

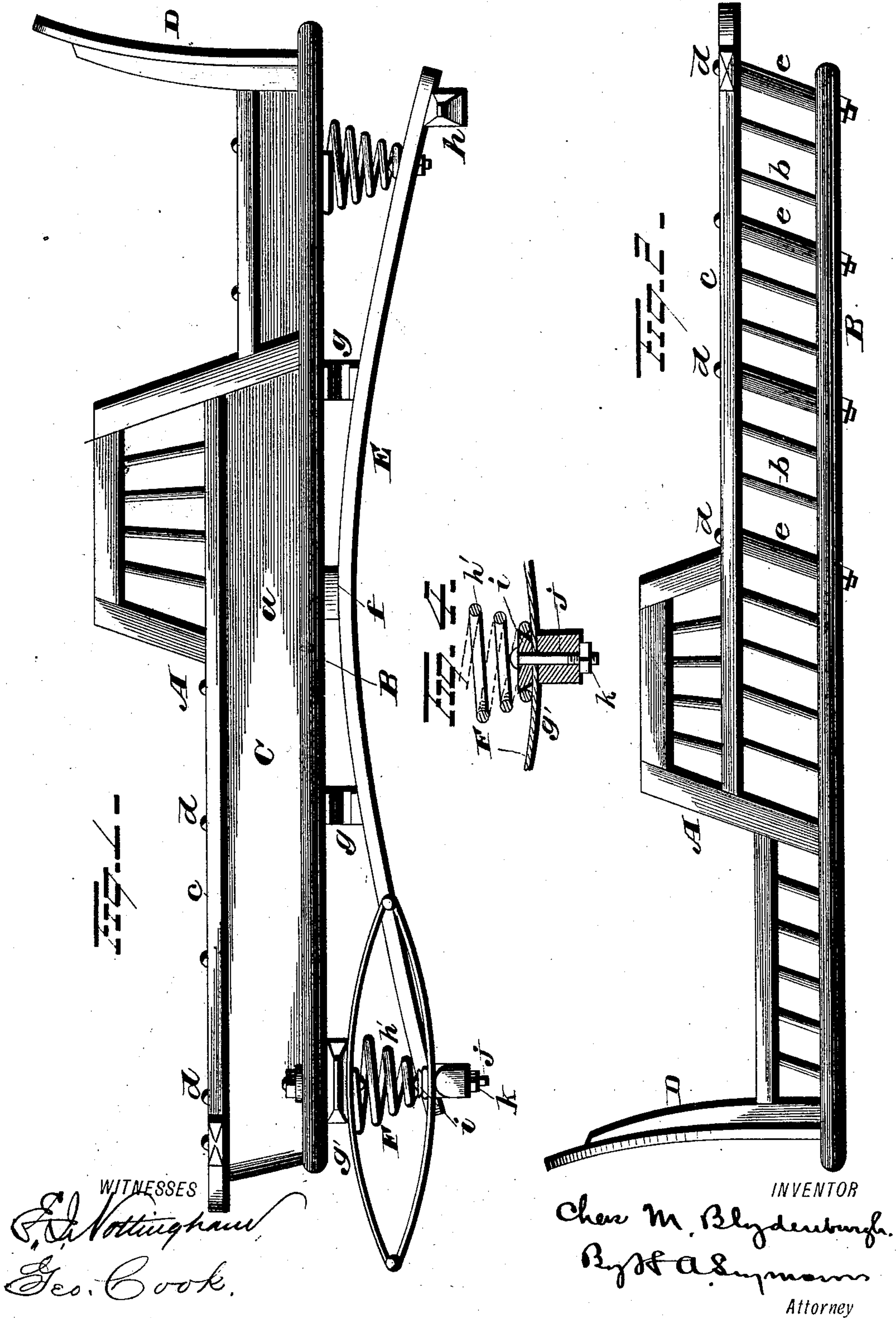
(No Model.)

2 Sheets—Sheet 1.

C. M. BLYDENBURGH  
SPRING VEHICLE.

No. 275,572.

Patented Apr. 10, 1883.





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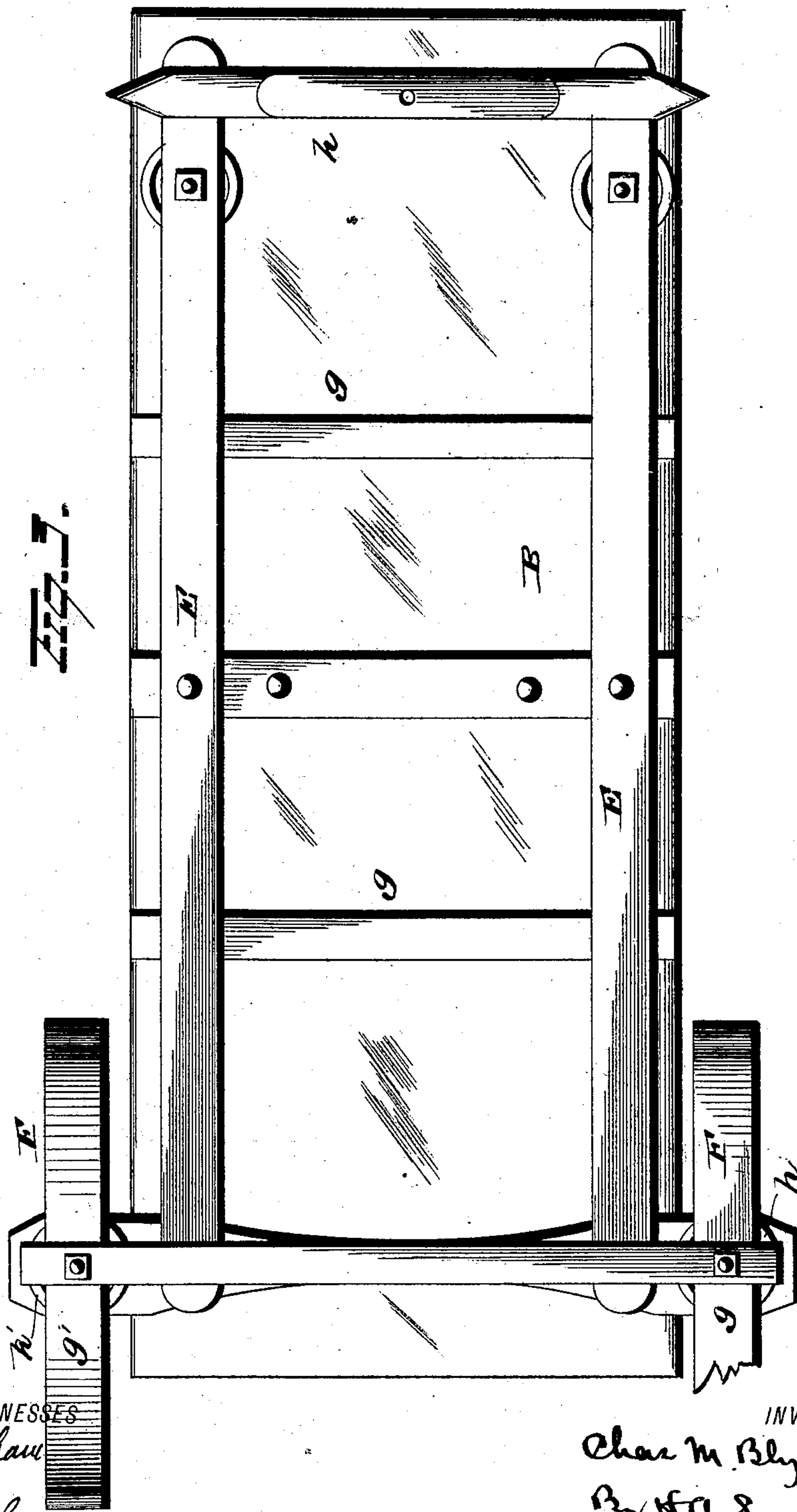
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WITNESSES  
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# UNITED STATES PATENT OFFICE.

CHARLES M. BLYDENBURGH, OF RIVERHEAD, NEW YORK.

## SPRING-VEHICLE.

SPECIFICATION forming part of Letters Patent No. 275,572, dated April 10, 1883.

Application filed November 27, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, C. M. BLYDENBURGH, of Riverhead, in the county of Suffolk and State of New York, have invented certain new and useful Improvements in Vehicles; 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 pertains to make and use the same.

My invention relates to an improvement in vehicles, the object of the same being to provide a device of this character which will combine simplicity and lightness in construction with durability and efficiency in use; and, with these ends in view, my invention consists in certain details in construction and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 represents my improvement in side elevation. Fig. 2 is a similar view, showing another style of body. Fig. 3 is a bottom plan view; and Fig. 4 is a vertical sectional view, showing the manner of securing the lower end of the cone-shaped spring to the elliptic spring.

A represents the body of the vehicle, which can be of any convenient size and shape; B, the bottom thereof; C, the sides and rear end, and D the dash-board.

The sides of the vehicle-body can be composed of the panels *a*, as shown in Fig. 1, or the rods *b*, as shown in Fig. 2, the said panels or rods being capped by the wooden or metallic strips *c*, the ends of which latter are secured together in the ordinary manner. The top strips and panels or the rods are rigidly secured to the bottom B by the tie-bolts *d*, which latter pass through the top strips, panels, or rods and the bottom, and secured therein by nuts.

In Fig. 2 I have shown a body the sides of which are made of rods separated sufficiently to form a light open vehicle, but close enough together to prevent packages or bundles from falling out. At suitable intervals apart I place larger-sized rods *e*, preferably made of wood. These rods, beside adding strength to the body of the vehicle, also cover or surround the tie-bolts *d*, which, as before stated, secure the parts together.

A body constructed as above described is much stronger than those in which the parts

are secured together by tenons, and, besides that, they can be manufactured and sold at less cost.

E are curved longitudinal spring-bars, the central portions of which are secured to the under side of the vehicle-body or to the transverse piece *f*, near its outer ends. The opposite ends of the spring-bars are curved downwardly, and are fulcrumed on the cross-bars *g*, which latter can be made of wood or metal, and adapted to yield and form supplementary springs. The rear end of these springs-bars are secured directly to the rear axle, and the front ends of the same are secured to the bolster *h*. The free ends of the spring-bars are separated from the vehicle-body a sufficient distance for the introduction of the springs *F*, which are preferably constructed as shown, although any style of spring would answer the same purpose, providing they possess sufficient stiffness for the purpose. The compound spring shown consists of a light, cheap, and flat elliptic spring, *g'*, and a cone-shaped spiral spring, *h'*, the latter secured within the elliptic spring, and adapted to increase its strength, and by its connection therewith prevent the breaking of the said elliptic spring, which is frequently caused by the sudden opening thereof while passing over rough roads.

Although numerous styles of springs can be secured to the elliptic spring, I prefer the cone-shaped spiral spring for the following reasons: First, because it is easily secured in position; and, second, because they are more limber and elastic under light loads, and gradually become stiff as the weight of the load is increased, which brings the small coils of the spring into play. The cone-shaped springs are secured centrally within the elliptic springs with their apices downward by means of the circular disks *i*. Each disk *i* is centrally perforated for the passage of the bolt *j*, and is also provided with inclined or tapering sides. These disks are placed within the spiral spring, and bear against or on the lowest coils of each spring. The bolt *j* is then passed through the disk and the elliptic spring immediately under the disk, and is secured by a nut, *k*. This construction of parts securely holds the springs in position; but, if desired, the upper coil of each spring can also be secured to the upper half of its respective elliptic spring and obvi-



ate the danger of breakage by the sudden opening of the elliptic spring while passing over rough roads.

If desired, I can dispense with the elliptic springs and secure the spiral cone, or any other suitably-shaped spring, directly between the ends of the spring-bars and the bottom of the wagon.

The spring cross-bars form fulcrums for the side spring-bars and are adapted to yield sufficiently to prevent the said side spring-bars from weakening at the points of contact with the cross-bars. Besides performing these functions, the said cross-bars also prevent the body from turning on the side spring-bars when each latter is secured to the former by a single bolt.

My invention is simple in construction, is of few parts, is durable and effective in use, and can be manufactured at a small initial cost.

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

1. The combination, with a vehicle-body, of curved spring-bars rigidly secured thereto near opposite sides thereof, and spring cross-bars interposed between the said spring side bars and the vehicle-body.

2. The combination, with a vehicle-body, of curved spring-bars secured thereto near opposite sides thereof, spring cross-bars or ful-

crums interposed between the bottom of the vehicle-body and the curved spring-bars, about midway between the center and ends of the said curved spring-bars, and springs interposed between the outer ends of the said curved spring-bars and the bottom of the body, all of the above parts combined and adapted to operate as described. 35

3. The combination, with the vehicle-body, of curved spring side bars, spring fulcrum-bars, and the double springs, all of the above parts combined and adapted to operate as described. 40

4. The combination, with an elliptic spring, of a cone-shaped spiral spring placed centrally within the elliptic spring, with its apex downward, the tapering or beveled disk *i*, adapted to set down in and impinge upon the lower coil of the spiral spring, and the bolt *j*, passing through said disk, with its head resting thereupon, and its screw-threaded portion extended downward through the elliptic spring and adapted to pass through and project below a bolster, substantially as described. 45 50 55

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES M. BLYDENBURGH.

Witnesses:

NAT. W. FOSTER,  
HENRY BROWN.