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ELECTRIC CABLE

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Fig. 1.

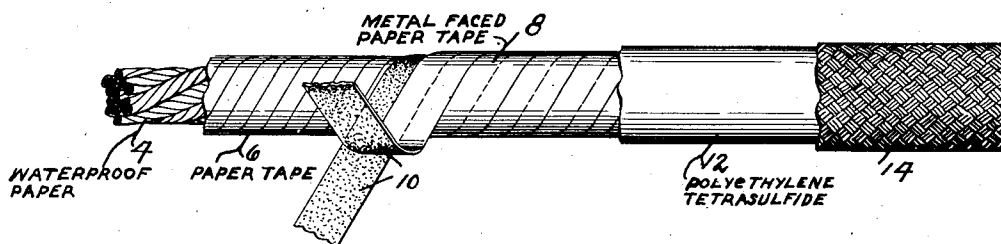
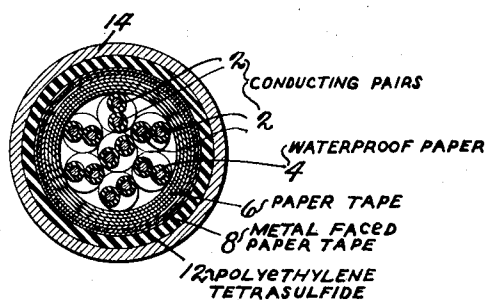


Fig. 2.



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ELECTRIC CABLE

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3 Claims. (Cl. 174-106)

My invention relates to an improvement in telephone cables, and has for one of its objects the provision of a multi-conductor telephone cable which is particularly well adapted for military use in the field, the construction being such as to permit the same to be opened in bad weather for terminating and splicing or for any other purpose without any deleterious effect on the cable due to moisture conditions.

My invention also provides a construction wherein the cable may be strung overhead without the necessity of employing a messenger.

In the accompanying drawing wherein I have illustrated one embodiment of my invention:

Fig. 1 is a part sectional elevational fragmentary view of my improved cable; and

Fig. 2 is a cross section of the cable of Fig. 1.

Referring to the drawing in detail: 2 designates several pairs of conductors which are suitable for telephone circuits. These conductors are preferably hard drawn copper strands of the order of nineteen or twenty-two gauge B & S wire, for example.

Each conductor of each pair of conductors 2 is insulated with paper 4 impregnated with a waterproofing agent such as terpin hydrate, for example, and fortifiers such as cupric stearate and lead stearate. While a paper which has been impregnated with hot terpin hydrate has its moisture resistance very materially increased, a further increase to moisture resistance is obtained by the addition to the hot terpin hydrate of a fortifier such as cupric stearate. Such a paper is eminently suited for my present purposes, but should it be desired further to increase the electrical insulation value of the paper, then I may add to the heated terpin hydrate a fortifier such as the lead stearate above mentioned.

The conductors thus insulated are twisted together and then the twisted together pairs of conductors cabled as shown in the drawing.

Over the cabled assembly thus provided I wrap paper binding tape 6, which has been treated with wax or other moistureproofing material.

About the binding tape 6 I wrap two layers of paper tape 8 faced with aluminum. These tapes are so applied that one layer breaks joints with the overlying layer and so that the aluminum facings 10 contact each other.

I next apply a sheath 12 of a rubber-like substance, such as the material polyethylene tetrasulfide known commercially as thiolok. This material is waterproof, a good electrical insulator and highly resistant to oils and acids.

This may constitute the finished cable, but, if desired, I may employ an ordinary braid covering 14 as an outer sheath for mechanical protection purposes.

It is unnecessary to enclose the cable in lead, for instance, for sealing purposes, in that I have found that a cable constructed as above described may safely be opened for splicing and terminating purposes in bad weather without danger of the moisture working along the conductor insulation and unfitting the cable for service.

I find also that if hard drawn copper strands, such as above referred to, are employed for the cable conductors, it is perfectly safe to string the cable overhead without the use of messengers.

It is to be understood that while I have illustrated and described one embodiment of my invention, changes may be made in the cable as a whole without departing from the spirit and scope of my invention.

What I claim is:

1. A telephone cable comprising in combination pairs of hard drawn copper conductors insulated with paper treated to render the same highly water resistant, said pairs of insulated conductors being cabled together, wax treated paper wrapped about said assembly, two layers of metal faced paper tape wrapped about the first mentioned paper layer, the metal faced tapes being applied so as to bring their metal facings into contact with each other and so that one tape breaks joints with the overlying tape, and an enclosing sheath of rubber-like material.

2. A telephone cable comprising in combination pairs of conductors insulated with paper impregnated with terpin hydrate, the insulated conductors of each pair being twisted together and the pairs of conductors being cabled, a water resistant tape wrapped about the cabled assembly, a pair of paper tapes wrapped about the water resistant tape, one face of each of the said pair of tapes being faced with metal, said two tapes being so applied that one tape breaks joints with the overlying tape and so that the metal faces of the tapes are in contact, and an enclosing non-metallic sheath of a waterproof material highly acid and oil resistant.

3. A telephone cable comprising pairs of hard drawn copper conductors insulated with a waterproof material having highly electrical insulating characteristics, said insulated pairs of conductors being cabled, wax treated paper binding tape wrapped about the cabled assembly, a pair of paper tapes having metal layers on their adjacent faces wrapped in superimposed relation about the paper binding tape, one tape breaking joints with the other, and an enclosing sheath of polyethylene tetrasulfide.

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