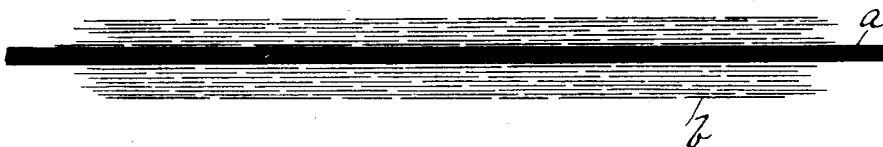


(No Model.)

F. S. RANDALL.
COVERING FOR ELECTRIC WIRES.

No. 540,687.

Patented June 11, 1895.



WITNESSES

J. W. West.
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UNITED STATES PATENT OFFICE.

FRANKLIN S. RANDALL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HOWARD A. ENGLE, W. HOWARD HOLDEN, AND DILLWYN P. ROBERTS, OF SAME PLACE.

COVERING FOR ELECTRIC WIRES.

SPECIFICATION forming part of Letters Patent No. 540,687, dated June 11, 1895.

Application filed January 2, 1894. Serial No. 495,290. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN STREATER RANDALL, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Coverings for Electric Wires; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon, which forms a part of this specification.

This invention relates to a means of covering electric cores, by which a thoroughly flexible, cheap, insulating sheathing is made to evenly surround the metal core to any desired thickness; and the invention consists in the use of staple of any suitable growth, drawn or combed into a condition in which each of the fibers of staple are separately straightened and in any suitable manner drawn and fed in the desired quantity and evenly to the surface of the metal core parallel with its axis. The single figure of the drawing represents these straightened fibers of staple associated one with the other to a given thickness and surrounding the metal core.

Referring to the drawing *a*, represents the metal core, and *b*, the covering.

To insure a full understanding of what I have invented it will be necessary to refer to the special condition in which I use the product in order to obtain the valuable results heretofore referred to.

As cotton staple is to be preferred by reason of the present use of already simply devised machinery for placing it into the condition required, and when in a purely dry state is an excellent electrical non-conductor, and its extreme low cost, I shall confine myself to a short description of the treatment of cotton staple after leaving the carding machine, as I am aware that the product of the afore mentioned machine has been used, the further treatment

of the product is necessary to insure the beneficial results I desire to obtain.

The product of the carding machine differs in name in accordance to what the cotton staple is to be used for, but where the product to be used is in the form of a strip essential in the further production of yarn and its technical name is "sliver," it must pass through a number of drawing frames receiving after each operation the same name, but the fibers are being separated one from the other and straightened until it completely loses its identity of a strip and becomes but a band of associated parallel fibers of staple in which each one of the fibers is not dependent upon its neighbor, but virtually independent, destroying every vestige of a strip or band. The drawing machinery that may be employed discharging it only as a number of thoroughly straightened fibers of staple laid parallel one with the other. As before stated the product must be exactly in this condition or as near so as it is practicable to produce it, and until this condition is reached, it is not suitable to apply to the metal core to secure the valuable results claimed. Suitable machinery can then be used to take this product and by drawing it to suit the required amount of thickness of covering deliver it to the wire core.

I am aware attempts have been made to utilize cotton staple in the form of "bat" or "sliver" as they are technically understood to be conditions of cotton coming from a carding machine, and then fold or wrap the same around the wire, but the use of such products when applied to the wire produce an uneven and decidedly inflexible covering. The fibers of staple are still thoroughly entangled and the "bat" or "sliver" must be folded or wrapped around the metal core, and when used in either the conditions named possesses definite edges which must produce a seam that in some manner must be knitted together, but which cannot be satisfactorily accomplished.

The condition of the staple as I use it is en-

tirely different. The entanglement of the staple is entirely destroyed and it reaches the metal core upon all its surface entirely free from any seam.

5 I claim—

The combination with an electric conductor, of an insulating covering therefor, consisting of straightened fibers, evenly applied parallel with the conductor, the said straight-

ened fibers consisting of sliver which has been drawn longitudinally until the fibers have been rendered parallel.

In testimony whereof I affix my signature in presence of two witnesses.

FRANKLIN S. RANDALL.

Witnesses:

WM. B. HILT,

LEWIS F. BROUS.