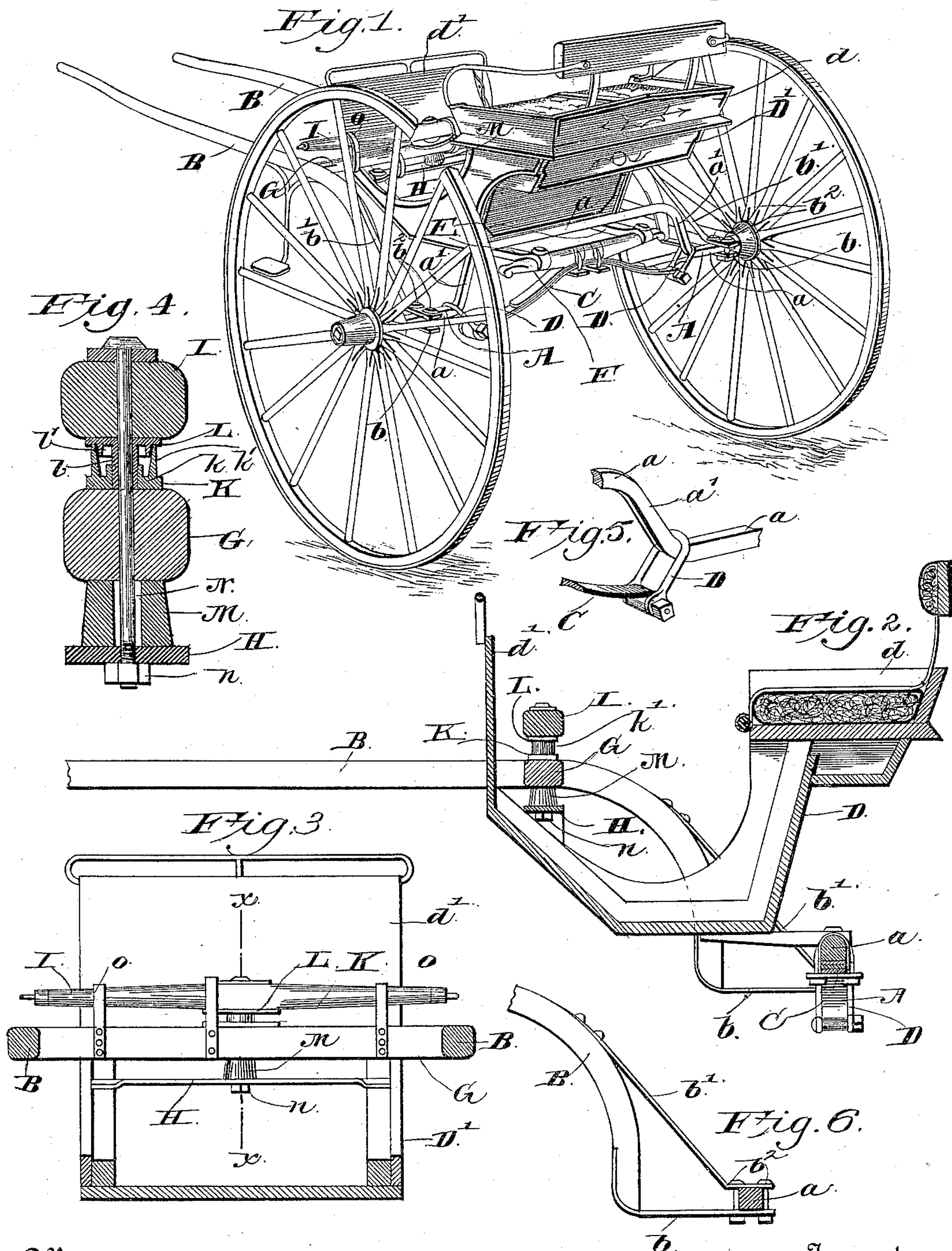


(No Model.)

J. G. HESS.  
ROAD CART.

No. 401,834.

Patented Apr. 23, 1889.



Witnesses.

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# UNITED STATES PATENT OFFICE.

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## ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 401,834, dated April 23, 1889.

Application filed October 31, 1888. Serial No. 289,619. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN G. HESS, a citizen of the United States, residing at Westminster; in the county of Carroll and State of Maryland, have invented new and useful Improvements in Road-Carts, of which the following is a specification.

This invention relates to improvements in road-carts, in which compactness and strength are the main desiderata; and it consists in a certain novel construction and combination of devices, fully described hereinafter in connection with the accompanying drawings, and specifically pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a vehicle embodying my improvements. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view taken in rear of the cross-bar. Fig. 4 is a detail sectional view on the line  $x x$  of Fig. 3. Fig. 5 is a detail view to show the connection of the spring to the axle. Fig. 6 is a detail view to show the connection of the thill to the axle.

Referring by letter to the drawings, A designates the cranked axles, having the outward offset,  $a$ , and the shoulders  $a' a'$  at the opposite ends of the offset, and B B designate the thills, which are attached at their rear ends to the axle outside of the said shoulders. Draft-straps  $b$  are secured to the rear ends of the thills and pass under the axle. Inclined brace-straps  $b'$  are attached at their front ends to the thills and bear at their rear ends on the upper side of the axle, and small vertical bolts  $b^2 b^2$  pass through the said straps on opposite sides of the axle to connect them firmly thereto.

C represents an upwardly-convexed semi-elliptical spring, which is arranged in the offset of the axle, and is provided at its ends with the loose swinging loops D D, which are engaged over the axle and bear against the shoulders  $a' a'$ , whereby as the center of the spring is depressed and the extremities thereof are forced laterally the said loops swing on the axle and accommodate the said movement.

D' represents the body of the cart, arranged between the thills and having the seat  $d$  and the splash-board  $d'$ , and E E are rearwardly-

extending arms on the bottom of the body, connected at their rear ends by the cross-brace F, that bears on the spring C, and is firmly secured thereto at its center.

The cross-bar G between the thills passes in rear of the splash-board above the bottom of the body and over a transverse spring-bar, H, which is secured at its ends to the body and is supported at its center above the bottom of the body, and I represents a whiffletree which is swiveled on the upper side of the said cross-bar. The adjacent sides of the cross-bar and whiffletree are provided, respectively, with wear-plates K and L, and the plate K is provided with a central opening,  $k$ , which fits around the lower end of a sleeve,  $l$ , which depends from the center of the plate L. The plate L is further provided near its outer edge with a peripheral downwardly-tapered depending flange,  $l'$ , which fits snugly in the vertical upwardly-tapered flange  $k'$ , which is formed on the upper side of the plate K.

A tubular or perforated block, M, is interposed between the under side of the cross-bar and the spring-bar H, and a vertical bolt, N, passes through registering openings in the whiffletree, cross-bar, and spring-bar, and through the sleeve I of the wear-plate L and the tubular block, and is engaged at its lower end by a suitable nut,  $n$ . To take up lost motion between the whiffletree and the cross-bar, tighten the vertical bolt, thereby drawing tapered flange  $l'$  downward into the tapered flange  $k'$ . Flexible straps O O are secured at their ends to the rear side of the cross-bar and pass over the whiffletree to limit the movement of the latter and prevent it from striking the splash-board.

From the above description it will be seen that the spring and cross-brace which connect the body to the axle are located in the offset of the said axle, thereby rendering this portion of the construction more compact, and, the cross-bar and whiffletree being arranged within the vehicle or in rear of the splash-board, the horse may be arranged closer to the vehicle, while at the same time the occupant of the vehicle is allowed plenty of room.

The slight vertical spring movement of the front end of the vehicle, owing to the transverse spring-bar which connects it to the cross-



bar, prevents undue jarring of the body of the vehicle, and allows, in connection with the spring at the rear end of the body, a gentle resiliency of movement.

5 Having thus described the invention, I claim—

1. In a road-cart, the combination of the axle, the thills connected thereto, the body connected at its rear end to the axle, and the  
10 cross-bar G between the thills, passing over the floor of the body in rear of the splash-board, and connected to the body, substantially as specified.

2. In a road-cart, the combination of the  
15 axle having the thills attached thereto, the body connected to the axle and having a transverse spring-bar, H, in rear of the splash-board, the cross-bar G, connecting the thills and passing over the said spring-bar, the  
20 wear-plate on the upper side of the cross-bar provided with a vertical tapered flange,  $k'$ , the whiffletree arranged on the upper side of the cross-bar and provided on its under side with a depending tapered flange,  $l'$ , fitting within  
25 the flange  $k'$ , and the bolt passing through registering perforations in the whiffletree, cross-bar, and spring-bar, substantially as and for the purpose specified.

3. In a road-cart, the combination, with the  
30 axle, of the thills and draft-straps  $b$  and inclined brace-straps  $b'$ , secured to the rear ends of the thills and arranged at their rear ends respectively below and above the axle, and the bolts connecting the rear ends of the said  
35 straps on opposite sides of the axle, said bolts bearing against the axle, substantially as specified.

4. In a road-cart, the combination, with a cranked axle provided with the upward offset  
40  $a$  and the thills connected to the straight portion of the axle on opposite sides of the offset, of the semi-elliptical spring arranged within and below the offset and connected at its ends to the shoulders  $a'$  of the offset,  
45 and the body having its main portion arranged forward of the axle and its seat directly above the same, and provided with a cross-brace, F, arranged parallel with and bearing on the said spring, and the horizontal  
50 arms E, connecting the cross-brace with the rear portion of the body, substantially as specified.

5. In a road-cart, the combination, with a cranked axle provided with the offset  $a$  and  
55 the shoulders  $a'$  on opposite sides of the offset, and the thills attached at their rear ends to the straight portion of the axle beyond the shoulders, of the spring C, arranged within and below the said offset and pro-  
60 vided at its ends with swinging loops D D,

passing over the axle and engaging the shoulders  $a'$ , the body provided with rearwardly-extending arms E E, the cross-brace F, connecting the rear ends of the said arms and secured to the center of the said spring, 65 and the cross-bar G between the thills, connected to the front of the body, substantially as specified.

6. In a road-cart, the combination, with the cranked axle and the thills affixed to the  
70 axle, of the spring C, provided at its ends with swinging loops D D, passing over the axle, and the body provided at its rear end with a cross-brace, F, arranged parallel with and bearing on and affixed to the said spring, 75 said cross-brace and said spring being arranged within and below the cranked portion of the axle, and said body being connected at its front end to the cross-bar G of the thills by a yielding or spring connection, substan- 80 tially as specified.

7. In a road-cart, the axle, the thills, the body, the transverse spring-bar H, secured to the floor of the body in rear of the splash-board, the cross-bar G, connecting the thills 85 and passing over the said spring-bar, and the whiffletree connected to the top of the cross-bar and extended at its ends beyond the side of the body, whereby the spring-bar, cross-bar, and whiffletree are all connected to the 90 floor of the body and are arranged in rear and close to the bottom of the splash-board, as set forth.

8. In a road-cart, the thills, the axle, the body, the cross-bar G, connecting the thills 95 and extending across the bottom of the body in rear of the dash-board, said cross-bar having a spring or yielding connection with the body, and the whiffletree connected to the cross-bar and arranged within the body and 100 extended at its ends beyond the sides of the body, as specified.

9. In a road-cart, the cranked axle, the spring C, arranged below the cranked portion of the axle and connected to the same, the 105 cross-bar F, arranged parallel with the spring and connected to the top thereof, and also arranged within the crank of the axle, and the arms E, connected to the cross-bar F and arranged at right angles thereto and extended 110 forward and connected to the body, as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOHN G. HESS.

Witnesses:

J. W. BEVIN,  
HUGH E. FIDDES.