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R. STIATTESI

INTERLINER

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Fig. 1

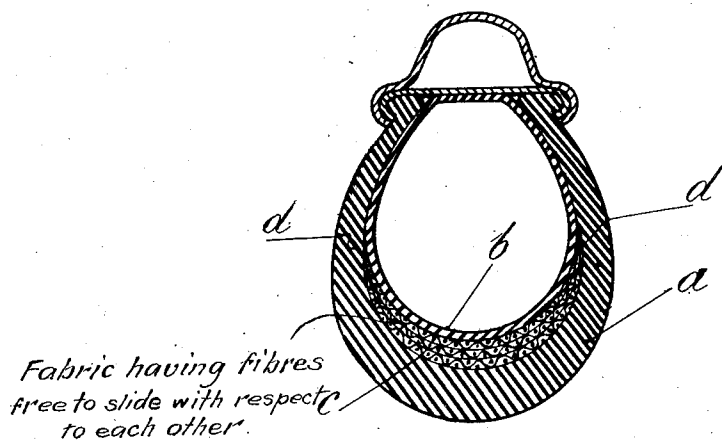


Fig. 2

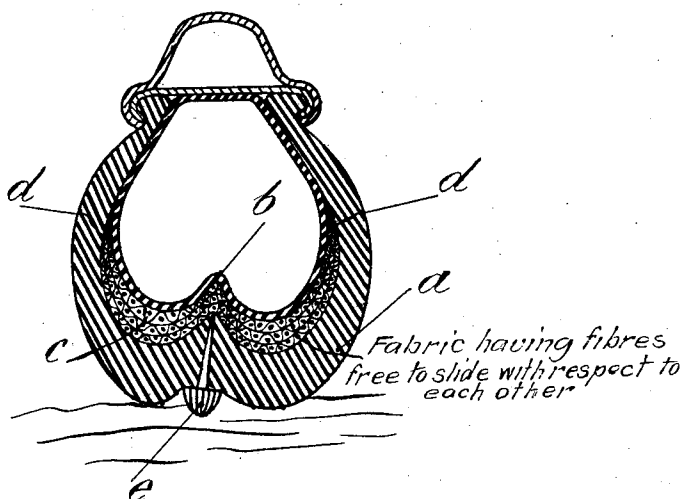
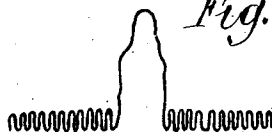


Fig. 3.



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INTERLINER.

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The object of the present invention is to provide means adapted to prevent anything pointed from penetrating into the usual inner tubes of motor-car, motor-cycle or bicycle tyres, etc.

The invention consists in the interposition between the inner tube and the outer cover or tyre of a layer of material such as shall spread out or slide forward in advance of any pointed object it may meet with in such manner that although the advancement of the pointed object still takes place towards the inner tube, said pointed object will at the same time encounter a flexible and extensible obstacle, the displaced part of which is that which moves forward with the pointed object, preceding the latter in such manner that it pushes up or indents the inner tube, without puncturing it.

The material employed consists of a strip or band, or a layer of strips, in either case composed of vegetable fibres, or of hair or spun threads. The strip may be smeared with powdered vegetable gum, or with any kind of powdered gum, especially such as only melts at a high temperature, or with a mixture of said powdered gums.

The vegetable fibres, the animal hair or spun threads, are preferably, woven into a stuff, of such a nature that the constituent threads are able, if pressed upon, to slide along in the texture; this is necessary because if the fibres, hairs or the spun threads fail to slide, they break under the pressure of the nail, glass, etc., met with by the tyre on its way; whereas, if they slide, they form a harmless mass in front of the pointed object, or the cutting part, which mass sinks into the inner tube, which it neither punctures nor cuts.

The texture which answers best has been found to be a knitted web, but the use of other textures having filaments or hairs, or slidable fibres, may suffice.

The strip having thus been formed, for the purpose of hindering as far as possible the advancement of the nail, it may be smeared with powdered gum, as above stated, either by rubbing the strip itself with the powdered gum, or by introducing the powder in any other way among the fibres, hairs or threads so that it may, above all, adhere to their downy surface. In fact, the powdered gum hinders the penetration of

the nail, because it sticks to its point, roughening it.

With several superposed layers of said simple strips, or with such as are smeared and covered with an excess of gum-powder, the protector is formed, the width of which will be greater or less according as it is intended to serve for bicycle, motor-cycle or automobile tyres; in any case, the protector should occupy a surface somewhat in excess of that to which the tyre is flattened on the ground under the weight of the vehicle.

It is necessary that said strip forming a protection, should never be directly attached to the tyre or inner tube, because in such case it would lose a part of its peculiar property, which is that of spreading.

In the accompanying drawing which shows, schematically, a practical example of the invention:—Figure 1 shows a section of the complete tyre mounted on the rim; Figure 2 the same tyre which, during running, has been partially penetrated by a nail, and Fig. 3 shows a cross section of the fabric when it is distorted by a puncturing object.

From this example it will be seen that between the tyre —a— and the tube —b— is interposed a layer —c— which extends around the whole of the outer part of the tyre, which, when distorted, is flattened against the road surface. The protective layer —c— is formed with tapered sides as shown at —d—.

The protector formed by the strip —c— is simply placed between the casing and the inner tube and is retained in its central position by the pressure of the inner tube.

Figure 2 shows the functioning of a tyre provided with said internal layer which renders the inner tube unpuncturable. From this figure it will be seen that when a pointed body, for instance, a nail —e— happens to pierce the tyre —a— it encounters the protective layer —c—; this becomes distorted under the thrust of the point of the nail —e—, and, curving up, compels the inner tube to follow the distortion of the layer —c— without said inner tube being in anywise injured.

The distortable layer —c— does not rob the tyre of any of its elasticity.

When the threads, the fibres or the texture employed for the protector are of considerable consistency, for instance, when the

latter is composed of spun animal threads—
such as silk—the powdered gum may be
omitted.

What I claim and desire to secure by
5 Letters Patent of the United States is:—

An interliner for protecting pneumatic
tyres from punctures, consisting of a tex-
ture of fibres formed in layers and arranged

between the inner tube and the outer cas-
ing of the tyre, the said layers being of such 10
a nature that the fibres of each layer can
slide freely with respect to each other, the
layers being built up so as to form tapering
side edges on the interliner.

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