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(54) A VEHICLE WHEEL AND TYRE ASSEMBLY

(71) We, CONTINENTAL GUMMI-WERKE AKTIENGESELLSCHAFT, of Continental-Haus, Post Office Box 169, 3000 Hannover, Germany (Fed Rep); a German body corporate do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 The invention relates to a vehicle wheel and tyre assembly having a rim body with a detachable side ring.

The detachable side rings of the rim have the advantage that solid tyres of rubber or rubber-like materials may be readily mounted. Also with the side ring removed the solid tyre is easily removed.

15 According to the present invention there is provided a vehicle wheel and tyre assembly comprising a solid tyre made of rubber or rubber-like materials and a rim body having a fixed tyre retaining flange, which body has a detachable side ring forming the other tyre retaining flange, the outline of the tyre base being adapted to the external outline of the rim body, wherein the solid tyre on its inner circumferential surface at the side nearest the detachable side ring has an encircling projection which engages in a corresponding recess provided in the rim body, and wherein the side ring is secured against axial displacement by a direct engagement in a groove of the rim body, or the side ring is retained against axially outward displacement by a retaining ring directly engaged in the groove.

20 This arrangement not only provides a better securing of the tyre on the rim body, but moreover also simplifies the structure of the rim or the rim wheel in that conventional metal rim rings are abandoned. This embodiment of the solid tyre further has the advantages that owing to the one-sided projection on the inner circumference an accurate predetermined position of the solid

tyre is ensured with reference to the rim body.

The present invention will be described further, by way of example, with reference to the accompanying drawings, in which:— 50

Fig. 1 is a radial part section through a vehicle wheel and tyre assembly; and

Figs. 2 and 3 each showing a part section through a modified vehicle wheel and tyre assembly. 55

A metal rim body 1 is, in known manner, connected to a hub of a wheel via a dished member, not shown. A centrally located seat surface on the outer circumference of the rim body 1 is defined on one side by a flange 2 and on the other side by a detachable side ring 3 acting as a tyre retaining flange. In the arrangement of Fig. 1 the side ring 3 is retained by a ring 4. 60

The rim body 1 on its outer circumference is provided with a recess 5 extending around over a third of the width of the seat surface, at the side adjacent the side ring 3. 65

A solid tyre provided for the vehicle wheel has a tough tread band 6, a resilient rubber cushion band 7 and a tough base ring 8 in which steel wire rings are embedded. The surface of the base ring 8 is adapted accurately to the seat surface of the rim body 1. Consequently, the solid tyre, at its edge nearest the side ring 3, has an encircling projection 9 on its surface which engages in the recess 5 substantially without any clearance. 70

In accordance with Figs. 2 and 3 the side ring 3 and ring 4 are integrally formed and is retained in the circumferential groove 11. 75

WHAT WE CLAIM IS:—

1. A vehicle wheel and tyre assembly 85 comprising a solid tyre made of rubber or rubber-like materials and a rim body having a fixed tyre retaining flange, which body has a detachable side ring forming the other tyre retaining flange, the outline of the 90

tyre base being adapted to the external outline of the rim body, wherein the solid tyre on its inner circumferential surface at the side nearest the detachable side ring has an  
5 encircling projection which engages in a corresponding recess provided in the rim body, and wherein the side ring is secured against axial displacement by a direct engagement in a groove of the rim body, or  
10 the side ring is retained against axially outward displacement by a retaining ring directly engaged in the groove.

2. A vehicle wheel and tyre assembly according to claim 1, in which the projection has a substantially flat rectangular  
15 cross-section.

3. A vehicle wheel and tyre assembly

according to claim 1 or 2, in which the projection extends substantially over a third of the width of the tyre base or the rim  
20 seat surface.

4. A vehicle wheel and tyre assembly substantially as herein described with reference to and as illustrated in Fig. 1, 2 or 3  
25 of the accompanying drawings.

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FIG. 1

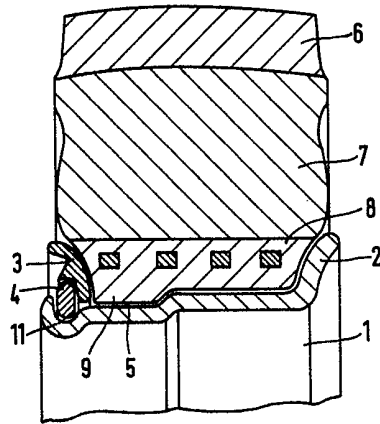


FIG. 2

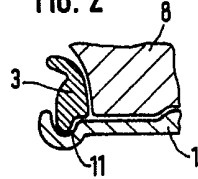


FIG. 3

