

(Model.)

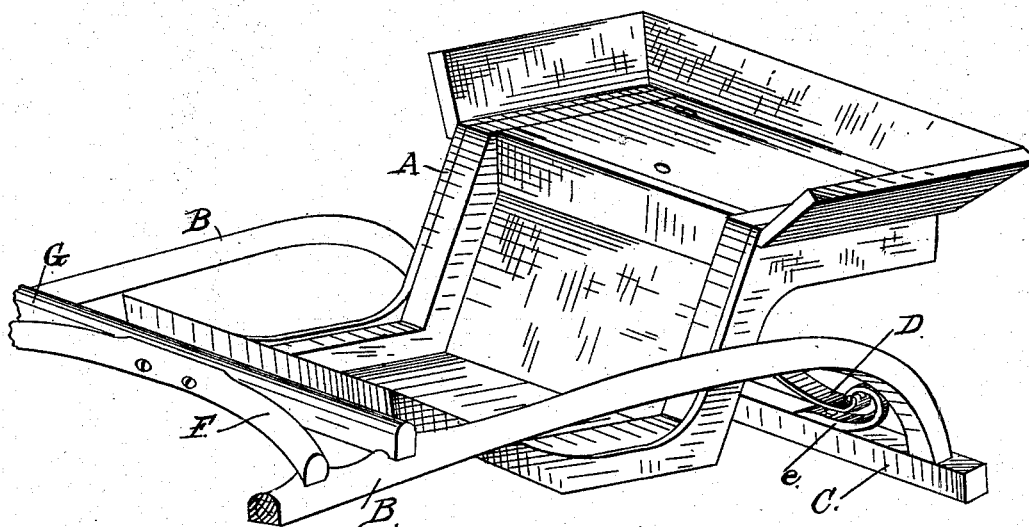
2 Sheets—Sheet 1.

G. HALE.  
ROAD CART.

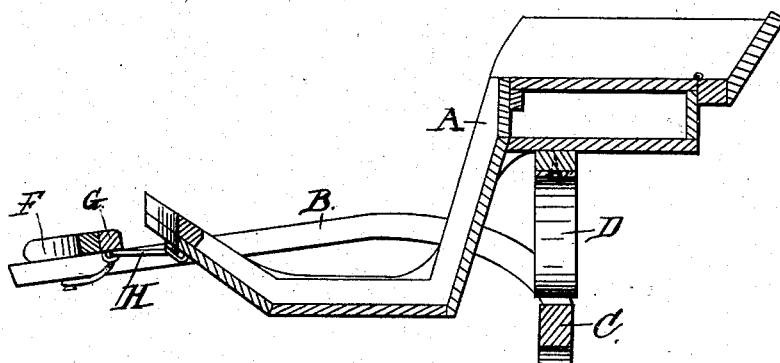
No. 262,036.

Patented Aug. 1, 1882.

*Fig. 1.*



*Fig. 2.*



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(Model.)

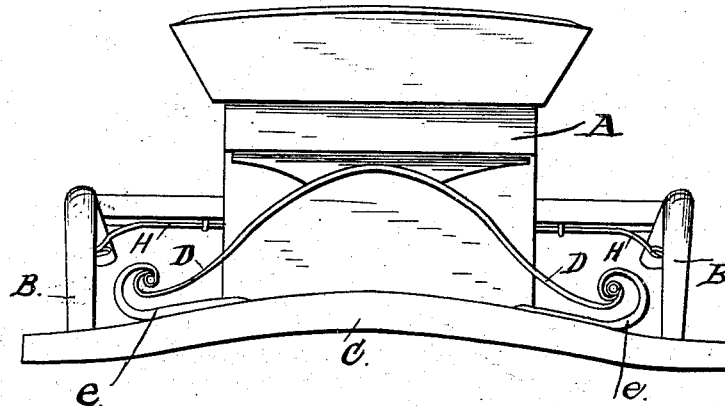
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G. HALE.  
ROAD CART.

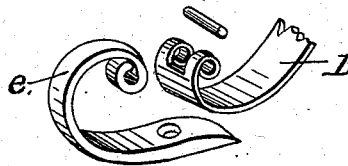
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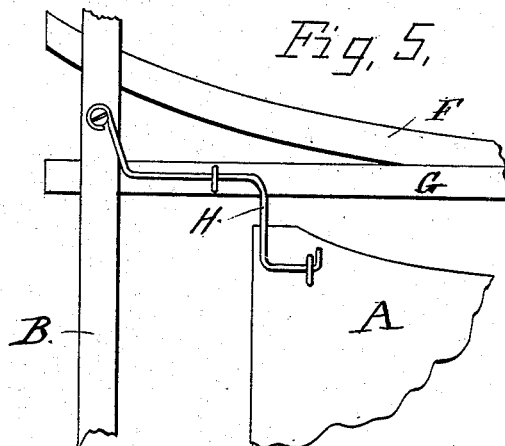
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

GEORGE HALE, OF AURORA, ILLINOIS.

## ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 262,036, dated August 1, 1882.

Application filed June 2, 1882. (Model.)

*To all whom it may concern:*

Be it known that I, GEORGE HALE, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Road-Carts or Two-Wheeled Vehicles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates more particularly to the springs, and to their construction, and to the manner in which they are applied to the two-wheeled vehicle both at front and rear, the objects being to prevent too much lateral sway or swing of the body, while affording an easy and sufficient vertical movement. I employ torsional springs for the front of the body, one at each side, and a single semi-elliptic spring at the rear, placed crosswise of the vehicle and hung at each end upon rigid "jacks," as distinguished from "shackles" or any loose attachment.

In Sheet 1, Figure 1 represents in perspective sufficient of a road-cart to illustrate my invention, and Fig. 2 a central vertical section of the same. In Sheet 2, Fig. 3 is a rear view of the cart; Fig. 4, details showing one of the rigid jacks, a portion of the rear spring, and their connecting pin or bolt; and Fig. 5, a partial view of the under side of the vehicle.

A is the body of the vehicle; B B, the shafts or thills connected to the axle C; D, the rear spring; *e e*, the metal jacks, made strong and rigid, as shown, and firmly secured to the axle, and to each of which, at its upper end, one end of the leaf-spring D is connected, the body A being connected to the center of this spring, as shown.

F is an arched cross-bar, and G a straight cross-bar immediately behind it. These bars are each fastened to the thills, and at their centers are fastened together, thus giving great firmness and strength at these points, the bar G also affording other advantages.

H H are the two torsional springs, each be-

ing, as shown, secured to one of the shafts or thills, thence being bent at about a right angle and secured to the straight cross-bar, and thence bent backward at about a right angle beneath the front part of the body A, and there secured at its end. It will be seen by this way of making and applying the torsional springs that their yield is not excessive, but that they can only be elastic enough to relieve the body at the front, and when used in connection with the rear spring they jointly relieve the body of that rigidity which attends road-carts as usually constructed. It will also be seen that, while the jacks *e e* prevent lateral swing or side motion at the rear, the torsional springs, by reason of the manner in which they are applied, also prevent any undue lateral swing or side motion at the front, for both the rear spring and the front ones check the motions not wanted, while they allow all the vertical movement desired to render the riding easy and as near akin as practicable to that of a four-wheeled wagon. The rigid character of the jacks also prevents any undue forward and backward swing of the body, which is such an objectionable feature in ordinary road-carts.

By the use of the straight cross-bar, combined with the arched one, not only is the strength of the structure much enhanced and a bed or base provided for the attachment of the torsion-springs, but it enables me to attach a dash-board to the body in the same manner and of the same form or forms as are found in the four-wheeled buggies and carriages now in use.

I am aware that torsional springs have been used in four-wheeled vehicles and applied in various manners, and that in such vehicles they have sometimes been employed with springs of other kinds; but I am not aware of any instance in which such a construction and arrangement of springs as I have shown and described have been applied to two-wheeled road-carts or to any other vehicle.

I claim—

1. In a two-wheeled vehicle, in combination with the body and with the thills and with the cross-bar G, the two torsional springs bent in

the shape shown and described, and applied and secured at the front of the vehicle to the body and to the thills and to the cross-bar, in the manner and for the purpose set forth.

- 5 2. In a two-wheeled vehicle, the two torsional springs bent as shown, and applied to the thills, cross-bar, and body, as set forth, combined with the single-leaved semi-elliptic

rear spring, placed transversely of the body and directly connected to the rigid jacks, all as set forth. 10

GEO. HALE.

Witnesses:

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