J. D. SARVEN.

Vehicle-Spring.

No. 165,956. Patented July 27, 1875.

FIG. 1.

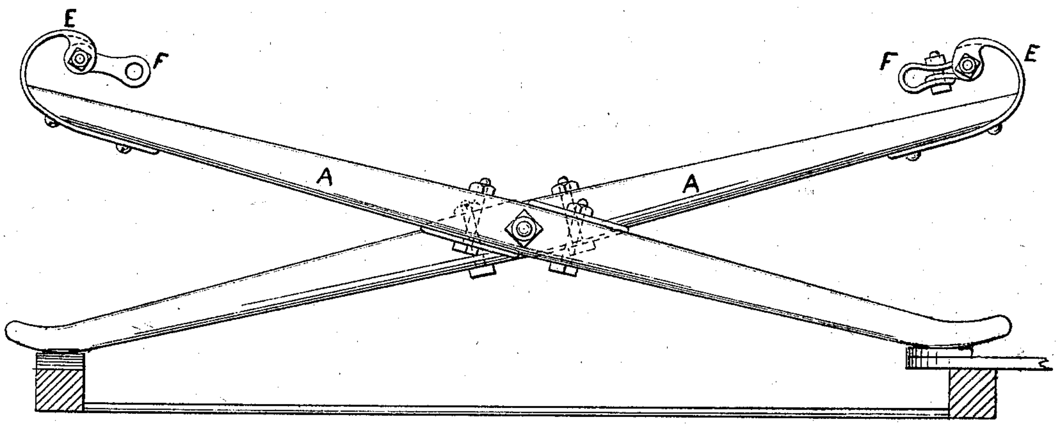
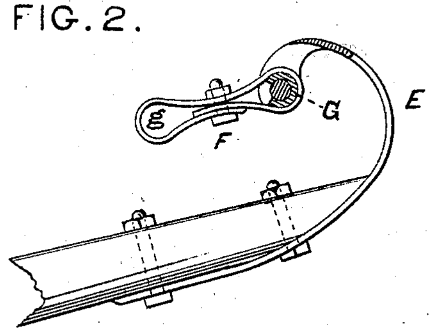


FIG. 2.



ATTEST.

Wm. H. Bates
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UNITED STATES PATENT OFFICE.

JAMES D. SARVEN, OF COLUMBIA, TENNESSEE.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **165,956**, dated July 27, 1875; application filed June 7, 1875.

To all whom it may concern:

Be it known that I, JAMES D. SARVEN, of Columbia, in the county of Maury and State of Tennessee, have invented certain Improvements in Carriage-Springs, of which the following is a specification:

My invention relates to X-shaped wooden springs for vehicles; and consists in the use of a C-shaped spring to which the carriage-body is hung, instead of being directly attached to the X-springs, as heretofore, for the purpose of allowing X-springs greater freedom of motion, as will be explained, and in the insertion of an elastic bearing between the carriage body and the springs for giving a soft and easy motion to the body of the vehicle.

Figure 1 is a side view of an X-spring with my improvements attached, and also shows one method of attaching the X-springs to the vehicle. Fig. 2 shows a section through the C-spring, and a connector for hanging the body of the vehicle.

A represents the X-springs, which are connected together at or near their center. The lower ends of the back part of these springs rest upon the back axle-bed, as shown in Fig. 1, or a bolster, this being immaterial, or they may rest upon cross-springs. The front ends may rest directly on the fifth-wheel, as shown in Fig. 1, in which a cross-piece is welded for that purpose, and through which the king-bolt extends, thus dispensing with the head-block and bolster, though either or a cross-spring may be interposed if preferred. When the front ends rest directly on the fifth-wheel they should be curved, as shown, so as to be parallel, or nearly so, to the plane of the fifth-wheel. The upper front ends of the springs will, in this case, be at some distance from the front corners of the vehicle body. When desired to have them at or near the corners a bolster or some equivalent may be used. E E are C-shaped springs attached to the X-springs at or near their ends. Heretofore the body of the vehicle has been attached to the X-springs by bolts, and when the body was depressed the ends of the springs would extend themselves outward, forward, and backward until the bolts arrested further movement, thus greatly impairing the effectiveness of the spring; but by the interposition of C-springs, as shown, this defect is entirely remedied, and the X-springs have full play. To these C-shaped springs are attached connectors F F for hanging the body of the vehicle. H is a bolt which fastens the C-spring and connector together. Between this bolt and the connector F I place caoutchouc or other elastic material, as shown at G, Fig. 2, on which the connector bears, and thus give a soft and easy motion to the vehicle-body. This caoutchouc may, of course, be at the other end of the connector *g*, or may be dispensed with.

Instead of the connector, as shown, other forms may be used, as at F, for instance, which shows two links, or leather may be used, and and the connectors may be bolted directly to the vehicle body, thus forming a sort of body-loop.

It will be observed that, though C-springs are used, there is no need of the usual bracing, the strain being directly on the X-springs, and not upon the axles or other portions of the running part, as is usually the case, thus allowing a considerable reduction in weight, and permitting of a vehicle being made very light and elastic.

If steel be substituted for wood in X-springs their ends may be bent to form the C. This might also be done with wood.

What I claim is—

1. In a carriage-spring, C-shaped springs, when combined with X-springs, so as to allow the ends of the X-springs greater freedom of motion, substantially as described.

2. In a carriage-spring, connectors F F, in combination with C-springs and X-springs, substantially as and for the purpose specified.

3. In combination with X-springs and C-springs, an elastic bearing between the carriage-body and C-springs, substantially as and for the purpose set forth.

In witness whereof I have hereto set my hand this 29th day of May, 1875.

JAS. D. SARVEN.

Witnesses:

ROBT. H. PARKINSON,

WM. S. BATES.