGLESTON, OF NEW YORK, N. Y., ASSIGNOR TO THE PLUME & ATWOOD MANUFACTURING COMPANY, OF THOMASTON, CONNECTICUT.

PROCESS OF MAKING ELECTRIC CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 286,796, dated October 16, 1883.

Application filed April 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS EGLESTON, of the city and county of New York, in the State of New York, have invented a new and Improved Process of Making Electric Conductors, of which the following is a specification.

My process consists in first covering the wire employed with cotton or other insulating material; in then applying to the insulating material a fire-proofing material, such as is hereinafter described; in then drying the fire-proofing material; in then passing the wire through a bath of molten metal or alloy for the purpose of coating it; in chilling the coating of metal as the wire leaves the bath by directing upon it a current or currents of air, and in finally passing the wire through a die or between rollers, to render the metal coating smooth, dense, and uniform.

The accompanying drawing represents a sectional elevation of an apparatus employed for the purpose of coating the wire with metal, and for chilling the coating and rendering it smooth, dense, and uniform.

In carrying out my invention, I first apply to the wire an insulating material—such, for example, as cotton or paper—and a fire-proofing material which impregnates and will tend to preserve the insulating material in case of the wire becoming heated to redness by the electric current, and which will prevent the conductor under such circumstances from melting the metal coating and setting fire to its surroundings. The insulating material, if of cotton, may be braided, woven, or wound on the wire, and, if of paper, it may be similarly applied or laid on in pulp. The fire-proofing material may be applied to the insulating material by passing the insulating-wire through a bath, or by means of a brush, or otherwise. The fire-proofing material *e* may consist of oxide of zinc, sulphate of baryta, talc, steatite, the hydrated silicates of magnesia and alumina, or porcelain-clay pulverized and mixed with oil. Linseed-oil, either raw or boiled, may be used; but I do not wish to be restricted to the use of this particular oil, for any oil not acid can be used. Several or all of the ingredients named may be mixed with the oil. In lieu of employing an oil with these ingredients, I can use the silicates of soda or potash, or water-glass. After the fire-proofing material is applied the fire-proofed conductor is dried by exposure to the air or by artificial heat, and is then ready to be coated with metal, as I shall now describe.

A designates a bath wherein metal, or any suitable alloy of metal, is maintained in a molten state by the heat from a furnace, B. At the ends of this bath are rollers *a b*, over which the wire or electrical conductor C passes as it enters and leaves the bath, and between these rollers it will sag and dip into the molten metal or alloy.

E designates a bobbin from which the wire or conductor C is unwound; and F designates a similar bobbin, by the rotation of which the wire or conductor is drawn from the bobbin E and through the bath, and on which it is wound. The wire or conductor C, which has previously been coated with fire-proofing material, as described in my aforesaid application, is drawn through the molten metal or alloy A, and receives a continuous coating of the metal or alloy over its entire surface. It is desirable to cool it as it leaves the bath, and for this purpose I arrange one or more nozzles or jet-pipes, G, in close proximity to the roller *b*, and from the nozzle or nozzles air is discharged upon the wire or conductor throughout its circumference. The air may be supplied to the nozzles or jet-pipes by a fan-blower or other suitable apparatus, not here shown, and it serves to chill the metal coating on the wire conductor.

Between the nozzles or jet-pipes G and the bobbin F, I arrange a finishing-die, H, or in lieu thereof suitably-arranged rollers, through or between which the wire or conductor passes, and by which the metal coating is smoothed down or finished, and is made dense, uniform, and homogeneous.

The use of the blasts of air for cooling or chilling the metal coating of the wire or conductor enables me to make the whole apparatus much shorter and more compact than it otherwise would be, and to move or draw forward the wire or conductor more rapidly than would otherwise be possible.

For the purposes of my invention I prefer to employ a metal or alloy of metals that will fuse at or below the melting-point of zinc. The metal or alloy can then be maintained in a molten state without raising its temperature sufficiently to injure the insulation of the wire as it passes through it, and the metal coating on the wire will be more quickly cooled by the blasts of air.

In my application for Letters Patent filed January 5, 1883, and of which the serial number is 81,071, I have described a conductor consisting of a wire having an insulating material and a fire-proofing material such as is herein described applied to it. I do not desire to claim here anything covered by my former application.

What I claim as my invention, and desire to secure by Letters Patent, is—

The process of making electric conductors, consisting in first covering the wire employed with cotton or other insulating material; in then applying to the insulating material a fire-proofing material, substantially such as herein described; in then drying the fire-proofing material; in then passing the wire through a bath of molten metal or alloy for the purpose of coating it; in chilling the coating of metal as the wire leaves the bath by directing upon it a current or currents of air, and in finally passing the wire through a die or between rollers, to render the metal coating smooth, dense, and uniform, substantially as set forth.

THOMAS EGLESTON.

Witnesses:
L. R. WEEKS,
JOHN MORRIS.