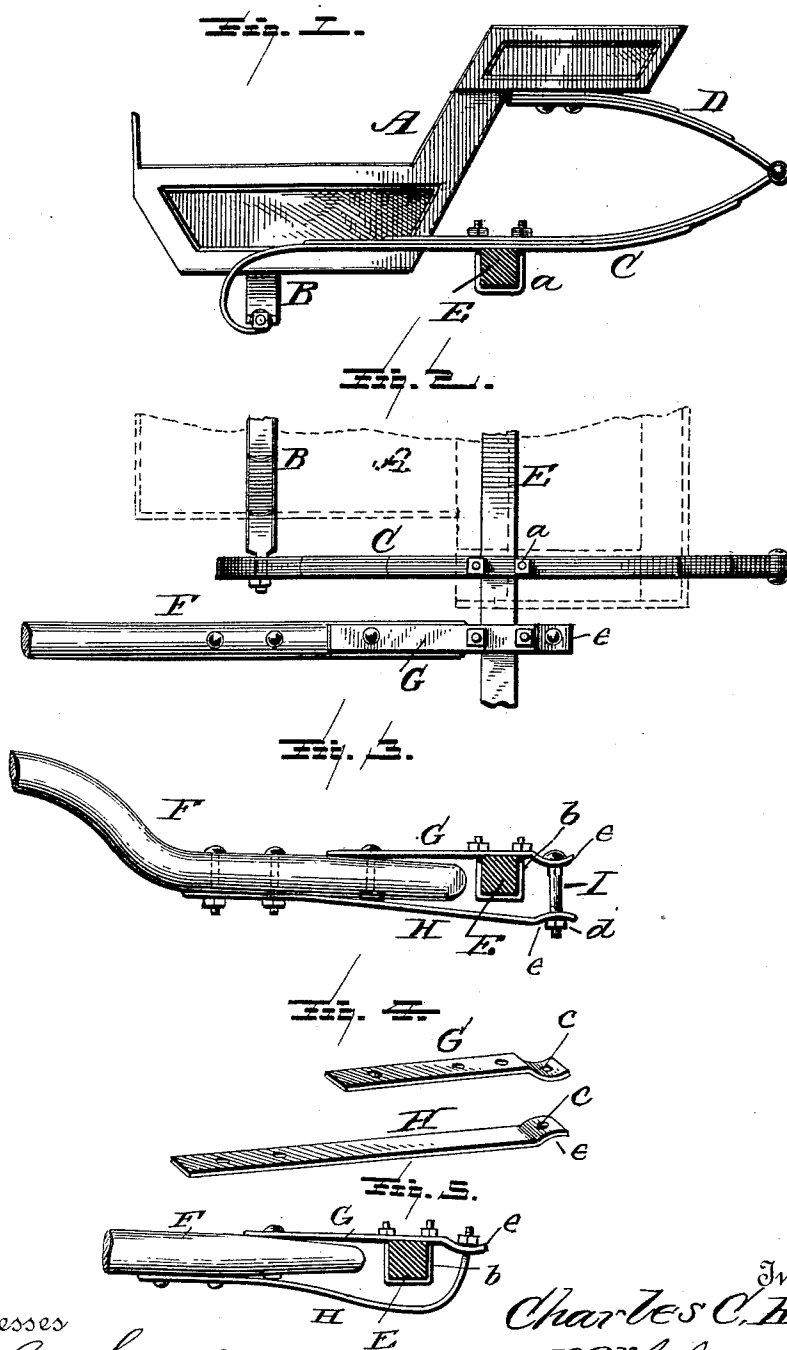


(No Model.)

C. C. HAYES.
TWO WHEELED VEHICLE.

No. 462,254.

Patented Nov. 3, 1891.



Witnesses

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UNITED STATES PATENT OFFICE.

CHARLES C. HAYES, OF PENN YAN, NEW YORK.

TWO-WHEELED VEHICLE.

SPECIFICATION forming part of Letters Patent No. 462,254, dated November 3, 1891.

Application filed September 15, 1890. Serial No. 365,072. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. HAYES, a citizen of the United States, residing at Penn Yan, in the county of Yates and State of New York, have invented certain new and useful Improvements in Two-Wheeled Vehicles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

Figure 1 of the drawings represents a side elevation of the body of a road-cart with my improved spring attachment applied thereto; Fig. 2, a top plan view showing the body in dotted lines and one of the shafts connected to the axle; Fig. 3, a detail view showing the manner of attaching the shaft to the axle, and Fig. 4 a detail view in perspective of the plates for attaching the shaft to the axle; Fig. 5, a perspective view of a modification thereof.

The present invention has relation to road-carts or other two-wheeled vehicles, and is designed more particularly as an improvement on my former patent granted March 25, 1890, No. 424,297; and the object of the invention is to improve the manner of supporting the body of the vehicle, also in the attachment of the shaft to the axle, whereby a more perfect running vehicle is provided, which has superior advantages both in ease and comfort as well as increased durability, which objects are attained by the construction substantially as shown in the drawings and hereinafter described and claimed.

In the accompanying drawings, A represents the body of a road-cart of the usual construction, upon the under side of which is connected in any suitable and well-known manner a transverse shaft or spring B. I have shown a spring in the present instance as being more preferable; but a rocking shaft or rod may be substituted without departing from the principle of my invention. The spring or rod, as above described, is of sufficient length that its ends will extend out beyond the sides of the body A, to which are attached in any suitable manner the ends of scroll-springs C. The opposite ends of the scroll-springs are connected to the ends of semi-elliptic springs D, and the latter-mentioned

springs are secured to the body A directly under the seat, as shown in Fig. 1.

The axle represented at E is connected to the scroll-springs C by means of suitable clips *a*, and to this axle are connected the shafts F by means of the plates G H and the clip *b*.

The plates G H are bolted or otherwise attached to the shafts F, and are of such length as to extend some distance beyond the rear ends of the shafts, as shown in Fig. 3. The upper one of these plates is connected to the axle by means of clip *b*, or any other desirable and well-known means may be employed for attachment of the plate to the axle. The plates G H are curved at their inner extremities, as shown at *e*, and have holes *c*, through which passes a headed bolt I, which has screw-threads to receive a nut *d*.

With the above-described means of attaching the shafts to the axle the body can be raised or lowered by tightening up the bolt or loosening it, as the case may be, thereby causing the body to ride level with a large or small horse and give play between the plates, also doing away with the so-called "horse motion" by the employment of the scroll-springs and connecting them to the semi-elliptic springs, thus providing a long and easy-riding spring, which does away with the attachment to the cross-bar in road-carts of ordinary construction. As the vehicle-body is supported by the springs C and said springs in turn connected to the axle and the axle to the plates G, it will be seen that any change of position of the axle will likewise change the position of the vehicle-body. Now by screwing up or loosening the nuts on the bolts I the plates H will be lowered or raised to a slight degree from a horizontal position, and consequently the axle will be inclined correspondingly. This inclination of the axle, although but a slight degree, will materially change the position of the vehicle-body by inclining it at an angle either forward or backward, as the case may be, and to insure the adjustment of the plate H said plate has sufficient spring or elasticity for the purpose, while the plate G remains stationary or is rigid and is not affected by the adjustment of the lower plate. It will be seen that the plates G H extend back of the axle E and the

adjustment is made at the rear thereof, thereby materially facilitating the operation.

In Fig. 5 I have shown a modification of the lower one of plates, which in the present instance extends upward and terminates in a screw bolt or shank, as shown, which is considered an equivalent to the construction shown in Fig. 3. It is deemed important that the free ends of the plates G and H be curved, as seen in Figs. 3 and 4, to form depressions for the reception of the head of the bolt and the nut, or nut alone, in the form shown in Fig. 5, whereby the nut is less liable to become loose, the curve of the metal forming a sort of spring-retainer, against which the edges of the nut impinge, and, besides, the nut is less liable to be turned or worked loose by contact with anything. I deem it important that the plates G and H be each independent of the other and each of a single piece, whereby greater elasticity is provided.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The combination, with the shafts, of the plate G in a single piece secured at one end to the rear end of the shaft and having its free end formed with a curve and depression, the axle secured to the plate to the rear of the shaft, the spring-plate H, secured to the under side of the shaft at one end independent of the plate G, curved under the axle, and its rear end extended upward and threaded and passed through a hole in the depression of the plate G, and a nut on the threaded end of said plate H and seated in the depression of the plate G, which forms a retainer for said nut to prevent its working loose, substantially as shown and described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES C. HAYES.

Witnesses:

FRANK R. DURRY,
ORVILLE F. RANDOLPH.