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PATENTED JULY 21, 1908.

E. D. C. BAYNE & L. A. SUBERS.

COATED CORD OR THREAD, THE COMPONENT STRANDS OF WHICH
ARE COATED.

APPLICATION FILED JUNE 24, 1907.

Fig. 1

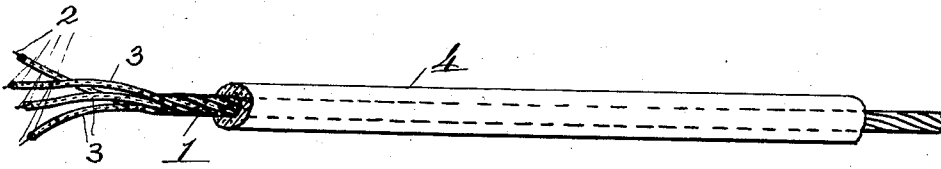
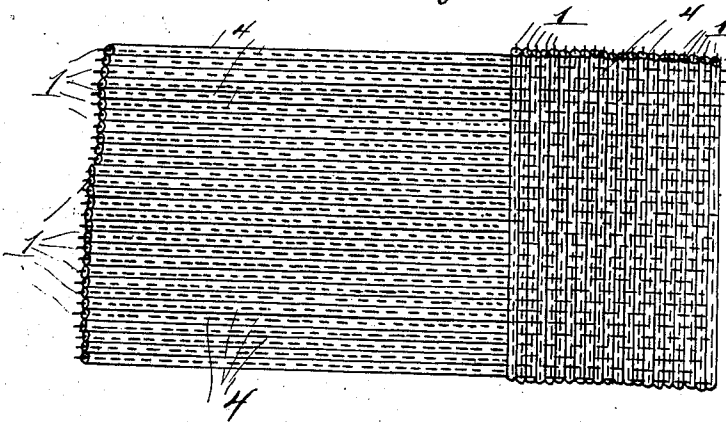


Fig. 2



Fig. 3



Witnesses
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UNITED STATES PATENT OFFICE.

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COATED CORD OR THREAD, THE COMPONENT STRANDS OF WHICH ARE COATED.

No. 894,172.

Specification of Letters Patent.

Patented July 21, 1908.

Original application filed April 25, 1907, Serial No. 370,139. Divided and this application filed June 24, 1907, Serial No. 380,401.

To all whom it may concern:

Be it known that we, EUGENE D. C. BAYNE and LAWRENCE A. SUBERS, citizens of the United States, and residents of Cleveland, county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Coated Cord or Thread, the Component Strands of Which are Coated, of which we hereby declare the following to be a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same.

The objects of the invention are to provide a thread which is to be incorporated in a fabric designed to include in its various properties those of extreme tensile strength combined with perfect flexibility and freedom from frictional contact of the component threads, and of the fiber strands of the thread itself, whereby the fabric is rendered also more durable under all kinds of flexure. To provide threads of this character the component strands thereof must be coated exteriorly with a coating of non-fibrous and tenacious material, and also the completed threads must be coated with the same or similar material before they are united together to form the fabric, so that not only the several strands composing the individual threads will be coated and rendered wholly out of contact with each other in the finished threads, but also the individual threads will be coated and separated out of contact with each other in the fabric and therefore incapable of frictional contact upon each other. To prepare a thread having these capabilities and qualities, it is first essential that the fibrous strands thereof if already twisted together should first be momentarily separated and immersed within the vulcanizable coating material and as soon as the material has been dried or partially dried thereon the strands are united to form the complete thread, or strands which are separate may be first coated and then united together. This thread is then exteriorly coated with the same non-fibrous compound to as great a thickness as the character of the particular fabric for which it is to be used may require, and the final coating after being dried is passed between grooved rollers to compress and solidify, as well as to give a perfect cylindrical shape to the coating. The coating

is then also applied in such a manner as to locate the thread in the exact center thereof, so that it will be evenly applied, over the surface of the thread.

The coating is preferably formed of india rubber or other elastic and vulcanizable material so that it can be vulcanized when it is incorporated within the fabric.

The india rubber coating retains a sticky surface until vulcanized, and hence the threads are adapted to be severally laid in their exact positions, and with their cylindrical surfaces in accurate relation to each other, and to adhere together, and pressure is also provided at the time of laying the threads to produce a perfectly regular, smooth surface without inequalities of any kind. The perfect cylindrical surface is also conducive to that effect.

The construction of the fabric is described in an accompanying application, Ser. No. 370,139 of which this is a division.

In the accompanying drawings, Figure 1 is a view of a portion of a completed thread; Fig. 2 is an enlarged transverse section thereof; Fig. 3 shows a flat fabric composed of two layers of parallel coated threads extended at right angles to each other.

The threads of one transverse layer cross the threads of the other transverse layer at an angle, if more than one layer is employed.

In these views, 1 is the thread, 2 the separated fibrous strands thereof, 3 the coating thereon, 4 the outer coating upon the thread composed of united strands.

It is obvious that a finished thread consisting of two or more fibrous strands can be momentarily untwisted and fed to the bath and united into a thread, or a number of fibrous strands can be fed to the bath before they are united into a thread.

We believe ourselves to be the first to make a finished thread (linen preferred) consisting of two or more united strands and to treat the fibrous strands thereof and thread in the manner herein described for the purpose of manufacturing a fabric in which the threads adhere together without weaving.

It naturally follows that if the strands become saturated with the rubber or analogous solution employed to coat them (which would certainly occur if they were free from impurities such as oil or wax) it would add

materially to their flexibility when united to form a thread and when afterwards incorporated in a fabric.

Having described the invention, what we claim as new and desire to secure by Letters Patent is:—

1. A thread for an unwoven fabric, comprising fibrous strands twisted together, such fibrous strands being momentarily untwisted and coated with a non-fibrous vulcanizable substance having a sticky surface prior to retwisting, and the retwisted thread provided with an exterior coating of the same material.

2. A thread for an unwoven fabric, comprising a series of fibrous strands united together, a separate coating upon each strand of a non-fibrous and tenacious material and an exterior coating of the same material upon the twisted thread.

3. A thread for an unwoven fabric, comprising a plural number of fibrous strands united together, each strand having a coating thereon of non-fibrous and adhesive material the said strands adhering together to

form the thread, and the twisted thread having a coating of cylindrical and non-fibrous and adhesive material compressed thereon.

4. A thread comprising fibrous strands grouped together, the said strands being each coated with a non-fibrous, flexible material, and the said completed thread also coated with a non-fibrous and flexible material, the said coatings upon said strands and threads being adhesive and vulcanizable.

5. A thread comprising fibrous strands grouped together, said strands being each saturated and coated with a non-fibrous flexible material and the completed thread also coated with a non-fibrous and flexible material, the said coatings upon said strands and threads being adhesive and vulcanizable.

In testimony whereof we hereunto set our hands this 22nd day of June, 1907, at Cleveland, Ohio.

EUGENE D. C. BAYNE.
LAWRENCE A. SUBERS.

In presence of—

L. F. SEITH,
A. T. OSBORN.