(No Model.)

T. SHAW.

MANUFACTURE OF ELECTRICAL CONDUCTORS.

No. 296,074. Patented Apr. 1, 1884.

Fig. 1

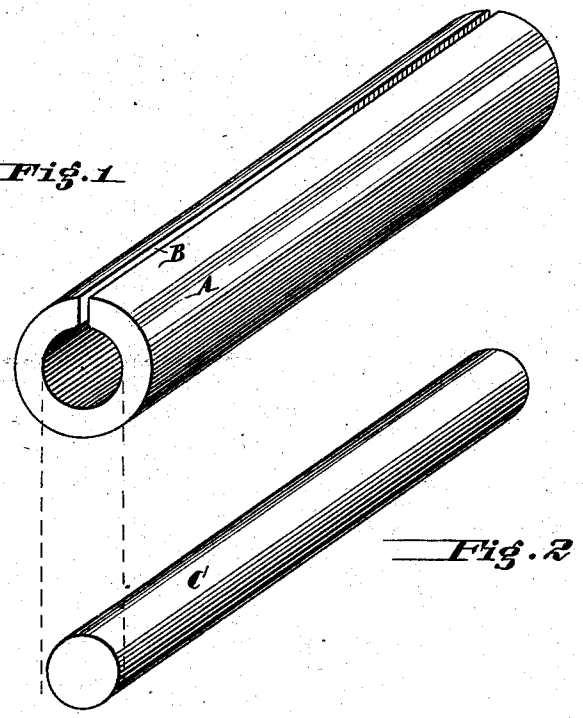


Fig. 2

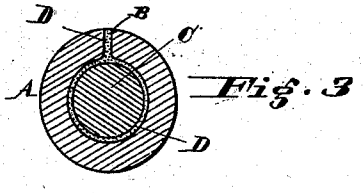


Fig. 3

Attest

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UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF NEWARK, NEW JERSEY, ASSIGNOR TO WILLIAM H. RITTER, OF NEW YORK, N. Y.

MANUFACTURE OF ELECTRICAL CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 296,074, dated April 1, 1884.

Application filed January 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city of Newark, county of Essex, and State of New Jersey, have invented an Improvement in the Manufacture of Electrical Conductors, of which the following is a specification.

My invention has reference to the process of manufacture of a compound telegraph or telephone wire; and it consists in inclosing a core of one metal within a tube or case of another metal, and then securing the two metals together by solder.

Telegraph-wires now generally used are composed of iron or of copper, the conducting-power of the former being far inferior to that of the latter. Although a good conductor of electricity, copper is not durable, and withstands the action of the elements very poorly. In use it often sags, and occasionally breaks when extended out at great lengths unsupported at intermediate points. The above objections may be overcome by combining the copper with another metal—as, for instance, phosphor-bronze—which has greater strength or tenacity, the copper being made the core or outer covering, as desired, and the two metals firmly secured together by soldering, as more fully set forth in the following specification and shown in the accompanying drawings, which form part thereof.

In the drawings, Figure 1 is a perspective view of the outer case or tube adapted to inclose the core. Fig. 2 is a perspective view of the core, and Fig. 3 is a cross-section of the wire complete.

A is the metal casing or tube, and may be made by bending up a strip of metal, leaving a slight separation, B, longitudinally therein. The core C is inserted therein, and the solder (preferably hard solder) is caused to flow through the aperture B or end, and fills the space D between the core C and case or tube A, thus securing the two metals firmly together, and forming a compound billet, which is then rolled or drawn down, either hot or cold, to the requisite size, thus forming a wire in which the core is of one metal and the covering another, the two being as firmly attached as if made of a single piece of metal. In practice, it is necessary to clean the opposing surfaces of the core and case with borax-water or other suitable flux, and thereby insure a perfect union of the two metals, when the solder is applied, the latter being fused by means of gas-jets or other fire.

It is preferable to make the core C fit loosely in the tube A, to enable its more ready insertion and admission of solder.

In this application I make no claim to the construction of the wire as an article of manufacture, as that forms subject-matter of another pending application.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The method herein described of forming a compound wire, consisting in forming a slotted cylinder of one metal or alloy, inserting a core or rod of another metal or alloy, and inserting solder between them through the slot, forming a solid ingot or blank for wire-drawing, substantially as set forth.

2. The process of manufacturing a compound wire, consisting in forming a slotted cylinder of one metal or alloy, and inserting a core or rod of another metal or alloy, and uniting them with solder inserted through the slot, forming a solid ingot or blank, and then passing the ingot through rolls or dies, producing a finished compound wire.

In testimony of which invention I hereunto set my hand.

THOMAS SHAW.

Witnesses:
H. C. HUNTEMANN,
JOHN R. BENNETT.