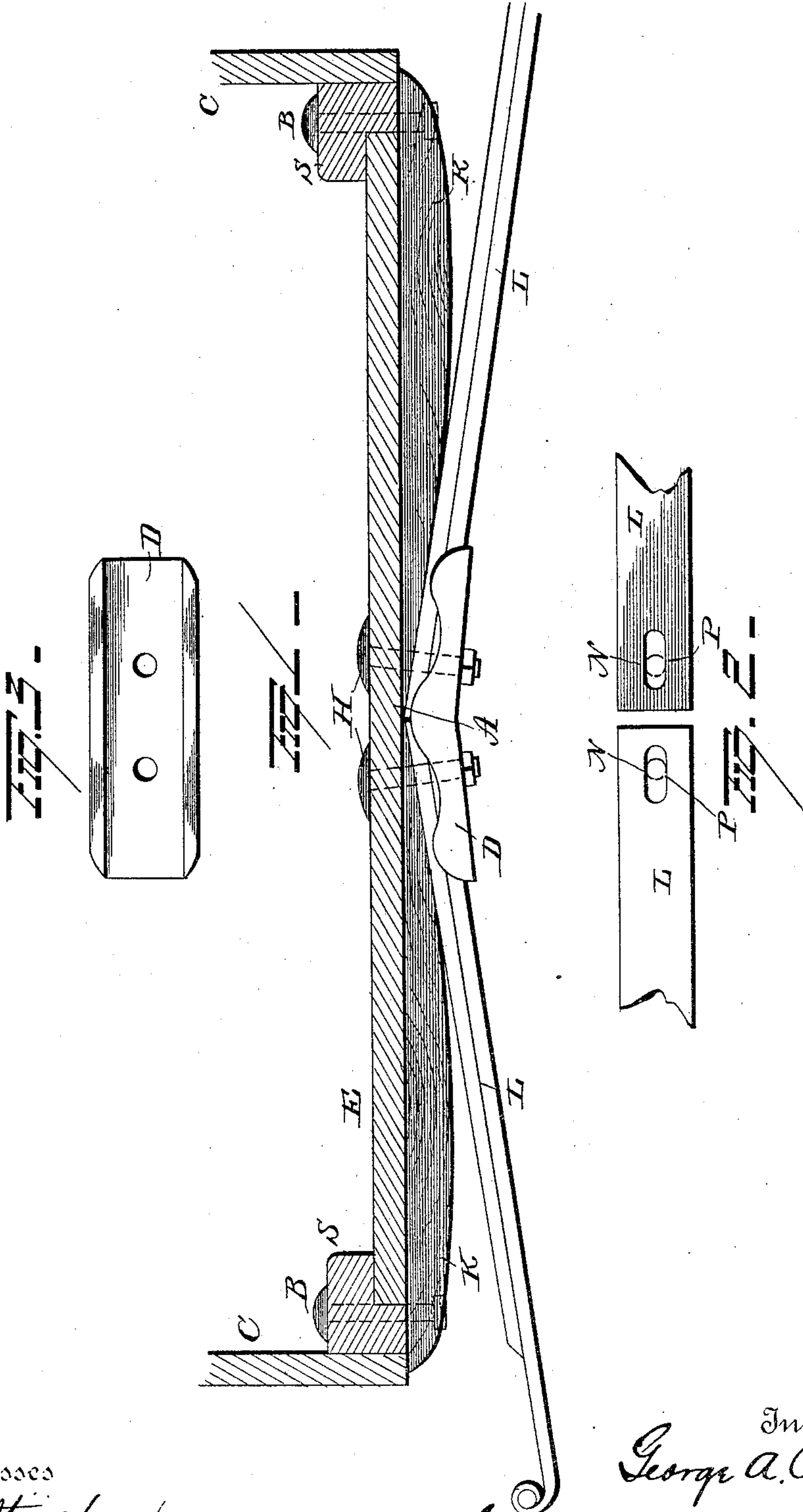


(No Model.)

G. A. RICHARDS.
VEHICLE SPRING.

No. 432,563.

Patented July 22, 1890.



Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE A. RICHARDS, OF NEW LONDON, CONNECTICUT.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 432,563, dated July 22, 1890.

Application filed February 25, 1890. Serial No. 341,680. (No model.)

To all whom it may concern:

Be it known that I, GEORGE A. RICHARDS, of New London, in the county of New London and State of Connecticut, have invented certain new and useful Improvements in Vehicle-Springs; 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 appertains to make and use the same.

My invention relates to an improvement in vehicle-springs, and has for its object to produce a combined vehicle-spring and cushion which shall be of simple construction and effectual in the performance of its function.

A further object is to so construct the device that it may be easily and quickly applied to a vehicle, and which is in effect self-adjusting.

A further object is to construct and arrange the device in such a manner that the spring is not liable to break, and so that if the spring should break such break will be compensated for and no serious effects would result therefrom.

A further object is to improve the general construction of vehicle-springs of this general character.

With these objects in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of my improvement. Fig. 2 is a detail view. Fig. 3 is a separate view of the socket or spring-supporter.

E E and K K represent the combined spring-bar and cushions; C C, the sides of wagon-body, and S S the sills thereof.

L L represent a spring, and D a socket or spring-supporter.

The combined spring-bar and cushion is connected to the body by means of bolts B B passing through the sills S S, and the entire combination of spring-bar, cushion, spring, and socket (or spring-supporter) is connected and secured together by means of bolts H H or such other means as may be advisable.

The combined spring-bar and cushions are composed of one or more pieces of wood or

other material, the upper portions or surface of the spring-bar E E being flat and forming a section of the bottom of the wagon-body and the bottom or under surface of the part K K being modeled so as to form cushions, the latter being bow-shaped to accommodate themselves to the height and length of various springs.

The carrying capacity of my within invention exceeds that of an elliptical spring one-third with one-half the metal; also, being self-adjusting, it rides equally well with one or more passengers, and will work more compactly than any spring now manufactured, so far as I am aware, of a like carrying capacity where the cushions are not flexible.

The herein-described invention gives a cushion which is one-third longer than others of a like class, this being the only spring of which I am aware which, starting from the outer point, where the plates come together, continues into the exact center A by straight lines without bend or break, whereby the plates require no fitting for adjustment into position, being flat and straight throughout their entire length, and the length of the cushions, as above set forth, tends to prevent the said spring from bending or breaking. The spring part of this invention may or may not be separated into two parts at the center A.

The leaves or plates composing the said spring L may be straight from the outer point where the plates join to the center, and the shorter plates may be made from material that in a spring-factory would be valueless in the construction of other springs, (and therefore sold as scrap or waste,) thereby rendering the cost of construction much less than that of other springs.

N N show oblong openings in each spring, and P P represent where the bolts H H pass through the same.

One of the most important points concerning the spring F is the fact that through the instrumentality of the oblong holes in the plates, as above referred to, by shifting the said plates, so that the bolts H H are secured at one or the other of the extremities of the said holes, the entire spring will thereby be shortened or extended in length.

All short springs are necessarily apt to

break off at the bolt-holes in the plates, especially during the upward motion of the spring; but by the use of my socket or spring-supporter, as herein described, it is almost a matter of impossibility for the spring to so break; 5 but, even admitting that it might do so, the fact would be scarcely noticeable, for the socket would retain all the parts of the spring in their proper place and not allow the wagon-body to drop down, as would be the case with 10 other springs without this attachment should they break. I therefore claim that this portion of my present invention—namely, the socket or spring-supporter—is a most useful 15 and valuable contrivance, and I therefore wish to secure the sole right of applying the same to any and all styles of springs as well as to the particular class portrayed in the annexed drawings.

20 I do not wish to be restricted in the use of my invention to any particular location thereof on a vehicle, as it is equally applicable either as an end spring, a side spring, a cross-spring, a seat-spring, or in any manner in which it 25 is capable of application.

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

30 1. The combination, with a spring-bar and cushion, of straight spring-plates having elongated slots in their inner ends, whereby they

are adjustably secured to the spring-bar and whereby the latter with the vehicle-body may be raised or lowered, substantially as set forth.

2. The combination, with a spring-bar and 35 cushion, of straight spring-plates having elongated slots in their inner ends, whereby they are adjustably secured to the spring-bar and whereby the latter with the body of the vehicle may be raised or lowered, and a socket 40 or spring-supporter secured beneath the ends of the springs, substantially as set forth.

3. The combination, with a spring-bar and 45 cushions, of straight spring-plates having elongated slots in their inner ends, whereby they are adjustably secured to the spring-bar and whereby the latter with the body of the vehicle may be raised or lowered, and a socket 50 or spring-supporter made in shape to clasp the adjacent ends of the springs, said supporter having flanges on its edges, substantially as set forth.

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

GEO. A. RICHARDS.

Witnesses:

T. E. BURROUGHS,

HENRY D. MILDEBERGER.