

(No Model.)

2 Sheets—Sheet 1.

S. E. BURKE.
ROAD CART.

No. 457,600.

Patented Aug. 11, 1891.

Fig. 1.

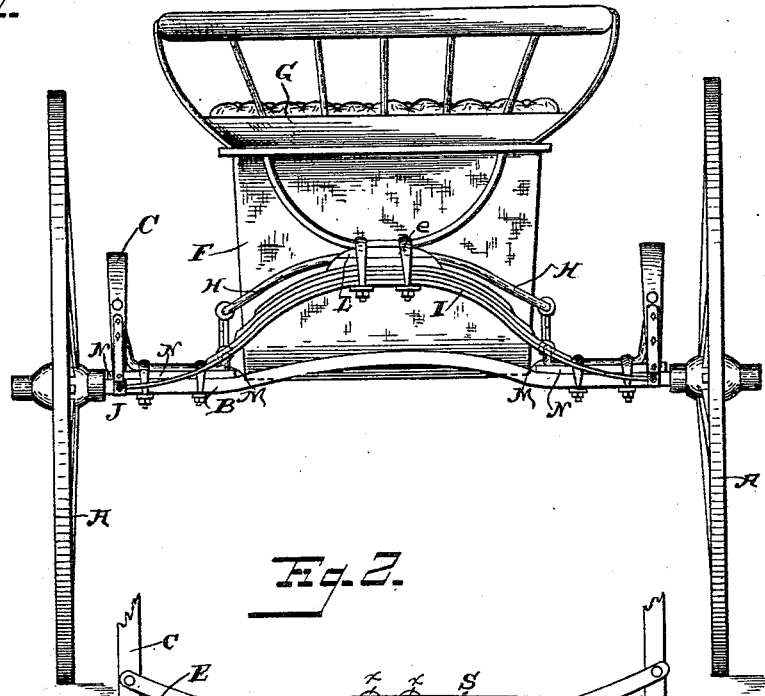
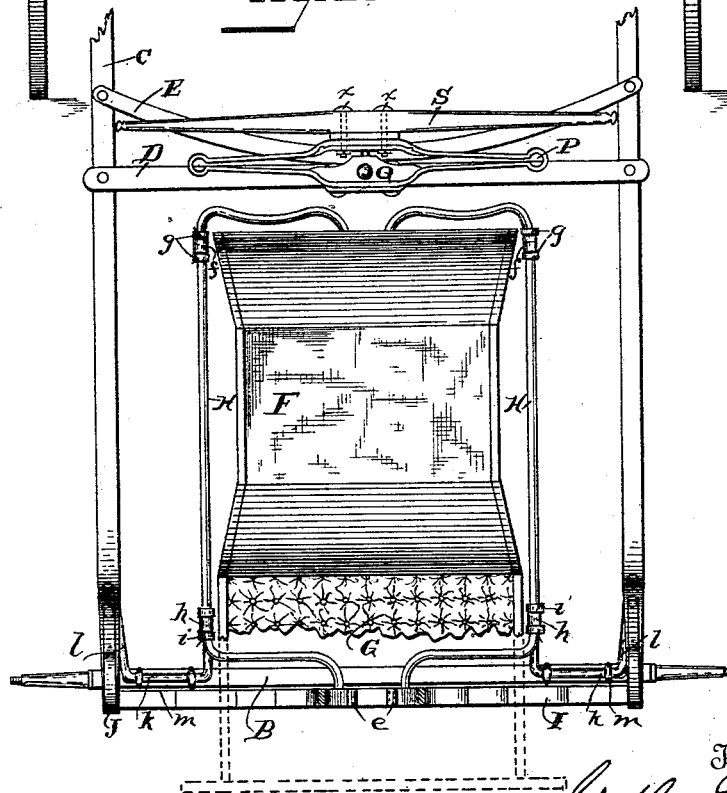


Fig. 2.



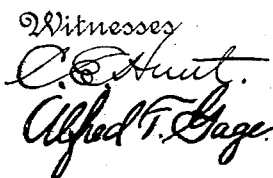
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2 Sheets—Sheet 2.

No. 457,600.

Patented Aug. 11, 1891.



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UNITED STATES PATENT OFFICE.

STEPHEN E. BURKE, OF EDON, OHIO, ASSIGNOR OF ONE-HALF TO LEWIS W. JOHNSON, OF SAME PLACE.

ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 457,600, dated August 11, 1891.

Application filed January 19, 1891. Serial No. 378,291. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN E. BURKE, a citizen of the United States, residing at Edon, in the county of Williams and State of Ohio, 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 of reference marked thereon, which form a part of this specification.

My invention relates to vehicles, more particularly to what are termed "road" or "dog" carts; and it has for its object to support the body or box of the vehicle entirely independent of the thills; also, to support it by means of equalizing and torsional-spring bars connected to supports, substantially as hereinafter set forth; also, to provide means for adjusting the body or box of the vehicle to the stature of the horse to draw it, so as thereby to keep the body or box level, or substantially so; also, to provide improved means for connecting the whiffletree to the vehicle.

It has further for its object to generally improve the construction of road or dog carts, whereby the same are rendered stronger, more durable, lighter, and neater in appearance, and the disagreeable "horse motion" is entirely overcome, the novel features for effecting which will be hereinafter particularly described and claimed, reference being had to the accompanying drawings, forming a part hereof, in which—

Figure 1 is a rear elevation of a "cart" with my invention applied thereto. Fig. 2 is a plan view of the same, with the wheels removed and a portion of the thills and the rear of the body broken away, the dotted lines indicating the outline of the broken-away portion of the body. Fig. 3 is a front view of a portion of the body, showing the manner of joining the equalizing-bars thereto. Fig. 4 is a plan view of the meeting faces of the socket-block in which the ball ends of the equalizing-bars are journaled at the front of the body or box. Fig. 5 is a perspective of the two parts of the socket-block in which the rear ball ends of

the equalizing-bars are journaled. Fig. 6 is a perspective of a portion of the axle and thill, showing also the torsional-spring bar fitting in its socket on the axle and the manner of attaching the same to the thill to adjust the body or box to the height of the horse. Fig. 7 is a perspective of the socket-block for the torsional spring, showing the same resting upon a portion of the axle. Fig. 8 is a perspective of the axle, main spring, and thill, and of the equalizing and torsional-spring bars for one side of the vehicle. Fig. 9 is a plan of a portion of the whiffletree and of the spring for connecting the same to the vehicle, the spring being in its normal or closed position. Fig. 10 is a similar view of the same parts, but the spring being in its distended position, as when the draft is on. Fig. 11 is a perspective view of the bolt that passes through the whiffletree and connects with the spring.

In the accompanying drawings, the letter A designates the wheels; B, the axle; C, the thills; D and E, the cross-bar connecting the thills; F, the box or body, and G the seat, all of which may be of any well-known approved form. Under the present invention the box or body F is suspended or supported from the rear of the vehicle without any connection to the thills or part connecting therewith at or opposite to the forward portion of the box or body. This entirely frees the box or body from the horse motion heretofore prevailing to a greater or less degree in vehicles of this class. The body or box may be supported or suspended in various ways to arrive at the advantages gained by my present invention; but the preferred and what I consider the best means for effecting the object is that which I have illustrated and shall now proceed to describe. It will be observed that the equalizing-bars H are connected at their rear ends to the main spring I, which at its ends is suspended from hangers J, of any approved form, extending from the rear of the thills and at their forward ends to the forward portion of the box or body. It is preferred to form the forward ends of these equalizing-bars with balls *a*, fitted in sockets *b*, formed in the two-part block K, which is secured by

bolts or otherwise to the forward part of the box or body under the sill, as illustrated, and to likewise form the rear ends of said bars with balls fitting in sockets *d*, formed in the two-part block L, secured to the main spring I by clips *e* or otherwise. To give firmness and strength to this mode of support and to afford a torsional-spring elasticity to the body, the equalizing-bars H are connected to torsional-spring bars M in any suitable manner, preferably by clips *f* at the forward ends of the torsional-spring bars encircling the equalizing-bars between collars *g*, formed thereon, and by clips *h*, encircling the equalizing-bars and torsional-spring bars toward their rear between the collars *i* and *j*, formed, respectively, thereon, and connecting the two bars together at such points, said clips having a loose connection with the bars where they encircle the same. I do not, however, restrict myself to such means of connecting the bars. The torsional-spring bars M at their rear ends are bent downwardly, and then, as shown at *k*, horizontally, and then, as shown at *l*, upwardly, and then connected to the thills—say to the lower face of the thills. The horizontal portion of the torsional-spring bars are secured by clips *m* to the axle, preferably in a manner to permit the horizontal portion to turn, and in order to afford a durable bearing for the horizontal portion of the bar a metallic block or bearing N is placed between the bar and axle B and secured by the same clips that secure the bar to the axle. This bearing-block is formed with a cavity *o* for the horizontal portion of the torsional-spring bar to lie in, and also, preferably, with a socket *p* for the butt-end of the thill to rest in.

While I prefer such details of parts specified, I do not restrict myself thereto. By the general construction described the box or body is suspended freely between the thills without any connection between its forward part and adjacent part of the vehicle that would transmit the horse motion to it, and consequently the box or body is relieved of all the horse motion which is so disagreeable and objectionable in vehicles of this class as heretofore constructed.

It is also the experience in vehicles of this sort that while the box or body may set substantially level with a horse of a given height, it will, when a horse of another height is hitched to it, be more or less removed from a level or horizontalism, and then the occupant of the cart experiences the discomfort consequent thereupon. In order to overcome that objectionable feature to the cart, I attach the rear end of the torsional-spring bar M to the thill by suitable means that will permit it to be drawn closer to or removed farther from the thill, which adjustment will raise or lower the torsional-spring bar, and consequently the box or body connected thereto through the equalizing-bars, and thus the box or body will be adjusted to the height of the horse hitched to the vehicle and it placed in a sub-

stantially level or horizontal position and the discomfort referred to overcome. Suitable means for effecting the adjustment are illustrated, and consists of a bolt O, passed through the thill and through the end of the torsional-spring bar, with nuts *q* fitted to the threaded portion of the bolt and on opposite sides of the torsional-spring bar, as illustrated, so as to hold the bar to its adjustment. A nut *r* on the bolt close to the under face of the thill will hold the bolt tightly to its place. While the particular means described for adjusting the torsional-spring bars will be effective for the purpose, I do not restrict myself to such means.

In my patent, No. 422,291, of February 25, 1890, for road-carts, I have described and claimed a loop-spring for connecting the whiffletree to a vehicle, and such in practice has been found to be efficient; but I have made certain additions thereto, which are found to greatly improve the same in some particulars, and such improvements will now be described, and are illustrated in detail in Figs. 9 and 10 of the accompanying drawings and shown applied in Fig. 2 of the drawings to the particular form of vehicle there illustrated. The spring P is in general construction similar to that shown in the patent referred to. At its central portion there is placed against its inner face opposite to the portion to which the whiffletree itself is applied a block Q, of metal or other suitable material, secured to the spring by bolts *s*, which also pass through a steel plate *t* on the opposite face of the spring, thus greatly strengthening the plate at that point. This block Q is formed with a hole *u* for the bolt which swivels the whiffletree to the vehicle and in its extension *v* is a threaded aperture to receive the threaded end of a bolt R, which serves to brace the parts and at the same time as a stop which limits the distention of the spring. This bolt is formed with a flattened head *w*, which plays in a recess or socket formed in the whiffletree S, and the shank of the bolt passes through the front part of the spring and screws into the threaded opening in the block Q, as stated. By screwing or unscrewing the bolt its length outside of the block Q is regulated and the extent that the spring shall be distended, fixed, and controlled, as it is apparent that the front part of the spring cannot be pulled farther than to the head of the bolt, which limits its play. The whiffletree S is secured to the front portion of the spring by bolts *x*, which pass through the whiffletree and the spring, as well as through a leather washer *z*, placed between the tree and spring and through the plate T, which is placed against the inside face of the spring and is formed with ears *y*, bearing against the edges of the spring. It is obvious that the bolt R, besides serving as a limiting-stop for the spring, also takes lateral strain from off the spring and greatly strengthens the parts. The head of the bolt R is flattened, so that

the recess in the whiffletree need not be made so large as to detract from the strength of the tree.

The advantages of the several features of the invention will from the foregoing description be apparent to those skilled in the art and need not be again set forth in detail or enlarged upon. It is also apparent from the description that the details of the several parts can be varied without departing from the spirit of my invention.

Having described my invention and set forth its merits, what I claim is—

1. In a vehicle, the combination, with the box or body, of the equalizing-bars having a ball-and-socket connection to the forward portion of the box or body and a ball-and-socket connection to a support at the rear of the vehicle, substantially as and for the purpose set forth.

2. In a vehicle, the combination, with the box or body, of equalizing-bars connected with the box or body and with a support at the rear of the vehicle, and torsional-spring bars connected with a support and with said equalizing-bars, substantially as and for the purposes set forth.

3. In a vehicle, the combination, with the box or body, of equalizing-bars connected with the box or body and with a support at the rear of the vehicle, and torsional-spring bars connected to said equalizing-bars and having a movable portion at an angle to their length, substantially as and for the purposes set forth.

4. In a vehicle, the combination, with the box or body, of equalizing-bars connected thereto, and torsional-spring bars connected to said equalizing-bars and to a support, substantially as and for the purposes set forth.

5. In a vehicle, the combination, with the box or body, of equalizing-bars connected thereto, and torsional-spring bars connected thereto and with the thills of the vehicle, substantially as and for the purposes set forth.

6. In a vehicle, the combination, with the box or body, of torsional-spring bars having a connection with the thills, and means connecting said bars with the box or body, substantially as and for the purposes set forth.

7. In a vehicle, the combination, with the box or body, of torsional-spring bars, means connecting the same with the box or body, and means connecting the same adjustably with the thills, whereby the body may be maintained in a substantially level position, substantially as described.

8. In a vehicle, the combination, with the box or body, of torsional-spring bars, means connecting said bars with the box or body, and means adjustably connecting the bars with another part of the vehicle to maintain the box or body in a substantially level position, substantially as described.

9. In a vehicle, the combination, with the box or body, of torsional-spring bars, means connecting said bars with the box or body, and the bolts passed through the thills and said bars and provided with means for adjusting the connection between the thills and bars, substantially as and for the purposes set forth.

10. In a vehicle, the combination, with the box or body, of the torsional-spring bars having a horizontal portion resting over the axle, bearing-blocks formed with cavities to receive the horizontal portion of said bars, and means securing the boxes and bars to the axle, substantially as described.

11. In a vehicle, the combination, with the thills and the torsional springs, of the bearing-block formed with cavities receiving the torsional-springs and the ends of the thills and secured to the axle, substantially as and for the purposes set forth.

12. In a vehicle, the combination, with the box or body and the main spring having a suitable support, of the equalizing-bars connected at one end to the box or body and at the other end supported from said spring, and the torsional-spring bars connected to said equalizing-bars and adjustably to the thills and having a bearing between said thills and equalizing-bars, substantially as and for the purposes set forth.

13. The combination, with a whiffletree, of the loop-spring to be attached to the vehicle and having the whiffletree connected to the forward portion thereof, and the bolt extending from the rear portion of the loop-spring and having a loose connection with the portion of the spring to which the whiffletree is attached to permit that portion of the spring to have movement thereon when it is pulled from its normal position by a draft on the whiffletree and at the same time limit the movement of that portion of the spring from its normal position, substantially as described.

14. The combination, with the whiffletree, of the loop-spring, the block attached to the rear portion of the spring, and the bolt having an adjustable connection with said block and a loose connection with the front portion of the spring, whereby the front portion of the spring is allowed movement on said bolt and the extent of the movement controlled by the adjustment of the bolt, substantially as and for the purposes set forth.

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

STEPHEN E. BURKE.

Witnesses:

C. F. HOUK,
J. W. CUMMINGS.