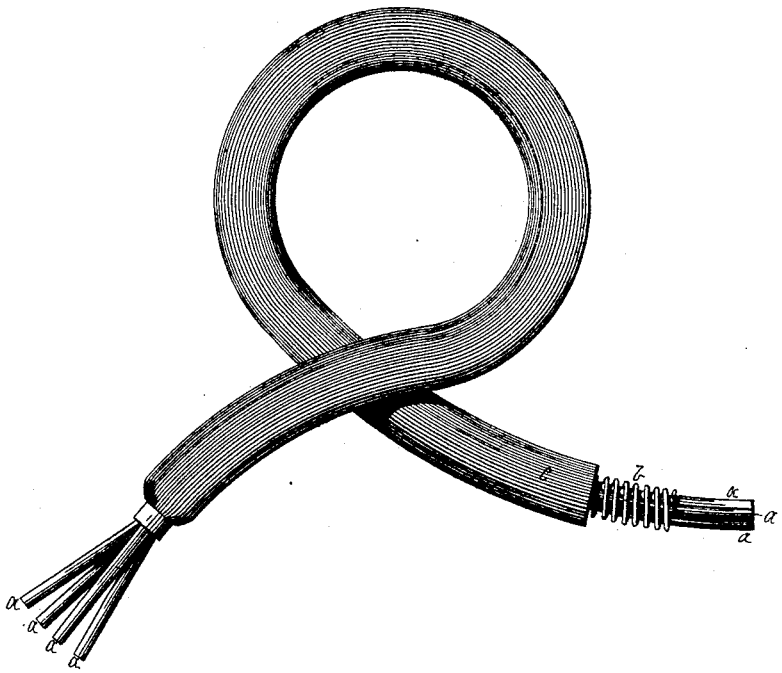
T. L. REED.

Electric Conductors for Elevator Annunciators, &c.

No. 200,569. Patented Feb. 19, 1878.



ATTEST.

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THOMAS L. REED, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO EUGENE F. PHILLIPS, OF SAME PLACE.

IMPROVEMENT IN ELECTRIC CONDUCTORS FOR ELEVATOR-ANNUNCIATORS, &c.

Specification forming part of Letters Patent No. **200,569**, dated February 19, 1878; application filed July 10, 1877.

To all whom it may concern:

Be it known that I, THOMAS L. REED, of the city and county of Providence, in the State of Rhode Island, have invented certain new and useful Improvements in Electric Conductors for Elevator-Annunciators, Telephones, &c.; and I do hereby declare that the following specification, taken in connection with the drawings furnished and forming a part of the same, is a clear, true, and complete description thereof.

As heretofore constructed, electric conductors for elevator-annunciators have been specially liable to loop or "kink" during the movements of the elevator, followed by breakage or other injury to the conductors, which renders the annunciator inoperative.

One object of my invention is to obviate, in elevator-conductors, this liability to loop or kink while in use.

For service with vocal telephones two separate insulated conductors are requisite. As heretofore employed, two conducting-wires are separately attached to the mouth-piece of the telephone, and separately extended from thence to the point of connection with the main and the ground wires. When constructed in accordance with my invention the two conductors are united in such a manner as secures great strength and flexibility.

My invention consists in a flexible electric conductor composed of any required number of insulated conducting-wires inclosed within a metallic coil.

To more particularly describe my invention I will refer to the accompanying drawing, in which a length of one of my conductors is shown, with portions thereof removed for exhibiting its several parts.

In each instance, *a* denotes one of the insulated wires, of which there are as many as may be required in each case. In some cases a single solid wire is desirable, and in others numerous fine wires laid side by side, or twisted or braided together, are preferable. Each wire or series of wires, as the case may be, is insulated, either by a textile material wound or braided thereon, or by any other insulating material which does not materially impair the normal flexibility of the wire or wires. These insulated wires *a* are preferably loosely laid side by side. The metallic coil at *b* is composed preferably of tinned iron wire, coiled upon an arbor, of such diameter as will afford a coil having sufficient interior capacity to freely receive the several insulated wires in mass, the same being drawn into the coil by means of a wire or cord. It will be seen that the spiral wire affords a reliable casing for the insulated wires, and prevents short bends, rendering it practically impossible for a tight loop or kink to occur.

For use with vocal telephones my improved conductor has a special value, by reason of its non-liability to kink; and it is obviously far more convenient to have the two wires within one casing than to employ them as heretofore.

For use on telegraph-office switch-boards, and, in fact, in all connections where several wires are required with an exceedingly flexible capacity, my improved conductors will be found to possess great practical value.

In many cases the coiled wire may be employed as a conductor; and for vocal telephones it may be used for the ground-connection, in which case a single insulated wire within will serve for the line-connection.

For the purpose of adding to the durability of the conductor, and for attaining a desirable finish, an exterior braided or woven jacket of textile material is usually applied, as at *c*, and this may be treated with shellac or other gum, or a compound of insulating matter, mainly for the purpose of protecting the textile material from undue wear and abrasion, to which it is specially exposed.

For use with mine-elevators, I prefer to inclose my conductor in a jacket of vulcanized rubber.

For telephonic service I have found that an exceedingly flexible and useful conductor may be attained by inclosing within the coil *b* solid conducting-wires, each of which is closely coiled and insulated with one or more braided jackets.

I do not broadly claim an electric conductor inclosed within a coil, for I am well aware that prior to my invention such a coil has heretofore been used for inclosing a series of metallic strips in contact with each other, and connected in each instance at one end of said

strips with the coil, so that the stretching of the coil and its elastic cover could not impair the conducting capacity of the several metallic strips, considered as one conductor.

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

A flexible electric conductor composed of any desired number of insulated wires inclosed within a metallic coil, substantially as described.

THOMAS L. REED.

Witnesses:
JOHN C. PURKIS,
GILMAN E. JOPP.