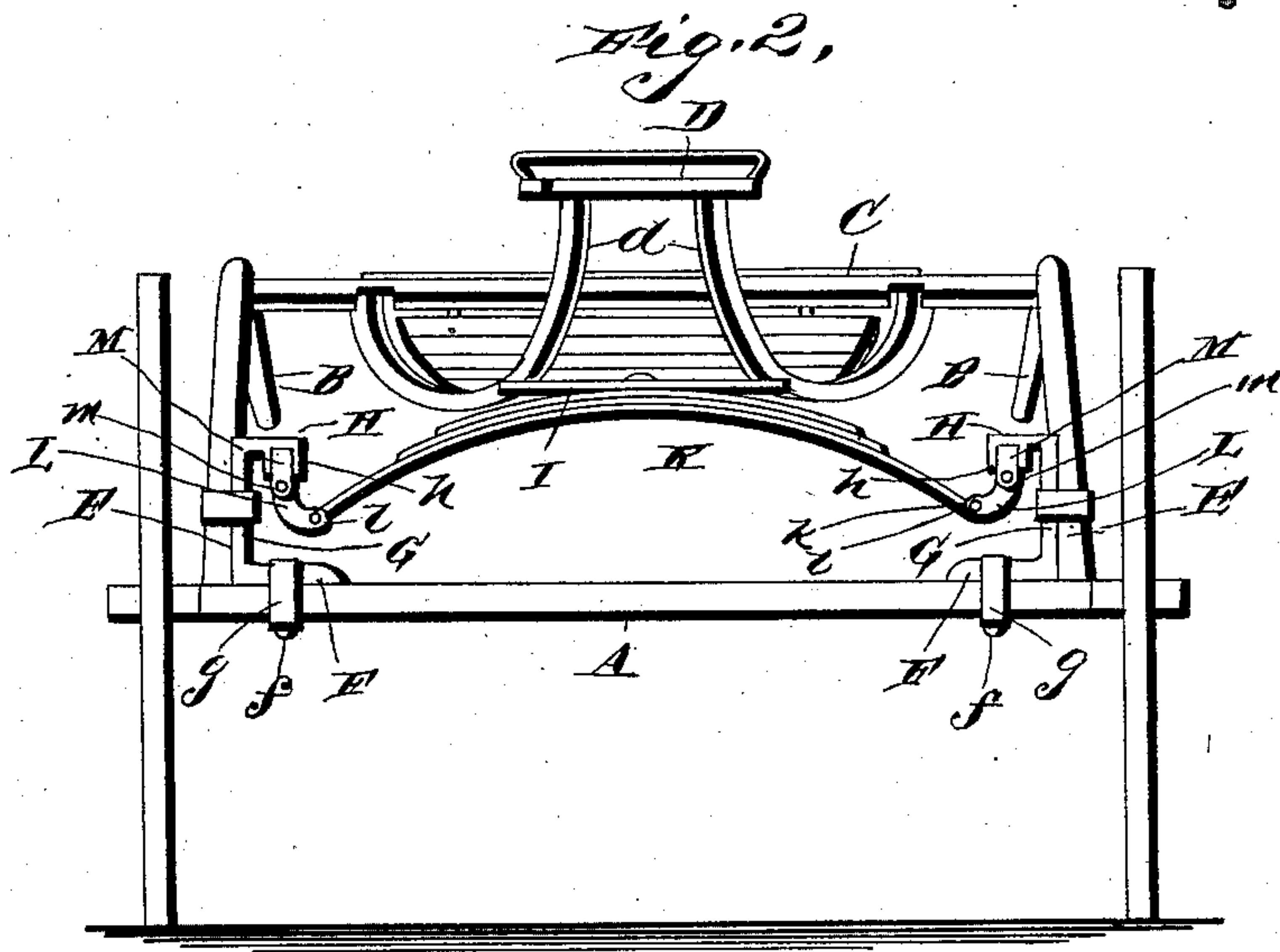
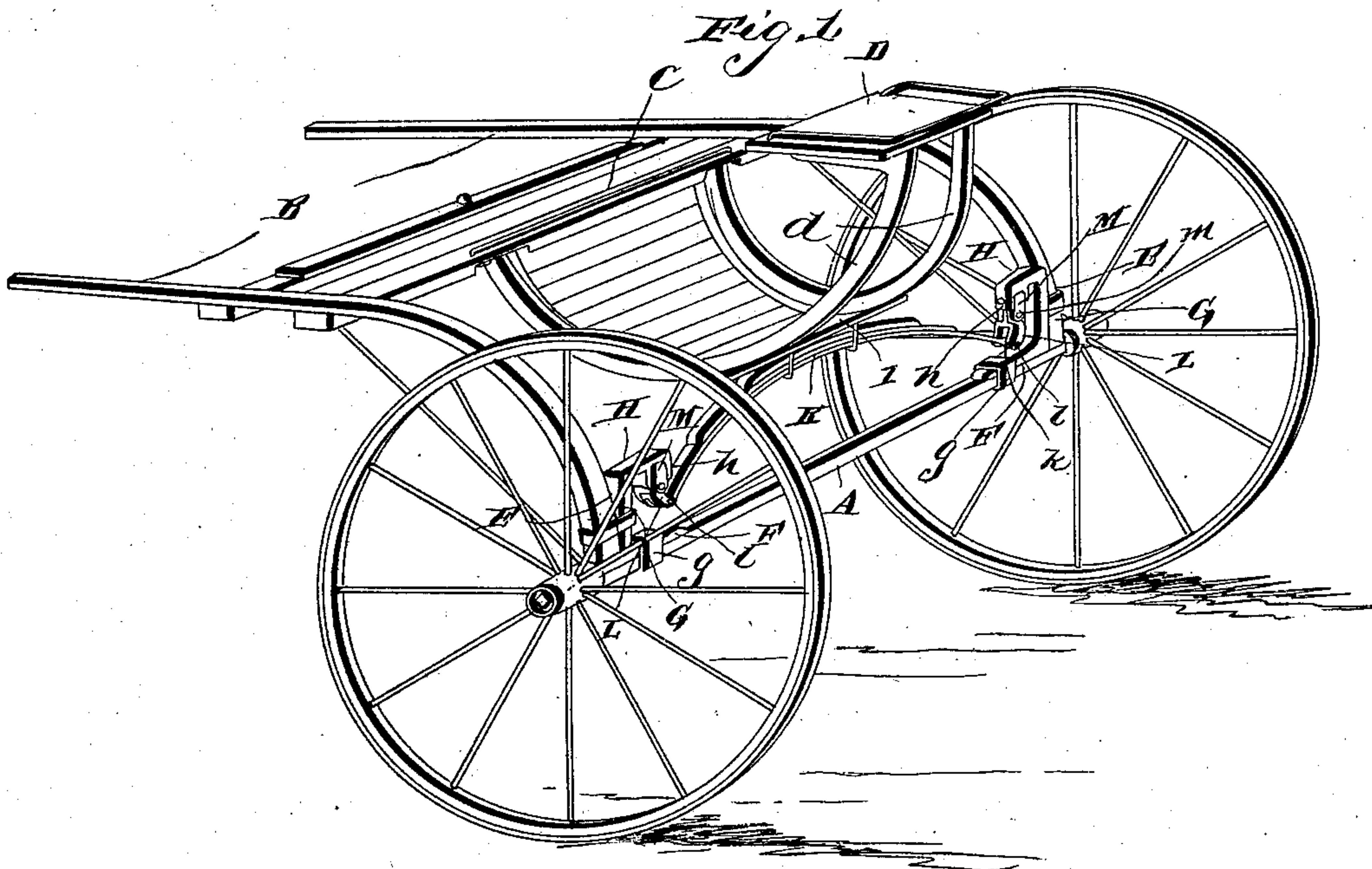


(No Model.)

F. HIGGINS.
ROAD CART.

No. 389,842.

Patented Sept. 18, 1888.



Witnesses

C. B. Taylor,
C. E. Doyle.

Inventor

Frank Higgins

By *his* Attorneys

C. B. Howden

UNITED STATES PATENT OFFICE.

FRANK HIGGINS, OF WELLSVILLE, NEW YORK, ASSIGNOR OF ONE-HALF TO
JAMES J. FREEMAN, OF SAME PLACE.

ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 389,842, dated September 18, 1888.

Application filed June 2, 1888. Serial No. 275,883. (No model.)

To all whom it may concern:

Be it known that I, FRANK HIGGINS, a citizen of the United States, residing at Wellsville, in the county of Allegany and State of New York, have invented a new and useful Improvement in Road-Carts, of which the following is a specification.

My invention relates to improvements in road-carts; and it has for its object to provide a spring for the seat which will combine simplicity and strength with great resiliency and ease of motion, and also to provide the spring with attachments to enable the thills to be firmly and readily connected to the axle.

The invention consists in a certain novel construction and arrangement of devices, fully set forth hereinafter in connection with the accompanying drawings, wherein—

Figure 1 is a perspective view of a road-cart provided with the improvements. Fig. 2 is a rear view, partly in section, of the same.

Referring by letter to the drawings, A designates the axle. B B designate the thills. C designates the cross-bar between the thills, and D designates the seat, having the side bars, *d d*, pivoted at their front ends to the said cross-bar.

E E designate brackets provided with the foot or base F and the vertical standard G, which are respectively affixed to the upper side of the axle and the inner side of the thill by means of bolts *f* and metallic clips *g*. The vertical standards of the brackets are provided with the horizontal inward-extending arms H, which are provided with the depending ears *h h*.

To a cross-bar, I, which is attached to the side bars, *d d*, of the seat, is affixed by suitable means the center of the semi-elliptical spring K, and the eyes *k k* at the ends of the spring are mounted between the parallel ears *ll* on the lower ends of the swinging links L. The connecting-link M is pivoted at its upper end between the depending ears *h h* of the horizontal arm H, and the lower ends of the parallel arms *m m*, which comprise the said link, are pivoted on opposite sides of the upper end of the swinging link. The connecting-link is capable of a forward and rearward swinging motion, and the swinging link is capable of a laterally-swinging motion, and

therefore, when the seat is depressed by a superimposed weight, the center of the elliptical spring is depressed and its ends are forced laterally, thereby causing the lower ends of the swinging links to swing outward, and the movement of the seat-bars around their pivots on the cross-bar will cause the swinging links and the lower ends of the connecting-links to swing slightly forward, as will be evident.

The pivoted movement of the seat-bars would, if the ends of the spring were not connected thus loosely to the standards, cause a twisting strain on the spring, which would ultimately result in loosening and perhaps detaching the latter; but when free swinging connection is employed all twist and strain on the connections of the spring are avoided, for the reason that the pressure on the latter is at all times perpendicular to its face.

It will be seen that the connection of the rear end of the thill to the axle is simple, the pressure is distributed, and a lateral strain is prevented from twisting the thill.

Having thus described the invention, I claim—

1. In a road-cart, the combination, with the seat having its bars pivoted at their front ends, of the elliptical spring affixed to the seat-bars and connected at its ends to universal connections, which consist of the links L and M, pivoted together, substantially as specified.

2. In a road-cart, the seat-bars mounted pivotally on the vehicle, and the standards having the horizontal arms on their upper ends, in combination with the semi-elliptical spring affixed to the seat-bars, the connecting-links pivoted to the horizontal arms and capable of a swinging motion, and the swinging links pivoted at their opposite ends to the extremities of the spring and the lower ends of the connecting-links, and capable of a swinging motion at right angles to the connecting-links, substantially as specified.

3. In a road-cart, the pivoted seat-bars and the axle having the thills affixed thereto, in combination with the standards provided with the horizontal arms H, having the depending arms *h h*, the connecting-links pivoted at their upper ends between the depending ears and

having parallel arms *m m*, the swinging links pivoted at their upper ends between the said arms *m m* and capable of swinging in a plane at right angles to the connecting links, and
5 the flat or semi-elliptical spring affixed to the seat-bars and having eyes on its ends mounted between the ears *l l* on the lower ends of the swinging links, substantially as specified.

4. In a road-cart, the combination of the
10 brackets *E E*, provided with the boxes *F F*, secured to the axle, and the standards *G G*, integral with the boxes, the thills secured at their rear ends to the standards, the seat hav-

ing the seat-bars pivoted to the cross-bar of the thills, and the elliptical spring attached 15 to the seat-bars and connected at its ends to the upper ends of the standards by swinging links *L M*, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 20 presence of two witnesses.

FRANK HIGGINS.

Witnesses:

F. H. FURMAN,

FRANK V. R. STILLMAN.