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(58) Field of search
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(54) Core for a tyre

(57) A core 1 to be arranged removably in the cavity of a pneumatic tyre 3 for supporting the load of the tyre and positioning the tyre beads has an external profile substantially corresponding to the internal profile of the inflated tyre. The core is made of elastomeric material, e.g. polyurethane or rubber which may be foamed. In an alternative embodiment the core is hollowed out from the inner periphery so as to be of substantially U-section.

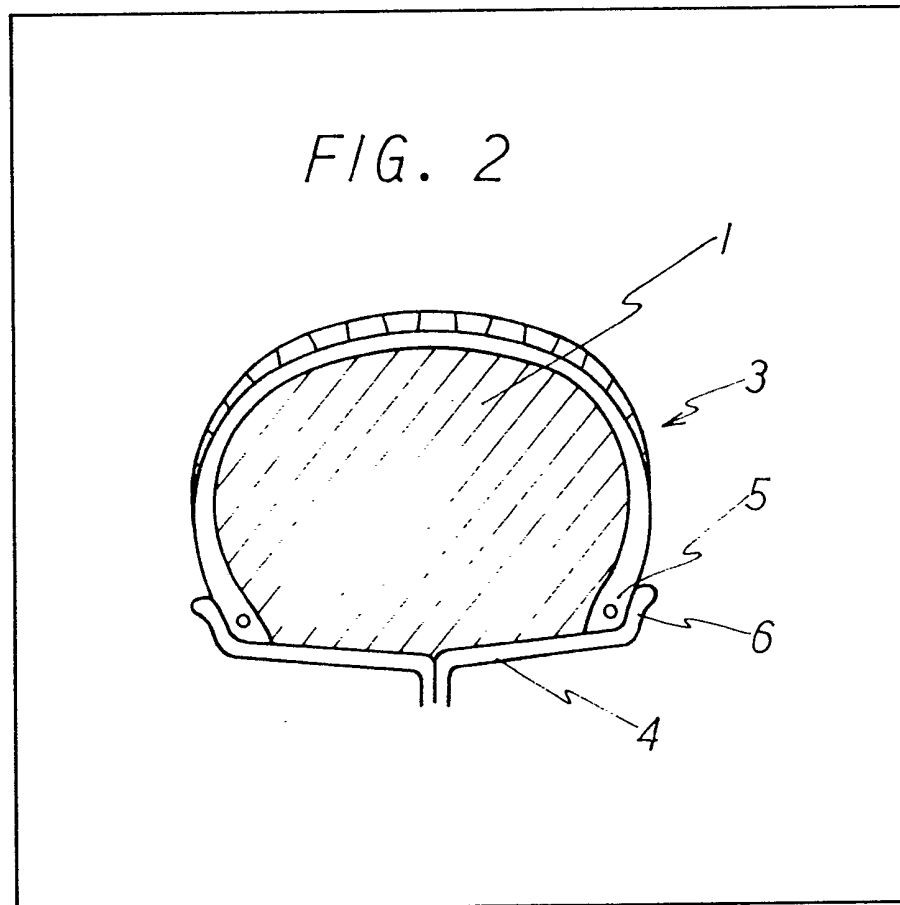


FIG. 1

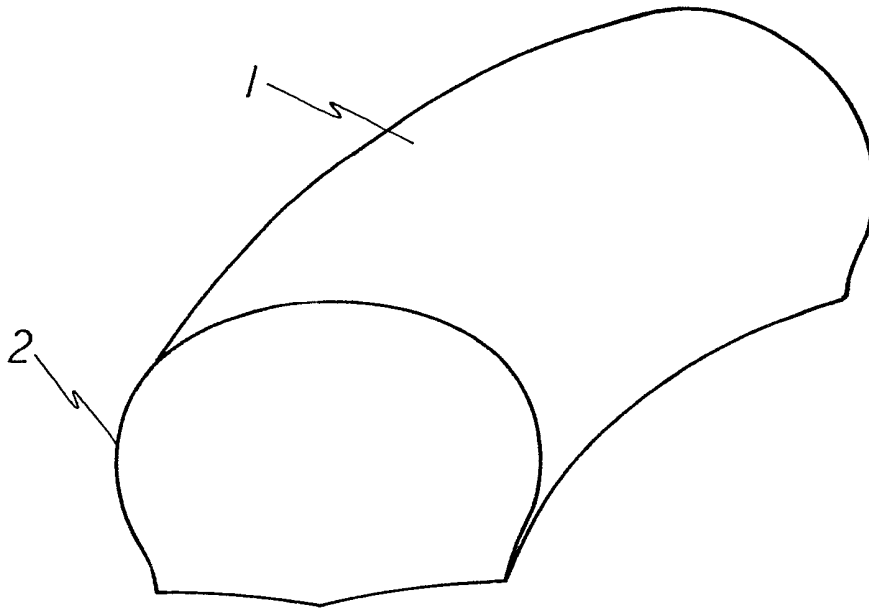


FIG. 2

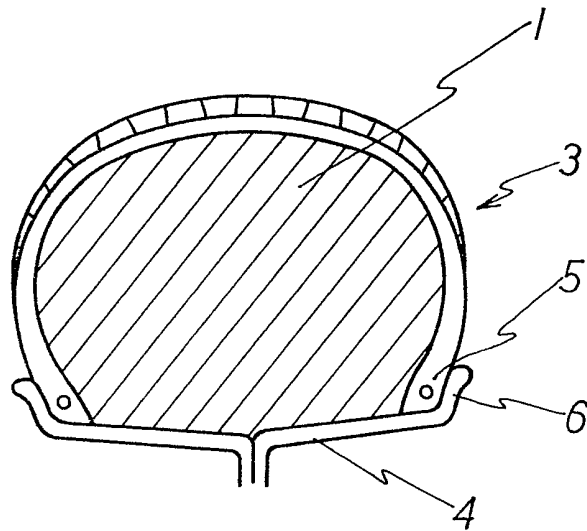


FIG. 3

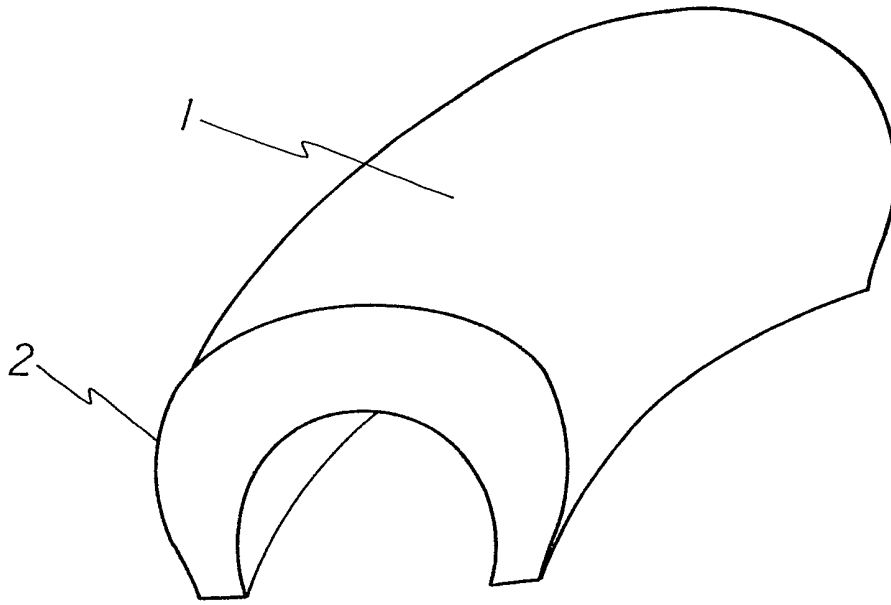
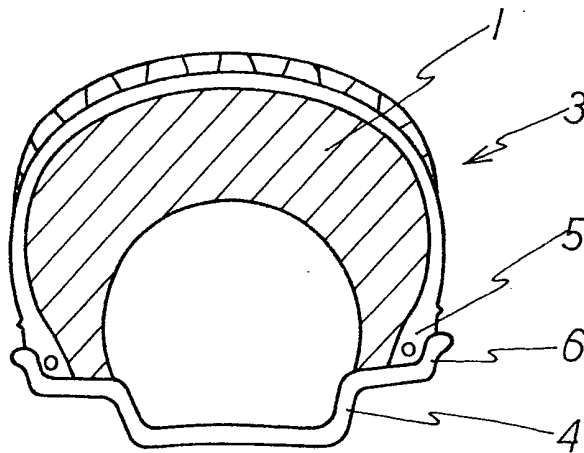


FIG. 4



SPECIFICATION

Core for safety tyre

5 The present invention relates to a core for safety tyre which is arranged in a cavity of a pneumatic tyre for supporting a load of tyre and fixing a bead portion.

A method in which polyurethane elastomer is filled in the inside of tyre, in addition to a method in which the tyre cover has a dual construction and a method in which a sealant is applied onto the inside surface of tyre, has been generally adopted in order to ensure the safety at a puncture of a pneumatic tyre. Although a tyre filled with polyurethane has the advantage that it is superior to other safety tyres in riding comfortableness in addition to an ensurance of the safety as described above, it has the defects that it requires much labor and time in the manufacturing because urethane raw material must be filled and hardened for every tyres, and also the internal temperature of the tyre rises in long-time travelling and thereby polyurethane is thermally degraded to lower the physical properties thereof.

It is an object of the present invention to solve these defects of conventional tyres filled with polyurethane.

Another object of the present invention is to provide a core for safety tyre which is easy to manufacture and exchangeable.

30 The present invention provides a core for safety tyre, characterized in that its profile almost accords with the inside profile of a carcass that a tyre takes at the time of being charged with the internal pressure and it has a rubber-like elasticity.

35 The present invention, together with further objects and advantages thereof, may be more clearly understood by reference to the following description taken in connection with the accompanying drawings which illustrate embodiments of the invention.

40 *Figure 1* is a partial perspective view showing a core for safety tyre according to the present invention;

Figure 2 is a sectional view showing the core arranged in the cavity of a pneumatic tyre;

45 *Figure 3* is a partial perspective view showing another preferred embodiment of a core according to the present invention; and

Figure 4 is a partial sectional view showing the core arranged in a pneumatic tyre.

50 Referring now to *Figures 1* and *2*, a core 1 according to the present invention is constructed so that the profile 2 thereof almost corresponds with the profile of a carcass of tyre cover 3 to be arranged therewith. The core 1 is made of materials having rubber-like elasticity such as polyurethane, natural rubber, synthetic rubber and the like. The rubber-like elasticity can make it easy to arrange the core in a tyre cavity defined by a rim 4 and the tyre cover 3. In addition, an excellent riding comfortableness can be achieved by the rubber-like elasticity of the core 1, since a tyre bead 5 is pressed on a rim flange 6 to surely retain the bead and a low spring constant similar to that of a pneumatic tyre can be shown in travelling. From such a point of view, it is desired that the core has a JIS hardness of 40° to 55°. Also,

the core may be made of foamed products, and thereby the elastic constant of the core can be suitably controlled. The core of the present invention can be fabricated in the same manner as the fabrication of a conventional casting tyre by pouring a raw material, e.g. urethane raw material, into a mold and then hardening it.

70 Thus a core for safety tyre according to the present invention has the advantages that high safety can be ensured without impairing an excellent riding comfortableness incidental to a pneumatic tyre, the travelling performance of tyre can be easily maintained by exchanging the core even though the physical properties thereof are thermally deteriorated owing to travelling for a long time and the core itself can be easily produced.

75 *Figures 3* shows another embodiment of the core of the present invention. The core 1 can be in the form in which the radial inside and outside thereof are hollowed out along the circumference thereof, as shown in *Figure 3*. The core of this type is applicable to a tyre using a deep-bottom rim. *Figure 4* is a sectional view showing the above core 1 arranged in a tyre using a deep-bottom rim 4.

90 CLAIMS

1. A core for safety tyre, characterized in that its profile almost accords with the inside profile of a carcass that a tyre at the time of being charged with the internal pressure and it has a rubber-like elasticity.

2. The core for safety tyre of Claim 1, in which said core is made of polyurethane foam.

100 3. A core for a safety tyre substantially as described with reference to the accompanying drawings.

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