

# PATENT SPECIFICATION



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## COMPLETE SPECIFICATION.

### Improvements in or relating to Tyres for Endless Track Vehicles.

I, ADOLPHE KEGRESSE, French citizen, of 48, rue du Theatre, Paris, France, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in tyres for endless track vehicles wherein the tyres are composed of belts of rubber or other suitable resilient material carrying wedge-shaped blocks of metal for guiding and driving.

According to the present invention, the driving and guiding elements are hollow and removably mounted on the part of the tyre carrying the treads for the rollers.

In the accompanying drawings, by way of example,

Figures 1, 2, 3 and 4 show in section, some arrangements according to the present invention.

Figure 5 is an elevation of the whole of the tyre, corresponding at *a*, *b*, *c* and *d* respectively, to the sections of Figures 1, 2, 3 and 4.

In Figures 1, 2, 3 and 4, the core of the endless track is constituted by flexible material 1, of cotton, hemp, metal, etc., the inner face 2 of which, on either side of the hollow guiding blocks 3, serves as a continuous tread for the rollers (not shown on the drawing) that carry the vehicle. The outer face of the core carries the ground treads 4, made of some plastic material, say india rubber, vulcanised on the core of the tyre.

In the middle of the inner face of the endless track (Figure 1) and over its whole length a longitudinal rib 5 (Figures 1 and 5) is provided constituted by the canvasses of the core of the endless track and notched at 6 (Figure 5) according to a predetermined pitch. On

said rib 5, and between notches 6, are mounted the hollow guiding and driving blocks 3, made of suitably thick sheet metal or other suitable material. Said blocks 3 are secured through their bases on the longitudinal rib 5 by means of rivets 7 (Figures 1 and 5*a*). They may be lined on the outer faces with some suitable material 8, india rubber for instance, facilitating the drive and diminishing noise.

In Figure 2 the guiding and driving blocks are not united to the longitudinal rib 5 of the core of the endless track by means of rivets but are hooked thereon. For this purpose the longitudinal rib 5 (Figure 2) is made in one piece with the core forming two longitudinal grooves 9, opposed back to back, wherein engages the bases 10 of the guiding blocks 3 (Figure 2) which thus pinch the rib 5. Said rib, the section of which provides a double groove, can also be notched, as indicated at 6 (Figure 5*b*) in order to preserve the flexibility of the tyre.

As will be apparent, with this device, the action of the driving pulleys, which is exerted by laterally squeezing the guiding and driving blocks, has the effect of increasing the initial pressure of the heels of the blocks on the rib 5 of the endless track.

In Figure 3 the endless track is composed, as in the preceding cases, of a canvas core carrying the ground treads 4. The face 2 opposite these treads and upon which roll the carrier rollers, is in the present case plain without a central rib. On its median part and over its whole length, are secured at equal intervals, by means of special bolts 11 (Figures 3 and 5*c*), the guiding and driving blocks 3 the base 12 of which bears on the core of the endless tyre.

In view of heavy traction stresses there is provided between the guiding and driv-

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ing blocks 3 and the core 1 of the endless track (Figure 4) endless cables or ribbons 13 made of metal or of some other resisting and flexible material. Said cables or ribbons, firmly clamped between blocks 3 and core 1 by bolts 11, are thus rendered integral with the tyre. Their high resistance and small elongation ensure traction of the endless track, which traction they receive from the guiding and driving blocks and transmit to the core 1 of the endless tyre. Therefore the latter has not to undergo the tension stresses between the endless track carrying pulleys.

Said flexible and endless cables or ribbons may be welded to the hollow guiding and driving blocks or secured thereto in any other manner, independently of their connection to the core of the endless track. They thus form together with the guiding and driving blocks, an endless element secured on the treads by bolts 11 and nuts 14 (Figure 4). In this way there is obtained an endless track composed of two main and quite distinct elements, to wit:

1. Continuous treads for the rollers and on the ground;
2. A guiding, driving and traction device.

These two elements can be readily separated and made parts of other tyres according to requirements.

The location of the fixing bolts 11 is so devised that their protruding part (Figures 3 and 4) in this case nut 14, will get housed between the ground treads 4 without interrupting at any time the continuity thereof.

In all the above combinations the guiding and driving blocks may have when required, their outer face furnished with some suitable material 8 (Figure 1) intended to decrease noise and to improve on certain occasions, the drive.

As will be apparent, with all the foregoing devices continuity of the tread is ensured since the vehicle-carrying rollers roll on the faces 2 (Figures 1, 2, 3 and 4) of the endless tyre, which faces offer perfect continuity.

On the other hand it will be apparent too (Figures 1, 2 and 3) that the hollow guiding and driving blocks are independent from the treads since they are constituted by parts removable from those first mentioned. Either part of the tyre can, therefore, be replaced and the one still in working condition be kept in use.

Having now particularly described and ascertained the nature of my said

invention and in what manner the same is to be performed, I declare that what I claim is:—

1. A flexible endless tyre for endless track vehicles wherein the elements serving for guiding and driving the tyre are hollow and removably mounted on the part of the tyre carrying the treads for the rollers.

2. In an endless tyre as claimed in Claim 1, an arrangement in which

(a) the guiding and driving blocks may be rivetted on a central longitudinal rib constituted by the canvasses forming the core of the endless track,

(b) the guiding and driving blocks may be hooked on the central longitudinal rib of the tyre provided for this purpose,

(c) the core may have no central rib and the guiding and driving blocks may be tightly secured by their larger base on the said core by means of bolts, of rivets or of any other suitable device the protruding part of which is arranged between the ground treads without interfering in any way with the latter's continuity.

3. An endless tyre as claimed in Claim 1 or 2 wherein between the larger base of the guiding blocks and the inner face of the endless track, are interposed flexible cables or ribbons, said cables or ribbons being intimately connected with the blocks and with the core of the tyre.

4. A modification of the endless tyre as claimed in Claim 3 according to which the highly resisting flexible cables or ribbons are secured to the guiding and driving blocks independently of the connection to the treads so as to constitute an endless track made of two readily separable main elements, to wit: the continuous treads that carry the vehicle, and the guiding, driving and traction system.

5. The arrangement on the guiding and driving blocks of the endless tyres claimed in any of the preceding claims, of a suitable covering or lining material for the purpose of reducing wear and tear, of lessening noise and of improving the drive.

6. The endless tracks substantially as described or substantially as illustrated in the accompanying drawings.

Dated this 9th day of July, 1926.

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Fig.1

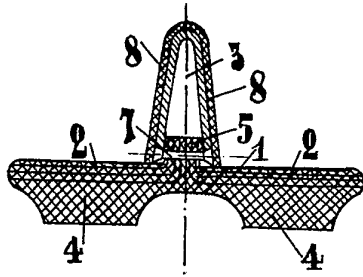


Fig.2

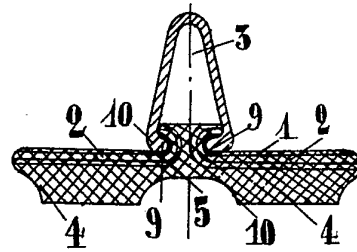


Fig.3

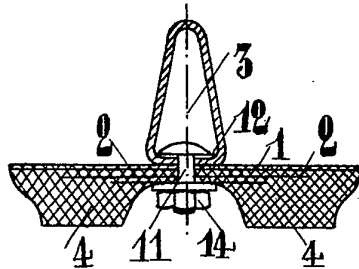


Fig.4

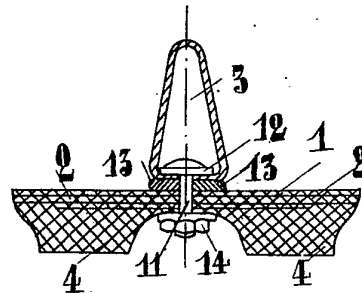
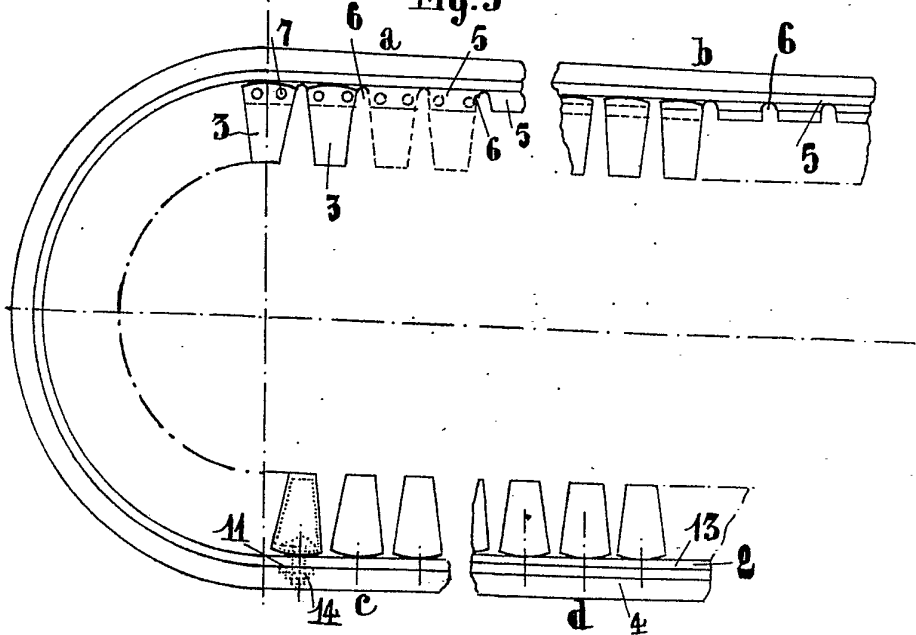


Fig.5



[This Drawing is a reproduction of the Original on a reduced scale.]