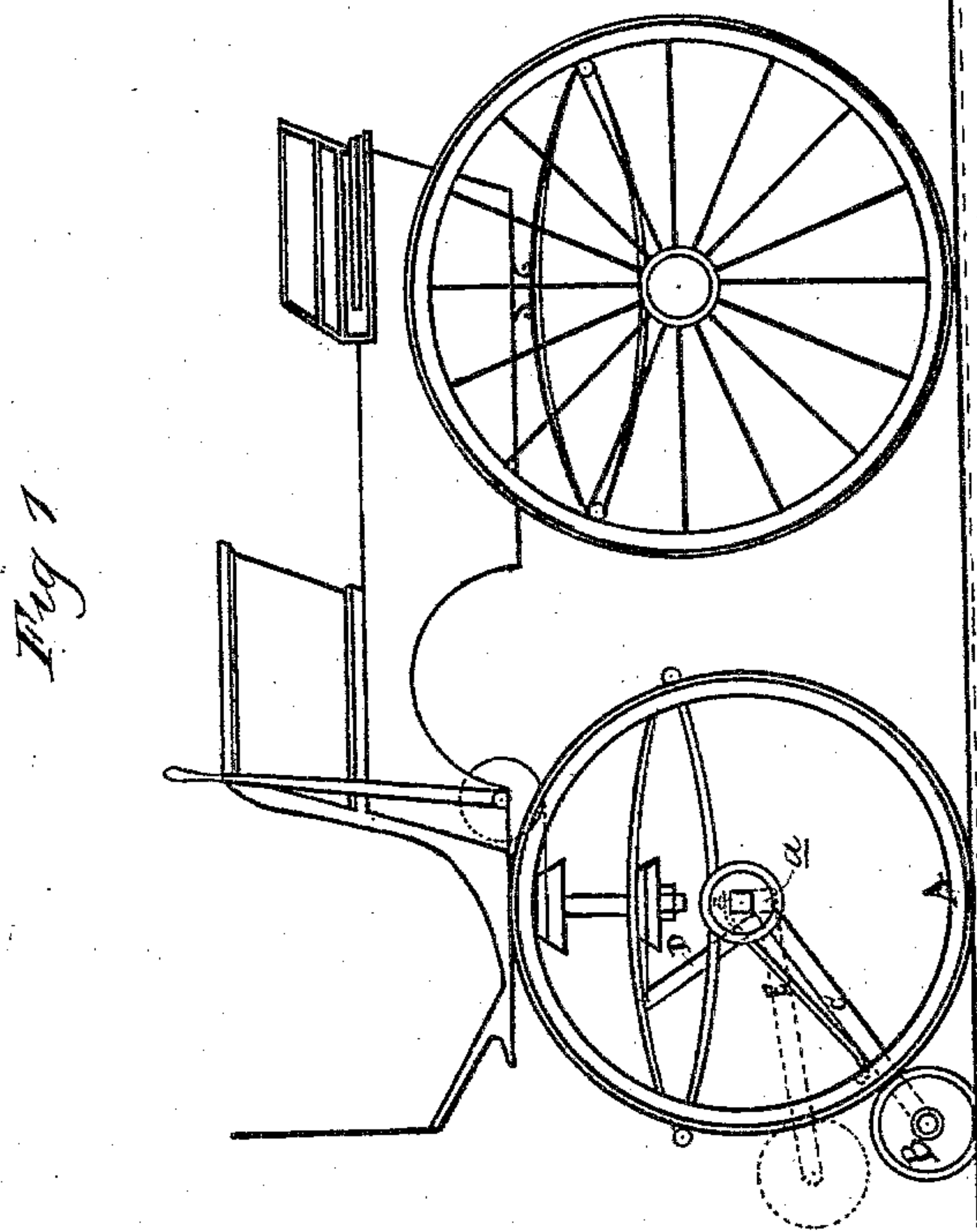
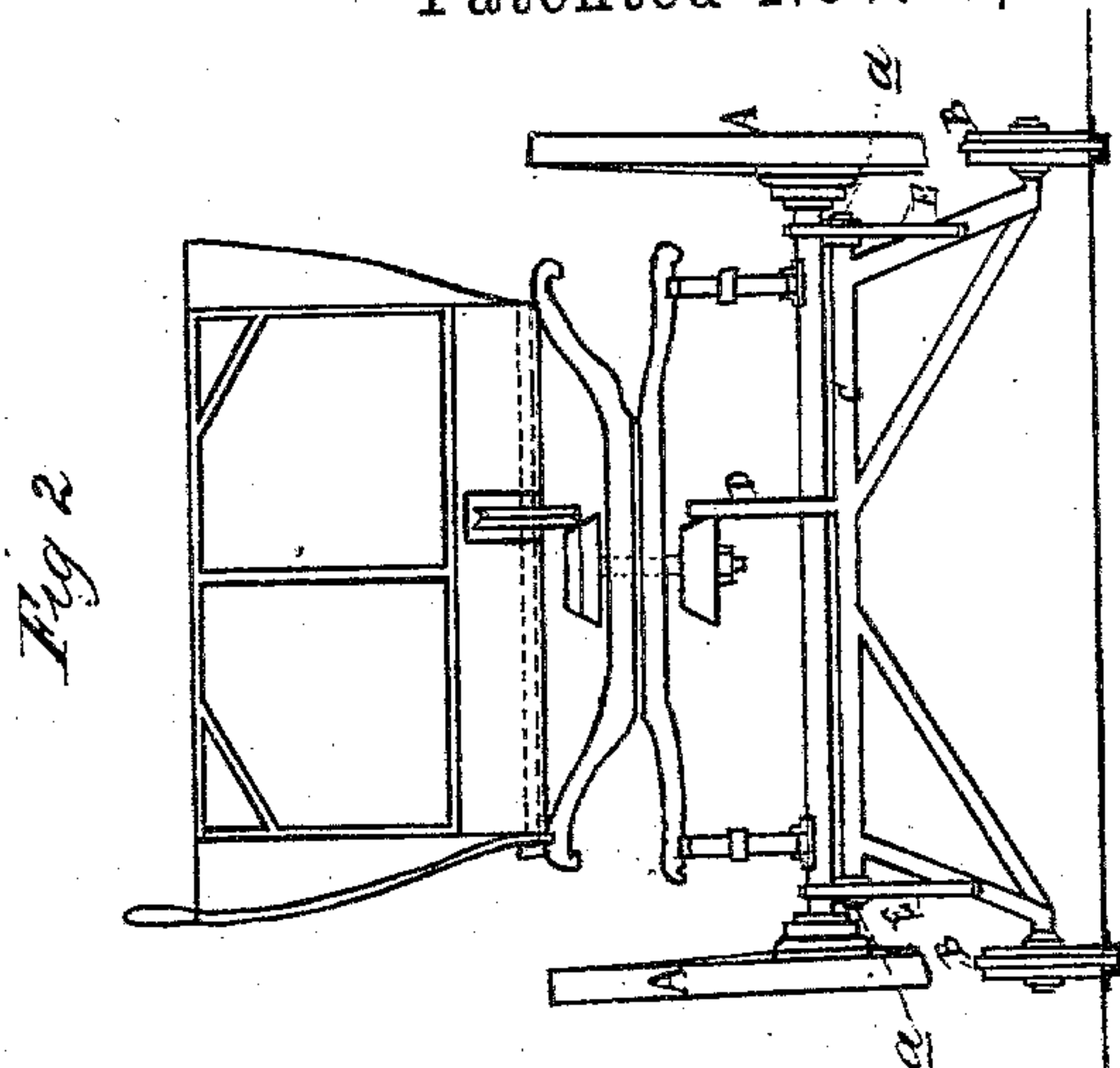


(No Model.)

J. M. TERRAS.  
VEHICLE.

No. 287,886.

Patented Nov. 6, 1883.



Witnesses.  
W. E. Foulter.  
J. W. Knotts

Inventor  
Jean M. Ferras  
per Henry W. W.  
his atty



# UNITED STATES PATENT OFFICE.

JEAN MARIE TERRAS, OF LYONS, FRANCE.

## VEHICLE.

SPECIFICATION forming part of Letters Patent No. 287,816, dated November 6, 1883.

Application filed July 25, 1883. (No model.) Patented in France February 10, 1883, No 153,624.

*To all whom it may concern:*

Be it known that I, JEAN MARIE TERRAS, a citizen of the Republic of France, residing at Lyons, in France, have invented new and  
5 useful Improvements in a Movable Guide-Wheel, enabling any vehicle to utilize the rails of road-railways, tramways, and the like, (for which I have obtained Letters Patent in France, dated February 10, 1883, No. 153,624,) of which the following is a specification.

The object of this invention is to enable vehicles of all descriptions other than the vehicles specially constructed for use on tramways or railways, and in particular vehicles  
15 provided with a swiveling fore carriage to travel indifferently, either upon the rails laid down in towns for tramways, road-railways, &c., or upon common roads, without the necessity for any alteration, either in the form of the  
20 wheels or in the vehicle itself, or in the harness, and without in any way interfering with the circulation of the specially-constructed vehicles. The sole condition is that the gage of the wheels should be the same as that of the  
25 rails.

The apparatus consists of a guide and guide-carrier.

First, the guide. The guide is arranged either before or behind the wheels that are to  
30 be guided, and consists, essentially, of a small wheel provided with a central or approximately central or lateral flange. The periphery of this wheel bears upon the rails. When the line is laid with double or grooved rails,  
35 the flange runs between the rails. When the line is laid with single-headed rails, the flange runs inside the rails; in short, the flange of the guide acts in the same manner as the wheels of the vehicles specially constructed to travel  
40 upon the line. If preferred, any other form of guide—such as a straight or curved rigid rod terminating in a point or in a ball, or provided with a movable ball or cylinder acting upon the rails in the same manner as the flange  
45 of the guide-wheel—may be substituted for the latter. The guides may be employed singly or in pairs, or in double pairs, and may be arranged either in advance of or in the rear of the wheels to be guided, or parallel with these  
50 wheels. In the case of four-wheeled vehicles

it may be fitted to the forewheels only, or to the hind wheels, or to all four wheels. In order to facilitate the action of the guide-wheel, the fore carriage may, if desired, when the guide-wheel is brought into action, be fixed by  
55 a movable pin acting upon a suitable part of the swiveling fore carriage and operated by the driver. By means of such pin the fore carriage will be prevented from oscillating or swiveling upon the king-bolt or axis. When  
60 the guide-wheel is lifted, the pin will be thrown out of action, and the fore carriage will be free to turn upon its center.

Second, guide-carrier. The guide, irrespective of its form, is carried by a rigid  
65 guide-carrier, which enables it to be elevated when the vehicle is traveling upon common roads, or lowered when the vehicle is traveling upon a tram or other similar line. This movement is obtained by means of a lever or other  
70 suitable means of transmission under the control of the driver. When it is desired to throw the guide out of action, the guide-carrier is elevated and retained in the elevated  
75 position by a catch. When it is desired to make use of the line, the vehicle is brought over the center of the line, so that its wheels bear upon the rails. The guide is then lowered and prevents the vehicle from running  
80 off the line. The guide-carrier may be combined with a spring, for the purpose of facilitating its movements or rendering it more effective.

In the accompanying drawings, Figure 1 is a side, and Fig. 2 an end, elevation of a vehicle fitted with this apparatus.

A is the ordinary wheel of the vehicle. The gage of the wheels is equal to that of the rails.

B is the guide-wheels, in the form of a wheel with a central flange.

C is the guide carrier or frame, composed of a metal frame hinged or jointed at *a*, and connected to the axle of the fore carriage. Any other analogous arrangement of guide-carrier capable of producing the same result and connected to any other suitable part of the vehicle may be employed.

D is a lever, worked by the driver, for raising or lowering the guide-carrier.

E is a spring for facilitating the movement,



and in particular the lowering of the guide-carrier, and for keeping the guide upon the rail. The spring may be arranged in any other manner, or may be dispensed with altogether, or  
5 any other equivalent device may be substituted.

In the drawings the full lines represent the flanged guide-wheel in action—that is to say, placed upon the rails. The dotted lines represent the guide and guide-carrier elevated.  
10

Having thus described my invention, I claim—

The combination, with an ordinary road-vehicle, of the flanged guide-wheel B, movable carrier or frame C, lever D, for operating the same, and regulating-spring E, substantially  
15 as and for the purposes described and shown.

JEAN MARIE TERRAS.

Witnesses:

I. P. A. MARTIN,  
J. PERRET.