H. W. PELL.
Vehicle-Spring.

No. 200,333. Patented Feb. 12, 1878.

Fig. 1

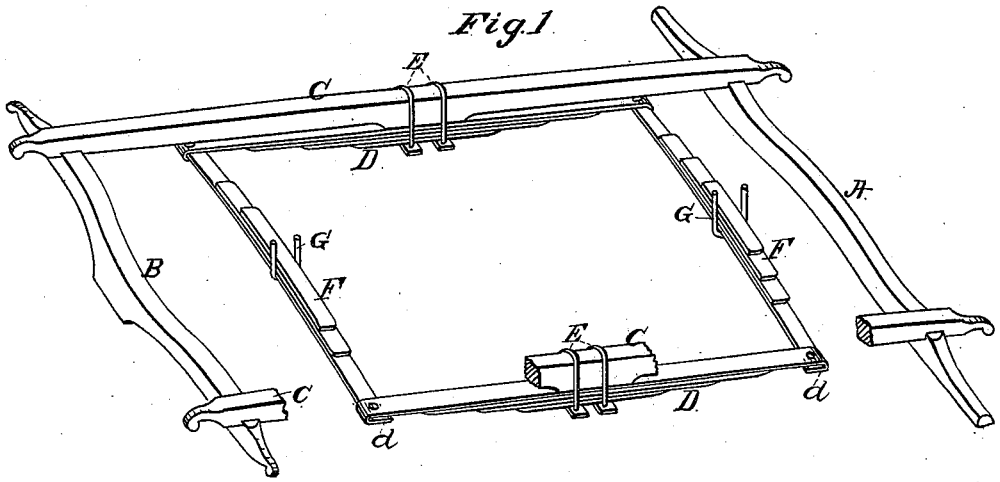
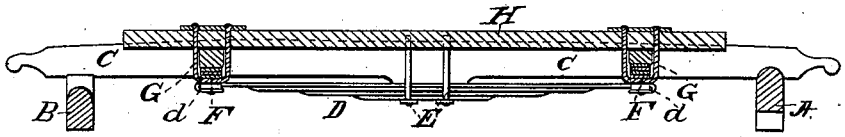


Fig. 2



Witnesses
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UNITED STATES PATENT OFFICE.

HENRY W. PELL, OF ROME, NEW YORK.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **200,333**, dated February 12, 1878; application filed October 20, 1877.

To all whom it may concern:

Be it known that I, HENRY W. PELL, of Rome, in the county of Oneida and State of New York, have invented a certain new and Improved Wagon-Spring, of which the following is a specification:

My invention relates to side-bar vehicles; and consists in the combination of arched end springs and straight side springs connected at their extremities by peculiar lock-joints, hereinafter described, so as to cause the side springs to act by torsion, and also to produce all the valuable effects of a continuous spring, the resilience being distributed from the arched centers of the transverse springs, where the bed rests, to the centers of the side springs, where they are attached beneath the side bars, and the contact of the straight side springs with the side bars limiting the rebound or upward motion without violence.

In the accompanying drawing, Figure 1 is a perspective view of the springs and their accessories, with the bed removed. Fig. 2 is a longitudinal section of the same.

A represents a portion of the rear axle of a carriage or wagon, and B the front bolster. C C are side bars rigidly attached to said axle and bolster. D D represent straight side springs, each consisting of a number of leaves, applied longitudinally underneath the side bars C, and attached thereto at their centers by clips E. F F are convex springs applied transversely beneath the bed H, and attached at their centers thereto by clips G. The ends of the transverse springs F F are received within folds or bends *d* at the extremities of the side springs D, to which they are securely bolted or riveted.

By constructing and applying the springs in the manner described, side and swaying motion are entirely obviated. The side springs being straight, and fixed to and underneath the side bars, there is no rebound beyond the line of the spring when passing over rough places. This prevents danger of breakage, which is usually caused by the recoil or reverse motion. The straight springs also afford an easier motion than the convex springs in common use. The mode of attaching the side springs to the side bars and the cross-springs to the body, and connecting the springs at each corner by the peculiar hooked and riveted joints *d*, causes a torsional effect on the side springs D, and renders the springs perfectly flexible at the corners, as well as throughout their entire length, so as to give a perfectly free and easy motion, without the disadvantages of shackles and other loose joints, and without the costliness in original construction and repair incident to the use of continuous or jointless springs.

My improved construction of springs combines all the points of advantage of side and cross springs, together with the beauty and well-known advantages of the side-bar carriage. The simple construction of the springs renders them easily repaired by an ordinary smith in case of injury.

My peculiar hooked and riveted joints are of especial value in the combination claimed, to provide sufficiently strong and durable connections between the end springs and side springs, and cause the latter to act by torsional as well as vertical deflection.

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

The combination of the straight side springs D D, fixed by their centers beneath the side bars C C, and the arched end springs F F, supporting the bed by their centers, and fixed to the extremities of the side springs D D by the lock-joints *d d*, all as herein specified.

HENRY W. PELL.

Witnesses:
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