

C. G. WILCOX.  
Spring-Perch Vehicle.

No. 218,353.

Patented Aug. 5, 1879.

Fig. 1.

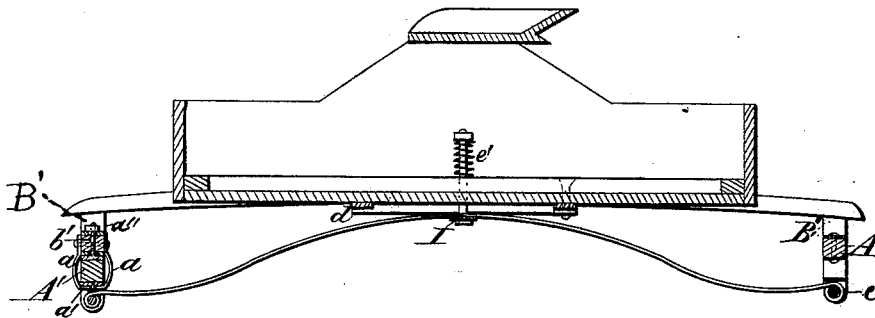


Fig. 2.

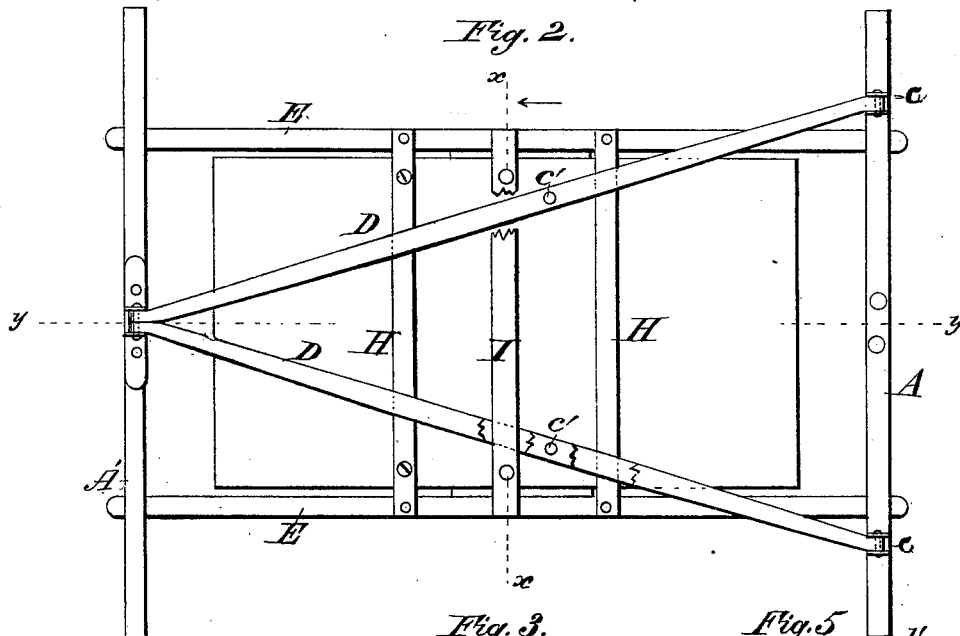
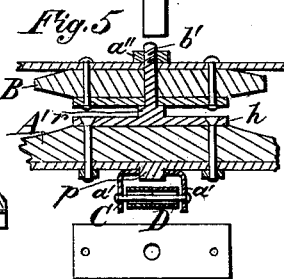
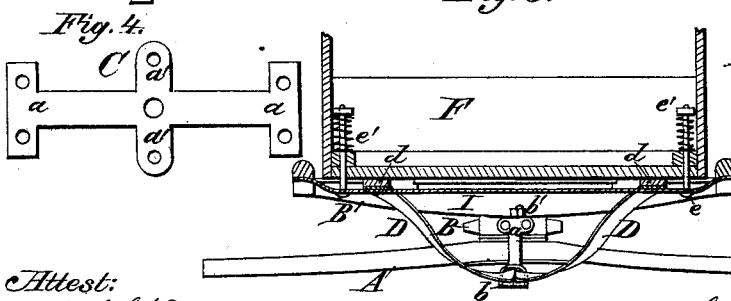


Fig. 3.



Attest:

J. H. Schmitt.

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Inventor:

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per J. C. Parker atty

# UNITED STATES PATENT OFFICE.

CHESTER G. WILCOX, OF WILKESBARRE, PENNSYLVANIA.

## IMPROVEMENT IN SPRING-PERCH VEHICLES.

Specification forming part of Letters Patent No. **218,353**, dated August 5, 1879; application filed June 17, 1879.

*To all whom it may concern:*

Be it known that I, CHESTER G. WILCOX, of Wilkesbarre, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Carriages; 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, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to an improvement in that class of carriage-springs usually called "side springs," the object being to furnish light carriages or buckboards with a system of springs that shall be free from the defects of the ordinary side spring, while it retains their cheap form of construction, so desirable for light carriages; and the invention consists in the especial arrangement of the springs and their manner of attachment to the carriage-body, as will be hereinafter fully set forth.

In the drawings, Figure 1 is a vertical longitudinal section of the body and its supports on the line *yy* of Fig. 2. Fig. 2 is a bottom plan, and Fig. 3 is a vertical cross-section, on the line *xx* of Fig. 2. Fig. 4 is an enlarged view of the king-bolt strap. Fig. 5 is a vertical section through the head-block and front axle, showing the form and construction of the king-bolt and the manner of attaching it to the axle.

In this method of constructing and applying springs the bottom of the vehicle-box forms an important element, as it is connected directly to the springs, so as to materially affect their action, as will be clearly understood from the following description in detail of the construction and arrangement of the several parts, which, when connected, make up the running-gear of the carriage.

A' represents the front axle, and A the rear axle. B is the head-block, connected to the front axle by a pivotal connection or king-bolt of peculiar construction, which holds the axle and head-block in their proper relative positions without the aid of a fifth-wheel or similar device. (See Fig. 5.) This king-bolt is

formed of a plate, *h*, bolt *b'*, and pivot *r*, all made of one solid piece of iron, and secured to the top of the front axle, as shown in Fig. 5. The strap C, which, when straightened, has the outline shown in Fig. 4, has its two ends *a a* bent up in a curve with their T-shaped extremities secured to the head-block by bolts passing through both head-block and strap, as shown in Figs. 1 and 3. The two projections *a'*, near the middle of the strap, project downward, forming the shackle *b*, which carries the front end of the spring-braces D D.

A pivot, *p*, is formed upon the under side of the front axle, that passes through the plate C, which supports the front ends of the spring-braces. The bolt *b'* passes through the head-block, and is secured upon the top of the latter by a screw-nut, *a''*, the whole forming a connection between the axle and head-block, which gives the necessary movement to the joint, and at the same time retains the necessary strength to prevent breakage in the sudden strains to which these devices are subjected.

Secured to the top of the head-block and rear axle are the half-elliptic springs B' B', the outer ends of which are connected by the flexible wooden side bars E E, which, to a certain degree, perform the function of a reach, while they assist in supporting the box or body of the carriage.

Another longitudinal connection between the front and rear axles is formed by the brace-springs D D, which are connected to the rear axle by the shackles *c c*, and to the front axle by the shackle *b* in the middle of the axle, thus causing these springs to assume a diagonal or bracing position, which gives great lateral stiffness to the whole gear.

In order to connect the body F with the springs D D, strips of wood *d d*, slightly concave on their under sides to conform to the shape of the spring, are secured to the bottom of the body and to the spring by the bolts *c'*, which pass through the spring and strips *d*.

If desired, this connection may be made by means of a clip, which incloses the spring and clamps it firmly to the strip, thus avoiding the danger of weakening the spring by the perforation for the bolt *c'*. The body is connected

to the side bars E E by means of two cross-bars, H H, which pass under the body and side bars at a short distance from their mid-length, so as to equalize the load, and are secured to both by suitable bolts or screws.

Passing under the body and side bars in the middle of their length is the truss-bar I, the ends of which are slightly bent upward to give them a firm bearing upon the side bars, while the springs D D lie upon it and are partially supported by it at the point where it is crossed by them. Between this point and the side bars are placed the bolts e e, which pass upward through the bottom of the body, and are provided with the coiled springs e' e'.

This trussing arrangement of the springs will be found of great service when the load is frequently varied, as when two seats are used instead of one, or when the length is greatly extended, as is sometimes the case with buckboard-wagons.

The whole will be found to produce a cheap and durable wagon-gear in which the seat is very low and easy of access, while its motion, from the combination of springs used, will be found easy on the roughest roads.

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:

1. In a vehicle having longitudinal springs, the swiveling connection for the front axle, consisting of the king-bolt *b'*, passing through the head-block, and having the pivot *r* and plate *h*, bolted to the axle and the stud upon the lower side of the axle, in combination with the spring-hanger C, having arms *a'* and *a*, the latter extending up around the axle and bolted to the head-block, substantially as and for the purpose specified.

2. The truss-bar provided with the vertical bolts, adjusting-nuts, and coiled sustaining-springs, substantially as shown and described.

3. The truss-bar, supported as shown and described, in combination with the side bars, as set forth.

4. The combination of the truss-bar with the diagonal brace-springs D D, substantially as set forth.

5. The combination of the truss-bar with the side bars and diagonal brace-springs, substantially as and for the purpose specified.

In testimony that I claim the foregoing I have hereunto set my hand this 26th day of May, 1879.

CHESTER G. WILCOX.

Witnesses:

GEORGE E. WILLIAMS,

SIMON ARNOLD.