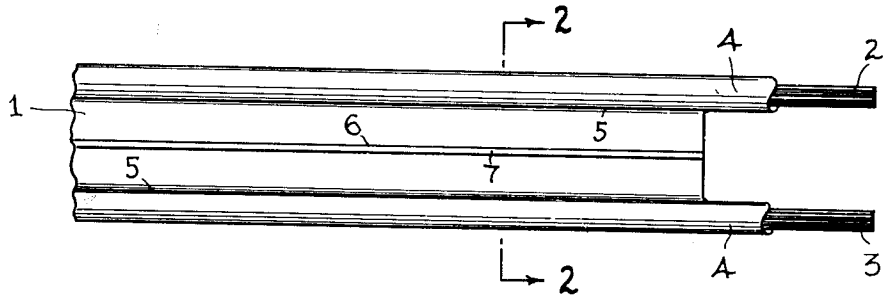
Jan. 12, 1954 L. K. WILDBERG 2,666,093

LOW LOSS HIGH-FREQUENCY TRANSMISSION LINE

Filed April 19, 1950

FIG. 1



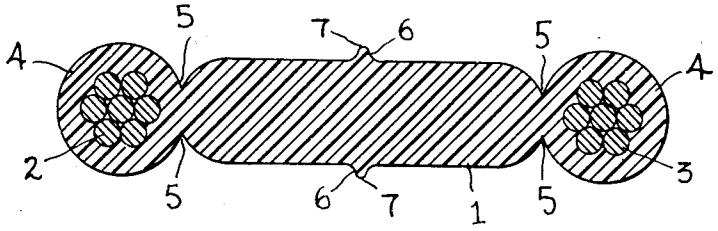


FIG. 2

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LOW LOSS HIGH-FREQUENCY TRANSMISSION LINE

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1 Claim. (Cl. 174—117)

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This invention relates, as indicated, to transmission lines, but has reference more particularly to low loss, high frequency transmission lines.

These lines, which are commonly used to connect television antennae to television sets, and for other high frequency purposes, such as frequency modulation, usually include two or more parallel conductor wires embedded in a dielectric material, the electrical characteristics of the line being determined by the spacing between the wires, the size of the wires, and the dielectric constant of the material in which the wire is embedded.

For ordinary television purposes, various lines having a range of nominal impedance from 72 to 300 ohms are most frequently used. In one type of such line, the conductors or wires are embedded in the marginal portions of a flat ribbon or band of plastic material, so that stripping or detachment of the conductors from the band, for attachment to terminals or contacts, requires the use of special tools, and involves considerable difficulty and the expenditure of a great deal of working time. Moreover, the large, unbroken, flat area between the conductors of the line is conducive to the accumulation of drops of water on the line, which cause variations in the impedance of the line, and is objectionable from other standpoints.

The present invention has as its primary object the provision of a novel low loss, high frequency transmission line, embodying conductor wires which are easily and quickly separable from the line for stripping purposes, without the necessity of using special tools.

Another object of the invention is to provide a transmission line of the character described, which is so constructed as to prevent accumulation of drops of water on the line, and is therefore characterized by a constant impedance at all points along the line.

A further object of the invention is to provide a transmission line of the character described, which can be manufactured in large quantities at a fairly low cost, competitive with existing types of transmission lines.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this specification, and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a plan view, on an enlarged scale, of a fragment or length of transmission line, embodying the novel features of the invention, and

Fig. 2 is a cross-sectional view, taken on the line 2—2 of Fig. 1.

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Referring more particularly to the drawings, reference numeral 1 designates a flat band or ribbon of a plastic, dielectric material, of appreciable thickness, having conductor wires 2 and 3 embedded in the marginal portions of the band and extending longitudinally of the band. The marginal portions of the band in which these conductor wires are embedded, and which are designated by reference character 4, are demarcated from the body of the band by lines 5, which may be made by roller cutters having knife-like edges, or may be molded into the dielectric plastic material. These lines, which reduce the thickness of the band along the lines, greatly facilitate separation of the marginal portions 4 from the band by simply tearing the latter from the band, as by hand. The plastic covering may then be easily stripped from the portions 4 by any conventional means, to expose the wires 2 and 3, as for connection of the latter to terminals or contacts.

The facility with which the portions 4 of the band can be stripped from the body of the band, avoids the use of tools, and considerably reduces the time required for stripping purposes.

The flat areas between the portions 4 of the band are broken up or interrupted by ribs 6 extending longitudinally of the band, approximately midway between the portions 4 of the band and parallel with the latter. These ribs, which are molded integrally with the band, preferably have relatively sharp ridges or upper edges 7. These ribs function to deflect or split drops which would otherwise accumulate on the flat areas, causing the drops to roll or fall off the line, and thus prevent accumulation of water on the line. In this way, the ribs do away with variations in the impedance of the line, providing a line of relatively constant impedance at all points along the line.

It is to be understood that the form of my invention, herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention or the scope of the subjoined claim.

Having thus described my invention, I claim:

A low loss, high frequency, transmission line comprising a band or ribbon of dielectric material having portions of substantially circular

cross-section at the margins thereof, said portions having conductor wires embedded therein, said band having a central portion extending between said marginal portions of a width considerably larger than the diameter of said marginal portions and of a thickness less than the diameter of said marginal portions, and ribs extending from both surfaces and formed integrally with said central portion, said ribs disposed substantially midway between said marginal portions and extending substantially parallel with the latter, said ribs having relatively sharp ridges lying in the plane of the outer surfaces of said circular marginal portions, said marginal portions being separated from said central portion by lines of demarcation which reduce the thickness of the central portion of the band, so as to facilitate tearing or stripping of said marginal portions from the band.

LESLIE K. WILDBERG.

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