J. WALSH.
Vehicle-Spring.

No. 221,129. Patented Oct. 28, 1879.

Fig. 1.

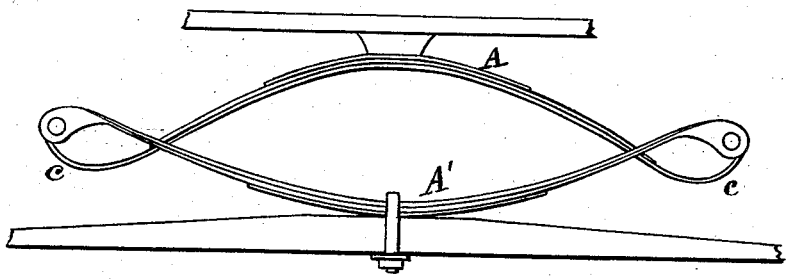
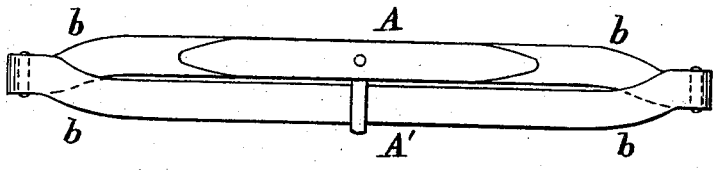


Fig. 2.



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UNITED STATES PATENT OFFICE.

JAMES WALSH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF OF HIS RIGHT TO EDWARD SWEENY, OF SAME PLACE.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **221,129**, dated October 28, 1879; application filed March 6, 1879.

To all whom it may concern:

Be it known that I, JAMES WALSH, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Vehicle-Springs; and I do hereby declare that the following is a full, clear, and exact description of the invention, which 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.

My invention relates to vehicle-springs; and it consists of a vehicle-spring having the ends of the two parts connected one above the other, like an ordinary elliptic spring, each part being bent outwardly, forming offsets, throwing the parts out of vertical range with each other, and curved reversely, as hereinafter more fully described.

In the accompanying drawings, Figure 1 is a back view, showing the spring attached to a vehicle. Fig. 2 is a top view of the spring detached.

A A′ represent the two parts of the spring, connected at the ends one above the other by a movable bolt, like an ordinary elliptic spring. The two parts are bent outwardly, forming offsets, as shown at *b*, to throw them out of vertical range, as shown in Fig. 2 of the drawings, so that when in motion the parts may pass each other, and they are curved reversely, so that near the ends the lower part, A, sweeps downward, as shown at *c*, and the middle extends upward, while the middle of the upper part, A′, extends downward, as shown in Fig. 1 of the drawings.

By means of the downward curve of the springs at *c* the body of the vehicle may be hung as low as when side bars are used, and body-loops, spring-bars, and cross-springs may be dispensed with.

The connections of the heads of my spring, as shown and described, operate as braces to the two parts and secure greater firmness, and the height of the body of the vehicle being greatly reduced, it is less liable to pitch backward and forward than an ordinary elliptic spring.

I am aware that elliptic springs have been made with the parts out of vertical range, but not with offsets, and the ends connected one above the other, as shown in mine, but with the ends arranged and connected by the side of each other by an elongated bolt, which construction necessarily subjects the end joints to very great strain, while the strain upon the joints of my spring is no greater than upon the joints of an ordinary spring.

It is readily seen that my improved spring may be made with any required ease of elasticity, or with any required strength and stiffness, suitable for light road-wagons, for speeding horses, or for other vehicles.

What I claim as new, and desire to secure by Letters Patent, is—

1. The vehicle-spring having the offsets in the two parts A A′, throwing them out of vertical range, and having the ends of the parts connected one above the other, the middle of the lower part extending above, and the middle of the upper part extending below, the heads of the spring, substantially as and for the purposes described.

2. The vehicle-spring having the parts A A′ out of vertical range with each other by means of the offsets in the parts, and having the downward curve in the part A, and the ends connected, substantially as and for the purposes described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

JAMES WALSH.

Witnesses:
EDW. BROWN,
FERDINAND W. KELLES.