(No Model.)

E. B. SKINNER.

ROAD CART.

No. 419,613. Patented Jan. 14, 1890.

Fig. 10.

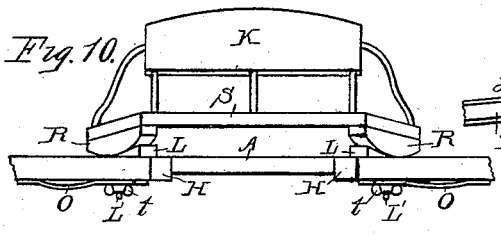
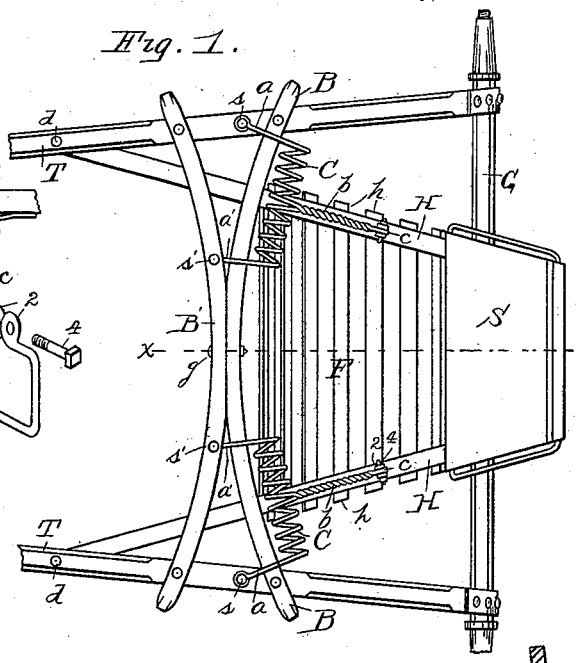


Fig. 1.



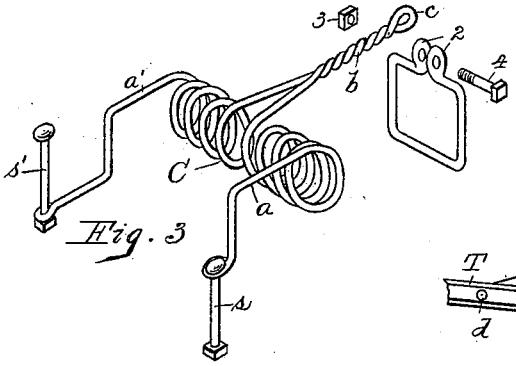


Fig. 3

Fig. 4.

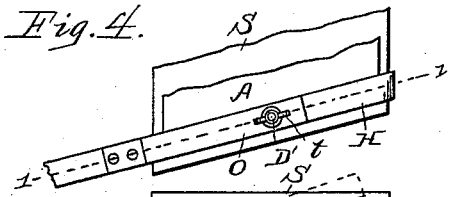


Fig. 5.

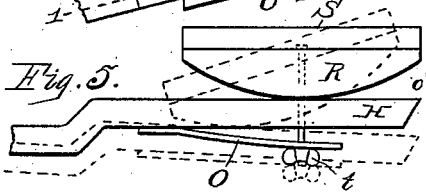


Fig. 2.

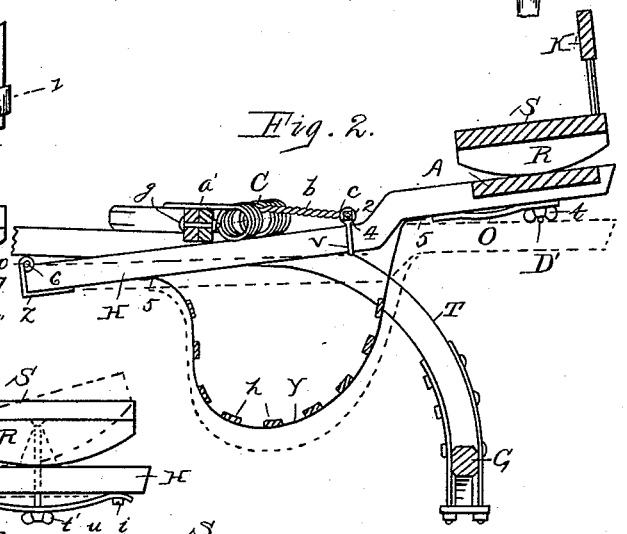
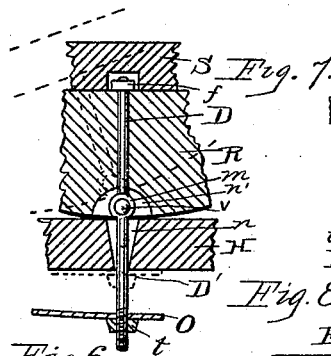


Fig. 7.



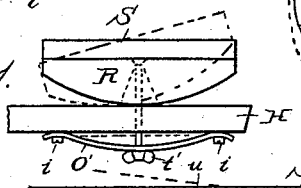


Fig. 8.

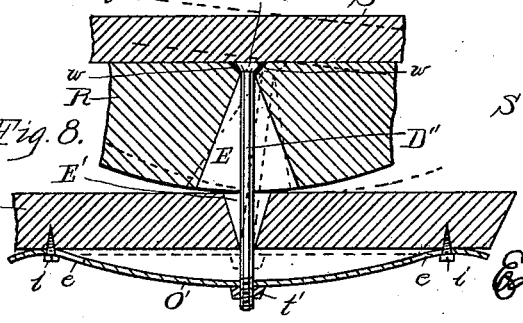


Fig. 9.

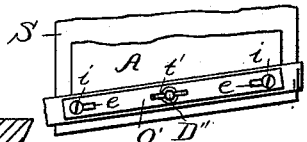


Fig. 6.

Attest.

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By

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Atty.

UNITED STATES PATENT OFFICE.

EDWARD B. SKINNER, OF FLINT, MICHIGAN, ASSIGNOR OF ONE-HALF TO LYMAN T. CURTIS AND SILAS E. CURTIS, OF SAME PLACE.

ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 419,613, dated January 14, 1890.

Application filed March 11, 1889. Serial No. 302,923. (No model.)

To all whom it may concern:

Be it known that I, EDWARD B. SKINNER, a citizen of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Road-Carts; and I do 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 the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to vehicles, and particularly to that class known as "road-carts;" and it consists in the construction and arrangement of parts whereby the seat and foot-rest are suspended over the axle by means of coiled springs, the uniform balance of the cart for light or heavy weights maintained without adjustment, and the further arrangement of parts permitting the seat to retain a perfectly horizontal plane during the motion of the springs, the object being to produce a cheap and durable road-cart, and one that will effectually overcome the horse motion, enabling also the employment of a lazy-back to the seat, all of which will be fully hereinafter set forth, and the essential features of my device pointed out particularly in the claims.

In the accompanying drawings, forming a part of this specification, Figure 1 is a plan view of the frame-work of a road-cart embodying the improved features of my device. Fig. 2 is a central sectional view taken on dotted line *x x* of Fig. 1. Fig. 3 is an enlarged detail of the double-coiled spring and clevis. Fig. 4 is an inverted detail of seat-arm spring and seat. Fig. 5 is a side elevation of seat-arm and rocker. Fig. 6 is a sectional view on dotted line *l l* of Fig. 4. Figs. 7, 8, 9, and 10 are details and modifications to be referred to.

As indicated in the drawings, T T represent the thills; G, the axle; B B′, the curved cross-bars; H H, the seat-supporting arms; C C, the double-coiled springs, and S the seat. The thills and axle are constructed in the usual way, and will require no special mention.

The outer ends of the cross-bars B B′ are bolted to the thills T T and their curved meeting faces secured by the bolt *g*. (See Fig. 1.) The coiled springs C C rest against the inner curved face of the cross-bar B, and are held in position by means of the angle-arms *a a′* of said springs, the inner arms *a′* passing over the top of the cross-bar B, down between the bars B B′, and are secured to the under face of the bar B′ by the bolts *s′ s′*. The outer arms *a a*, in like manner passing over the top of the bar B, are secured to the upper face of the thills by the bolts *s s*. This arrangement is clearly shown in Fig. 1. The springs C C are provided with the twisted shank *b*, having at the end thereof the eye *c*, for purposes hereinafter described.

The forward ends of the seat-arms H H are provided with the metal plates Z, which are bolted to the under face of said arms and turned over the ends thereof, forming the elongated eye *o*. Said eye is slotted through its center transversely to receive the depending eye in the bolt passing through the thills and secured by the nut *d*. The bolt 6 is passed through the elongated eye in the plate Z, and through the depending eye in the bolt passing through the thills, whereby the forward ends of the seat-arms H H are hinged to the under face of the thills T T, as shown in Figs. 1 and 2.

About midway between the ends of the seat-arms H H, and by means of clips bolted to their under face, is secured the clevis V. Said clevis environs the seat-arms, and is pivotally coupled to the shank *b* of the coiled spring C by placing the eye *c* in said shank between the eyes 2 2 of the clevis, so as to register therewith, and passing the bolt 4 through said eyes 2 *c* 2, and securing it therein with the nut 3, as clearly shown in Figs. 1 and 2, thus suspending the seat-arms H H from the coiled springs C C.

Crossing between the rear ends of the seat-arms H H is a base-board A. (See Fig. 10.) Mounted on the seat-arms over said base-board is a seat S, having the rockers R R and lazy-back K. By referring to the detail

section shown in Fig. 6 the parts used to couple the seat S to the rear ends of the seat-arms H H will be plainly seen and their operation clearly understood. The meeting ends of the bolts D D′ are flattened, holes punched therein to receive the rivet *v*, by which said ends are coupled, forming the joint *m*. The bolt D, passing up through the rocker R, is firmly held therein by the nut *f*. The bolt D′ passes loosely through the seat-arm H, through the end of the spring O, and receives on its lower end the thumb-nut *t*, the cut-out portion *n′* of the rocker allowing a free action of the joint *m*, and the enlarged orifice *n* through the seat-arm H permitting a vertical and lateral play of the bolt D′ as the seat oscillates. When the seat oscillates, the bolt D′ is drawn up, bringing the spring O against the under face of the seat-arm H, as shown by dotted lines in Figs. 5 and 6, whereby the seat is prevented from rocking too far, the degree of oscillation being governed by the thumb-nut *t*. This arrangement of parts allows the seat to oscillate on the rockers R R as it rises and falls by the motion of the springs C C, permitting the occupant of the seat to maintain a perfectly-perpendicular sitting and allowing the employment of a lazy-back to said seat with ease and comfort, whereas the rigid seat in common use on road-carts cannot be supplied with a lazy-back, for reason that the peculiar motion given to such a seat by the action of the springs causes the lazy-back to strike and rub against the back of the occupant of the seat, which is very disagreeable, and in long riding becomes painful; but, if desired, the seat may be made perfectly rigid by screwing the thumb-nut *t* onto the bolt D′, and forcing the spring O against the under face of the seat-arm H, as shown in Fig. 2, when the seat S will be firmly held from oscillating, and the seat may be also secured at any desired angle by placing the block L between the rocker R and the upper face of the seat-arm H, and tightening the thumb-nut *t*, as shown in Fig. 10.

The foot-rest F is formed by bolting to the under face of each of the seat-arms H H the ends of the loop-shaped metal straps Y, as shown at 5 5 in Fig. 2. Said loop-shaped straps are crossed by the slats *h h*, which are placed a certain distance apart and bolted at their ends to the metal straps Y. (See Figs. 1 and 2.) Thus the foot-rest will rise and fall with the motion of the seat, as shown by dotted lines in Fig. 2.

It will be observed by means of the seat-arms H H, hinged at their forward ends to the under face of the thills and supporting on their rear ends the seat S, and being suspended near their longitudinal center from the shanks *b b* of the coiled springs C C, an easy swinging motion is given to said seat when occupied. The yielding and elastic nature of the springs C C conduces, in conjunction with the oscillating feature of the seat S, to effectually overcome the horse motion, and that a road-cart constructed as described maintains a uniform balance with light or heavy weights without adjusting.

The modification shown in Figs. 7, 8, and 9 consists in employing the single tie-bolt D″ in coupling the seat to the seat-arms. Said tie-bolt passes down through the rocker R, through the seat-arm H and spring O′, receiving on its lower end the thumb-nut *t*, the beveled head *u* of said bolt resting in the concaved washer *w*. (See Fig. 8.) The cut-out portions E and E′ in the rocker R and seat-arm H, respectively, allow of the lateral play of the bolt D″ as the seat oscillates. The slots *e e* in the ends of the spring O′, through which pass the screws *i i*, allow for the expansion of the spring when drawn upon by the bolt D″. This modified form of coupling will be used in the same manner as that before described and will conduce to substantially the same result.

Having thus fully set forth my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a seat for a road-cart, the combination of the seat and rockers, said rockers having the cut-out portion *n′*, the seat-arms H H, having the enlarged orifice *n*, the jointed bolt passing through the rocker and through the orifice *n* in the seat-arm, the spring O, and thumb-nut *t*, as and for the purposes specified.

2. In a road-cart, the combination of the thills, the curved cross-bars, the seat-supporting arms pivoted at their forward ends to the thills, the coiled springs C, having the end angle-arms *a a′* and the twisted shank *b*, said springs being secured by means of their arms *a a′* to the cross-bar B′ and to the thills, the clevis encircling the seat-supporting arm and pivoted to the outer end of the shank *b* of the spring, substantially as and for the purposes specified.

3. In a road-cart, the combination of the axle, thills, and cross-bars, the coiled springs having the shank *b*, the clevis V, the seat-arms hinged at their forward ends to the thills, the foot-rest attached to the seat-arms, the seat S, mounted on the rear ends of said arms, said seat having the rockers R R, the spring O, secured to the under face of the seat-arms, the jointed bolt passing through the rockers R R, the arms H H, and spring O, its lower end receiving the thumb-nut *t*, whereby said seat S is adapted to oscillate, as and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD B. SKINNER.

Witnesses:
DENNIS LYON,
BERNARD C. GEORGE.