R. S. CASE.

CONDUIT FOR ELECTRIC WIRES.

APPLICATION FILED AUG. 4, 1911.

1,166,432. Patented Jan. 4, 1916.

Fig. 1.

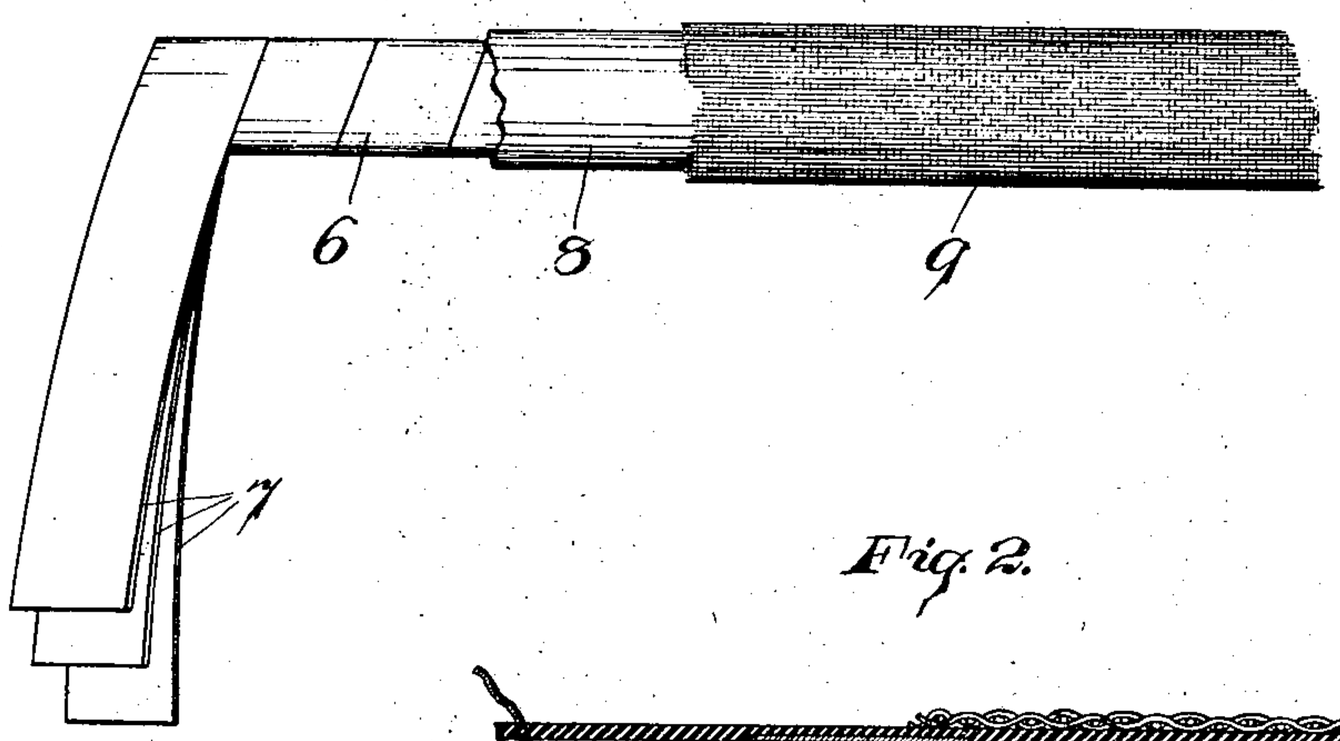


Fig. 2.

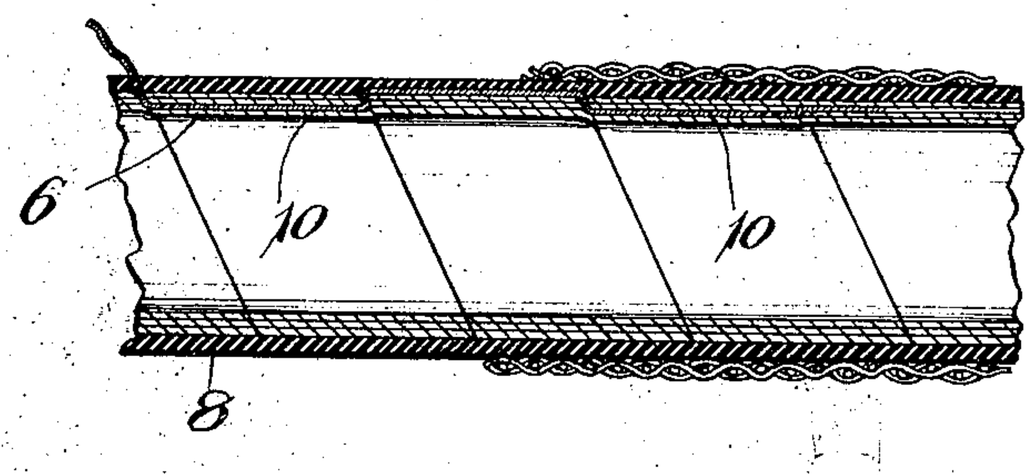
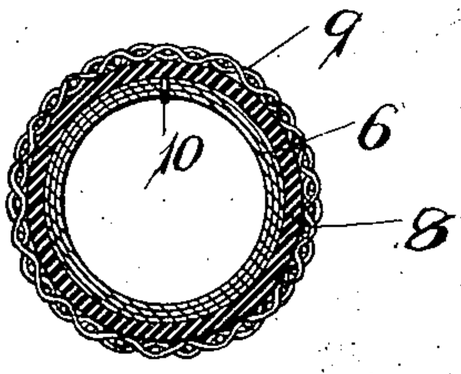


Fig. 3.



WITNESSES:

Louis Lucia.

E. L. Stoughton

INVENTOR.

Raymond S. Case

BY

Arthur B. Jenkins

ATTORNEY.

UNITED STATES PATENT OFFICE.

RAYMOND S. CASE, OF UNIONVILLE, CONNECTICUT.

CONDUIT FOR ELECTRIC WIRES.

1,166,432. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed August 4, 1911. Serial No. 642,264.

To all whom it may concern:

Be it known that I, RAYMOND S. CASE, a citizen of the United States, and a resident of Unionville, in the county of Hartford and State of Connecticut, have invented a new and Improved Conduit for Electric Wires, of which the following is a specification.

My invention relates to the class of devices above named, and the objects of the invention, among others, are to provide a device of this class that while possessing all of the qualities of strength required in such devices may be constructed at a minimum cost, one in which the opening through the tube shall be extremely smooth, and one which shall compel the use of the structure as originally made.

A form of device in the construction and use of which these objects, as well as others, may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a detail side view of a conduit embodying my invention with parts of the structure broken away to show construction. Fig. 2 is a view on enlarged scale in central lengthwise section through a portion of a tube. Fig. 3 is a detail view in cross section through the same.

A common form of construction of conduits for electric wires includes a core or inner tube of paper-board spirally wound, this being covered with a layer of rubber tape, and outside of these a cover of fabric. The paper-board composing the core is of necessity of considerable thickness with a result that as the paper is wound, the inner surface being disposed on a smaller circle than the outer surface, is liable to become wrinkled, or the outer surface must stretch, this requiring the use of a paper quite expensive to manufacture, and having qualities to resist this wrinkling and stretching without cracking or breaking. I have demonstrated that this lining tube may be composed of a cheaper grade of paper, and such a structure will have the added result that the inner surface of the tube will be comparatively smooth and free from wrinkles.

In constructing a tube in accordance with my invention the inner tube 6 is spirally wound as shown in Figs. 1 and 2 of the drawings, and is composed of a plural number of plies 7 of paper, three plies being shown herein. These plies are of a thickness to provide the required thickness for the inner tube when they are superimposed. In winding this tube the difference between the inner surface and the outer surface of each ply is so slight as to put no unnecessary strain upon the strips or plies, and it also avoids the wrinkling on the inner surface of the tube, and the difference between the inner diameter of the tube and its outer diameter will be taken care of in the different plies, the outer ply requiring to be longer than the inner ply, as illustrated in Fig. 1 of the drawings, in which is shown a structure of three plies of paper of equal length, and in which it will be seen that the outer plies become continually shorter than the inner ply as the winding progresses. These plies may be secured together in any desired manner, in the form of construction shown an adhesive being placed between the plies to bind them together after the winding operation is completed. In constructing my improved conduit the usual layer 8 of rubber may be made use of, and the outer covering 9 of fabric employed.

In the installation of electric wires it sometimes happens that the opening in the conduit is slightly smaller than a wire to be inserted therein, and workmen frequently strip the core from the conduit in order to make it large enough to receive the wire, with the obvious result of destroying the efficiency of the conduit. In order to obviate such an operation or objectional use the core is firmly bound to the remainder of the structure as by means of a cord or cords 10 passed between such plies of the fabric as may be desired, the cord passing from one wind of the spiral on to another wind thereon and including any number of winds of the spiral. This cord may be secured to the next layer of the conduit, or may be simply included in the spirally wound inner tube, in either event it effectually preventing the stripping of this inner tube from the conduit.

While I have shown and described herein a preferred construction for carrying out my invention this may be departed from to a greater or lesser extent without avoiding the invention, and I do not therefore limit the invention to the exact construction herein shown and described.

I claim—

A flexible conduit for electric wires comprising a tube formed from a strip of material and an inner layer consisting of at

least three independent plies of spirally wound strips of thin paper of uniform thicknesses in each strip, all being of even width throughout and having their joints arranged in the same plane, said strips being connected by an adhesive, plastic during the winding and thereinafter setting whereby the strips may be simultaneously wound and yield longitudinally with respect to each other.

RAYMOND S. CASE.

Witnesses:
ARTHUR B. JENKINS,
E. L. STOUGHTON.