

A. L. & L. A. DAVIS.
Vehicle-Spring.

No. 212,905.

Patented Mar. 4, 1879.

FIG. 1.

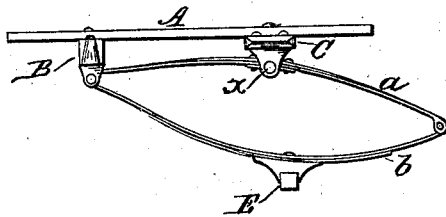
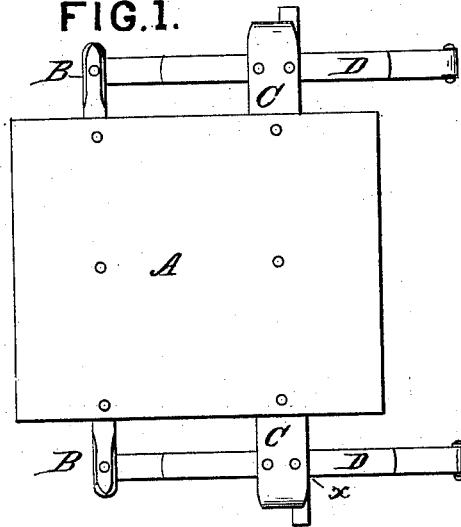


FIG. 2.

FIG. 3.

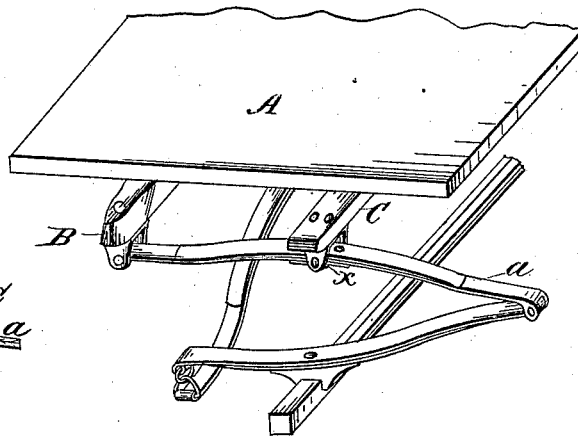
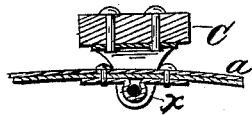


FIG. 4.



WITNESSES

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AMBROSE L. DAVIS AND LEVI A. DAVIS, OF BINGHAMTON, NEW YORK.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. 212,905, dated March 4, 1879; application filed September 24, 1878.

To all whom it may concern:

Be it known that we, AMBROSE L. DAVIS and LEVI A. DAVIS, of the city of Binghamton, in the county of Broome and State of New York, have invented certain new and useful Improvements in Vehicle-Springs; and we 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 the letters of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 represents a plan view, from the top, of a section of the wagon-body, supported by the rear gear and springs, herein described as our invention. Fig. 2 is a side elevation of the same, showing one spring.

Our invention is applicable either to the use of full elliptical springs or to half elliptical springs. Fig. 2 shows it in connection with full spring, while Fig. 3 in the drawings represents a perspective view of a modification of our improvement; and Fig. 4, a detached sectional view of the spring, taken on a longitudinal line with the pivotal joint, by which it is secured at the middle to the body of the vehicle.

A is the wagon-body, and B C are cross-bars in the frame. D D are the springs, *a* being the upper half and *b*, the lower spring. E represents the axle, to which *b*, the under half of spring, is secured in any suitable manner. Spring D is connected at one end to the body or frame-work of the wagon, as shown in the drawings, to cross-bar B, and at or near the middle of the upper half, *a*, is connected to the cross-bar C, or its equivalent, by means of a pivot or hinge, *x*, so constructed and so connecting the spring to the wagon-body as to allow free action through its entire length to the upper spring, *a*.

Our invention consists, chiefly, in the use of

the upper semi-elliptical spring, *a*, secured to the frame-work of the body both at one end and at or near the center of the spring by the pivot-hinge *x*, allowing the free action of the spring, as described. Ordinarily elliptical springs are rigidly connected to the body only at the center, which connection is necessary in order to utilize the elasticity of the spring. By the additional connection of one of the ends of the spring to the body the axles are more steadily held in position, and the draft is transmitted directly through the spring to the axle.

Our invention is applicable to either a front or rear gear, or to both combined in the same vehicle. In the combination using both halves of the elliptical spring D, the upper spring, *a*, may run directly over the under half, *b*, parallel with it, and each connected at the same point to the cross-bar B, or its equivalent, forming thereby a full elliptical spring; or the upper spring may be at any desired angle to the under spring.

Having thus described our invention, we claim—

1. In combination with the body of a vehicle, an elliptical spring, connected at one end to the body of the vehicle or an attachment thereof, and at the middle of its upper part by a pivotal attachment, whereby full play is given to the spring, substantially as specified.

2. In the construction of vehicle-gears, the upper semi-elliptical spring, *a*, secured at one end to the frame of the vehicle, and connected at or near the center to cross-piece C by the free pivotal joint *x*, substantially as and for the purposes described.

In testimony that we claim the foregoing as our own we hereto affix our signatures in presence of two witnesses.

AMBROSE L. DAVIS.
LEVI A. DAVIS.

Witnesses:

EDWARD K. CLARK,
CARL SHERWOOD.