(No Model.)

L. BURG.

ROAD CART.

No. 376,470. Patented Jan. 17, 1888.

Fig. 1.

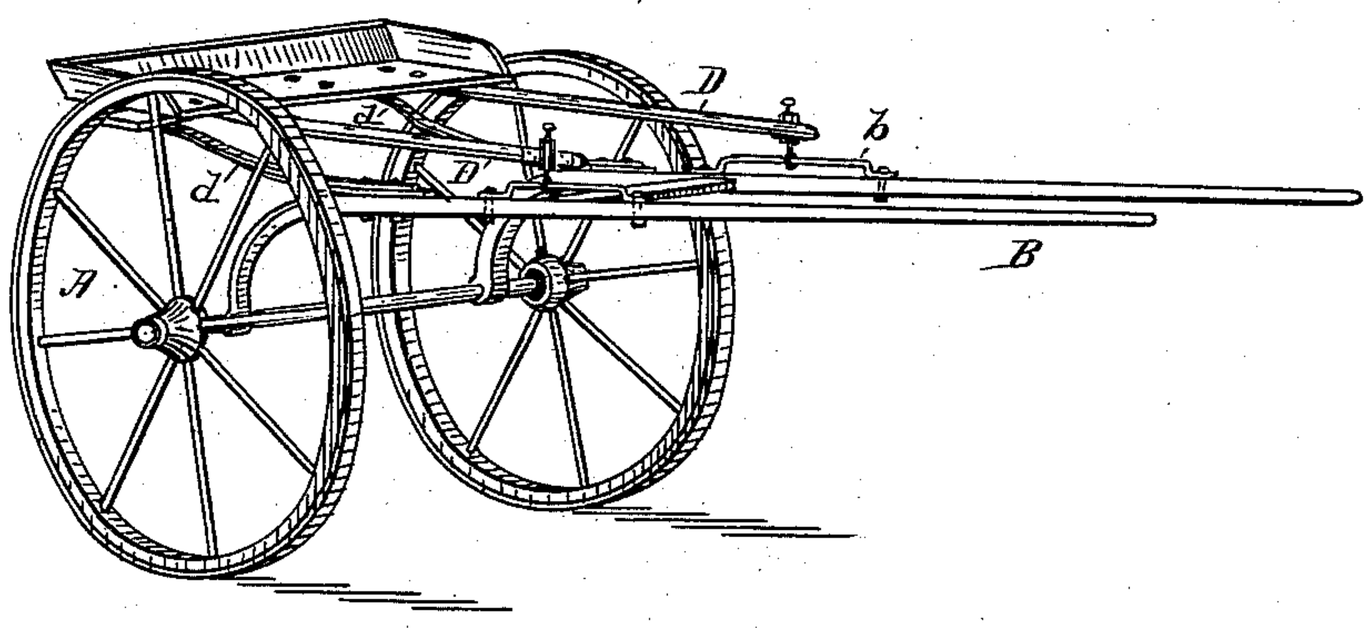


Fig. 2.

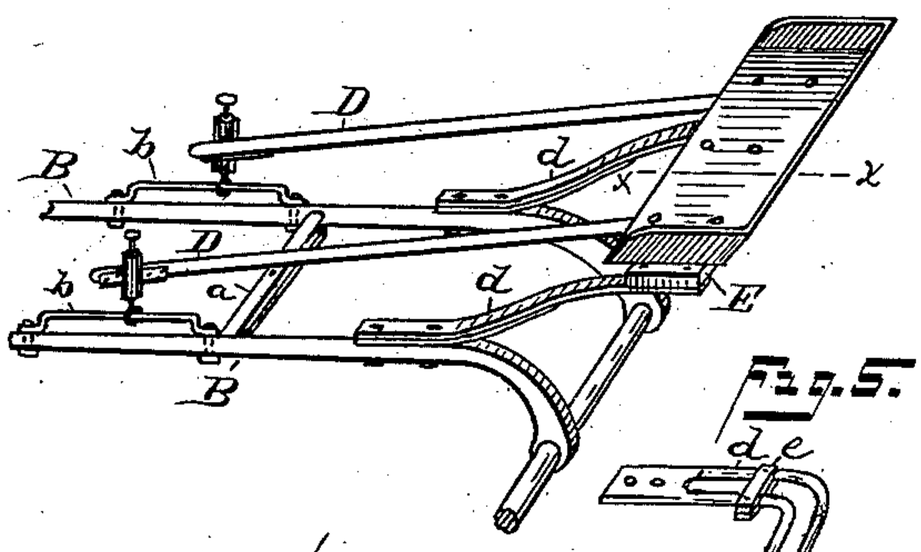


Fig. 3.

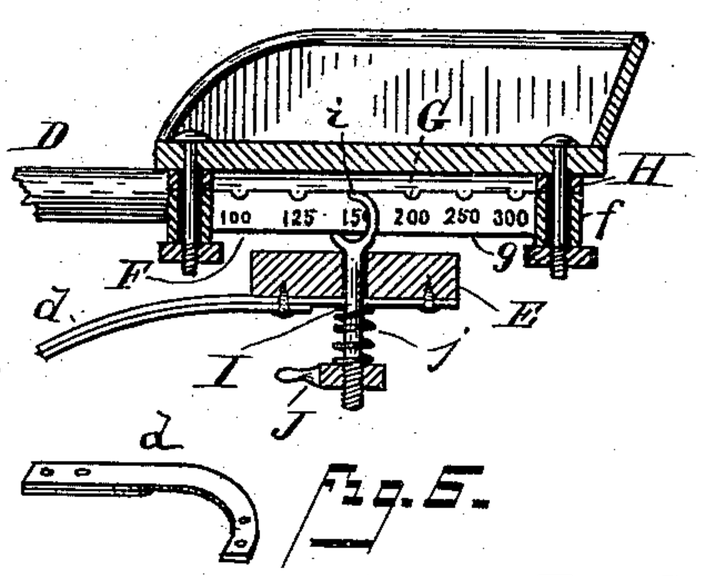
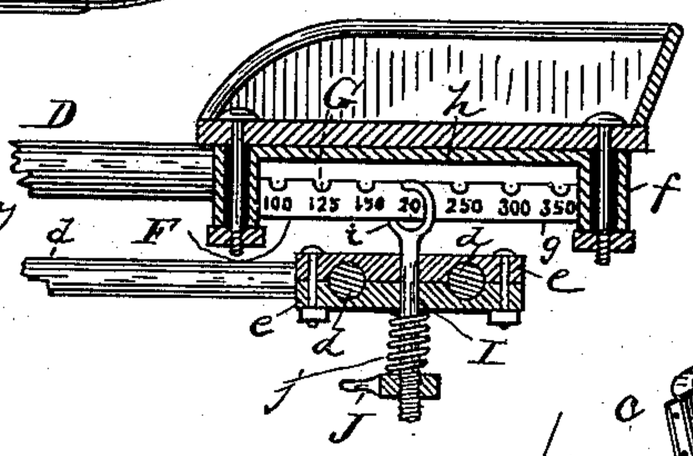


Fig. 5.

Fig. 6.

Fig. 4

Fig. 7.



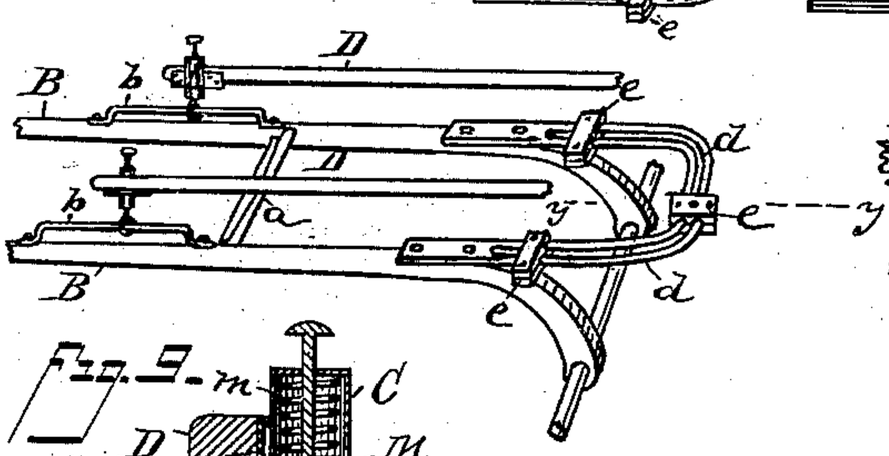


Fig. 9.

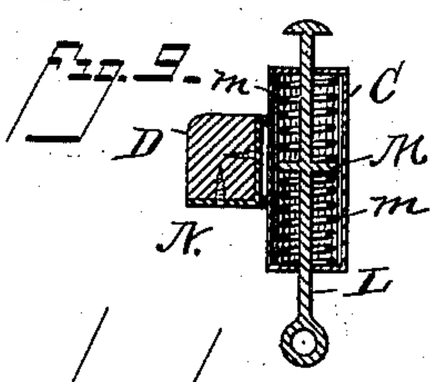


Fig. 8.

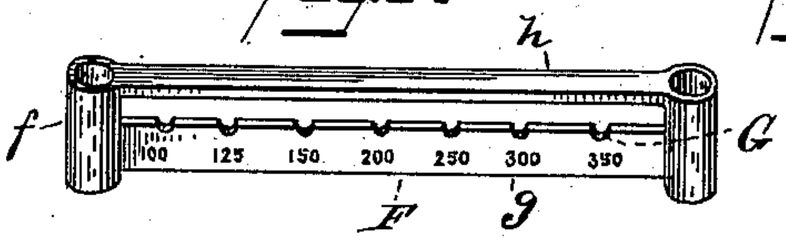
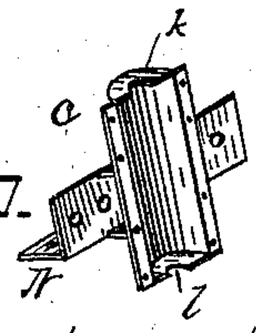


Fig. 10.



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UNITED STATES PATENT OFFICE.

LEWIS BURG, OF FARMINGTON, IOWA.

ROAD-CART.

SPECIFICATION forming part of Letters Patent No. 376,470, dated January 17, 1888.

Application filed October 13, 1887. Serial No. 252,211. (No model.)

To all whom it may concern:

Be it known that I, LEWIS BURG, a citizen of the United States, residing at Farmington, in the county of Van Buren and State of Iowa, have invented certain new and useful Improvements in Village-Carts; and I 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, which form part of this specification.

My invention relates to that class of devices known as a "two-wheeled vehicle," and more commonly termed a "village cart" or "sulky," and has for its principal object to provide a convenient and easy adjustment of the seat proportionate to the weight of the person or persons to be carried or to the size of the draft-animal, so that at all times there shall be an equal degree of pressure or weight upon the thills to produce a balance with the seat, to prevent the thills from being too heavily pressed downward or tilted upward, and also to provide means for relieving the seat of the cart of the motion of the horse; and it consists in the construction hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a perspective view of my improved cart ready for use. Fig. 2 is a perspective view of the rear of the cart with the wheels off, showing the springs. Fig. 3 is a cross-sectional view, on the line *x x* of Fig. 2, through the seat, showing the means of adjustment. Figs. 4, 5, and 6 are perspective views showing the modified form of the spring. Fig. 7 is a cross-sectional view on the line *y y* of Fig. 4, with the seat and adjustment bar attached. Fig. 8 is an enlarged view of the adjusting-bar. Fig. 9 is an enlarged sectional view of the double spring clip of the seat-bar. Fig. 10 is a plan view showing a half-section of the cylinder inclosing the bolt and springs of the clip.

Like letters of reference refer to corresponding parts in each figure of the drawings.

A represents a village cart or sulky having a running-gear of usual construction.

B refers to the thills, which are bent downward and backward at their rear ends, and are secured to the axle in the usual way, having a cross-bar, *a*, in front with a singletree attached thereto. About midway of the thills are long adjusting loop-irons *b*, fastened to the thills by bolts secured by nuts, or by other suitable means.

Near the ends of the seat-bars D there are secured spring-clips consisting of vertical cylinders C, containing double-action springs for the purpose of relieving the seat-bars from the motion of the horse or other draft-animal. These cylinders C are preferably of malleable iron, though they may be made of other kinds, as double-thick sheet-iron, and are cast in half-sections *c*, each section having perforated flanges K projecting from its sides, and semicircular heads *k* in its ends, provided with half-openings *l*. When the sections *c* of the cylinder are brought together, the holes in the flanges register with each other, and the two sections are rigidly united by screws, bolts, or rivets, as desired, leaving a circular central opening through the center of the united half-heads *k* for the reception of an eyebolt. Within the cylinder there is placed a vertical eye-bolt, L, extending out through the openings and above and below the heads, and provided at about midway of its length with a diaphragm, M, integral therewith, that is slightly smaller in diameter than the interior opening of the cylinder.

Around the bolt L, above and below the diaphragm, there are coiled springs *m*, slightly less in diameter than the interior cylinder. One of these springs rests against the lower head and diaphragm and the other against the upper head and diaphragm, so that when there is a downward pressure upon the bolt the lower spring will tend to throw it upward, and when there is an upward pressure upon the rod the upper spring will tend to throw it downward, the springs thereby equalizing each other and absorbing any jolting or harsh motion imparted by the horse that would otherwise add greatly to the discomfort of the rider. I do not, however, confine myself to coil-springs within the cylinder for this purpose, as rubber or other forms of springs adapted for the purpose may be used.

The bolt L is extended at some distance above the upper head, *k*, of the cylinder, and is provided at its end with a flanged top larger than

the opening of the head, and also at some distance below the lower head, terminating in an eye adapted to fit over and slide upon the loop-irons *b*, fastened to the thills. One of the half sections *c* of the cylinder has a lateral angle-iron, N, extending across its outer side, which is made rigid or integral therewith. Both plates of the angle-iron are perforated for the reception of bolts or screws for securing it to the seat-bar D and holding the cylinder in a vertical position on the side thereof by placing one of the plates under and the other upon the side of the bar. The cylinders may be placed on the bars from the inner or outer sides, as shown in Figs. 2 and 4 of the drawings; but they are preferably placed on the inner sides, so as to throw the ends of the seat-bars outward from the horse.

The seat-bars D extend back over the thills and in the rear of the axle, and are provided with a seat of usual construction, extending across and secured to their rear ends. At a suitable distance in front of the bend of the thills, at their rear ends, there are springs *d*, secured to their upper sides by means of bolts and nuts or other appropriate means. The springs rest upon the thills for a short space in the rear of their point of security, and are then gradually curved upward and backward under the seat and their rear ends locked together by a cross-bar, E, extending across their tops; or, if desired, the rear ends of the springs may be curved inward toward each other, as shown in Fig. 6, to enable the cross-bar to rest upon a greater portion of the springs, thereby supporting them and affording additional strength to their rear ends. These springs consist of leaf-steel, and may be composed of one or more leaves, as desired, depending upon the size and weight of cart constructed. I do not, however, confine myself to this particular construction of springs, as they may be made semicircular and attached to and extended back from the thills in the same manner as before described, being continuous around under the seat from one thill to the other, and being composed of round rod-steel, as shown in Figs. 4, 5, and 7; or, if preferred, the round rod-steel may be employed in the construction of spring shown in Fig. 6, where the semicircle is not made complete. In this instance the rod of which the spring is made is turned back upon itself at the rear or curved end of the spring and the two ends united in front, where the springs are secured to the thills. When the springs are made in this form of round bar-steel, a single bar or spring may serve the purpose of small light carts intended only for carrying a limited weight person; but two or more springs arranged by the side of each other from front to back are preferable in the usual size cart.

When two or more round springs are used, they are united at different points by a yoke-clamp, *e*, consisting of an upper and lower section, each recessed to one-half the diameter of the springs, the recesses of the one section registering with the other, so that when placed together, from the upper and lower sides of the springs, and united at their ends by bolts and nuts, the parts of the springs thus held will be entirely enveloped and rigidly secured within the clamps, and insure a uniformity of action of all the springs.

Across the center of the under side of the seat, extending from front to rear, there is an adjusting-bar, F, composed of wrought or malleable metal, having vertical sockets *f* on each end, through which bolts are passed from the front and rear edges of the seat and secured by nuts underneath. This bar is provided on its upper side with a series of cross-notches, G, extending from front to rear, each of which is numbered at *g* on the side of the bar, increasing in numbers from front to back, for the purpose hereinafter set forth.

As it is desirable to leave a small space between the upper edge of the bar F and the under side of the seat, the bar may be cast so as to come flush with the upper ends of the sockets *f*, and thin washers H used between the sockets and the seat on the bolts, as shown in Fig. 3; or it may be as illustrated in Figs. 7 and 8, with the sockets extended upward above the bar F and united at their tops by a flat strengthening-bar, *h*, that comes flush with their upper ends and supports the under side of the seat, leaving the desired space beneath the bar *h* and above the adjusting-bar.

The bar F is provided with a bolt, I, having a loop or hook, *i*, on its upper end, through which the bar passes and is adapted to slide for adjustment. The shank of this bolt extends downward through the cross-bar E, which unites the rear ends of the leaf-springs under the seat, or through a hole in the yoke-clamp *e*, that unites the rear portions of the springs made of round rod-steel, and is secured on the under side of the cross-bar or yoke-clamp by means of a thumb-nut, J, or other convenient holding device on the lower end of the shank of the bolt. Between the nut J and cross bar or clamp on the shank of the bolt there is a coil-spring, *j*, which slightly yields in a motion throwing the seat upward, and at the same time produces a gentle traction upon the bolt to hold the eye in the notch of the adjusting-bar F. This coil-spring also co-operates with the coil-springs *m* in the cylinders C, around the eyebolts L on the loop-irons of the thills, to relieve the seat of the motion of the horse as it is imparted to the springs through the thills.

As the seat is attached to the adjusting-bar at its central point, it is prevented from tilting down at either end by the seat-bars D under the ends of the seat, which are of a sufficient thickness to strike down upon the spring-bar or the spring before the under side of the adjusting-bar reaches them. By this construction it will be understood that the seat of the cart can be readily adjusted back and forth and fixed at any desired point proportionate to the size of the draft-animal or to the weight of any

person, or to the combined weight of any two persons, to the extent the cart is capable of carrying.

In operation the thumb-nut J is loosened, allowing the eyebolt to slide upward, when the eye or hook *i* is readily slipped from one notch to the other on the adjusting-bar F. The seat is then slid backward or forward, as desired, on the loop-irons of the thills, passing the adjusting-bar F through the eye of the bolt I until the eye is over the notch corresponding with the weight of the person or combined weight of the two persons to be carried, as indicated by figures at *g*, on the side of the bar below the notches. The bolt I is then drawn down by means of the thumb-nut, seating the eye in the notch of the bar, and holding it securely in place until released by a reverse operation.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a two-wheeled vehicle, the combination, with the thills having adjusting loop-irons secured thereto, of eyebolts provided with springs sliding on the loop-irons and fastened to seat-bars above, as set forth.

2. The combination, with thills having loop-irons, of eyebolts adjustable thereon, having diaphragms on their shanks, and springs above and below the diaphragms, said bolts being secured to seat-bars, as set forth.

3. The combination, with loop-irons, of eyebolts adjustable thereon, having diaphragms on their shanks, and springs above and below the diaphragms inclosed within vertical cylinders secured to seat-bars, as set forth.

4. A spring device for seat-bars of vehicles, consisting of a cylinder having central openings in its heads, provided with an eyebolt extending through the cylinder, and having a diaphragm secured thereto, with springs above and below the same within the cylinder, and a perforated angle-iron extending across and rigidly secured to one side of the cylinder, as set forth.

5. The combination, with the thills having springs secured to their rear portion and extending behind the axle, of a seat over the rear portion of the springs, provided with seat-bars extending in front of the springs and attached to adjusting loop-irons on the thills, adapting the seat to be moved back and forth over the rear portion of the springs, as set forth.

6. The combination, with a seat in the rear of the axle, having seat-bars movable back and forth on the thills, of an adjusting-bar secured to the under side of the seat and held to the rear portion of the springs by an eyebolt over the bar, as set forth.

7. The combination, with a vehicle-seat, of an adjusting-bar on the under side thereof, having notches on its upper side, and vertical sockets at its ends for securing it to the seat, said notches being provided with indicating-marks on the bar, as set forth.

8. The combination, with an adjusting-bar for a vehicle-seat, having notches on its upper side and sockets on its ends, of an eyebolt or hook over the bar fitting into the notches, the shank of the bolt passing through the springs or spring-bar connecting them, and having a coil-spring thereon and secured under the spring, as set forth.

9. The combination, with a seat having an adjusting-bar provided with notches, and an eyebolt on said bar, of a round bar spring secured to the thills, said bars being placed by the side of each other and secured together by clamps, the shank of said bolt being fastened in the rear clamp of said spring, as set forth.

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

LEWIS BURG.

Witnesses:
W. D. McCORMICK,
S. R. FRENCH.