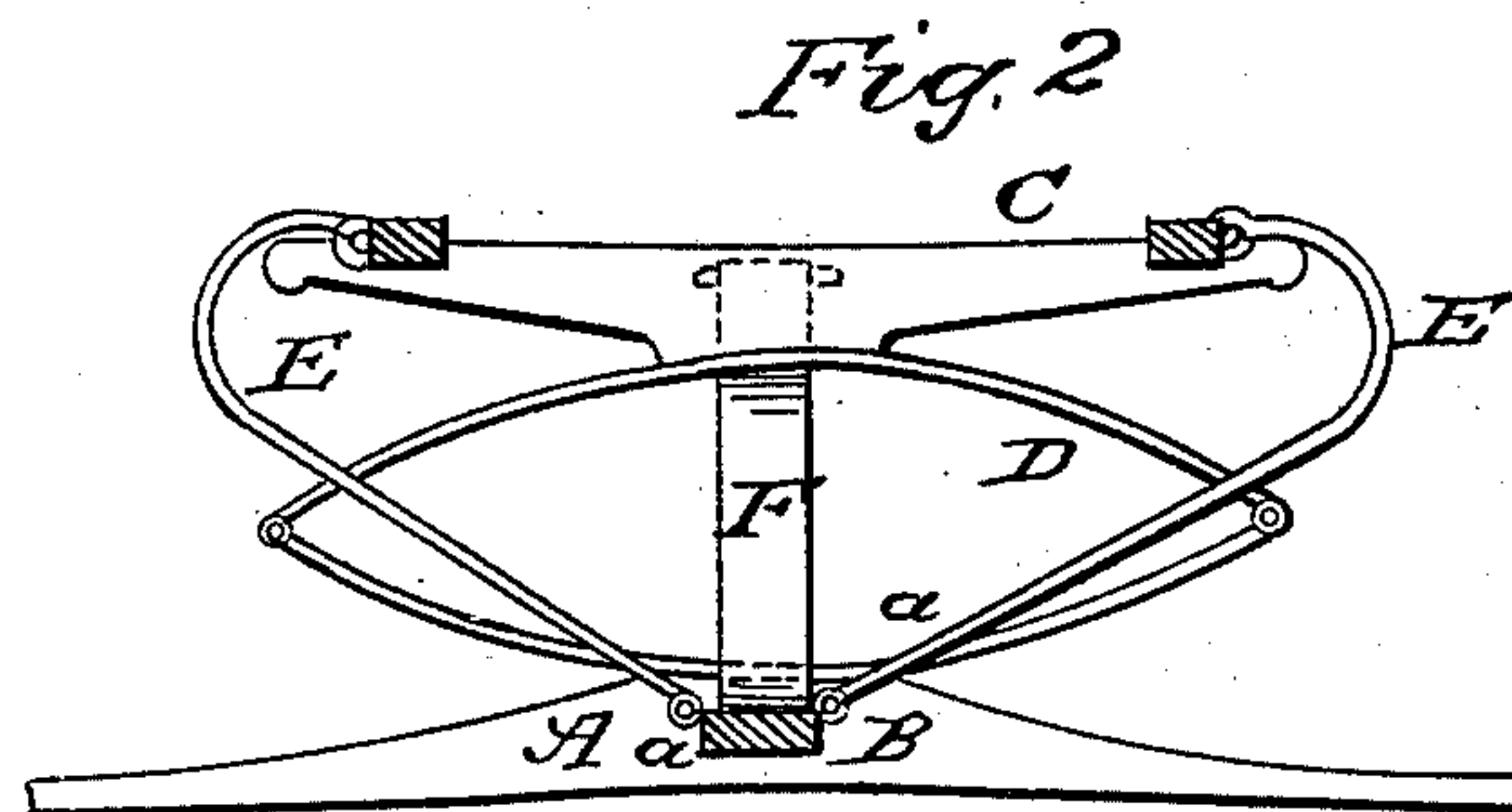
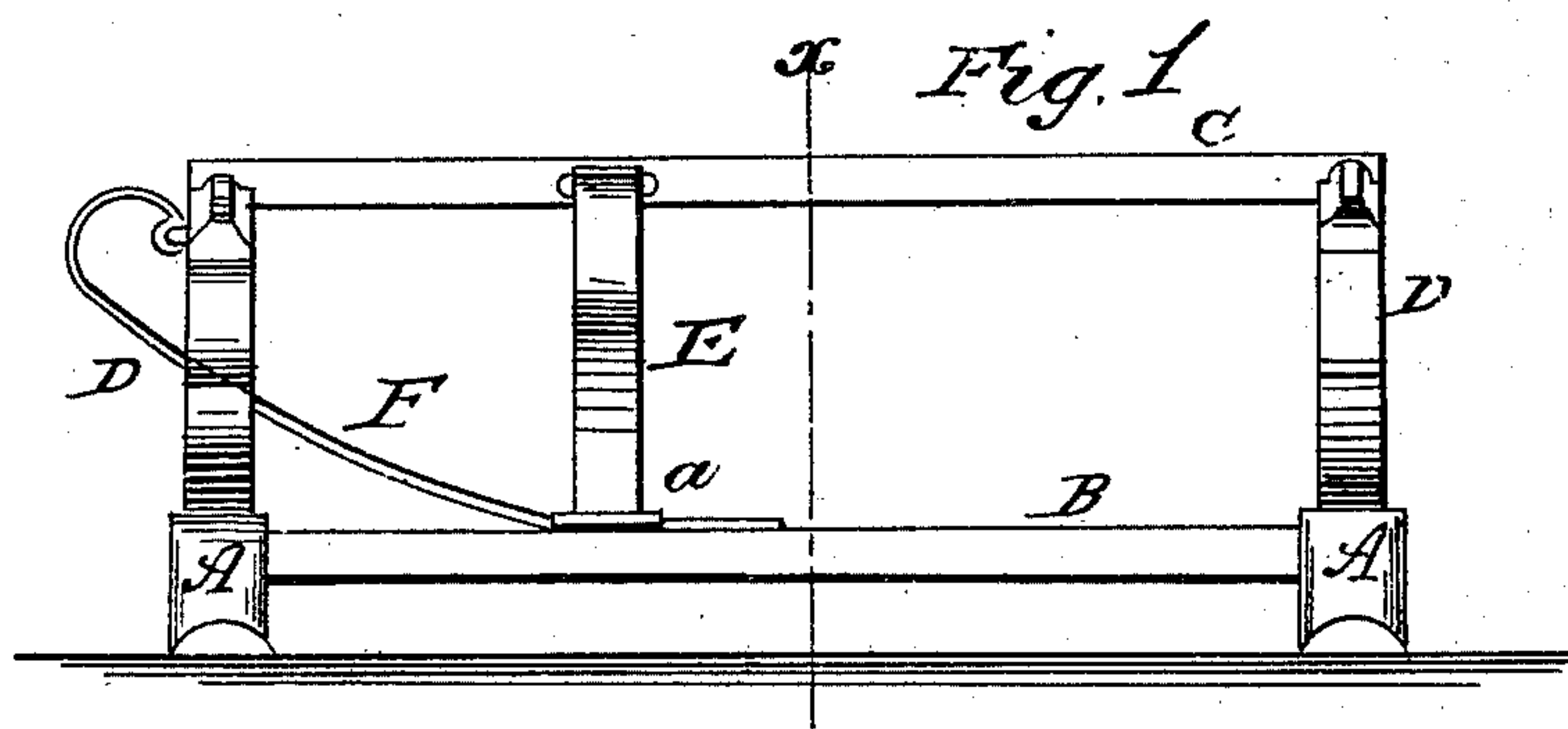


C. L. RICE.  
Spring for Vehicles.

No. 74,424

Patented Feb. 11, 1868.



Witnesses  
Theo. Inche  
Wm. Freur

Inventor  
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# United States Patent Office.

CHARLES L. RICE, OF DUNMORE, PENNSYLVANIA.

*Letters Patent No. 74,424, dated February 11, 1868.*

## IMPROVEMENT IN SPRINGS FOR VEHICLES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, CHARLES L. RICE, of Dunmore, in the county of Luzerne, and State of Pennsylvania, have invented a new and useful Improvement in the Application of Springs to Wheel-Vehicles; and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim, and desire to have secured to me by Letters Patent.

This invention relates to a new and improved application of springs to wheel-vehicles, as hereinafter fully shown and described, whereby the body of a vehicle is prevented from moving longitudinally forward or backward, and also prevented from tilting sidewise in an appreciable degree, while, at the same time, the body is better supported than usual by the springs. In the accompanying sheet of drawings—

Figure 1 is a side view of my invention.

Figure 2, a transverse vertical section of the same, taken in the line  $x x$ , fig. 1.

Similar letters of reference indicate like parts.

A A represent the front and rear spring-bars of a wheel-vehicle, and B the reach or perch which connects them. C is the frame of the carriage-body which rests at the front and rear ends upon elliptic springs D D, which may be of usual construction. E E represent two side springs, the lower ends of which are connected by hinges or joints  $a$  to the reach B, and the upper ends connected to the sides of the frame C, as shown clearly in fig. 2. F is a spring, the lower end of which is attached to the reach B, between the lower ends of the side springs E E, the upper end of said spring being attached to the front end of the frame C, as shown clearly in fig. 1.

It will be seen from the above description, and the drawings referred to, that the side springs E E are substitutes for the side straps or chains commonly used for preventing the side springing or sagging of the sides of the vehicle when a wheel strikes suddenly a stone or any hard prominence in the road, and the spring F prevents longitudinal play of the body from the same cause, or when descending eminences or going up the same. This spring F is also a substitute for a chain or strap frequently used to accomplish the same end.

The advantage of the springs E E F over the straps and chains is manifest. In the first place, the springs assist the elliptic springs D D in supporting the body, and admit of the elliptic springs being made lighter than they otherwise could be. They also afford a better support for the body, preventing the sagging of the same, and, while preventing side-swinging and longitudinal play of the body, do not check its movements abruptly so as to cause jars and concussions, and subject the bolts and various connections of the vehicle to undue strain. They also add to the appearance of the vehicle, and will not, at least in an appreciable degree, enhance its cost. I would state that one or more springs F may be used, one at the rear of the body if desired, and also that two pairs of side springs E may be employed.

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

The combination of the side springs E, whose lower ends are hinged at  $a$  to each side of the reach, and whose upper curved ends are hinged to the sides of the wagon-body, and the spring F, whose inner end is secured to reach between the springs E, and whose forward end passes through the springs D, and is bent over and hinged to the forward edge of the upper part of said spring, all arranged and operating as described, to prevent the longitudinal and lateral movements of the body, as herein set forth.

CHARLES L. RICE.

Witnesses:

CHAS. S. WELLS,

A. H. ELLIS.