

**DOCUMENTS RELATING TO  
ROSS WINANS' PATENT FOR  
THE EIGHT-WHEELED CAR,  
PP. 1-43 (NOT COMPLETE)**

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by Ross Winans

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# DOCUMENTS

RELATING TO

## ROSS WINANS' PATENT

FOR THE

EIGHT-WHEELED CAR.

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New-York :

JOHN W. AMERMAN, PRINTER,

No. 60 WILLIAM-STREET.

1856.



## Documents relating to Ross Winans' Patent.

(COPY OF THE PATENT.)

The United States of America.

To all to whom these Letters Patent shall come :

Whereas, Ross Winans, a citizen of the United States, hath alleged that he has invented a new and useful improvement in the construction of cars or carriages intended to run upon rail-roads, which improvement he states has not been known or used before his application; hath sworn that he does verily believe that he is the true inventor or discoverer of the said improvement; hath paid into the Treasury of the United States the sum of thirty dollars, delivered a receipt for the same, and presented a petition to the Secretary of State, signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Ross Winans, his heirs, administrators or assigns, for the term of fourteen years from the first day of October, one thousand eight hundred and thirty-four, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Ross Winans himself, in the schedule hereto annexed, and is made a part of these presents.

In testimony whereof, I have caused these letters to be made patent, and the seal of the United States to be hereunto affixed.

Given under my hand, at the city of Washington, this first day of October, in the year of our Lord one thousand eight hundred and thirty-four, and of the Independence of the United States of America the fifty-ninth.

[L. s.]

ANDREW JACKSON.

By the President,

JOHN FORSYTH, *Secretary of State.*

CITY OF WASHINGTON, TO WIT: I do hereby certify that the foregoing Letters Patent were delivered to me on the first day of October, in the year of our Lord one thousand eight hundred and thirty-four, to be examined, that I have examined the same and find them conformable to law, and I do hereby return the same to the Secretary of State, within fifteen days from the date aforesaid, to wit, on the first day of October, in the year aforesaid.

B. F. BUTLER,

*Attorney General of the United States.*

10 THE SCHEDULE referred to in these Letters Patent, and making part of the same, containing a description, in the words of the said Ross Winans himself, of his improvement in the construction of cars or carriages intended to run upon rail-roads:

11. TO ALL WHOM IT MAY CONCERN:—Be it known, that I, ROSS WINANS, civil engineer, of the city of Baltimore, in the State of Maryland, have invented a new and useful improvement in the construction of cars or carriages, intended to travel upon rail-roads; which improvement is particularly adapted to passenger cars, as will more fully appear by an exposition of the difficulties heretofore experienced in the running of such cars at high velocities, which exposition I think it best to give in this specification, for the purpose of exemplifying the more clearly the object of my said improvement.

Improvement in the construction of CARS or carriages.

Passenger cars.

High velocities, cause of difficulties.

Rail-roads in this country, in view.

Curves of but a few hundred feet radius.

constitute the difficulties to be overcome, with the least friction on all parts of the road.

12 In the construction of all rail-roads in this country, which extend to any considerable distance, it has been found necessary to admit of lateral curvatures, the radius of which is sometimes but a few hundred feet; and it becomes important, therefore, so to construct the cars, as to enable them to overcome the difficulties presented by such curvatures, and to adapt them for running with the least friction practicable, upon all parts of the road. The friction to which I now allude is that which arises from the



*Baltimore, January, 1856.*

Sir,

I send to you a pamphlet containing a copy of the Patent, which was granted to me on the 1st of October, 1834, and extended for seven years, from the 1st of October, 1848, for what is commonly known as the *eight-wheeled car*. I invite your attention and that of the Board of Directors of the Rail Road Company with which you are connected, to the specification annexed to the Patent, and to the legal decisions in regard to the Patent, which you will find in the pamphlet. I have tried three suits at law upon the Patent. In one I obtained a verdict. In the others, the juries were unable to agree. You will find in the pamphlet, the decisions that have been made by Chief Justice Taney and by Mr. Justice Nelson and Judge Conkling, all of them in my favor. I call your attention particularly to these decisions, and ask that the Board of Directors of your Road may be made acquainted with them, in order that they may fully understand the grounds of my confidence in the justness of the claim which I am now engaged in enforcing before the legal tribunals of my country. I believe that the information afforded by this pamphlet will be new to most of those who control the action of the Rail Road Companies of the United States, and that it will disabuse their minds of very much of the prejudice which they entertain in regard to my claims under my Patent.

Yours respectfully,

ROSS WINANS.



contact between the flanches of the wheels and the rails, which, when it occurs, causes a great loss of power, and a rapid destruction of, or injury to, both the wheel and the rail, and is otherwise injurious.

The high velocities attained by the im-13  
provements made in locomotive engines, and which are not only sanctioned but demanded by public opinion, render it necessary that certain points of construction and arrangement, both in the roads and wheels, which were not viewed as important at former rates of traveling, should now receive special attention. The greater momentum of the load, and the intensity of the shocks and concussions, which are unavoidable, even under the best constructions, are among those circumstances which must not be neglected, as the liability to accident is thereby not only greatly increased, but the consequences to be apprehended much more serious.

The passenger and other cars in general 14  
use upon rail-roads have four wheels, the axles of which are placed from three and a half to five feet apart; this distance being governed by the nature of the road upon which they run, and other considerations.

When the cars are so constructed that the 15  
axles retain their parallelism, and are at a considerable distance apart, there is a necessary tendency in the flanches of the wheels to come into contact with the rails, especially on the curvatures of least radius, as the axles then vary more from the direction of the radii. From this consideration, when taken alone, it would appear to be best to place the axles as near to each other as possible, thus causing them to approach more nearly to the direction of the radii of the curves and the planes of the wheels to conform to the line of the rails.

There are, however, other circumstances 16  
which must not be overlooked in their constructions. I have already alluded to the

Friction meant is between flanch and rail.

Modern high velocities

make points formerly unimportant, render for special attention.

Momentum of load and intensity of shocks and concussions, not to be neglected, as they render

accidents more probable - consequences more serious.

Common four-wheeled car axles, 3 1/2 to 5 feet apart, according to nature of road.

Parallel axles, far apart, bring flanches and rails in contact, on sharp curves.

Therefore, axles near together,

approaching radii of curvature.

Other circumstances to be looked at.