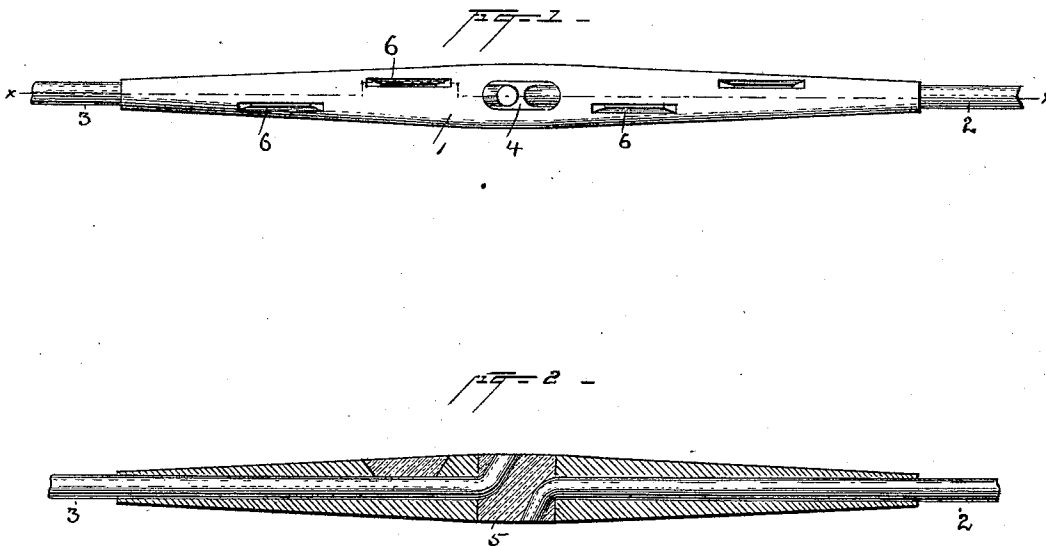


(No Model.)

H. P. BALL.
ELECTRIC WIRE CONNECTION.

No. 461,562.

Patented Oct. 20, 1891.



Witnesses
J. A. Clark
R. F. Clark

Inventor
H. P. Ball.
By his Attorneys
Dyer & Seely.

UNITED STATES PATENT OFFICE.

HENRY PRICE BALL, OF BROOKLYN, ASSIGNOR TO THE EDISON GENERAL
ELECTRIC COMPANY, OF NEW YORK, N. Y.

ELECTRIC-WIRE CONNECTION.

SPECIFICATION forming part of Letters Patent No. 461,562, dated October 20, 1891.

Application filed May 12, 1891. Serial No. 392,457. (No model.)

To all whom it may concern:

Be it known that I, HENRY PRICE BALL, a citizen of the United States, residing in Brooklyn, county of Kings, and State of New York, have invented a certain new and useful Improvement in Connecting Electrical Conductors, of which the following is a specification.

The present invention relates to certain improvements in the art of connecting wires, and especially the heavy wires used as trolley-wires for electric railroads.

The main object of the invention is to provide a joint which shall be stronger than those heretofore used, and which shall be cheap and easy to construct.

In the accompanying drawings, which illustrate the improvement, Figure 1 is a side view of a joint embodying the improvement, and Fig. 2 is a section thereof on the line *x x*.

The joint consists of a sleeve 1, preferably of brass, and tapering toward both ends. This sleeve has a longitudinal passage through it, in which the ends of two wires 2 3 are inserted, so that they meet and are bent in a transverse opening 4, communicating with the longitudinal passage. It will be evident that it is not necessary that both wires should have their ends bent in the same transverse opening; but this is the simpler and better arrangement. I have shown the transverse opening as extending entirely through the sleeve, since with this arrangement it is more convenient to bend the ends of the wires. This is done by driving a punch in from one side; but it is not essential that the opening should pass entirely through the sleeve. After the wires have been inserted and bent, as just described and as shown in Fig. 1, a filling 5 of a material which is soft but which hardens on cooling or drying, is placed in the transverse opening or openings around the ends of the wires. This material is preferably solder or other cast metal. When this material hardens, it locks the bent ends of the wires, so that, however great the strain on the wires, they cannot be pulled from the sleeve by straightening the ends. The strain is not borne wholly by the ends of the wires nor wholly by the solder, but is distributed between both elements. To still further strengthen the joint, I provide other openings 6 at intervals along the length of the sleeve and at different points in the circumference thereof. These

openings also communicate with the longitudinal passage, and consist of simple sawkerfs cut by a circular saw. Into these openings solder or molten metal is introduced, so that it comes in contact with the wires at several points in the length of the sleeve, and thereby gives increased strength and conductivity.

A joint made as I have described is very strong and presents a smooth exterior, so that a trolley can readily pass over it.

What I claim is—

1. The improvement in the art of connecting wires, which consists in forming a sleeve with a longitudinal passage and a transverse opening communicating therewith, inserting the ends of wires into the passage, bending the ends of the wires, and introducing a material which afterward hardens around the bent ends of the wires, substantially as described.

2. The improvement in the art of connecting wires, which consists in forming a sleeve with a longitudinal passage and several transverse openings communicating with said passage, inserting the ends of wires into the passage, bending the ends of the wires, pouring a molten metal into one of the openings around the bent ends of the wires, and introducing solder or molten metal into the other openings, substantially as described.

3. A joint for wires, consisting of a sleeve having a longitudinal passage and one or more transverse openings communicating therewith, wires in the longitudinal passage, the ends of the wires being bent in a transverse opening, and a filling of cast material embedding the ends of the wires, substantially as described.

4. A joint for wires, consisting of a sleeve having a longitudinal passage and transverse openings communicating therewith, wires in the longitudinal passage, the ends of the wires being bent, a filling of cast metal embedding the ends of the wires, and a filling of solder in the other openings, substantially as described.

This specification signed and witnessed this 5th day of May, 1891.

HENRY PRICE BALL.

Witnesses:

AND. JONSSON,
A. K. WARREN.