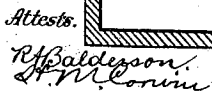


P. SCHILOWSKY.
MONOTRACK VEHICLE.
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By *Inventor*
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UNITED STATES PATENT OFFICE.

PETER SCHILOWSKY, OF KOSTROMA, RUSSIA.

MONOTRACK-VEHICLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, PETER SCHILOWSKY, a subject of the Czar of Russia, residing at Kostroma, in Russia, governor of Kostroma, in Russia, have invented certain new and useful Improvements in Monotrack-Vehicles, of which the following is a specification.

This invention relates to monotrack vehicles the lateral stability of which is obtained by means of a gyroscope or gyroscopes.

According to my invention the bodies of the vehicles and in particular the passenger coaches of a train are resiliently mounted with respect to the vehicle wheels in such manner that vertical and lateral shocks due to irregularities of the rails or swaying of the vehicle are substantially suppressed, by mounting the vehicle with freedom of movement in two directions, viz: vertical and lateral, with respect to the wheels. Further, the bodies of the vehicles are so supported on the wheels that their whole weight is available for braking power. These and other features of my improved system are shown in the accompanying drawings in the form most approved by me at the present time and will be hereinafter more particularly described with reference to these drawings, but I wish it to be clearly understood that the drawings are to be regarded merely as illustrating my invention which is in no way restricted to the particular constructions shown.

In these drawings, Figure 1 is a side elevation, partly broken into section, of a bogie of a mono-rail coach showing the approved system of suspension; and Figs. 2 and 3 are sections on lines 2—2, 3—3 respectively of Fig. 1.

The two wheels *a* of each bogie are journaled in brackets or frames *b* which are mounted to swing about transverse axles *c*, and the ends of these axles are journaled in frames *d* pivotally mounted at *d'* on opposite sides of the bogie frame *k* so as to allow the axles *c* to sway longitudinally, that is to say transversely of the vehicle, by their axes assuming positions that will lie in planes parallel with that containing the axes of the pivots of the frames *d*. The brackets are shown as being of angular form with the depending arms *b'*. The brackets *b* are elastically coupled by means of a spring or springs such as *e* which are compressed under the weight of the vehicle body acting

through the pivot supports of the brackets *b*. As shown in the drawing the spring *e* is a helical spring encircling the end of a longitudinal rod *f* which passes through collars *g* horizontally pivoted in depending arms *b'* of the pivoted frames *b*, and the spring or springs *e* are compressed between the collars *g* and adjustable abutments such as the nut *f'* on the rod *f*. A spring such as *e* may be interposed at each end of the rod (or only at one end thereof), between the collars *g* and their coöperating abutments. It will be seen that the bogie is movable vertically with respect to the wheels within the limits of range of the springs *e*, and that it is also movable laterally. The lateral movement may also be controlled or damped by suitably disposed springs.

When it is desired to utilize the weight of the body of the vehicle for braking purposes, it becomes necessary to annul or reduce the supporting force of the spring or springs *e*, for example by withdrawing one of the abutments, so as to allow the bogie to drop low enough for the fixed brake shoes or blocks *h* carried on the bogie to contact with and bear against the wheels. This may be conveniently done as shown in the drawings by substituting for one of the collars *g* or attaching thereto a cylinder *i* the piston or plunger *i'* of which is secured on the end of the rod *f*. Normally the cylinder *i* would be filled with fluid under pressure, usually water, supplied through a flexible pipe *i''* from a hydraulic pressure distributing system extending along the train. On taking off the pressure (which may be done by means of a suitable valve in the guard's van or other vehicle), the liquid abutment is annulled and the lower arms *b'* of the wheel brackets *b* are free to separate under the weight of the vehicle so as to bring the brake blocks into operation.

In my system of mono-rail locomotion I propose usually to provide special cars for the gyroscopes separate from the locomotive and passenger or freight cars. For example, a five car train, i. e. a train having five passenger coaches, may have the vehicles arranged in the following order: locomotive, gyro-car, two passenger cars, gyro-car, two passenger cars, gyro-car, composite car or guard's van. Where the locomotives are steam engines and the gyroscopes are driven by steam motors, e. g. steam turbines, the working fluid may be supplied from the

boiler by a flexibly coupled pipe line. Each wheel on a loco-car may be driven by an independent motor which in the case of a reciprocating motor would be carried by the wheel bracket *b*. In an electric system the rotor would be mounted directly on the wheel axle.

Since the lateral freedom between the vehicle wheels and bogie or body of the vehicles of a train, which is necessary when the train is running, is unnecessary or undesirable when the train is brought to a standstill, this lateral freedom may be annulled or reduced as much as may be desired by the coöperation of suitably beveled edges *r* on the wheel brackets *b* with blocks *s* on the bogie frame the surfaces of which are so inclined that when the brake shoes rest on the wheels the blocks *r* and *s* substantially come into contact.

Instead of having the brake blocks rigidly fixed to the bogie frame, they may be mounted with a certain relative freedom and have buffer springs such as *t* interposed between them and the bogie frame, the direction of movement of the brake blocks being so guided by links *u* from the axles *c* as to coincide with the direction of the relative movement of the wheels and brake blocks at the moment of engagement.

Having thus described the nature of this invention and the best means I know of carrying the same into practical effect, I claim:—

1. A monotrack vehicle comprising a frame carrying the vehicle body, transverse axles mounted upon said frame, brackets mounted to swing upon said axles and carrying the vehicle wheels, and a yielding coupling connecting the said brackets, substantially as described.

2. A monotrack vehicle comprising a frame carrying the vehicle body, transverse axles mounted with longitudinal freedom upon said frame, brackets mounted to swing upon said axles and carrying the vehicle wheels, and a yielding coupling connecting the said brackets, substantially as described.

3. A monotrack vehicle comprising a frame carrying the vehicle body, transverse axles pivotally mounted upon said frame, brackets mounted to swing upon said axles and carrying the vehicle wheels, and a yielding coupling connecting the said brackets, substantially as described.

4. A mono-track vehicle comprising a frame carrying the vehicle body, transverse axles mounted upon said frame, brackets mounted to swing upon the said axles and carrying the vehicle wheels, a spring acting on the swinging brackets to support the weight of the vehicle body, and means for releasing the spring to allow the vehicle body to drop and the wheels to be braked, substantially as described.

5. A mono-track vehicle comprising a frame carrying the vehicle body, transverse axles mounted upon said frame, brackets mounted to swing upon the said axles and carrying the vehicle wheels, a spring acting on the swinging brackets to support the weight of the vehicle body, a fluid pressure abutment for said spring and means for taking off the pressure to annul said abutment, substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two witnesses.

PETER SCHILOWSKY.

Witnesses:

H. A. LOVIAGUINE,
A. MIGHIS.