(No Model.)

G. F. WOODARD & G. H. CARROLL.

ROAD CART.

No. 413,332. Patented Oct. 22, 1889.

Fig. 1

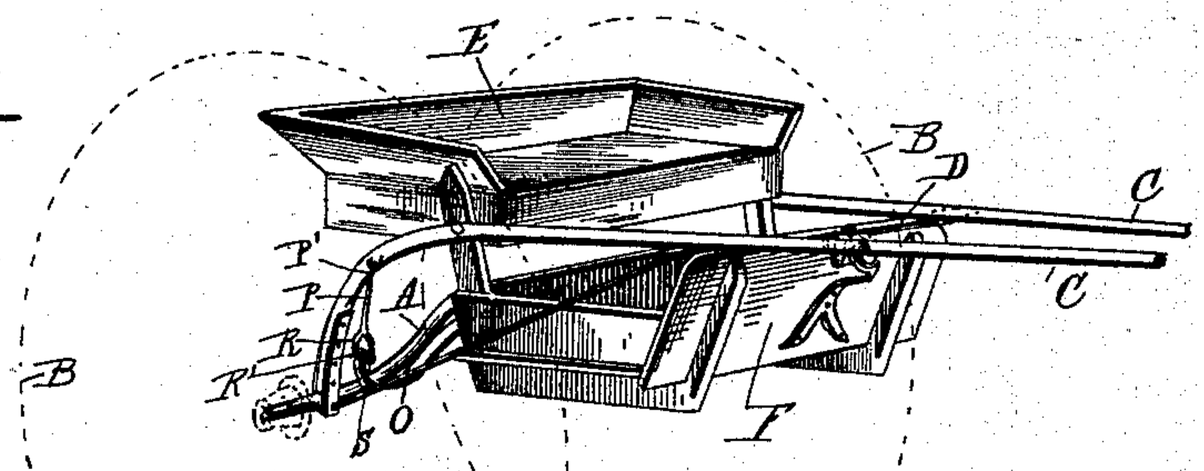
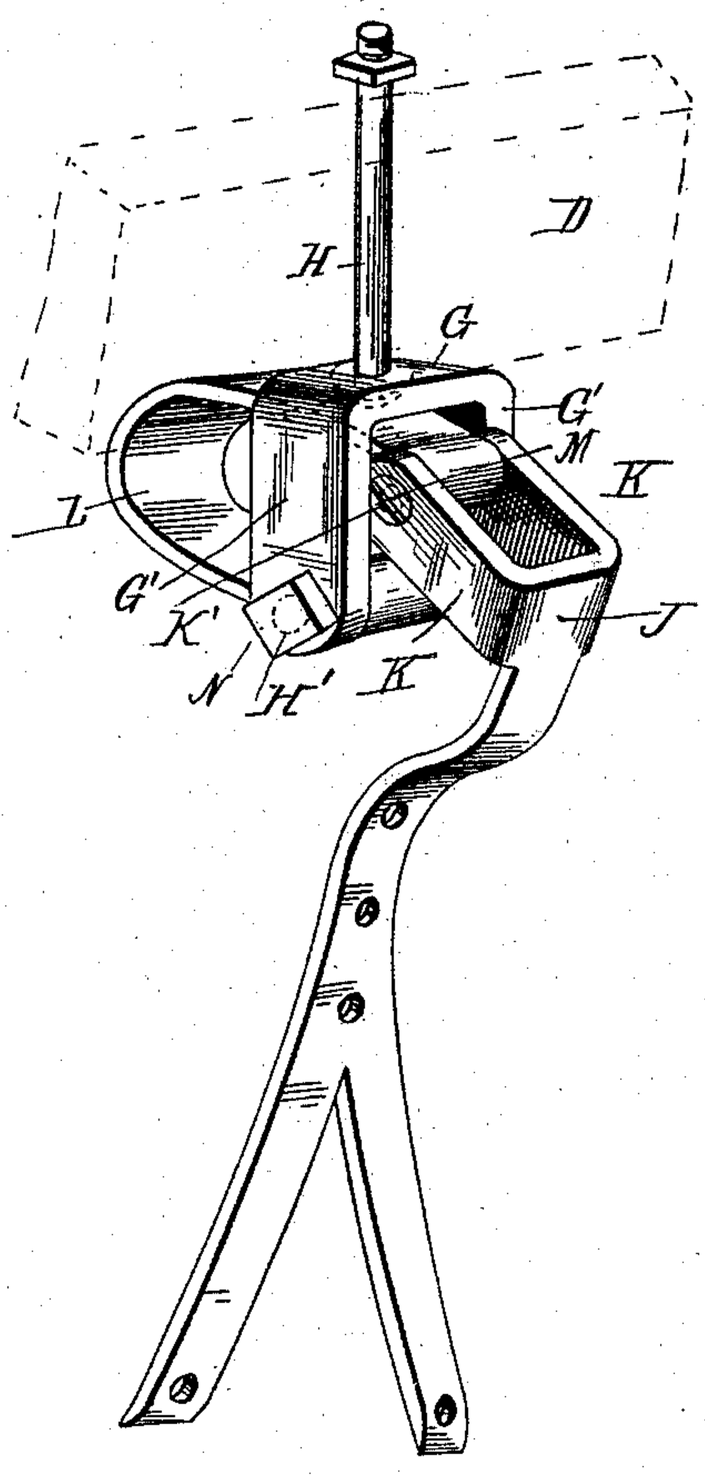


Fig. 2



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UNITED STATES PATENT OFFICE.

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ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 413,332, dated October 22, 1889.

Application filed August 8, 1889. Serial No. 320,100. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. WOODARD and GEORGE H. CARROLL, citizens of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Road-Carts; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference marked thereon, which form a part of this specification.

Our invention has reference to improvements in road-carts, and pertains more especially to mechanism for attaching or suspending the occupant's seat and foot board to the thills of the vehicle in such a manner as that neither the lateral oscillation of the vehicle nor the lateral motion of the animal or his vertical movements will be communicated to said seat and foot board.

It is well known that the movements of the horse attached to a vehicle is of a threefold character: first, the lateral swing of his body; second, a vertical movement, and, third, a forward impulse with each step. As the thills are required to be strapped rather tightly to the horse in order to prevent any tilting movement of the axle, the tendency is, unless avoided in some way, to transmit these motions of the animal to the seat of the vehicle—a result which is uncomfortable to the occupant thereof. Also the striking of one wheel against an inequality or obstruction tends to give a lateral oscillation to the axle.

In our invention the purpose is to allow the thills and axle to be oscillated in either a vertical or a horizontal plane without communicating such motion to the body of the vehicle. This is accomplished at the rear of the body by suspending each end of the transverse spring upon which the rear end of the body rests in pendent rods adapted to oscillate both lengthwise and crosswise of the vehicle, and at the front end of said body by suspending the latter centrally to the cross or tenter bar which connects the two thills in such a manner that said body may have a pivotal movement in both a vertical and horizontal plane. To further relieve the occupant from the discomfort of the vertical movement aforesaid of the animal, I provide at the forward central support aforesaid of the body a secondary joint or pivot in a vertical plane, which permits said body at its forward connection aforesaid to freely turn in a vertical plane independently of the supporting-thills and cross-bar. The hinged or pivotal connection of the upper ends, respectively, of the downwardly-suspended rods or arms aforesaid permits a like flexibility or freeness of the rear end of said body, so that by the combined pivotal attachment afforded by the hinged character of the upper ends of said supporting-rods and the central pivoting aforesaid of the front end of said body in both a horizontal and a vertical plane the communicating connection which would otherwise exist between the body and the supporting portion of the vehicle is severed, and each of said parts is at liberty to move or to be moved independently of the other. The successive forward impulses of the animal are precluded from reaching the body of the vehicle by means of a shackle central connection of said body to said tenter-bar.

In the drawings, Figure 1 is a perspective from the front (partially oblique) of a cart provided with our invention. Fig. 2 is details of the front central pivotal and shackle support before referred to.

A is the usual axle, supported upon the two carrying-wheels B B.

C C are the thills, attached in any suitable way at their rear ends to the axle A.

D is the tenter-bar transversely connecting the thills C.

E is the occupant's seat, and F the foot-board. These last two named parts are made integral with each other, and can be of any of the usual shapes or kinds and adapted to carry one or more occupants.

To the lower face of the center of the tenter-bar D is pivotally attached a metallic plate G, having a flat central portion parallel with said tenter-bar, and depending ears G′ at each end. A bolt H is passed loosely up through the center of plate G and tenter-bar

D and secured by a nut on the upper side of said bar. Holes H′ are formed in line transversely through the ears G′.

J is a clip bifurcated at its lower end or otherwise adapted to be attached at said end centrally to the forward end of the foot-board F. The upper end of the clip J is bent forward at right angles and formed into the ears K K. A round bolt M is passed transversely through the holes K′ in the ears K and through the upper end of a bowed spring L, the bow of which is projected forward under and beyond the bar D, and the opposite or lower end of the spring L is projected between the ears G′ of the plate G and pivotally seated therein by means of a transverse bolt N, passed through the ears G′ and the adjacent end of the spring L.

The connection just described of the forward end of the foot-board F to the tenter-bar D, it is obvious, affords a double pivotal support for the front end of said foot-board, permitting said bar to oscillate in both a vertical and horizontal plane without affecting the seat E.

The freedom of the spring L longitudinally prevents the successive forward impulses aforesaid of the horse from being communicated to the seat E. The size and location of the parts are such that the clip J cannot pass forward under the bar D, nor the spring L backward under said bar.

The ends of the rear transverse spring O are supported from the thills C C by means of pendent rods P. In the upper ends of the rods P, respectively, are formed the transverse holes P′, through which said arms are suspended loosely in any suitable manner at their upper ends to the thills C C, respectively. The lower ends of the rods P are bifurcated, forming depending ears R, which hang in line with or lengthwise of the vehicle. Horizontal holes R′ are formed in the lower end of the ears R, and the ends of the spring O are projected, respectively, within the ears R, and supported pivotally therein by means of horizontal bolts S, passed through the ears R and a suitable hole in the end of the spring O, lengthwise of the cart. This suspension of the rear end of the seat E permits said seat to have its aforesaid horizontal oscillation at its aforesaid central front support by the arms P P oscillating laterally to permit the lateral freedom of the rear end of said seat. The pivotal connection of the upper ends of the rods P permits any oscillation of the thills C C caused by the movement of the horse or by striking obstacles without communicating said oscillations to the body of the vehicle. The top of clip J oscillates longitudinally between the ears G′ of plate G, being supported by the upper end of spring L.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

1. The combination of the thills C C, suitably supported at their rear ends by the axle A, the seat E, foot-board F, bar D, plate G, provided with ears G′, clip J, provided with ears K, bolt M, spring L, bolt N, spring O, and rods P P, pivotally suspended from thills C, respectively, and pivotally attached at their lower ends, respectively, to spring O, substantially as shown, and for the purpose described.

2. The combination of the thills C C, bar D, axle A, wheels B, seat E, foot-board F, a centrally-located universal joint suspending the front end of said foot-board to said thills, spring L, spring O, and arms P P, pivotally attached at their upper ends to said thills and at their lower ends to said spring O, substantially as shown, and for the purpose described.

3. In a road-cart, the combination of the thills C, bar D, seat E, foot-board F, clip J, provided with ears K, spring L, pivotally attached at one end to said clip, plate G, pivotally attached to bar D and to the opposite end of spring L, and provided with ears G′, substantially as shown, and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE F. WOODARD.
GEORGE H. CARROLL.

Witnesses:
JOHN G. MANAHAN,
ADDA E. WARD.