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A. KEGRESSE
ENDLESS TRACK WITHOUT ARTICULATIONS FOR
UNIVERSAL VEHICLES
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Fig. 1

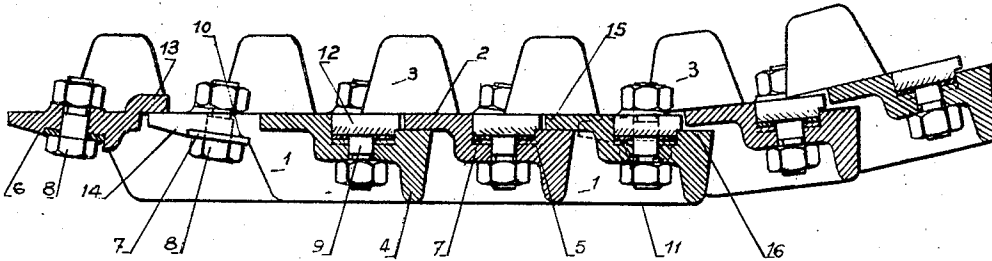


Fig. 2

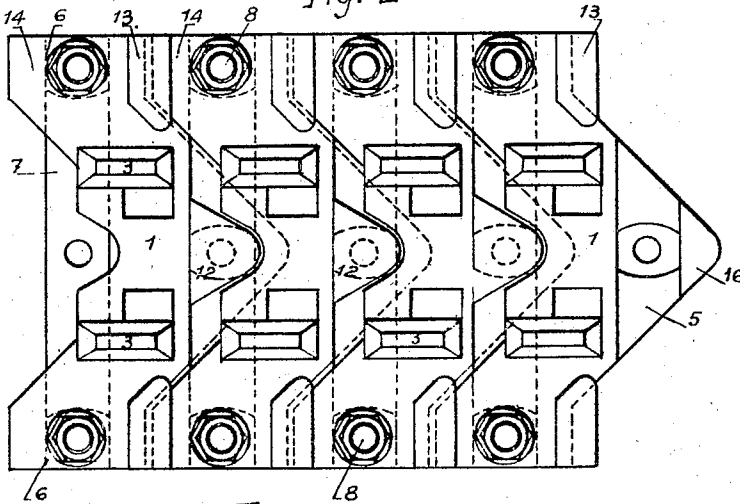


Fig. 3

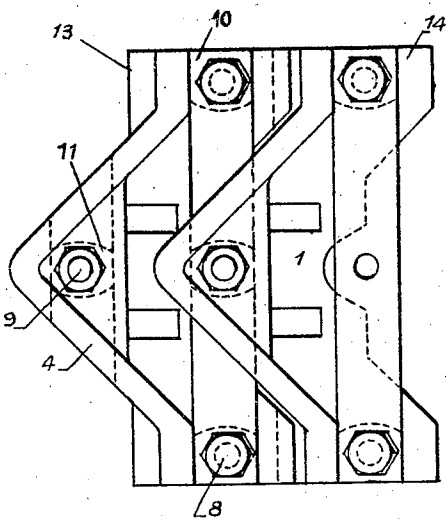
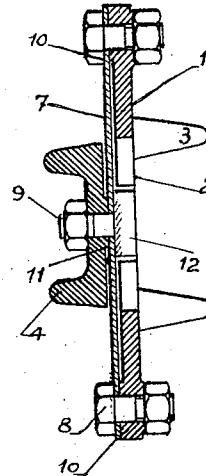


Fig. 4



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UNITED STATES PATENT OFFICE

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ENDLESS TRACK WITHOUT ARTICULATIONS FOR UNIVERSAL VEHICLES

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7 Claims. (Cl. 305-10)

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The invention relates to endless track without articulations for "universal" vehicles. The endless tracks of "universal" vehicles when they consist of metal, are furnished with articulated shoes, generally assembled together by means of axles.

These axles are subjected to wear and tear and must be made of special steel which is very hard. Therefore their cost price is high.

Moreover if the vehicle be of the high speed type it is indispensable to lubricate them, which complicates both the construction and the maintenance.

The endless track to which the present invention relates is entirely of metal but is without axles.

According to the present invention, shoes are assembled through the medium of transversal leaves of springs having torsional effect and allowing two adjacent shoes to form between themselves the angle necessary for the winding-up of the endless track upon the carrier pulleys.

In the accompanying drawings:

Figure 1 is a longitudinal section of this endless track.

Figure 2 is a plan view showing the internal face of the track.

Figure 3 is likewise a plan view but represents the external face of the latter.

Figure 4 is a transversal section of the endless track.

The shoes 1 which constitute the endless track form upon their internal face runway 2 for the sheaves, and the guide lugs 3. On the other face they form the ribs 4 for adherence to the ground.

They have the general form of a chevron having at the top, a transversal housing 5 and, at the two ends of the base, other transversal housings 6. These housings are intended to receive a flexible blade 7 attached on the one hand to the base of the chevron of one shoe by bolts 8 positioned at the two ends of this blade and on the other hand at the top of the chevron of the shoe adjacent thereto by means of a central bolt 9.

The tightening of each flexible blade 7 is effected in the zones 10 and 11 of Figures 3 and 4 where the blade is tightened on bearing surfaces of small dimensions, the remaining portions of the housings 5 and 6 being disengaged from the blade to allow of the torsional deformation of the flexible blade.

The central fixing of this blade may be ensured by means of the bolt 9 furnished with special head 12 ensuring the continuity of the runway or by an ordinary bolt and wedge of suitable form, fulfilling the same conditions.

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The torsion angle of each flexible blade is relatively weak and it is advantageous to cause it to work on both sides of the stationary position. For this purpose the tightening zones of the blade are not all three positioned in one and the same plane. Those of the ends of the chevron base designated by 10 are inclined in relation to that of the top, according to an angle corresponding to half the total maximum angle formed between two shoes upon their passage across the carrier pulleys. On assembling, the blades being free, the endless track may assume the curved form as shown at the right-hand portion of Figure 1.

In order to avoid too great deformation in the inverse direction of the winding when obstacles pass between the carrier sheaves, the shoes form on their lateral edges, stops 13 and 14. In the centre they are equipped with a tongue 15 and lug 16 at the top of the chevron; these stops may be arranged so as to prevent any deformation in the inverse direction as indicated in Figure 1 in the left-hand portion, or to limit this deformation to a predetermined angle.

The manner of operation of an endless track constructed according to the present invention will be readily understood: in traction the stress is transmitted through the flexible blades pressing upon the lateral faces of the housings. Upon the winding upon the carrier pulleys each shoe turns, causing the flexible blade to work with torsion in its free portions between the fixing zones 10 and 11.

The energy absorbed by the torsion of the blade is restored when leaving the pulleys when it again assumes its normal position.

An endless track produced in this manner without any frictional part and not requiring any precision machining is of very low cost price; the maintenance of same is practically zero.

It is evident that several detailed modifications may be made in the elements constituting this endless track without thereby falling outside the scope of the present invention.

Having now particularly defined and ascertained the nature of the said invention and in what manner the same is to be performed, what is claimed, is:

1. In a metallic endless track for motor vehicles, separate shoes and transversal flexible blades common to two consecutive interengaged shoes and assembling said shoes.

2. In a metallic endless track for motor vehicles, separate shoes, and transversal flexible rectilinear blades common to two consecutive interengaged shoes and assembling said shoes,

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each blade being fixed at its two ends to a shoe, and in its centre to the adjacent shoe, the parts of the blade included between its fixing zones being free.

3. In a metallic endless track for motor vehicles, separate shoes in form of a chevron, fitted one with the other, furnished with transversal housings on the one hand at their top, and on the other hand at their base, and transversal flexible rectilinear blades fixed in the housing of the top of one shoe, and in the housings of the base of the following shoe.

4. In a metallic endless track for motor vehicles, separate shoes, transversal flexible blades common to two consecutive interengaged shoes and assembling said shoes, said blades being fixed with torsion stress when the endless track is rectilinear, in order to allow them some play on both sides of its stationary position, when the vehicle is running.

5. In a metallic endless track for motor vehicles, separate shoes in form of a chevron, fitted one with the other, furnished with transversal housings on the one hand at their top, and, on the other hand, at their base, and transversal flexible blades fixed in the housing of the top of one shoe, and in the housings of the base of the following shoe, the top and base bearing surfaces for each blade in the respective housings of two consecutive shoes being oppositely inclined rela-

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tively to the plane of the blade in order to allow of the blade being placed under stress, when the endless track is rectilinear.

6. In a metallic endless track for motor vehicles, separate shoes, transversal flexible rectilinear blades common to two consecutive interengaged shoes and assembling said shoes, and a fixing bolt at the centre of each blade, said bolt being furnished with a flat head flush with the plane of the runway formed by the shoes.

7. In a metallic endless track for motor vehicles, separate shoes or links, transversal flexible blades or leaf springs assembling said shoes, and stops provided upon the shoes to limit the deformation of the endless track and of the flexible blades, in the inverse direction to the winding upon the carrier pulleys.

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