(No Model.)

J. G. GAY.

VEHICLE SPRING.

No. 302,392. Patented July 22, 1884.

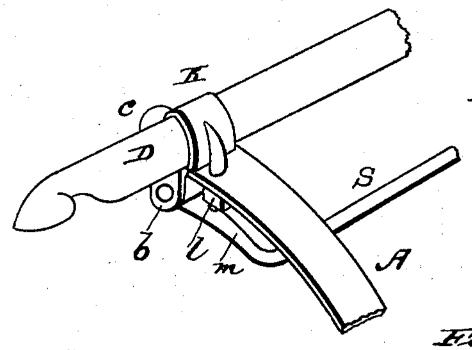

Fig. 1.

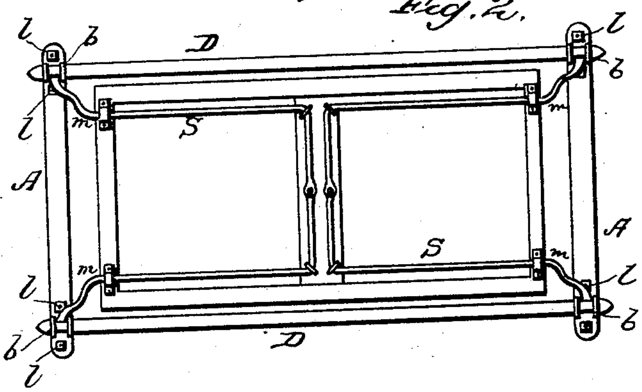

Fig. 2.

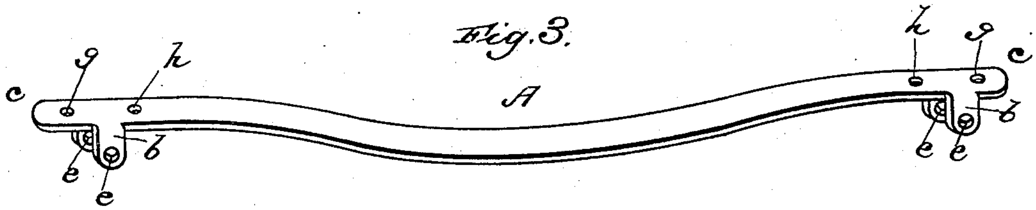

Fig. 3.

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UNITED STATES PATENT OFFICE.

JOSHUA G. GAY, OF OTTAWA, ILLINOIS.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 302,392, dated July 22, 1884.

Application filed May 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSHUA G. GAY, a citizen of the United States, residing at Ottawa, in the county of La Salle and State of Illinois, have invented certain new and useful Improvements in Vehicle-Springs; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a perspective view, Fig. 2 is a bottom view, and Fig. 3 is a detail view, of my invention.

This invention has relation to that class of vehicle-springs which are known as "semi-elliptic" springs; and it consists in the construction and novel arrangement of devices, all as hereinafter set forth, and pointed out in the appended claims.

In the accompanying drawings, the letter A designates a semi-elliptic spring, which has its end so constructed that a torsion or side spring can be readily attached thereto. For this purpose the end of the spring is formed with ears or lugs *b*, which are bent at right angles to the plane of the end of the spring. The ears or lugs *b* are on opposite sides of the spring, near the extremity thereof, the end *c* of the spring being extended outward horizontally beyond the ears or lugs to provide means of attachment to a side bar, D. The ears or lugs are perforated, as shown at *e*, and between the lugs and the extremity of the spring end is made a perforation, *g*, through said spring end. A similar perforation, *h*, is made through the spring near the lugs, but on the inner side thereof, as shown.

K indicates a clip which embraces the side bar, its threaded ends extending through the perforations *g* and *h* of the spring, the end portion of which extends under the side bar. Nuts *l* are applied to the clip under the spring to secure the parts firmly together.

S indicates the torsion-spring or side spring, which is provided at its end with lateral projections *m*, which engage the perforations *e* of the ears of the spring end, said ears extending downward immediately under the clip, being formed on that portion of the spring which constitutes the base of the clip, as shown. These ears are therefore strongly supported by the clip and side bar, so that they will sustain the strain of the side spring.

Various styles of side-bar buggies and wagons are made with semi-elliptic springs and cross-springs which support the body. By my improvement side bars can be used in combination with torsion or side springs which support the body, which is not in any manner attached to the side bars. These side bars, therefore, can be made lighter without danger of breaking or getting out of shape.

Having described this invention, what I claim, and desire to secure by Letters Patent, is—

1. A semi-elliptic spring having perforated ears or lugs on opposite sides of its end portion which is extended beyond said ears or lugs and perforated at *g* and *h* to engage the ends of a side-bar clip, substantially as specified.

2. The combination, with a side bar and a clip embracing the same, of a semi-elliptic spring having its end portion perforated to receive the ends of the clip, and downwardly-bent lugs on each side between the clip-perforations for the attachment of a side spring or torsion-spring, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

JOSHUA G. GAY.

Witnesses:
A. M. HOFFMAN,
E. G. OSMAN.