(No Model.)

W. H. DOYLE.

VEHICLE SPRING.

No. 294,374. Patented Mar. 4, 1884.

Fig. 1

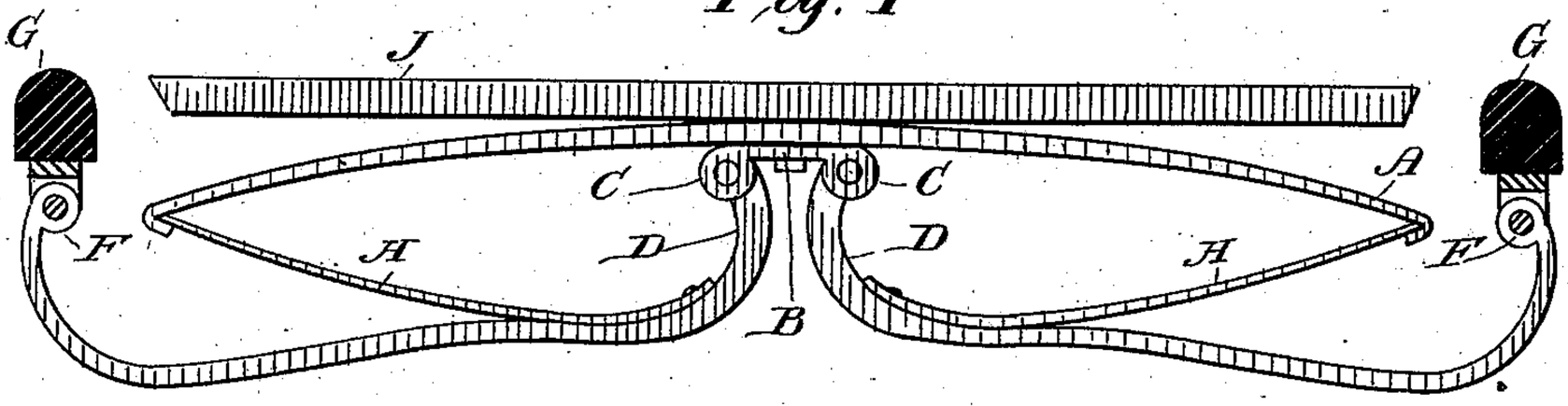


Fig. 2

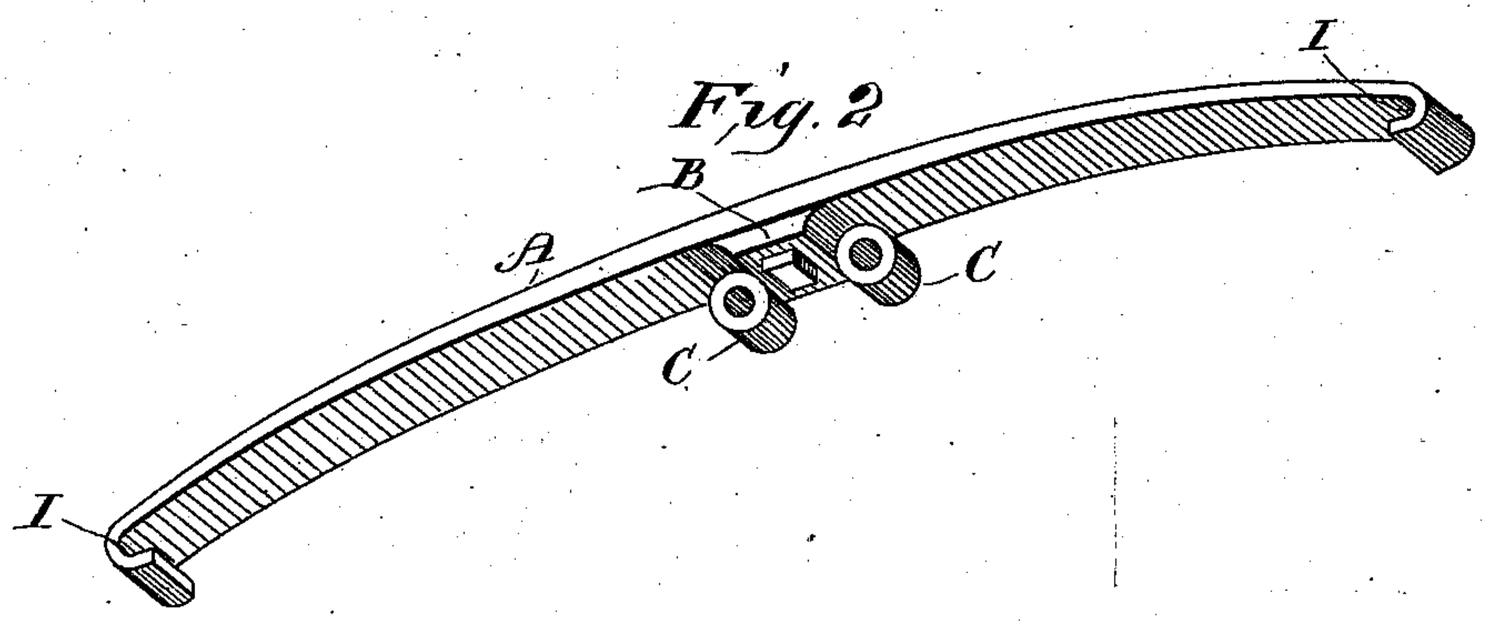
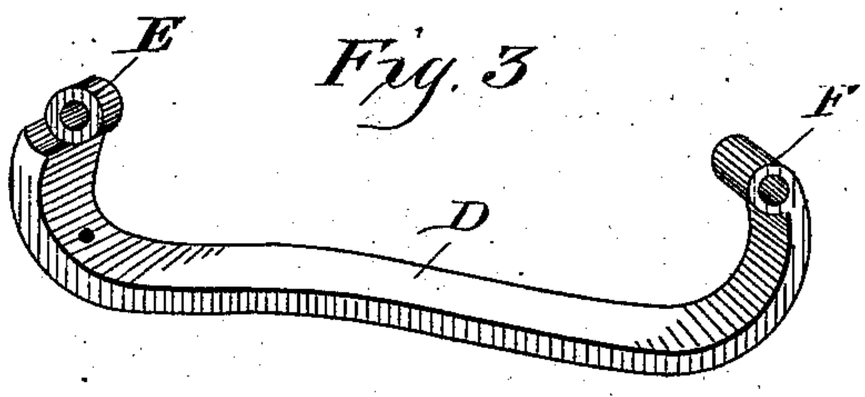


Fig. 3



Witnesses:
S. S. Williamson
W. T. Haviland

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UNITED STATES PATENT OFFICE.

WILLIAM H. DOYLE, OF BANTAM FALLS, CONNECTICUT.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 294,374, dated March 4, 1884.

Application filed December 31, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DOYLE, a citizen of the United States, residing at Bantam Falls, in the county of Litchfield 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 certain novel and useful improvements in the construction and application of springs for vehicles, but more especially that class of vehicles in which the springs are connected to a side bar.

The object of my invention is to provide a greater length of spring and more spring motion without any torsion or twisting of the spring itself, while at the same time the construction shall be such that the heavier the load the more the spring is strengthened; and with these ends in view my invention consists in the details of construction and combination of elements hereinafter fully and in detail described, and then specifically designated by the claims.

In order that those skilled in the art to which my invention appertains may understand more fully how to make and use the same, I will proceed to describe it in detail, referring by letter to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an elevation of my improvement attached to side bars, the latter being in section; Fig. 2, a detail perspective view of the upper spring, and Fig. 3 a detail perspective view of the lower springs.

Similar letters denote like parts in the several figures of the drawings.

A is the upper spring, having bolted or secured thereto in any ordinary manner a plate, B, provided with ears C.

D are springs having at their extremities eyes E F, through which bolts are passed to pivot said springs to the ears C and side bar, G, respectively, for the purpose presently explained.

H are auxiliary springs, bolted or otherwise secured at their lower extremities to the springs D, and with their upper extremities abutting against and fitting within sockets I at the outer ends of the spring A.

J is a bolster secured on the spring A, and upon which the body of the vehicle rests.

The operation of my improvement is as follows: The weight is communicated from the spring A to the spring D by means of the intervening spring H, and the greater the weight to be sustained the farther will the line of contact extend between the springs D H, and accordingly the stiffer will these springs become and the more will they be strengthened. It will be readily understood that any strain is communicated to all the springs, and in no instance is the burden thrown on any one or two of the springs, and this greatly decreases the liability of breaking or weakening in such manner that the resiliency is impaired.

By forming the lower springs, as shown, with eyes E, and connecting them in the manner described to the spring A, I am enabled to do away with the expensive shackles or other couplings commonly used, and by forming the upper springs with sockets and adapting the auxiliary springs H to simply abut against or lie within said sockets any binding or buckling of the spring is prevented, which is a great advantage in devices of this construction.

I have shown and described my improvement as applied to a side-bar vehicle; but I do not wish to limit myself to this particular style of vehicle in the application of my improvement, as it may with equal facility be adapted to any suitable kind of vehicle.

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

1. In a vehicle, the upper spring, upon which the bolster rests, in combination with two lower springs, pivoted independently to said spring, and the intermediate or auxiliary springs, secured at one end to the lower springs, and the other extremities resting in sockets in the upper springs, substantially as set forth.

2. The springs D, having their inner ends formed with eyes E, in combination with the plate B, secured to the spring A, and provided with ears C, and intermediate springs, H, substantially as described.

3. The spring A, with sockets I, as described, in combination with the springs H and springs D, substantially as and for the purpose set forth.

4. In combination with the spring A, hav-

ing sockets I, and the lower springs, D, pivoted to said spring, the auxiliary or intermediate springs, H, resting within said sockets, and secured upon said lower springs, whereby the strain is distributed throughout all the springs and a uniform and positive action had, substantially as hereinbefore shown and described.

5. In combination with the upper spring, A, the spring H, secured on the upper surface of the lower spring, D, whereby the greater the weight placed upon the upper spring the longer will be the line of contact between the lower and the intermediate springs, substantially as set forth.

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

WILLIAM H. DOYLE.

Witnesses:
BUEL E. SEDGWICK,
CHAS. F. FLYNN.