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# PATENT SPECIFICATION

199,373



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## COMPLETE SPECIFICATION.

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

I, ADOLPHE KEGRESSÉ, of 53, rue Balard, Paris, France, citizen of the French Republic, 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 the device described in Specification of Letters Patent No. 127,322 which comprises driving pulleys of the type consisting of two separate half pulleys each having an outwardly turned rim and an inwardly turned face, a T-shaped belt or endless band passing over the pulleys with its inner horizontal and vertical faces engaging with the outwardly turned rims and inwardly turned faces of the pulleys.

In the prior specification referred to one of the separate half pulleys was adapted to move angularly and axially on the shaft, so that when the resistance of the belt or endless band caused a slipping on one half pulley it turned the other half pulley angularly and caused it to clamp the vertical face of the belt more tightly by moving axially.

According to the present invention both halves of the pulley are keyed to the shaft so that they rotate angularly with it, but there is or are provided one or two false or supplementary rims between the belt or endless band and the horizontal face or faces of one or both of the half pulleys.

This rim or these rims is or are moved when the belt slips and operate means for moving one half of the pulley axially to grip the belt or endless band on its vertical faces.

A wheel according to the invention is illustrated by way of example in the accompanying drawings, in which—

Figure 1 is a transverse section of the wheel;

Figure 2 is a transverse section of a modified construction;

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Figure 3 shows one half of the wheel shown in Figure 1 in side elevation.

An axially movable hub 2 is an easy running fit on the driving shaft or axle 1 (Figure 1) which rotates the said hub through loosely mounted keys 3, so that the hub is adapted to move axially within limits on the axle, to which one half 4 of the wheel is rigidly secured. The hub 2 carries the other half 5, the rim of which is of smaller diameter and is narrower than that of the half 4. The outer end of the shaft 1 has suitable teeth 6 and is adapted to rotate a disc 7 one of the faces of which is provided with vertical inclined thrust surfaces, the other face being flat and bearing against a nut member 8 secured to the shaft 1. The thrust surfaces of the disc 7 are in contact with correspondingly shaped faces of the disc 9 secured to the web 10 of the rim 11 loosely mounted on the half 5 of the wheel. The disc 9 and the web 10 are an easy fit on the hub 2 and merely bear against the flange 12 of the latter. The inner rib or central projection 13 of the endless band or track is an accurate fit between the two wheel halves 4 and 5. The horizontal portions 14 of the band rest on the half 4 and on the false or supplementary rim 11.

The apparatus works as follows: When the two halves 4 and 5 of the wheel slip on the endless band owing to lack of adherence, they move through a certain angle relatively to the rim 11 since the latter is not driven by the shaft, but is in close contact with the endless band or track. The disc 7 rigidly secured to the driving shaft 1 is thus shifted relatively to the other disc 9 rigidly connected to the rim 11 through the web 10. It will be readily gathered that the relative shift of the two discs moves the wheel half 5 towards the half 4 and increases the grip of the wheel on the rib 13 of the flexible band.

Figure 2 illustrates a modified construction of the wheel. In this construction the shaft 1 drives the hub 2 through keys 3 which are an easy fit on the said hub. The latter can thus slide to a suitable extent on, and axially to the shaft 1. Two half wheels 4<sup>1</sup> are rigidly secured to the shaft 1 and the hub 2 by suitable webs. False rims 11<sup>1</sup>, the shape of which follows that of the endless band 13, are loosely mounted on the wheel halves 4<sup>1</sup>. The supplementary rims 11<sup>1</sup> are connected by two flexible webs 15 to a false hub made in two sections 16 and 17. A flange or projection on the section 16 loosely engages a recess formed on the shaft 1 by a rigidly screwed nut 18 and a collar or flange of the said shaft. The section 17 is internally screw-threaded and the inner end of the hub 2 has an external screwthread running in opposite direction to that of the section 17. An internally and externally screw-threaded annular nut or ring 19 is an easy-fit on the hub 2 and the section 17. A stop 20 rigidly secured to the hub 2 and a flange or stop 21 integral with the section 17 limit the axial movements of the said ring or nut 19. The outer thread of the annular nut 19 being opposite to its inner thread, it will be gathered that owing to the stops 20 and 21, the final purpose of the nut or ring is to move the web of the hub 2 and that of the shaft 1 towards one another, whatever be the direction in which the false hub 16—17 is rotated relatively to the shaft 1 and the hub 2.

The device works as follows: The flexible endless track or band is driven through the supplementary rims 11<sup>1</sup> located between the half wheels 4<sup>1</sup> and the said band 13, the drive being effected mainly by the lateral pressure exerted by the said wheel halves on the false rims 11<sup>1</sup>. The material to be placed between the half wheels 4<sup>1</sup> and the false rims 11<sup>1</sup> must be such as to yield in any case a coefficient of adherence lower than that

of the track on the supplementary or false rims, so that the slip is always between the halves 4<sup>1</sup> and the false rims 11<sup>1</sup>. This slip shifts the false hub 16—17 relatively to the shaft 1 and hub 2 through the flexible webs 15, so that the hub 2 is axially moved on the shaft 1 in consequence of the action of the annular nut 19. Owing to the stops 20 and 21, the final effect of the above-mentioned shift is to move the two wheel halves 4<sup>1</sup> towards one another whatever be the direction of rotation, for the purpose of gripping the vertical faces of the band 13 to the extent required by circumstances.

Obviously, the same results may be obtained by replacing the nut and screw arrangement by inclined thrust surfaces, for instance.

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. In a driving pulley of the kind described in the Specification of Letters Patent No. 127,322, in which both halves of the pulley are keyed to the shaft so that they rotate angularly with it the provision of one or two false or supplementary rims between the belt or endless band and the horizontal face or faces of one or both of the half pulleys, in order that when the belt slips, means are actuated for moving one half of the pulley axially, for the purpose described.
2. The wheel for endless track vehicles substantially as described or substantially as illustrated in Figure 1 or in Figure 2 of the accompanying drawings.

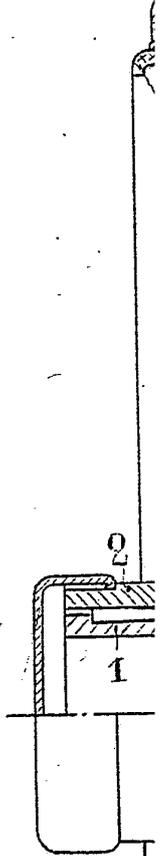
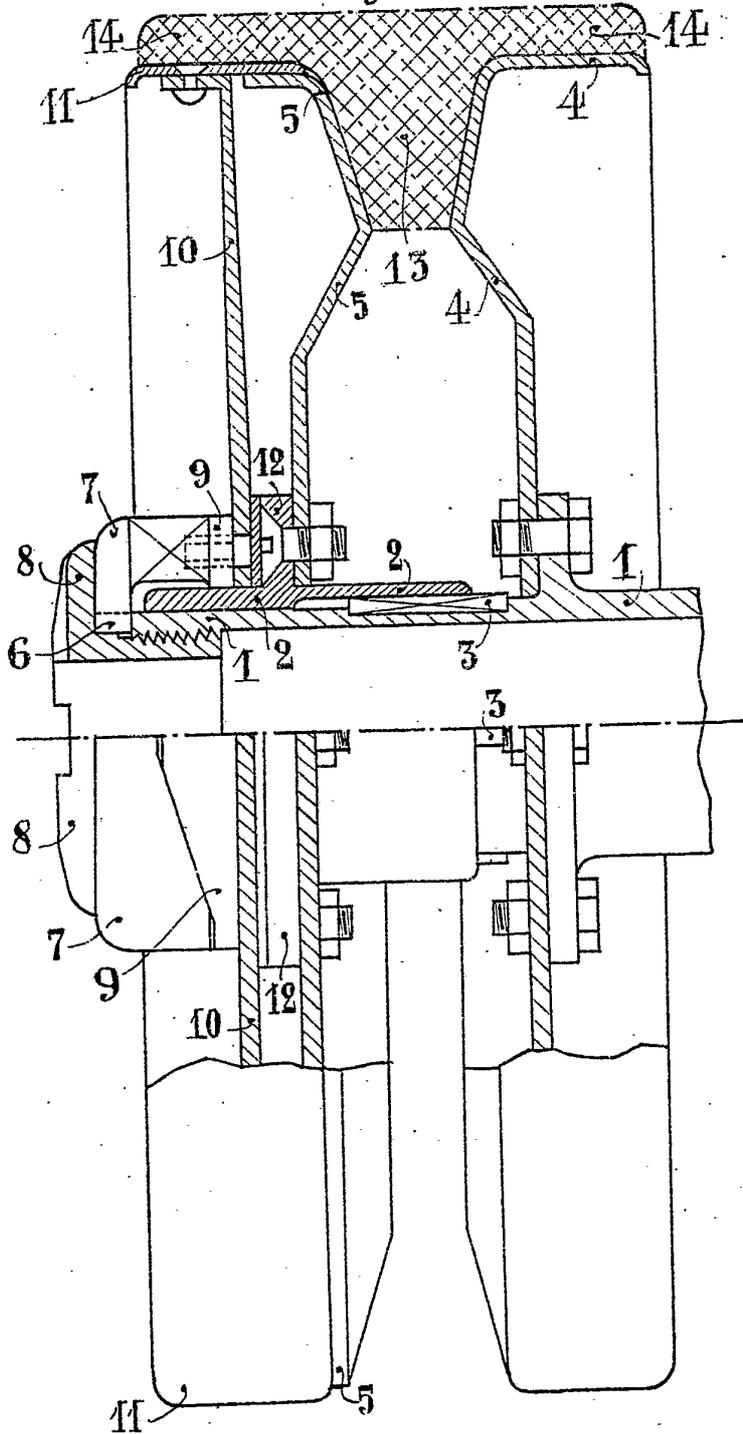
Dated this 24th day of May, 1923.

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Fig.1.



[This Drawing is a full-size reproduction of the Original.]



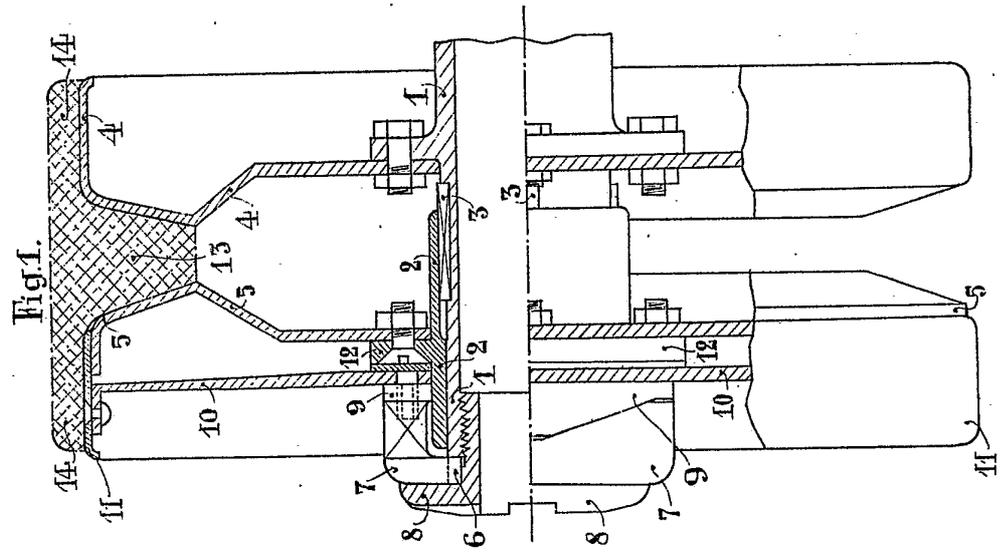
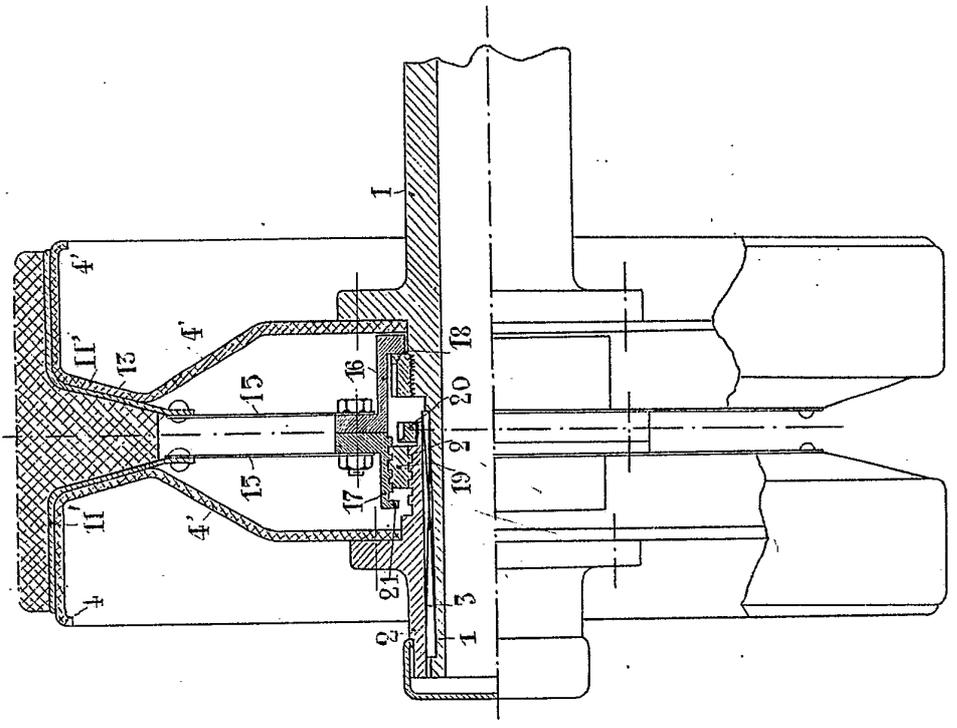


Fig 2



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Fig. 3.

*[This Drawing is a full-size reproduction of the Original.]*

