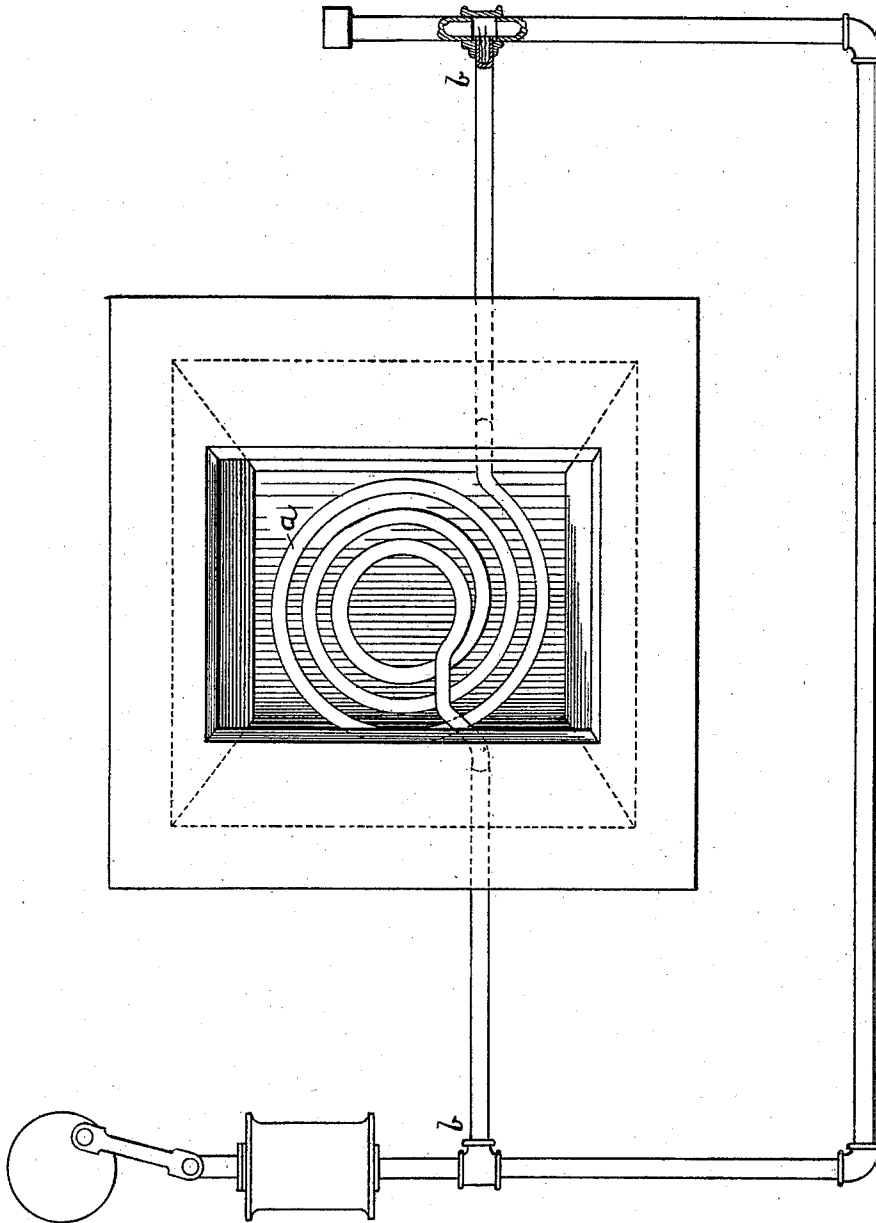


(No Model.)

C. H. RUDD.
DRYING ELECTRIC CABLES.

No. 535,173.

Patented Mar. 5, 1895.



Witnesses:
George L. Cragg
W. Clyde Jones.

Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES H. RUDD, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WESTERN
ELECTRIC COMPANY, OF SAME PLACE.

DRYING ELECTRIC CABLES.

SPECIFICATION forming part of Letters Patent No. 535,173, dated March 5, 1895.

Application filed April 13, 1892. Serial No. 429,630. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. RUDD, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Drying Electric Cables, (Case No. 29,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to drying the cores of electric cables; more particularly that class of electric cables in which conductors are insulated by a covering of fibrous material, especially when inclosed in a protecting pipe or tube. Its object is to effect a more complete desiccation of the insulating material than has heretofore been possible, and to accomplish this with greater facility than has heretofore been practicable.

My invention consists in applying heat to the core after it has been drawn into its protecting pipe, in such a manner as to expel the moisture from the insulating material surrounding the conductor or conductors of the core and removing the vapor formed from this moisture by maintaining a vacuum in the pipe. Heretofore it has been usual to expose the core to a high temperature in an oven, for a considerable time, without reducing the atmospheric pressure surrounding the core. This process necessitates several handlings of the core, and the consequent liability of reducing the insulation between the conductors by the absorption of moisture from the atmosphere, or from the hands of the workmen in handling the core. Another disadvantage of this process, was the length of time that was required to thoroughly remove the moisture from the insulating material. In this process heretofore used, it was necessary in order to insure, approximately, the complete dryness of the insulating material to handle the core and introduce it into its protecting pipe or tube, when it was heated to a high temperature.

In my invention, the moisture is more completely expelled than under the old process, and the inconveniences above described are obviated. It is a well known fact that by reducing the atmospheric pressure, the moist-

ure may be made to vaporize at a lower temperature; and thus in my process, the drying of the insulating material is facilitated; but the principal advantage resulting from my invention, is the facility with which cores may be dried in the protecting pipe, which may be done after the cores are placed in the pipes and are safe from further injury or handling.

The apparatus for carrying out my invention, is illustrated in the accompanying drawing which represents a reel of cable connected to the vacuum pump.

The coil of cable *a* is placed in an oven, which is adapted in any well known way to have its temperature raised to a high degree, I preferably accomplish this by lining the walls of the oven with steam pipes. Either one, or both ends *b b* of the pipe, into which the core has already been drawn, are attached to the tube leading to the vacuum pump. When only one end is so attached, the other end is sealed in any well known convenient way.

For the purpose of determining the progress of the desiccating process, I select from the conductors of the core one as near the center as possible, another on the outside layer, and by means of the two insulated connecting wires *c c* passing through the cap *d* connect the binding post *c' c'* with the two selected wires of the core above mentioned. I thus have access for the purpose of testing to two insulated wires passing through the entire length of the cable. The other conductors of the core I group together and connect to the ground, or to the protecting pipe. By testing the two wires above described against the other conductors of the core, I am enabled by determining the gradual rise in the insulation to watch the progress of the process of drying, and to determine when it has reached practical completion. I have found in practice that by raising the temperature to 260° Fahrenheit and reducing the atmospheric pressure to one inch of mercury, practically complete desiccation results in from six to twenty-four hours, depending upon the size and length of the cable, and other circumstances.

Having thus described my invention, what

I claim as new, and desire to secure by Letters Patent, is—

5 The herein described method of removing moisture from the cores of cables provided with a protecting sheath, which consists in heating the completed cable in an oven from which the air is not exhausted, and simultaneously maintaining a vacuum within the

sheath surrounding the core of the cable, substantially as described. 10

In witness whereof I hereunto subscribe my name this 4th day of March, A. D. 1892.

CHARLES H. RUDD.

Witnesses:

GEORGE MCMAHON,
M. JEANE TALLETT.