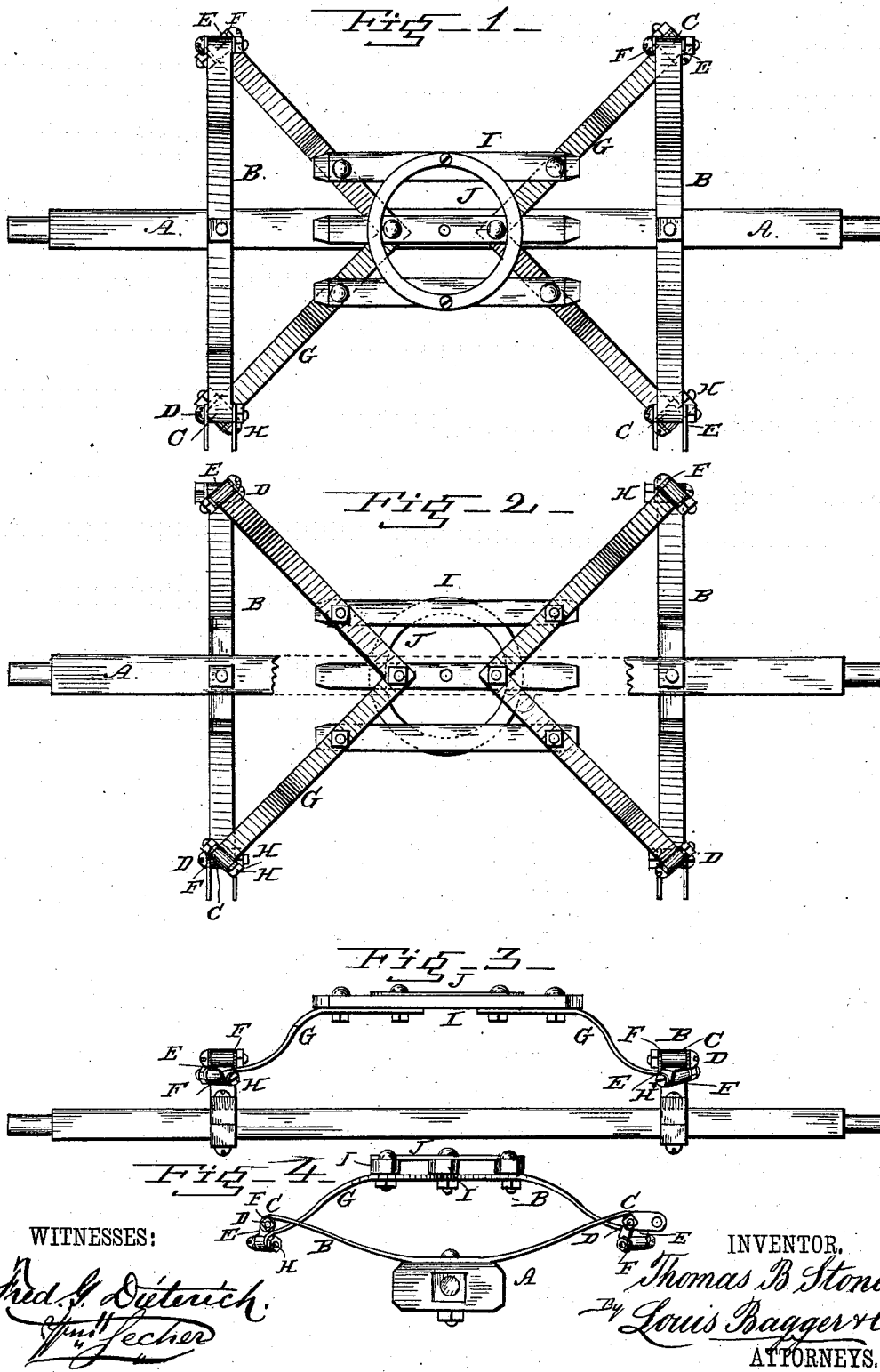


(No Model.)

T. B. STONE.
VEHICLE SPRING.

No. 302,049.

Patented July 15, 1884.



UNITED STATES PATENT OFFICE.

THOMAS BENTON STONE, OF CAMPTOWN, PENNSYLVANIA.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 302,049, dated July 15, 1884.

Application filed February 4, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. STONE, of Camptown, in the county of Bradford and State of Pennsylvania, have invented certain
5 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
10 use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a top view of the same. Fig. 2 is a bottom view, and Figs. 3 and 4 are side
15 and end views.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to so-called "platform-springs" for vehicles; and it consists in
20 the improved construction and combination of parts of the same, as hereinafter more fully described and claimed.

Heretofore in this class of inventions platform-springs have been constructed in such a
25 manner that three quarter-elliptic springs have been bolted to a fifth-wheel-supporting platform, and have been provided with inverted arches to strengthen the same, said quarter-elliptic springs being connected one to a rear
30 cross-spring, and the other two each to a front end of side springs. Also four quarter-elliptic springs have been connected at their inner ends to a square fifth-wheel-supporting frame, and at their outer ends to the ends of side
35 springs. In all these cases the quarter-elliptic springs are separated from and independent of each other, the square frame, cross-bar frame, or Y-frame serving to support the fifth-wheel and as the connection for said quarter-elliptic springs. In my invention I employ
40 two semi-elliptic springs, their ends properly connected with each other, one of them being curved or bent laterally, and yet remaining integral and unbroken, so that no joint occurs
45 where it is attached to the frame, and other advantages herein described are secured.

In the accompanying drawings, the letter A indicates the front axle of a vehicle, to the
50 upper side of which two springs, B B, are secured in the usual manner near the ends of the axle, which springs form eyes C at their

ends, through which pass bolts D, upon the ends of which the upper perforated ends of shackles or stirrups E are pivoted. These
stirrups have upwardly and downwardly projecting perforated lips or ends F, which lips
55 are twisted in planes at an angle of about forty-five degrees to each other, and the ends of two V-shaped springs, G, are hinged upon bolts H in the lower lips of the shackles, the
60 ends of these springs thus forming angles of about forty-five degrees to the ends of the side springs B. The ends of the springs B are slightly raised above their middle, and the inner joined ends of the V-shaped springs are
65 raised above the outer ends, and secured to the under side of a platform formed of a number of cross-pieces, I, upon the upper side of which the lower fifth-wheel plate, J, is secured.

It will be seen that both sets of springs will
70 yield and cushion the movements of the vehicle, and that the shackles will allow a lateral and longitudinal motion to the springs and through them to the body of the vehicle, which will assist in cushioning the motions of the vehicle,
75 and at the same time render all jars caused by unevenness of the road less injurious to the running-gear, spring, and body of the vehicle.

It will also be seen that by having the ends of the V-shaped springs extending almost
80 radially from the center of the platform upon which the weight of the load rests, the said weight is distributed evenly to all four ends of the two side springs with a slight outward strain, which is exercised upon the stirrups,
85 which again bear upon the ends of the side springs, converting the outward strain to a downward strain by the shape of the stirrups, thus, as before said, distributing the strain evenly over all parts of the springs. The V-
90 shaped springs, upon which the platform is secured, will serve to connect the cross-pieces composing the said platform, and at the same time be more securely fastened than separate
95 springs, as are generally used in this class of vehicle-springs, the bolts securing one half of the V-shaped spring, also securing the other half, thus distributing the strain of each half upon the securing-bolts of both halves.

I am aware that platform-springs having
100 radiating quarter-elliptic springs secured at their ends in twisted shackles at the ends of

the side springs have been made, and I do not wish to claim such construction, broadly.

I am also aware that two semi-elliptic springs, each one being bent laterally and in opposite directions to the other, have been used together, the ends of each spring being shaped diagonally in opposition to the diagonal outline of the connected end of its mate, and I do not claim such a construction. By laterally bending but one half of my spring and retaining square ends on both halves, I reduce the tendency to torsional strain on either half and provide a form of spring which is adapted for use in connection with either a platform-gear-
ing or directly with a body.

I claim—

1. A platform-gear comprising the following elements: straight semi-elliptic springs secured to an axle, laterally curved or bent integral semi-elliptic springs pivotally connected at their ends to the straight semi-elliptic springs, and a series of parallel bars bolted to the

integral bent or curved portions, and having secured thereto a fifth-wheel, substantially as specified.

2. The combination of the straight semi-elliptic spring B, and the laterally curved or bent integral semi-elliptic spring G, each spring having square ends, and the twisted shackles F, substantially as shown and described.

3. The combination of the straight semi-elliptic springs B, the laterally-curved integral semi-elliptic springs G, cross-bars I, fifth-wheel J, and axle A, substantially as shown and described.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

THOMAS BENTON STONE.

Witnesses:

C. C. SMITH,
L. B. CAMP.