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F. UNTERBUSCH ET AL

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MULTICORE HIGH FREQUENCY CONDUCTOR

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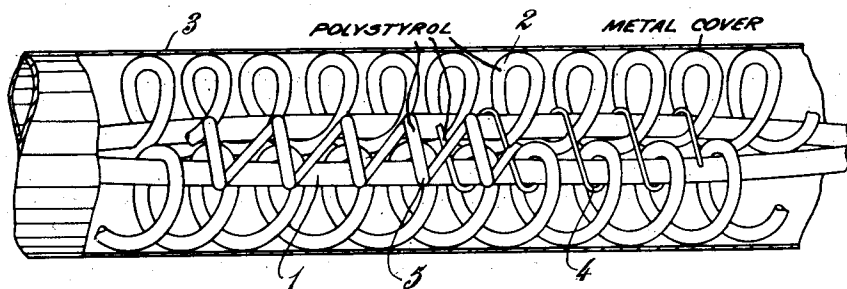


Fig. 1.

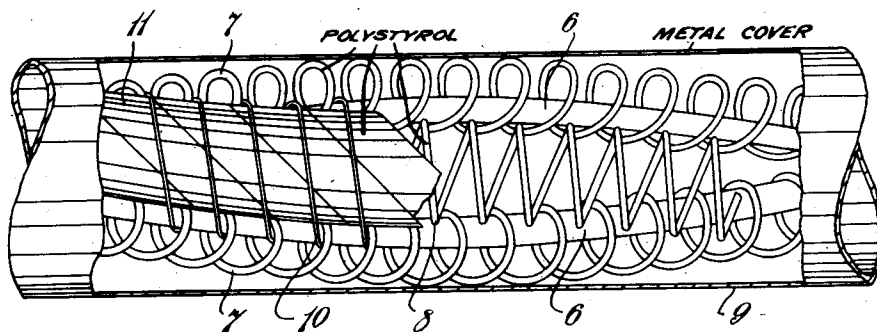


Fig. 3.

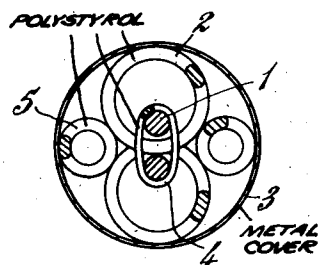


Fig. 2.

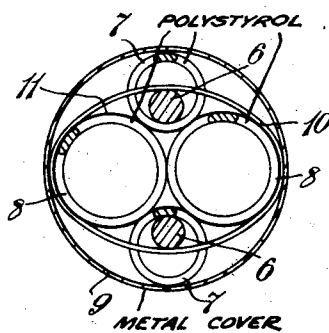


Fig. 4.

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MULTICORE HIGH FREQUENCY CONDUCTOR

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3 Claims. (Cl. 173-265)

This invention relates to an improved high frequency conductor with air space insulation comprising a number of metallic conductors. According to the invention the individual metal conductors are surrounded by a helix of insulating material, preferably polystyrol, the inner diameters of which are substantially larger than the diameter of the metal conductors. The conductors are then stranded together in such a manner that the threads of insulating material interengage in such a manner that the distance between the conductors is equal to the thickness of one thread. By the stranding of the conductors the helices are pressed outwardly, and in this way serve as distance holders for the outer covering. In this way the capacity of the core with respect to the metal covering is considerably reduced, since only very little insulating material is employed.

One form of construction according to the invention is illustrated by way of example in the accompanying drawing, in which Figures 1 and 2 are a sectional elevation and tranverse section respectively of one form of construction, and Figures 3 and 4 a sectional elevation and a tranverse section respectively of a second form of construction.

Referring to the construction illustrated in Figures 1 and 2, the metal conductors 1 are surrounded by polystyrol helices 2 and are stranded together in such a manner that the distance between the two conductors is equal to the thickness of one polystyrol thread. The polystyrol helices maintain the distance between the core and the outer metal covering 3.

In order to render more stable the fixing together of the two conductors 1, the latter may be bound together by means of a thread 4 of high tearing resistance and good dielectric properties, for instance a thread of polystyrol. In order that the core may have an approximately circular shape polystyrol helices 5, which may have a direction opposite to that of the helices 2, are inserted in the free spaces, between the helices 2 and the metal covering 3, or the said free spaces may contain other fillings.

In order to reduce the damping of such conductors the helices carrying the conductors may be kept at a certain distance from one another, also by means of distance holders, for instance further helices. Such a form of construction is illustrated in Figures 3 and 4.

The conductors 6, which are in the interior of the helices 7, are held at a certain distance from one another and from the metal covering 9 by means of helices 8. The distance between the conductors is maintained by means of a thread 10 of tension resisting material.

Adjacent helices run preferably in opposite directions or have a different pitch so that they do not fall into one another. The helices may however be wound round individually, or several together, by means of a thin tape, for instance of polystyrol. Such a tape is indicated in the drawing by 11. In this form of construction it has been found advisable to arrange the conductors 6 in such a manner that their distance from the centre of the cable, and from the covering 9, is approximately the same.

What we claim is:—

1. A high frequency cable with air-space insulation comprising a number of conductors, a helical insulating thread wound round each conductor, the said helical threads having each an inner diameter larger than the conductors they surround and being of such material as to keep their helical shape, additional helices which keep the helices carrying the conductors at a certain distance from one another and means for retaining all the said conductors together as a cable.

2. A high frequency cable with air-space insulation comprising a number of conductors, a helical insulating thread wound round each conductor, the said helical threads having each an inner diameter larger than the conductors they surround and being of such material as to keep their helical shape, additional helices which keep the helices carrying the conductors at a certain distance from one another, and a covering surrounding all the individual conductors with the helices round them and the additional helices together as a cable, the distance of the individual conductors from one another being double their distance from the said covering.

3. A high frequency cable as claimed in claim 2, and in which a tension resisting thread of insulating material holds the conductors and the additional helices together at the said distance between the conductors, as compared with their distance from the covering.

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