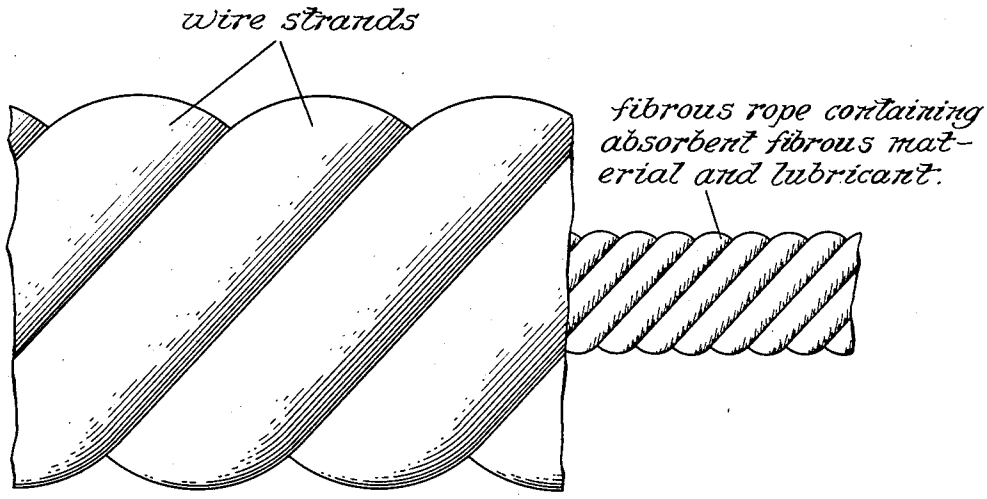
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WIRE ROPE

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WIRE ROPE

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5 Claims. (Cl. 117—53)

This invention relates to wire ropes, and particularly to wire ropes having a fibrous rope core.

In my copending application Serial Number 637,007 is described a lubricated wire rope in which a finely divided fibrous material is loosely permeated throughout the interstices of the fibrous rope strands.

In accordance with the invention described in said application 637,007, a rope core is prepared from the usual vegetable fibres, such as manila, hemp or the like, with which is incorporated a relatively absorbent fibrous material, together with a lubricant. Preferably, a lubricant is prepared comprising the absorbent fibrous material and the mixture is then forced into the strands or into the yarn of the rope core. Finely divided asbestos is preferably used as the absorbent material. Properly cleaned, ground and fluffed asbestos will absorb as much as 14–16 times its weight of lubricant, whereas manila, hemp and the like will absorb only ⅛ to ¼ of their weight. However, instead of the asbestos, a wide range of other absorbents may be used, such as jute, cotton, linters or the like.

In accordance with the present invention, the rope fibres are supplied with a fibrous absorbent, together with a lubricant, in a quantity substantially less than the absorbent will hold. As a result, when the rope core is compacted during the manufacture, no substantial quantity of lubricant is squeezed out of the fibrous absorbent material. It is desirable to avoid such expulsion of lubricant from the core because if expelled, it would displace or wash off the lubricant supplied on the wires which is ordinarily different from that in the core.

The single figure of the accompanying drawing is a diagrammatic illustration of a wire rope embodying my invention.

It has also been found desirable in the same connection to use a mixture of absorbent asbestos. As described in my copending application, a coarsely ground asbestos will only absorb about three parts by weight of lubricant. However, a long strand of carded No. 1 fibre free from foreign substance and ground very fine will absorb from 14–16 times its weight of lubricant. This finely ground material, however, is extremely difficult to disperse uniformly in the lubricant, and in order to distribute it uniformly the best results can be obtained by mixing it with a major proportion of the more coarsely ground material.

Any suitable lubricant may be used which the absorbent material will suitably absorb. It is preferred to use a grease of high tenacity and viscosity. A grease comprising 72 parts of mineral oil, for example, 100 viscosity naphthalene base Smackover oil and 2½ parts of aluminum oleate is satisfactory. It is preferred to incorporate therewith a minor proportion of a preservative such as creosote, degras, thymol, pine tar or any petroleum oxidation product of the type made by Alox Chemical Company, and particularly the product known as 130 BB. These petroleum oxidation products are described in Patents 1,690,768, 1,690,769, and 1,863,004.

Instead of aluminum oleate soaps, other aluminum soaps such as aluminum tungate or linoleate may be used, or greases may be employed which have for their base any suitable gelling soap. For example, magnesium, calcium, sodium lead, zinc or other soaps may be used.

As an example of the invention, 75 parts of a grease of the composition above given are incorporated with 25 parts of abestos. The proportion of coarse and fine asbestos used in the mixture will depend upon the particular use to which the rope is to be put, as well as the character of the rope core itself.

Where it is desired to have a core of considerable absorptive powers, it is preferred to use 22 parts of the coarse asbestos with 3 parts of the finely ground asbestos. This will give a total absorptive capacity of 108 parts of lubricant, whereas it will be used with only 75 parts. A somewhat less absorptive material may be prepared by using 23 parts of coarse asbestos with 2 parts of finely ground, giving an absorptive capacity of at least 97 parts of lubricant.

For a relatively low absorptive capacity 24½ parts of coarse asbestos may be used with ½ part of finely ground material, giving an absorptive capacity of 80½ or more parts of lubricant.

The foregoing description has been given for clearness of understanding only, and no unnecessary limitations should be understood therefrom, but the appended claims should be construed as broadly as permissible in view of the prior art.

What I regard as new and desire to secure by Letters Patent is:

1. A wire rope comprising a plurality of strands of wire wound about and pressing upon a fibrous core, said core comprising fibrous rope strands having finely divided asbestos loosely permeated throughout the interstices of the rope strands, and having a lubricant distributed throughout said core and asbestos, the amount of said lubricant being substantially less than the absorbing capacity of the asbestos, and said asbestos being

composed of a major proportion of coarsely ground asbestos, and a minor proportion of extremely finely ground asbestos.

2. A wire rope comprising a plurality of strands of wire wound about and pressing upon a fibrous core, said core comprising fibrous rope strands having finely divided asbestos loosely permeated throughout the interstices of the rope strands, and having a lubricant distributed throughout said core and asbestos, the amount of said lubricant being sufficiently less than the absorbing capacity of the asbestos that under the pressure of manufacture and use the lubricant is held within the core and prevented from entering the wire strands.

3. A wire rope comprising a plurality of strands of wire wound about and pressing upon a fibrous core, said core comprising fibrous rope strands having a finely divided fibrous material having markedly higher lubricant absorbing powers than the rope fibres loosely permeated throughout the interstices of the rope strands, and having a lubricant distributed throughout said core and absorbent fibrous material, the amount of said lubricant being sufficiently less than the absorbing capacity of the absorbent fibres that under the pressure of manufacture and use the lubricant is held within the core and prevented from entering the wire strands.

4. A wire rope comprising a plurality of strands of wire wound about and pressing upon a fibrous core, said core comprising fibrous rope strands having finely divided asbestos loosely permeated throughout the interstices thereof, said asbestos being composed of a major proportion of coarsely ground asbestos, and a minor proportion of extremely finely ground asbestos; and having a lubricant distributed throughout said core and asbestos.

5. Cordage formed of fibrous rope strands and having finely divided asbestos permeated throughout the interstices thereof, said asbestos being composed of a major proportion of coarsely ground asbestos, and a minor proportion of extremely finely ground asbestos, the cordage having a lubricant distributed throughout its strands and said asbestos.

WALTER D. HODSON.