Dec. 30, 1930. A. KÉGRESSE 1,786,430

ENDLESS TRACK VEHICLE

Filed April 13, 1928

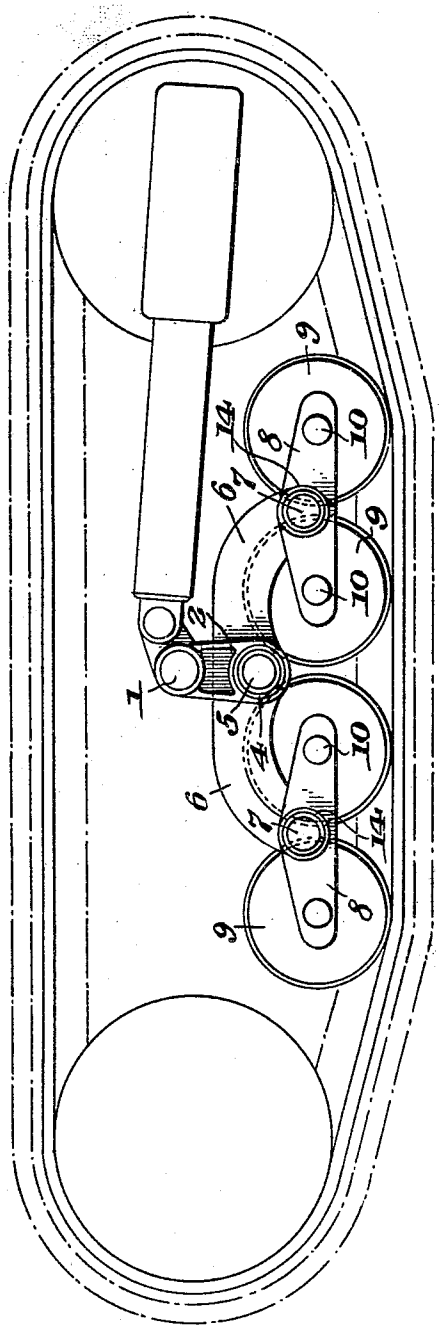

Fig. 1.

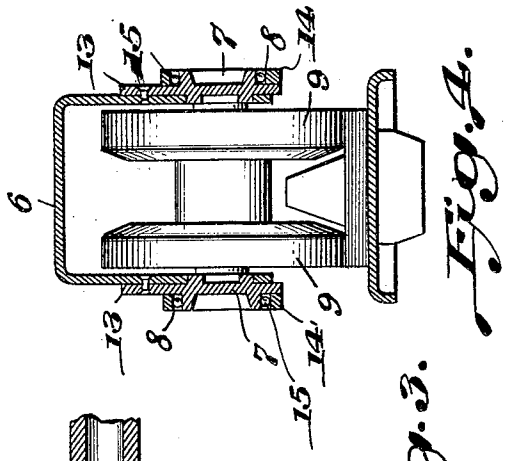

Fig. 4.

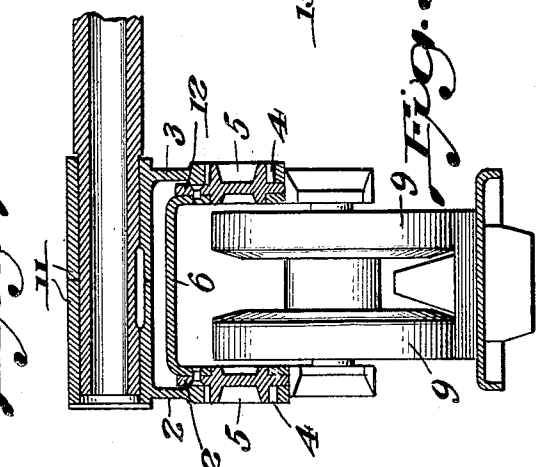

Fig. 3.

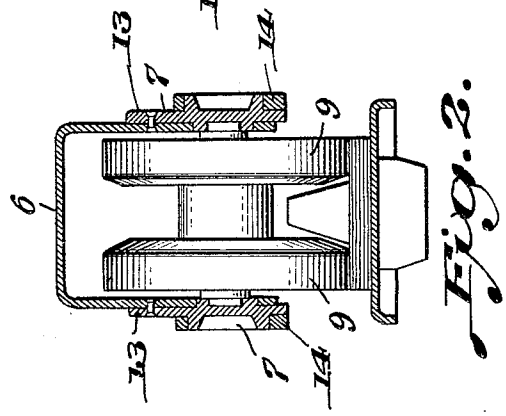

Fig. 2.

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UNITED STATES PATENT OFFICE

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ENDLESS-TRACK VEHICLE

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In vehicles of the endless track belt type, it has heretofore been usual to employ spindles for pivotally connecting the roller-carrying members of the train that bear on the lower stretch of the belt; and it has also been usual to employ for the same purpose trunnions that are disposed centrally of the train between the rollers. The first of these two arrangements, however, requires a considerable spacing of the rollers in order to enable the passage of the floating axle or spindle therebetween; while the second arrangement, although it permits the rollers to be positioned closer together than the first one, necessitates an outward slanting of the rollers with relation to the longitudinal vertical plane of the bearing train which involves complicated and expensive assembling and fitting up.

The object of my invention is to provide improved articulating or connecting devices for the component parts of the bearing train which will eliminate the above-mentioned disadvantages.

In the accompanying drawing:

Figure 1 is a view in side elevation showing the invention installed;

Fig. 2 is a section through the floating trunnions of one of the secondary rocking beams;

Fig. 3 is a vertical cross-section through the supporting axle; and

Fig. 4 is a modification of Fig. 2.

Referring more particularly to the drawing, 1 indicates the supporting or carrier axle, connected in some suitable manner (not shown) with the chassis of the vehicle; the latter, as will be apparent, being of the endless flexible track belt type. The axle, as is customary, carries the roller train which bears on the lower stretch of the track belt and which, in the construction illustrated, embodies front and rear groups of double rollers 9 disposed at opposite sides of axle 1, each group itself comprising two rollers, one in front of the other, connected to and carried by auxiliary rocking beams 8, as hereinafter described. It is to be understood, of course, that there is a track belt at each side of the vehicle, and that each belt has a roller train associated with it.

To each end of axle 1 is secured a sleeve-like element 11 provided with a pair of spaced, depending cheeks 2 and 3; said sleeve, as a matter of fact, being made in two parts which are arranged end to end in abutting relation, and each of which carries one of the cheeks at its outer end, as shown in Fig. 3. The sleeve is designed to support the main rocking beam 6, which is of inverted trough-shape in cross-section (Figs. 2–4) so as to span and fit over the two central rollers of the train; said beam and cheeks having a central pivotal connection to permit the required rocking movement of the beam.

In the construction illustrated, this connection embodies a pair of laterally-projecting, annular trunnions 5 which fit rotatably in annular bearings 4; the bearings 4 being here shown as formed on or in the cheeks 2 and 3, while the trunnions 5 are provided on plates 12 secured to the side members of the beam 6, though such arrangement may, of course, be reversed. The beam is of convex or bow-shaped formation with its opposite end portions curved downward and terminating between the rollers of the respective front and rear pairs (Fig. 1); and the aforesaid beam ends are joined to the central portions of the previously-mentioned auxiliary beams 8 by pivotal connections similar to that between the cheek members of the sleeve and the main beam 6, the trunnions 7 thereof being, in this instance, formed on plates 13 secured to the sides of beam 6, while the bearings 14 are provided on or in the adjacent beams 8, which latter are flat instead of trough-shaped in section. This arrangement likewise may be reversed, with the trunnions provided on the auxiliary beams and the bearings on or in the plates 13. Balls or other anti-friction elements 15 may be interposed between the trunnions 7 and bearings 14, as indicated in Fig. 4.

As will be understood from the foregoing, the mounting above described enables the rollers to be set very close to one another, owing to the fact that the use of spindles pivotally connecting the main and auxiliary beams and passing between the rollers is entirely eliminated, the connections being effected solely by the interfitting trunnions and

bearings which are themselves extremely short or shallow. This elimination of spindles is a matter of importance, because the spindles frequently cause the rollers to become jammed, due to the entrance and lodging of foreign bodies into the space between the rollers and their fixed spindles. The pivotal connections of the train, moreover, are symmetrical with respect to the longitudinal axis of the system, and the shape of the main beam 6 is such as to render it extremely rigid and strong. Needless to say, the construction illustrated is not intended to be strictly limitative, as the invention is clearly susceptible of modifications and changes within its scope as claimed.

Having thus described my invention, I claim:

A bearing train for endless flexible track belts, comprising a supporting axle, a sleeve fitted on and secured to said axle and provided with a pair of spaced depending cheeks, a main rocking beam having down-turned end portions, the central portion of the beam being disposed between and pivotally connected to said cheeks, and bearing rollers connected two-and-two to said beam ends, the pivotal connection between the cheeks and the central portion of the beam consisting of a pair of short trunnions provided on one of the two connected elements, and shallow bearings provided on the other element to receive the trunnions therein but free of axial connection between said trunnions.

In testimony that I claim the foregoing as my invention I have signed my name.

ADOLPHE KÉGRESSE.