

P. L. BOUSQUET.
FABRIC.

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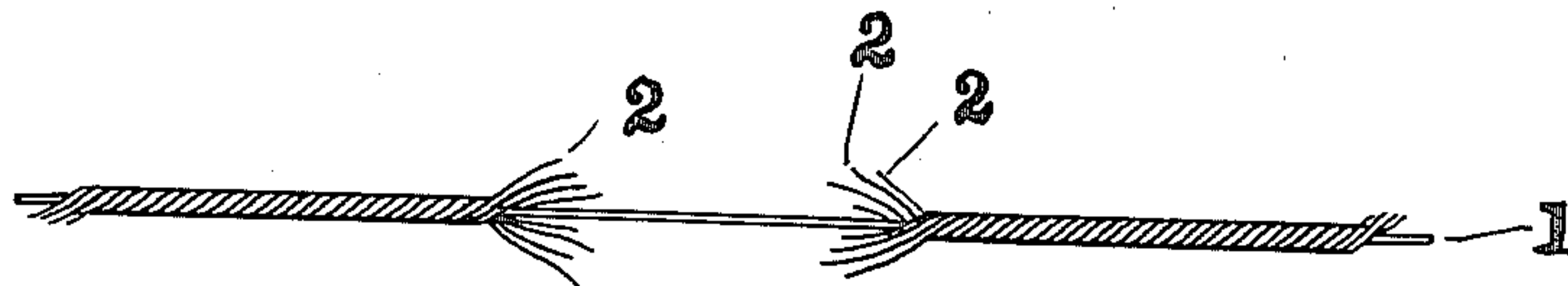


Fig. 1

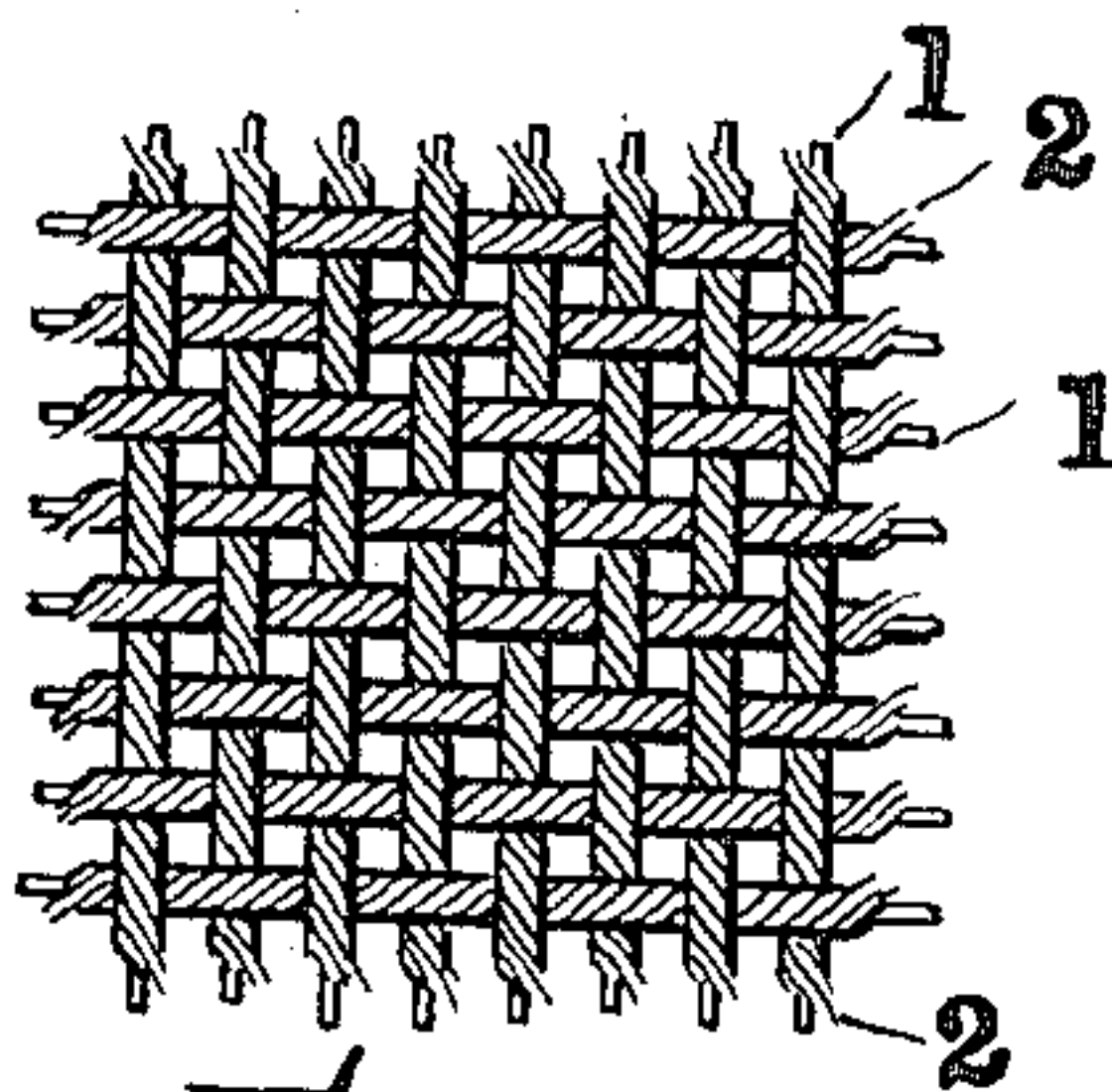


Fig. 2

Witnesses:

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To all whom it may concern:

Be it known that I, PAUL L. BOUSQUET, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Fabrics, of which the following is a specification.

This invention relates to improvements in fabric especially adapted to be used in the manufacture of rubber articles such as pneumatic tires and gaskets.

The object of this invention is to provide an improved fabric especially adapted for use in the manufacture of outer shoes of pneumatic vehicle tires so constructed as to possess great inherent strength for the purpose of preventing puncture and blow-outs in the tire casing; and also adapted to other uses where fabric having great strength is required.

The invention contemplates forming a fabric, either by weaving or otherwise, from threads each of which embodies a central metallic wire or core around which are wrapped a plurality of strands of fibrous material, previously impregnated with a solution of a vulcanizable gum compound, preferably capable of being dried previous to the wrapping or twisting of the strands about the metallic wire or core. After the manufacture of these threads the fabric is constructed in any preferred manner therefrom.

With the foregoing and other objects in view, the invention consists in the novel construction, combination and arrangements of parts constituting the invention to be hereinafter specifically described and illustrated in the drawings which form a part hereof wherein is shown the preferred embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claim hereunto appended.

In the drawings, in which similar reference numerals indicate like parts in the different figures: Figure 1 is a view of a thread used in constructing a fabric embodying this invention; and, Fig. 2 is a view of a piece of woven fabric employed to illustrate one way of utilizing the threads shown in Fig. 1.

It is believed that the invention will be better understood by giving a brief description of the process by which the fabric is manufactured. The threads from which the

fabric is made is constructed by wrapping or twisting about a central core or a fine wire 1 a plurality of strands 2 of a fibrous material such as long-fiber Sea-Island cotton the strands of which have preferably been dipped or immersed in a bath of a solution of a vulcanizable gum compound, such for instance as rubber cement, after which the strands impregnated with the vulcanizable rubber compound are permitted to dry and are then preferably wrapped or twisted by machinery about the wire or core 1, as shown in Fig. 1, after which the threads are formed into fabric, either of coarse or fine mesh, as desired, the piece of fabric shown in the drawings having an unusually large mesh to better illustrate the construction of a woven fabric made from threads constructed in accordance with this invention.

If the fabric is employed in the construction of articles which are afterward to be vulcanized, the vulcanizable gum with which the strands are impregnated is also simultaneously vulcanized with the article.

The common mode of constructing rubber-saturated fabric is to impregnate the same as far as possible with a vulcanizable gum compound, after the fabric has been woven, and as the strands composing each of the threads or yarn from which the fabric is made are ordinarily twisted, the vulcanizable gum compound does not penetrate and impregnate the threads to such an extent as to render the product as satisfactory as it is in the present invention wherein each of the threads, previous to its being wrapped or twisted about the central core or wire, is first impregnated. The thread constructed from these strands is saturated with the solution of vulcanizable gum compound to such an extent that when vulcanized all portions of the thread and consequently all portions of the fabric are effectually and completely cured by the vulcanizing process.

As each thread in the fabric is composed of a central core or wire both additional strength and durability are imparted to the fabric, which could not be obtained where threads of fibrous material are used alone; but in this invention where the strands are wrapped about a metallic core these desiderata are obtained and at the same time the covering of the metallic core 1 by the fibrous material previously impregnated by a vulcanizable gum compound, serves to protect

the wire against the deleterious action of the elements. From this it will be seen that a fabric made in accordance with this invention provides a highly desirable product for use in making the outer shoes or casings of double-tube pneumatic tires wherein great pliability and strength are required, to furnish to the vehicle on which the tire is used, a cushioning effect and at the same time eliminate the danger of either puncture or the blowing out of the tire.

Experience has shown that the incorporation of a fine wire as a core for the thread from which the fabric is manufactured does not in any way decrease the durability or elasticity of a tire provided with this kind of fabric, and the ordinary accidents of puncture and blowing out are reduced to a minimum, the life of the tire being thus prolonged.

What I claim and desire to secure by Letters Patent, is:—

A fabric for the purpose described com-

prising warp and weft threads woven together, each of said threads embodying a wire constituting a core inclosed by a plurality of strands of fibrous material, each of said strands having been impregnated with a solution of a vulcanizable gum compound previous to its superimposition on said wire, whereby all portions of the fabric covering each of said wires is saturated with said vulcanizable compound, so that when said fabric is subjected to a vulcanizing heat the fibrous covering will be intimately united together and to said warp and weft threads to constitute a flexible unitary and approximately water-proof structure.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PAUL L. BOUSQUET.

Witnesses:

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