March 3, 1936. J. J. MORRISON ET AL 2,032,712

CABLE

Filed Oct. 9, 1931

Fig. 1.

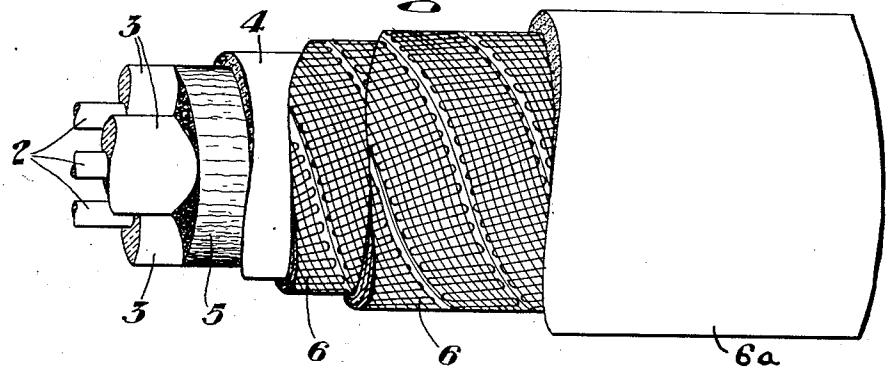


Fig. 2.

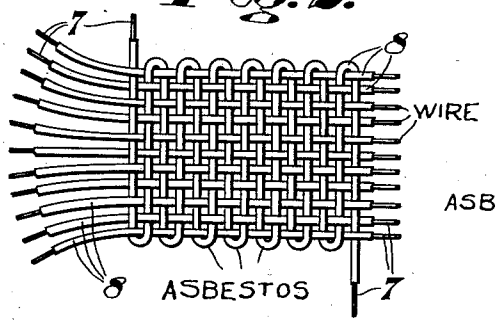


Fig. 3.

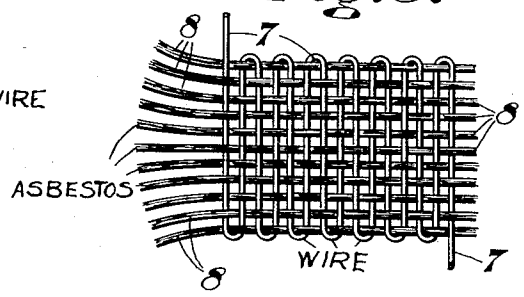
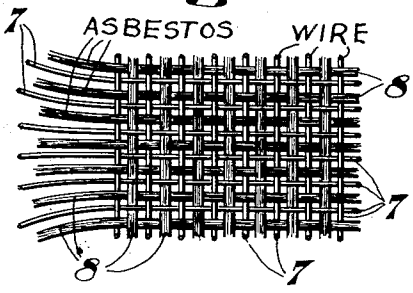


Fig. 4.



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UNITED STATES PATENT OFFICE

2,032,712

CABLE

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Application October 9, 1931, Serial No. 567,922

1 Claim. (Cl. 173—264)

This invention relates to electric cables, particularly the type laid in the earth without protection. Such a cable is generally made with a lead covering over insulated conductors, a layer of fibre covered by helically wound metal tapes protecting the soft lead. This cable requires careful and costly manufacture to prevent uneven tension on the metal tape, which would tend to cut the lead covering, and is not possessed of the shock absorbing qualities necessary to resist mechanical injury, such as might be caused by careless digging on the part of workmen. To avoid these difficulties a cable may be made with a covering of vulcanized fibre, rubber compound and the like, which substitutes for the lead and metal tape. In this construction, however, the elimination of the metal coverings has removed the electric ground necessary to prevent injury to workmen who might accidentally damage the cable, and is therefore objectionable.

In the present invention the costly and cumbersome lead covering and metal tape is eliminated and a covering of fibrous material, asbestos for example, interwoven with wire is used for protection instead. This construction has the combined inherent qualities of the two discussed types of construction, and has several advantages peculiarly its own.

Having reference to the accompanying drawing:

Figure 1 is a cut-away view of an example of a cable constructed in accordance with this invention.

Figures 2, 3 and 4 show various constructions of fibrous metal and wire coverings.

The first figure shows a cable having a number of conductors **2**, covered individually by insulation **3** and bunched within an asphalt compound saturated fibrous cover **4**, filling material **5** rounding out the whole. Over this is wound two layers of woven asbestos fibre and wire tape **6**, the edges of this tape either overlapping or abutting in each instance. A covering **6a** of asphalt compound impregnated fibrous material is applied over all.

There are numerous ways of constructing the tape **6**, Figure 2 showing wire **7** encased in asbestos fibre **8** and woven into form. Asphalt compound may probably be more easily applied to this form of tape than to that illustrated by Figure 3, in which longitudinally laid fibres **8** are cross-woven with bare wire **7**. This latter is shown, however, as its use may prove advantageous in other ways. A modification of this may consist in individually interwoven longitudinal and lateral wires and fibre strands, Figure 4 being here particularly referred to.

The advantages of this new cable are obvious. It is resilient; a feature very necessary in the resistance of mechanical injury by internal absorption of shocks. The wire prevents cutting and affords the desired electric ground for the inner conductors. And finally it is lighter and more flexible than any other armored cable known to the inventor.

Specific forms of the invention have been shown in accordance with the patent statutes, and not with the intention of limiting the scope of the invention thereto, except as defined by the appended claims.

We claim:

An electric cable comprising one or more insulated conductors, an asphalt compound impregnated fibrous layer over said conductors, asphalt compound impregnated interwoven asbestos fibre and wire tape wound over said layer and an asphalt impregnated fibrous cover over said tape, said cable being entirely free of any lead sheathing and said tape functioning to protect said cable against mechanical injury and to form the electrical ground usually provided by lead sheathing.

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