C. G. LAZEAR.

Carriage-Springs.

No. 161,800. Patented April 6, 1875.

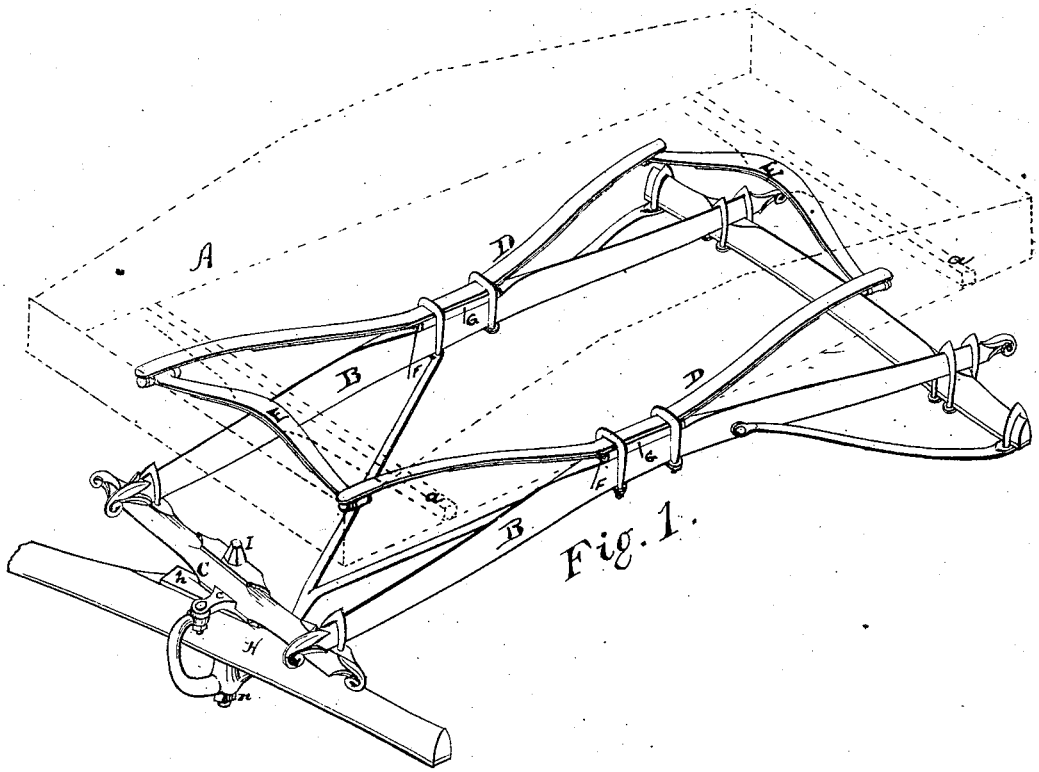

Fig. 1.

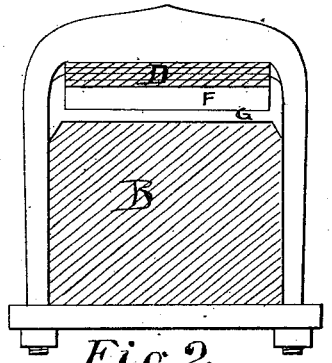

Fig. 2.

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UNITED STATES PATENT OFFICE.

CORNELIUS G. LAZEAR, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN CARRIAGE-SPRINGS.

Specification forming part of Letters Patent No. **161,800**, dated April 6, 1875; application filed September 28, 1874.

To all whom it may concern:

Be it known that I, CORNELIUS G. LAZEAR, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Carriages; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of my spring with its attachment to the running-gear and to the body. Fig. 2 is a transverse section through one of the side springs and side bar, showing the elastic bed-piece upon which the spring rests.

This improvement relates more particularly to that class of carriages known as buggies, though I do not confine myself to carriages of that class; and it consists in an improved method of constructing and attaching the spring to the running-gear and to the body.

The object of my improvement is to produce a spring capable of yielding with equal freedom in every direction, so that the body and its load will not be affected by any irregularity of movement on the part of the running-gear in passing over obstructions in the road.

Heretofore, as I am aware, springs have been constructed for the platform of an express or burden wagon having my arrangement in part; but in such wagons it is not possible to employ my entire arrangement, because, necessarily, the front and tail ends are independently supported upon separate springs. Therefore, in such wagons, a rigid bar is in the place occupied by one of the transverse plates of my spring. The body necessarily is supported upon a system of springs connected together, and mutually supporting each other, or freedom of motion in all directions cannot be obtained.

The unpleasant rattling or rumbling noise made by a light carriage in passing over a rigid pavement is largely produced by the vibrations and striking together of several plates or leaves of which the spring is composed. This is the effect of the transmission of vibration or shock from the running-gear to the metallic leaves of the spring, and may be almost entirely prevented by placing an elastic cushion of india-rubber between the spring and the part upon which it rests. The vibration or shock is absorbed by said elastic cushion, and is not transmitted to the objects resting upon it.

That others may more fully understand my invention, I will now more particularly describe its construction and operation.

A is the body of my carriage, constructed in the usual way; and B B are the side bars, resting at the rear upon the hind axle, and at the front upon the bolster C. These bars are secured in place by the usual fastenings. The spring is composed of two side plates, D D, and a front and rear cross-plate, E E. These plates are joined at their corner intersection by hinge-couplings, and form a rectangular platform, all parts of which yield mutual support, and permit a yielding motion in any direction with equal facility. The ends of the side plates D D are elevated, and said springs are supported at the center by the side bars B B. The ends of the cross-plates E E are depressed and are supported by the ends of the side plates D D, and the bed-pieces *a a* of the body A rest upon and are secured to the central parts of said cross-plates. I place beneath the springs D D plates F, of india-rubber, to absorb vibration and shock from the running-gear, as before set forth. Said elastic plates F are conveniently retained in place and concealed by bedding them into the side bars D; but I prefer to accomplish the same purpose by means of shoe-plates G, of metal, with flanges along each edge to project up over the edge of the rubber plate F, and also partly cover the edge of the spring D. The whole is secured by clips in the usual way. The bed-pieces *a a* have elastic plates interposed between them and the spring-plates E for the same purpose, and they may be confined and concealed in the same way, though said elastic plates are not so important at this point as between the spring and running-gear.

Having described my invention, what I claim as new is—

1. The side plates D D and cross-plates E E, connected at their ends by hinge-joints, said side plates being attached at their middle to the running-gear, and said cross-plates attached to the front and rear bed-pieces of the

body A, all combined to form a body-spring flexible in every direction, all as set forth.

2. Combined with the carriage-spring and the parts of the frame to which it is attached, the interposed elastic cushions F, to absorb vibrations and prevent rumbling, as set forth.

3. The shoe-plate G, combined with the elastic cushion F and spring D, to hold said cushion in place and conceal it from sight, as set forth.

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Attest:
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