P. G. GARDINER.

Car Spring.

No. 92,182. Patented July 6, 1869.

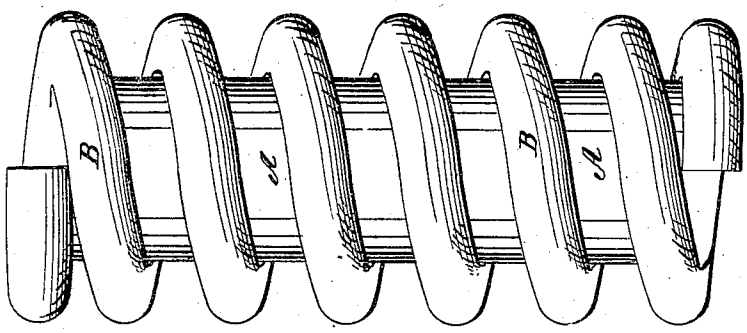


Fig: 3.

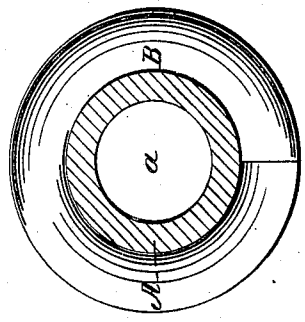


Fig: 2.

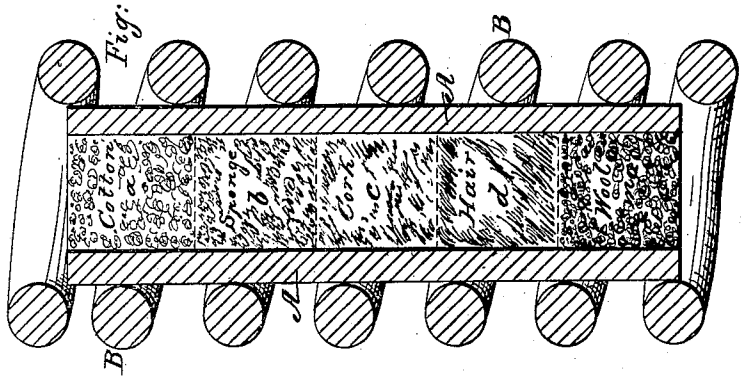


Fig: 1.

Witnesses
Henry E. Roeder
Nathaniel Lundee.

Inventor.
P. G. Gardiner

N. PETERS. Photo-Lithographer. Washington. D. C.

UNITED STATES PATENT OFFICE.

PERRY G. GARDINER, OF NEW YORK, N. Y.

IMPROVED RAILWAY-CAR SPRING.

Specification forming part of Letters Patent No. 92,182, *dated July* 6, 1869.

To all whom it may concern:

Be it known that I, PERRY G. GARDINER, of New York, in the county and State of New York, have invented a new and Improved Compound Car-Spring; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

Figure I represents a section; Fig. II, a top view; and Fig. III, an outside view of my compound car-spring.

This invention consists in the combination of several elastic substances, such as wool, hair, cork, sponge, cotton, or similar articles, with which the central part of a cylindrical india-rubber tube is filled under pressure, when said india-rubber tube is surrounded by a spiral metal spring to aid in giving increased strength and elasticity to the spring to retain the india-rubber tube or spring in form, and to force the same between the coils of the metal spring, and thus restrain the same from snapping or injury.

In the accompanying drawings, A represents an india-rubber tube or cylinder, surrounded by a spiral metal spring, B. The central part, or the hollow space of the tube or cylinder A is filled, under a pressure of two thousand (2,000) pounds, more or less, with any elastic, flexible substance, or with several of them combined, such as cotton, sponge, cork, hair, wool, or similar substances, represented in the drawings by the letters *a*, *b*, *c*, *d*, and *m*.

By this filling of the central hollow space of the india-rubber spring or tube, after the same is surrounded by the spiral metal spring, the india-rubber will be partially forced between the coils of the metal spring, and the greater the load placed upon the whole spring, the more the india-rubber will be forced between the coils, preventing thereby the metal spring from snapping or from being otherwise injured, and at the same time increasing the strength of the spring materially.

If the weight and the amount of material contained in this spring are considered in relation to its power, we find that no other spring, or combination of springs, can compare with the same.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, with an india-rubber hollow cylinder surrounded by a spiral spring, of an elastic substance or substances, such as wool, cotton, hair, sponge, cork, or equivalent fibrous material, either singly or several of them combined, forced under pressure into the central hollow space of the india-rubber tube, in the manner and for the purpose substantially as specified.

Witnesses: P. G. GARDINER.

HENRY E. ROEDER,

NATHANIEL LUNDIE.