Aug. 30, 1932. E. FISCHER 1,874,481

TELEPHONE CABLE

Filed Oct. 18, 1929

Fig. 1

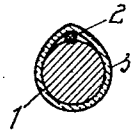


Fig 2

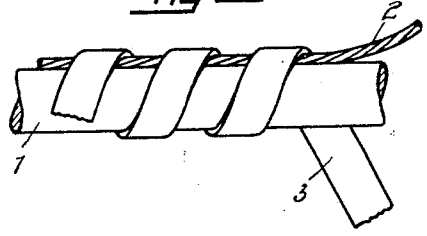


Fig. 3

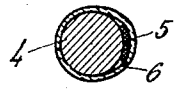
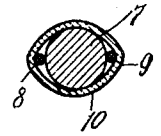


Fig. 4



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UNITED STATES PATENT OFFICE

ERNST FISCHER, OF BERLIN-TEMPELHOF, GERMANY, ASSIGNOR TO SIEMENS-SCHUCKERT-WERKE AKTIENGESELLSCHAFT, OF BERLIN-SIEMENSSTADT, GERMANY, A CORPORATION OF GERMANY

TELEPHONE CABLE

Application filed October 18, 1929, Serial No. 400,577, and in Germany October 23, 1928.

My invention relates to improvements in telephone cables, and more particularly in cables with continuously distributed inductive loading in which a strip or flat tape of a material of high permeability, such as a so-called permalloy strip, is wrapped around the conductors. In the manufacture of such cables difficulties arise when subjecting the strip to the necessary annealing process in order to increase its permeability, inasmuch as the magnetic strip is stretched when it cools down whereby its permeability is reduced. Various means have already been suggested to eliminate this drawback, such as resilient copper conductors, a closed combustible sheath on the conductor or a recoiling of the magnetic wire by subjecting the conductors to torsion. All these processes cause extra costs inasmuch as they require additional working operations or difficult conductor constructions.

According to my invention the stretching of the magnetic strip during the cooling after the annealing process is avoided by running a combustible thread or tape along the copper conductor when applying the Krarup winding so that the circumference of a turn of the applied magnetic material is greater than the circumference of the copper conductor. This has the advantage that during the wrapping process the magnetic tape or wire may be tightly wound around the conductor and that it becomes loose during the annealing only when the combustible tape is burned. In this way the detrimental stretching of the magnetic material during the cooling is effectively avoided. In certain cases it is advantageous to wrap the combustible thread or tape in helical turns of large pitch around the copper conductor. Instead of the combustible tape two or more threads or cords may be employed.

In the drawings affixed to my specification some embodiments of my invention are illustrated by way of example. In the drawings:

Fig. 1 represents a cross-section through my improved cable,

Fig. 2, a side elevation of it,

Fig. 3, a cross-section through a modification, and

Fig. 4, a cross-section through another modification.

Referring to Figs. 1 and 2, 1 is the copper conductor, 2 the combustible thread or cord and 3 the wrapping of magnetic material.

In Fig. 3 a combustible tape or strip is employed, 4 is the copper conductor, 5 the combustible tape and 6 the magnetic winding.

In Fig. 4, 7 is the copper conductor, 8 and 9 are two combustible threads employed instead of the tape in Fig. 3, and 10 is the strip of magnetic material wrapped around the conductor.

I claim as my invention:

1. The process of producing a magnetizable heat treated wrapping on conductors for telephone cables with continuously distributed inductive loading, which consists in placing a combustible thread in a substantially straight line parallel to the said conductor and said magnetizable wrapping during the wrapping process, and heating the conductor after the application of the said combustible thread and the said wrapping to the annealing temperature of the wrapping.

2. The process of producing a magnetizable heat treated wrapping on conductors for telephone cables with continuously distributed inductive loading, which consists in placing a combustible tape narrower than the conductor in a substantially straight line parallel to the said conductor and between it and said magnetizable wrapping during the wrapping process, and heating the conductor after the application of the said combustible tape and the said wrapping to the annealing temperature of the wrapping.

3. The process of producing a magnetizable heat treated wrapping on conductors for

telephone cables with continuously distributed inductive loading, which consists in placing a combustible spacer narrower than the conductor between said conductor and said magnetizable wrapping in a substantially straight line during the wrapping process, and heating the conductor after the application of said spacer and said wrapping to the annealing temperature of the wrapping.

In testimony whereof I affix my signature.

ERNST FISCHER.