No. 760,698. PATENTED MAY 24, 1904.

E. McPHEE.

TWO-WHEELED VEHICLE.

APPLICATION FILED SEPT. 12, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

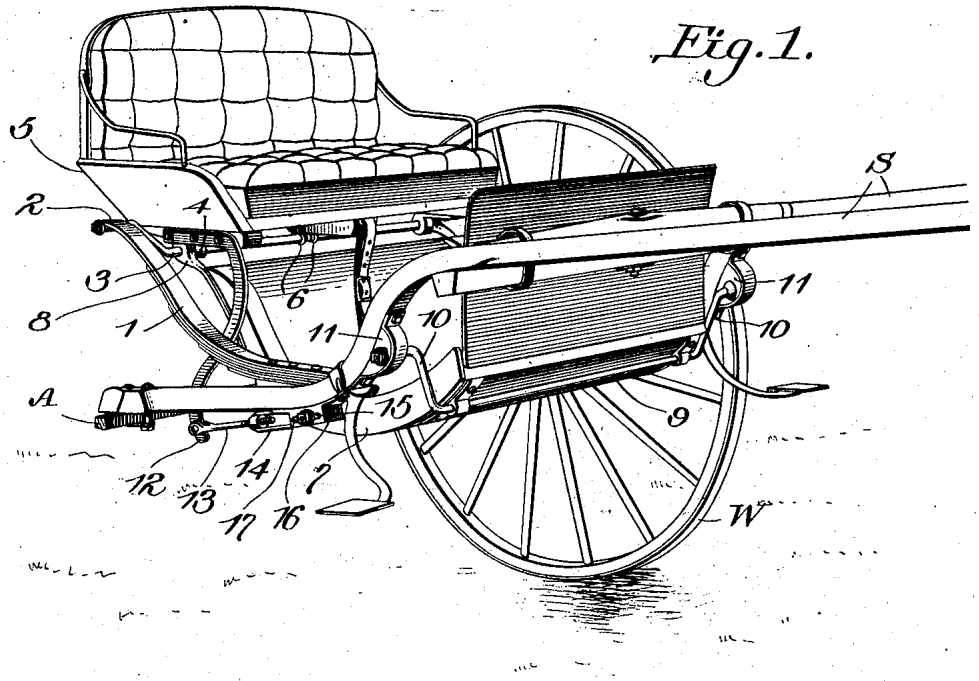
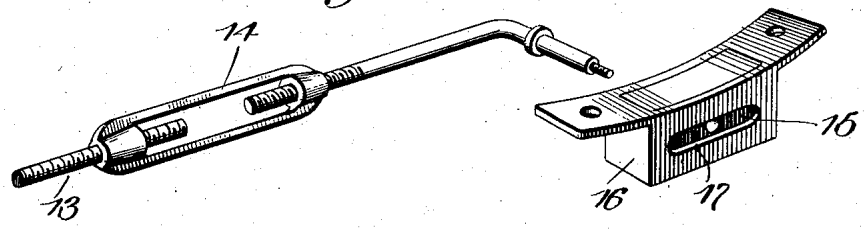


Fig. 4.



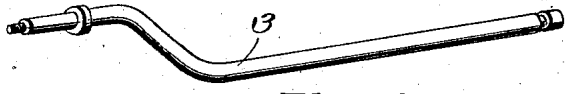


Fig. 5.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 2.

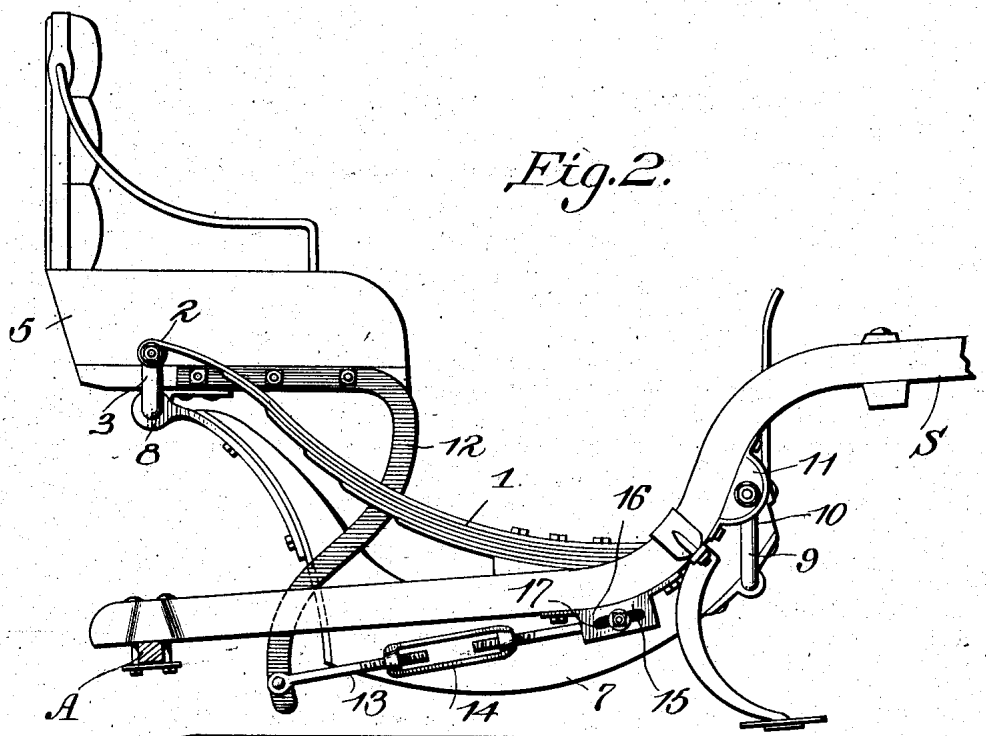
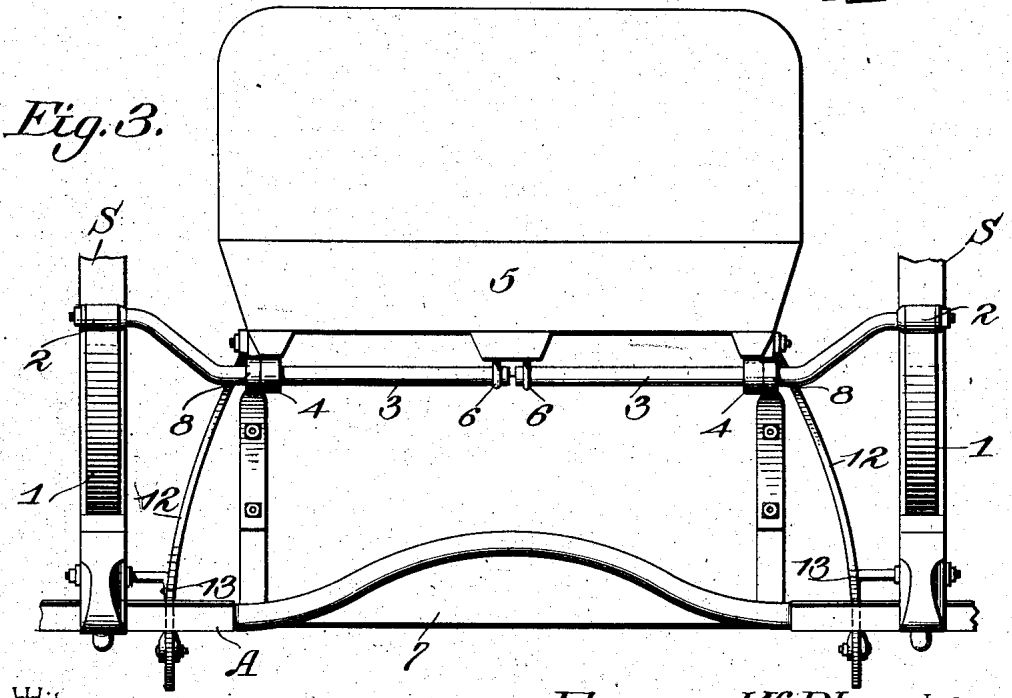


Fig. 3.



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UNITED STATES PATENT OFFICE.

EUGENE McPHEE, OF LEAD, SOUTH DAKOTA.

TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 760,698, dated May 24, 1904.

Application filed September 12, 1903. Serial No. 172,996. (No model.)

To all whom it may concern:

Be it known that I, EUGENE McPHEE, a citizen of the United States, residing at Lead, in the county of Lawrence and State of South Dakota, have invented a new and useful Two-Wheel Vehicle, of which the following is a specification.

This invention relates to two-wheel vehicles of the type generally known as "road-carts."

The object of the invention is to provide a two-wheel vehicle of such construction that persons riding therein will not be inconvenienced by the rocking of the body of the vehicle occasioned by the up-and-down movement of the horse.

It is a common defect in road-carts that the seat upon which persons riding therein sit is rocked up and down or forward and back with the movements of the horse, and this horse motion is a source of so much discomfort that the use of road-carts is almost limited to regions in which vehicles with four wheels could not be successfully used.

In order to do away with the effect of the horse motion upon the seat of the road-cart, I make use of the novel construction hereinafter described, shown in the accompanying drawings, and having the novel features pointed out in the appended claims.

In the drawings, Figure 1 is a view in perspective of the vehicle with one wheel removed. Fig. 2 is a view in side elevation of the vehicle with both wheels and the forward portions of the shafts removed. Fig. 3 is a view in rear elevation of the parts shown in Fig. 2. Fig. 4 is a detail view in perspective of one of the adjusting-rods and the cushion in which one end of the rod is secured. Fig. 5 is a detail view in perspective of one of the equalizing-rods.

Referring to the drawings, in which corresponding parts are designated by similar characters of reference throughout, A designates the axle, W the wheels, and S S the shafts, of a road-cart. The shafts are shown as rigidly fastened to the axle and as extending forward for a short distance in a nearly-horizontal plane before arching to the proper height for the support of the whiffletree. On this lower portion of the shafts just back of the arch therein are bolted springs 1, preferably of the leaf type, and terminating at their free rear ends in loops 2, in which are journaled rods 3, which will be hereinafter referred to as "equalizing-rods." Each of the equalizing-rods is bent near the extremity, which is journaled in one of the loops 2, and extends inward at a lower plane than its terminal portion. The two equalizing-rods extend through eyes 4, rigidly secured to the under side of the seat 5 of the vehicle, which is hung on the two equalizing-rods. The inner portions of the equalizing-rods are alined, as shown, and their inner ends, which are nearly in contact, are supported in eyes 6 on the under side of the seat near the middle.

The body 7 of the vehicle may be of any preferred form, and is provided at the top of the back portion with eyes 8, arranged just external to the eyes 4 on the equalizing-rods. The forward portion of the body is supported upon a hanger 9 in the form of a rod having cranked ends 10, which are journaled in bearing-blocks 11, bolted to the shafts on the under side of the arching portion.

To hold the seat in proper position upon the equalizing-rods, arms 12 are rigidly attached to the seat on each side near the forward margin and are extended downward slightly below the level of the axle, where they are pivotally connected with adjusting-rods 13, each of which is formed in two sections connected by a turnbuckle 14. The adjusting-rods 13 extend forward and terminate in laterally-disposed end portions, each of which extends through a block 15, of rubber, secured in a box 16, mounted on the under side of one of the shafts, and slotted at 17 to give play to the end of the adjusting-rod located therein.

With a road-cart constructed in the manner described the up-and-down movement imparted to the shaft by the gait of the horse is not communicated to the seat of the vehicle, which, owing to its pivotal support on the cranked equalizing-rod, is adapted to remain stationary while the equalizing-rods turn in the eyes under the seat, through which they pass.

The freedom of the seat from horse motion may be briefly explained as follows: Each upward movement of the shafts produces a slight

rearward movement of the free ends of the spring in arcs of which the axle of the vehicle is the center. As this rearward movement of the spring ends is contrary in direction to the general travel of the vehicle, the momentum of the seat and the persons sitting thereon will tend to carry the seat forward at the time of the rearward movement of the spring ends, and the forward movement of the seat will swing the equalizing-rods upon their cranked terminals as centers and will carry the seat forward and upward a sufficient distance to counteract the effects of the rearward movement of the spring ends.

The tendency of the seat to tilt when the shafts are raised is overcome by the action of the arms 12 and the adjusting-rods 13. As the seat swings forward slightly upon the equalizing-rods it carries with it the upper ends of the arms 12, which are rigidly connected with the seat, as above stated. The lower ends of the rods 12, however, are fastened to the adjusting-rods 13, and hence cannot travel forward with the seat. In consequence of this fact the arms 12 turn with their lower ends as pivotal points and draw the front edge of the seat slightly downward to counteract the tilting effect occasioned by the rocking movement of the shafts.

As the body of the vehicle is suspended on the equalizing-rods and the hanger 9, it is free to move forward independently of the shaft, and hence does not interfere with the automatic movements of the seat on the equalizing-rods to counteract the effect of the movement of the shafts.

While leaf-springs have been shown, and they are preferred, as means for supporting the equalizing-rods, other forms of spring may be used instead without departing from the spirit of the invention. The equalizing-rods are shown in preferred form; but these may also be varied without departing from the invention.

The arms 12 are shown as curved merely to lend beauty to the design, and straight arms may be used with equally as satisfactory results.

The adjusting-rods 13, with the turnbuckles 14, connecting their sections, are employed in order to adjust the position of the seat to correspond to the height at which the shafts must be supported for the best draft effects, and the rubber blocks 15 are provided to prevent any rattling of the adjusting-rods when the vehicle is in use.

The elimination of horse motion from the seat might be accomplished by the use of a single hanger in lieu of the equalizing-rods 3; but by using two rods the seat adjusts itself automatically to position when two persons of unequal weight are in the vehicle and one side of the seat is depressed more than the other. If a single hanger were employed instead of the rods 3, the action of the device would be satisfactory when the seat was equally depressed on both sides; but binding would result when the two sides of the seat were unequally depressed.

The invention has been shown and described as embodied in a one-horse vehicle because it is uncommon to build road-carts for use with two horses abreast; but it will be obvious that the invention may be applied to a road-cart provided with a tongue instead of shafts.

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

1. In a two-wheel vehicle, a pair of springs having loops held normally above the axle of the vehicle, a hanger journaled in said loops, a seat pivotally mounted on said hanger, and means for tilting the seat slightly forward when the ends of the hanger are moved rearward.

2. In a two-wheel vehicle, a spring-supported hanger having its ends rotatably mounted, a seat pivotally mounted on said hanger, rigid arms depending from said seat near the forward edge, and rods pivoted at their rear ends to the lower ends of said arms and pivoted at their forward ends to stationary parts of the vehicle.

3. In a two-wheel vehicle a pivotally-mounted hanger, a seat pivotally supported on said hanger, arms rigidly connected with said seat in front of said hanger and extending downward, extensible rods pivotally connected at their rear ends to said arms and pivotally connected at their forward ends to the shafts of the vehicle.

4. In a two-wheel vehicle a pivotally-mounted hanger, a seat pivotally supported on said hanger, arms rigidly connected with said seat in front of the hanger and extending downward, adjusting-rods, each comprising a turnbuckle, pivotally connected at one end with said arms and pivotally connected at the other end with the shafts of the vehicle.

5. In a two-wheel vehicle, a pivotally-mounted hanger, a seat pivotally supported on said hanger, arms rigidly connected with said seat in front of the hanger and extending downward, rods pivotally connected at one end with said arms, and rubber cushions mounted on the shaft of the vehicle within which the other ends of said rods are secured.

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

EUGENE McPHEE.

Witnesses:
H. P. COOLIDGE,
JOHN GELROY.