

P. TORCHIO.  
INSULATING COVERING FOR CABLES.  
APPLICATION FILED MAY 4, 1909.

958,046.

Patented May 17, 1910.

2 SHEETS—SHEET 1.

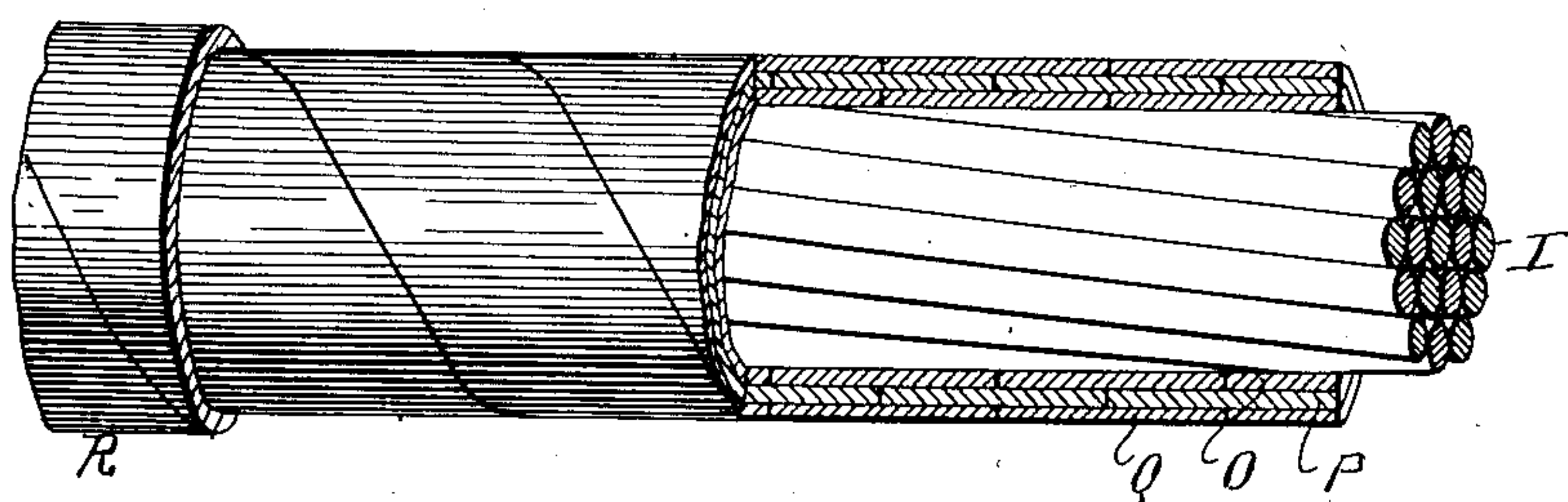


Fig. 1.

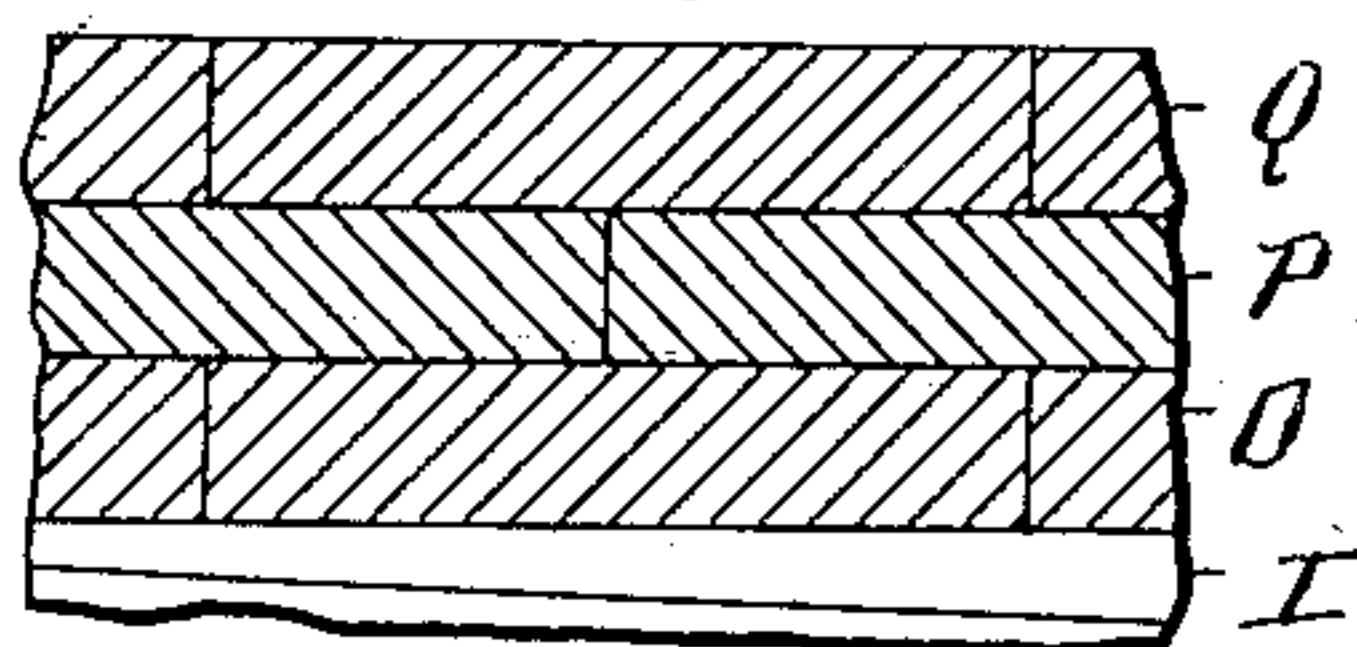


Fig. 2.

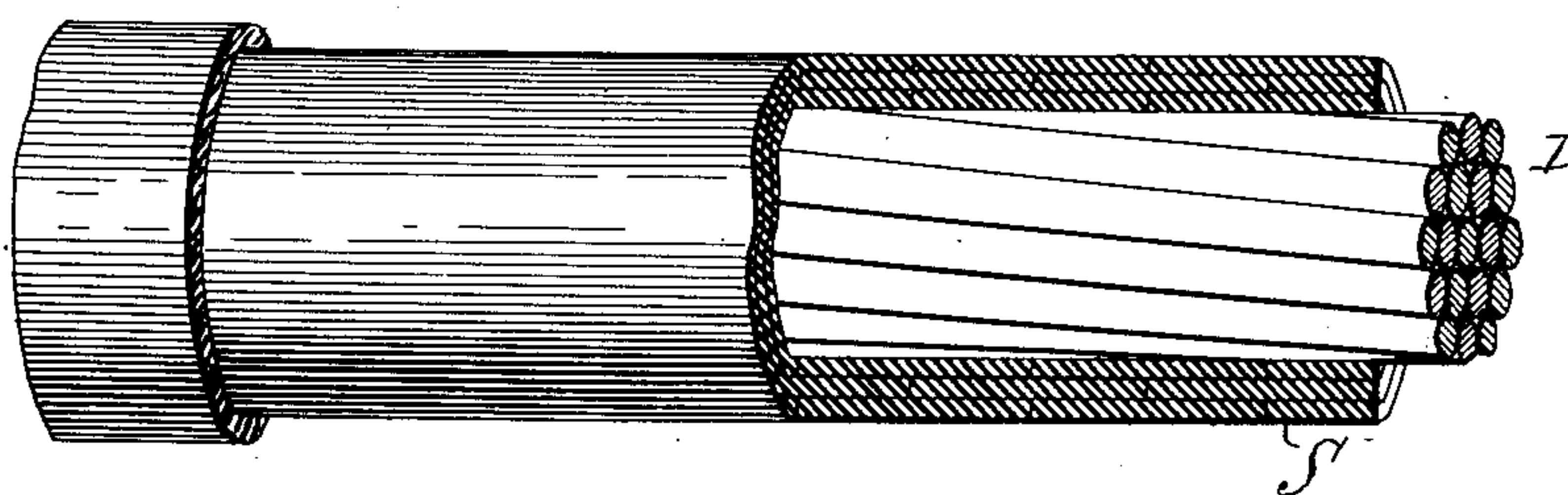


Fig. 3.

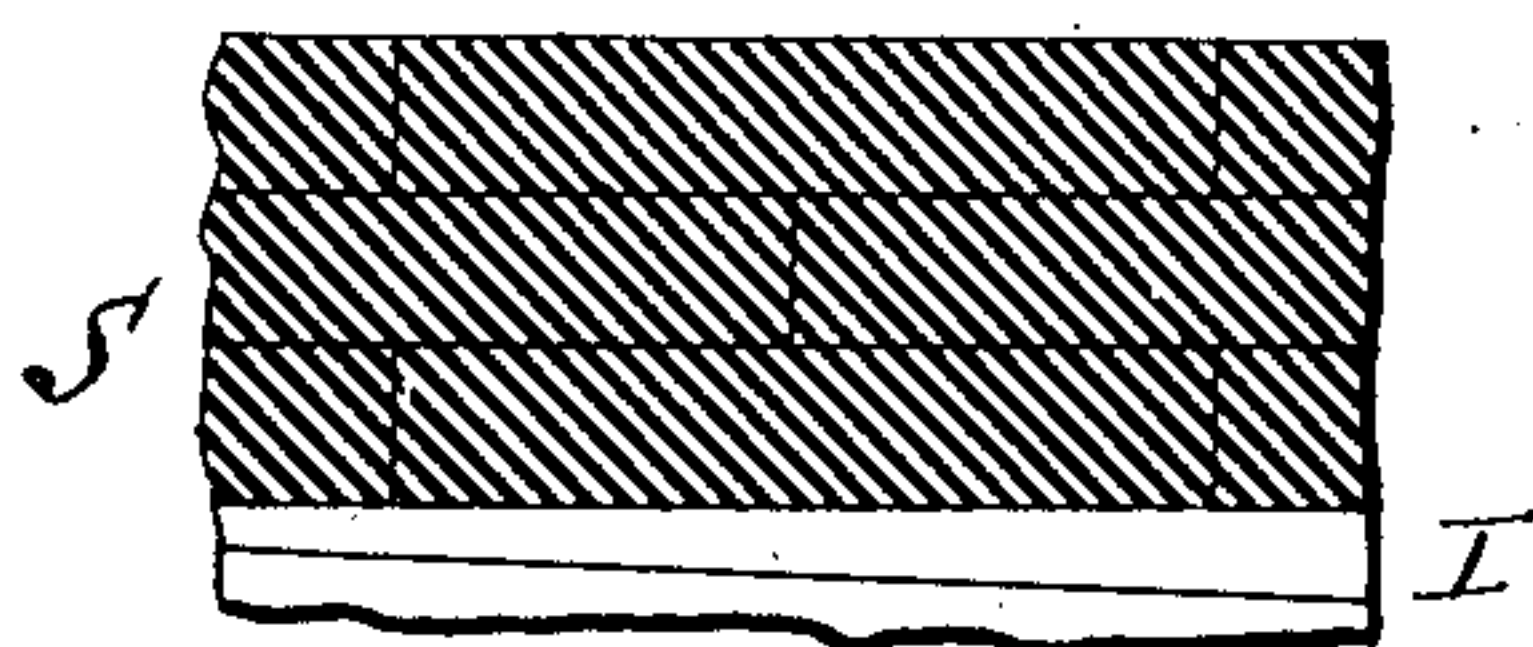


Fig. 4.

Witnesses:  
*C. H. Bertholf*  
*May T. Mc Larry.*

Inventor  
*Philip Torchio*  
By *h* Attorney  
*Lawrence*

P. TORCHIO.  
INSULATING COVERING FOR CABLES.  
APPLICATION FILED MAY 4, 1909.

958,046.

Patented May 17, 1910.

2 SHEETS—SHEET 2.

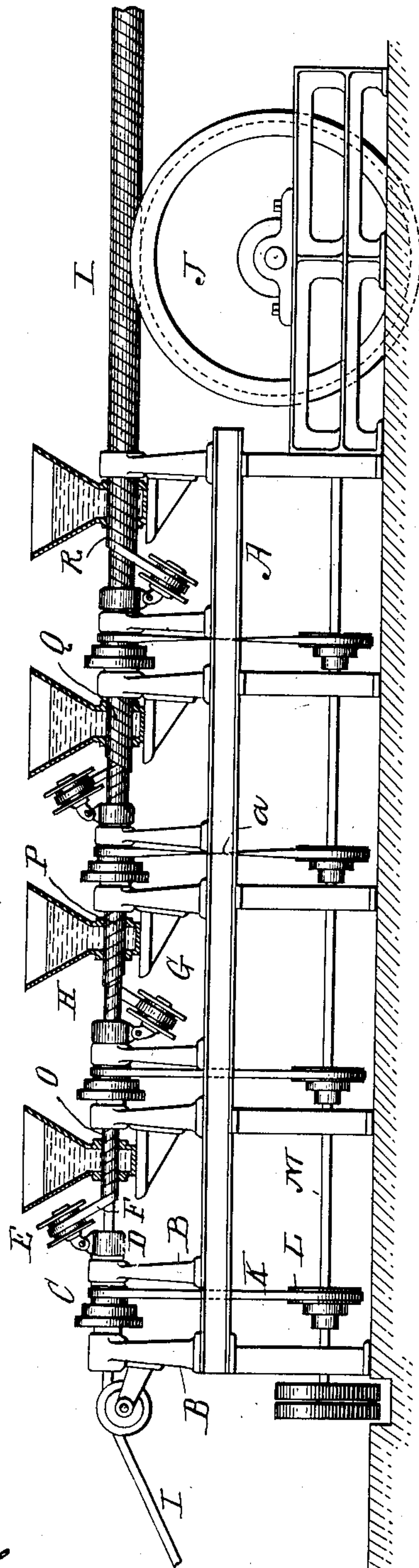


Fig. 5.

Witnesses:  
*C. H. Berthoff*  
*May T. Mc Farley.*

Inventor  
*Philip Torchio*  
By *Attorney*  
*Lawyer*



# UNITED STATES PATENT OFFICE.

PHILIP TORCHIO, OF NEW YORK, N. Y.

## INSULATING-COVERING FOR CABLES.

958,046.

Specification of Letters Patent.

Patented May 17, 1910.

Application filed May 4, 1909. Serial No. 493,880.

To all whom it may concern:

Be it known that I, PHILIP TORCHIO, a subject of the King of Italy, residing at New York, in the county of New York and State of New York, have invented a certain new and useful Improvement in Insulating-Coverings for Cables, of which the following is a specification.

The invention relates to the manufacture of insulating coverings for electric conductors, and more particularly to the method of making said covering, so that it ultimately becomes a plurality of strips of fabric embodied in a homogeneous cylindrical mass of vulcanized rubber. My said process may be carried into effect in various ways and by different forms of apparatus. I herein illustrate one form of such apparatus, whereby said process may be performed.

In the accompanying drawings—Figure 1 shows an electric conductor provided with my said covering and prior to vulcanization, a part of the covering being broken away to show the layers of rubber saturated fabric. Fig. 2 is an enlarged view, in section, of a portion of said covering. Figs. 3 and 4 are views respectively similar to Figs. 1 and 2, indicating the condition of the covering after vulcanization. Fig. 5 is a side elevation of a machine for saturating the strips of fabric and applying the same to the conductor.

Similar letters of reference indicate like parts.

In carrying out my process, I may use the apparatus represented in Fig. 5. On the table A are disposed a number of pairs of standards B. In each pair is journaled a hollow shaft carrying the belt pulley C and having at one end a head D, upon which is mounted an inclined reel E for the fabric strip F. Upon one member of each pair of standards is a bracket G which supports a tank H having openings in its walls. In the tanks H is placed the rubber solution with which the fabric is to be permeated. The conductor I is drawn continuously through the hollow shafts and tanks by means of the rotating friction drum J. At the same time, the reels E are given orbital motion around the conductor by means of the belts K which transmit motion to the pulleys C from pulleys L on the main driving shaft M. The strips are thus wound on the cable spirally with butt joints N at

their edges, and in successive layers, as, O, P, Q, R. The strips of one layer may be wound in opposite direction to the strips of the next adjacent layer, but I consider it preferable to wind two layers, as, O, P, in one direction and two layers, as, Q, R, in the opposite direction, and so on alternately. This is accomplished in the apparatus of Fig. 5, by crossing two of the driving belts K, as indicated at a.

The rubber solution used in the tanks is compounded with a sufficient percentage of sulfur, litharge and other ingredients required for the proper vulcanization of the rubber, and as the wound cable is drawn through the tanks, said solution permeates the fabric strips and cements together the successive layers. The covered cable is next vulcanized preferably at a temperature not exceeding 250° Fah., whereby all the moisture in the fabric is expelled and the whole body of rubber on and in the separate strips is converted into a homogeneous mass S, Figs. 3 and 4, without joints, in which mass the strips remain embedded and firmly held. The lines of demarcation between the original layers of fabric and the joints of each set of strips physically disappear, and an insulating covering is produced which is continuous, homogeneous, elastic and water-proof.

In another application for Letters Patent, Serial No. 478,762, filed by me April 3, 1909, I have described and claimed the insulating covering being the product of my herein set forth process.

I claim:—

1. The process of making an insulating covering for electric conductors which consists in first, winding a strip of fabric in close spiral around the conductor: second, saturating said applied strip with a rubber solution: third, winding another strip of fabric in like manner upon the first strip: fourth, saturating said second applied strip with a rubber solution and so on continuously for any desired number of layers: fifth, vulcanizing said covered conductor to convert the several layers of rubber engaging with said several strips into a homogeneous mass.

2. The process of making an insulating covering for electric conductors which consists in first, winding a strip of fabric in close spiral around the conductor: second,

drawing said covered conductor through a bath of rubber solution: third, winding a second strip of fabric in like manner upon the first strip: fourth, drawing said conductor, thus twice covered, through a bath  
5 of rubber solution and so on continuously for any desired number of layers: fifth, vulcanizing said covered conductor to convert

the several layers of rubber engaging with said several strips into a homogeneous mass. 10

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

PHILIP TORCHIO.

Witnesses:

MAY T. MCGARRY,

GERTRUDE T. PORTER.