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Letters Patent.

The Schedule referred to in these Letters Patent and making part of the same containing a description in the words of the said Frederick Davis and William Ashdown themselves of their improvement on George W. Cleaveland's improvement on Rail Road Cars.

To all to whom these presents shall come. Be it known that the Frederick Davis and William Ashdown of the City of Baltimore and State of Maryland have invented a new and useful improvement on George W. Cleaveland's improvement in the Rail Road Car which was patented to him in the fall of 1836. and that the following drawings and remarks are a full and true description of our improvement. The object of our improvement is to produce regularity in the motion and direction of the wheels on the axle or prevent their liability to move in a Zig Zag. line. or to prevent the constant liability of the flanges of the wheels coming into contact with the rails. Instead of one solid axle Mr Cleaveland has his separated in the middle. The square from fig 1. represents a mechanical contrivance which supports the inner end of each pair of axles and allows both to oscillate horizontally. and they revolve independently of each other. whilst they always remain parallel with each other. The dotted lines and the oval a. show when one of the inner gudgeons of each axle works. the gudgeons of the other axle being on the opposite side. Fig 2. represents the working parts of Fig 1. A being the same piece in both figs. B. is a pivot lever the rounded ends of which rest in the inner holes of the boxes or pieces a, b, c. when by means of the axle the Box b is moved to the right hand or from axle 1. the box c is moved to the left or backwards. Fig 3. represents the connection of one of the axles with the Cleaveland's. by means of the elevation of the pin through the middle. We make the pin fast to the lever as may be seen by the square from a, to b. shown by a square and at the top we attach the lever C. which works with the pin and pivot lever ff. are sections of rods connected with C. by working joints. Fig 4. represents a top view of the centre piece of the bar. The dotted lines represent the relative position of the axles on it

curved Road. the outer and longer curve or track being from your g.g. outwards as Fig 1. h. h. are bearers. as is in Fig 6. i. i. i. are rods connected with the bearers h. h. and the bent levers k. 4. l. by working joints. the bent levers at m. m. have working joints by means of bolts in the back. on the end of each of the bent levers at n. is an upright steel pin as a medium of connection with either car or moving force. When either of the bent levers move in the direction of the arrows. by means of its connection with car or other moving force, the inner end of the axles a. b. c. c. are brought nearer together. When each set of the levers and axles are on the same line with each other the car is in a position for a straight track and by throwing the axles into a position opposite to that in which they now stand the car will be in a position for opposite curves. By the use of our fixtures the flanges of the cars will be kept almost, if not quite at all times from the rails as these levers draw the car on a line of the chord of the curve nearer to the inner track. whereas without this provision the car will be kept home by means of the rubbing of the flanges against the outer rail. The reaction of the forward power has a tendency to keep the axles on the same lines and consequently no tendency will remain to produce an irregular or zig zag direction in the running of the car. We claim the apparatus for the purposes of governing and regulating the motion of the axles and wheels as above described

Witnesses
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