

E. L. BURRELL.
MATERIAL FOR BELTING, &c.
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1,116,237.

Patented Nov. 3, 1914.

Fig. 1.

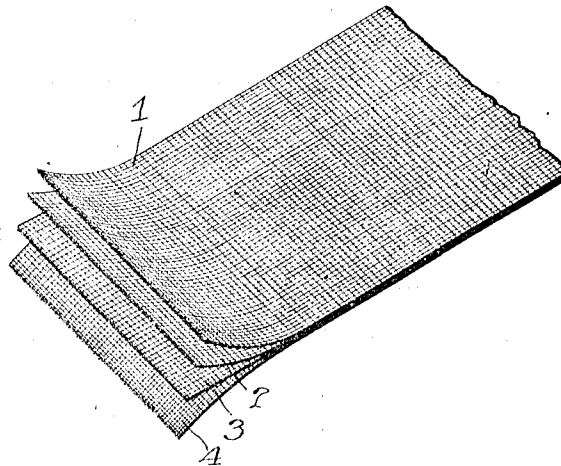
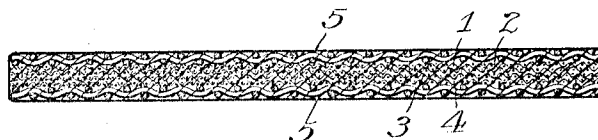


Fig. 2.



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UNITED STATES PATENT OFFICE.

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MATERIAL FOR BELTING, &c.

1,116,237.

Specification of Letters Patent.

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Application filed April 26, 1913. Serial No. 763,759.

To all whom it may concern:

Be it known that I, ERNEST L. BURRELL, a citizen of the United States of America, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Material for Belting, &c., of which the following is a specification.

The main object of this invention is to provide an improved material of great tensile strength which is suitable for power transmission belting, which is practically non-stretchable at the tensions to which power transmission belts are likely to be subjected, and under the conditions in which they are likely to be used, and which may be more economically produced than the belting materials of good quality now in common use.

Belting embodying this invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a portion of a belting core formed according to this invention. Fig. 2 is a transverse section of a piece of a completed belt made according to the invention and showing the outer layers of belting material made of woven cotton such as is now used in other belts.

The core shown in Fig. 1 is made by combining cellulose pulp, such as is ordinarily used in the manufacture of paper, with layers of suitable porous material such as textile fabric, so that when the two are combined and suitably pressed together, the result will be a combination of paper and textile fabric in which the paper fills the meshes of the fabric.

The pulp is preferably combined with a suitable adhesive material and made into the form of a cement which is applied to layers of fabric in a plastic condition, the layers being pressed together before the cement has become hardened. The pressure causes the cement to fill the pores and meshes of the fabric and secure the layers together. For this purpose a sulfate pulp of the kind used in making the so-called "Kraft" paper may be combined with such adhesives as hide glue, or bone glue. I prefer the hide glue. The proportions of these materials may be considerably varied, but I find that a suitable proportion is one

pound of the sulfate pulp to five pounds of hide glue. To this may be added other ingredients to improve its pliability and to preserve the belt. To improve its pliability I add to the cement a small quantity of fish sounds or Russian isinglass, the preferred proportion of which is about one ounce to the above mentioned mixture of pulp and glue. As a preservative to prevent molding of the cement, I prefer to add carbolic acid, using about a teaspoonful for the above proportions of other ingredients. To aid in spreading the cement, I prefer to add a volatile ingredient such as Venice turpentine, in the proportion of about two ounces to the above mixture.

It is apparent that the kind of pulp and the kind of adhesive may be considerably varied without departing from the spirit of this invention.

The layers 1, 2, 3 and 4 of the textile fabric should preferably be of practically straight weave and of thinner material than the outer or facing layers 5. A material of this kind which I have successfully used for this purpose is a thin cotton sheeting known as Indian Head cotton.

After the cement, consisting of the above mentioned ingredients, has been spread over the layers of fabric 1, 2, 3 and 4, or the layers have been run through the cement mixture so as to become thoroughly impregnated therewith, they are laid one upon another, as shown in Fig. 1, and interposed between two outer layers 5, as shown in Fig. 2, which outer layers 5 are to form the body of the belt and provide the bearing faces. The outer layers 5 may be of the usual heavy woven cotton belting material or of leather or any other material which is adapted to serve as a facing for the belt. The combined layers are then pressed together. This may be done with any suitable apparatus such as pressure plates or rollers.

The cement is of suitable consistency and quantity to pass into and through the sheets forming the core, and also into the meshes or pores of the sheets forming the facing layers, but preferably not of sufficient quantity to come out upon the outside of the facing layers.

After the several layers of fabric have been secured together, the facing layers are preferably dressed by running the finished

belt through hot bee's wax or paraffin, or a mixture of the two, which renders the belt substantially water-proof.

What I claim as my invention and desire to secure by Letters Patent is—

1. An article of manufacture, comprising outer facing layers formed of flexible sheets of porous material, and a core formed of a plurality of layers of textile fabric secured together by a mixture of fibrous pulp and cement impregnating the pores and meshes of said material and fabric.

2. An article of manufacture comprising two facing layers formed of flexible sheets of porous material and a core formed of a plurality of layers of flexible sheets of porous material secured together by being impregnated with a cement containing paper pulp, said cement extending into the pores of the facing layers.

3. An article of manufacture comprising

a plurality of layers of textile fabric, secured together by a mixture of sulfate pulp and hide glue impregnating the meshes of said fabric.

4. An article of manufacture comprising two facing layers formed of flexible sheets of porous material, having a core formed of a plurality of layers of flexible sheets of porous material secured together by being impregnated with a cement containing paper pulp, said cement extending through and upon opposite faces of each of the layers forming the core, and extending into but not through the two facing layers.

Signed at Chicago this 23rd day of April, 1913.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."