

A. HEBBARD.

Car Spring.

No. 53,222.

Patented Mar. 13, 1866.

Fig. 1.

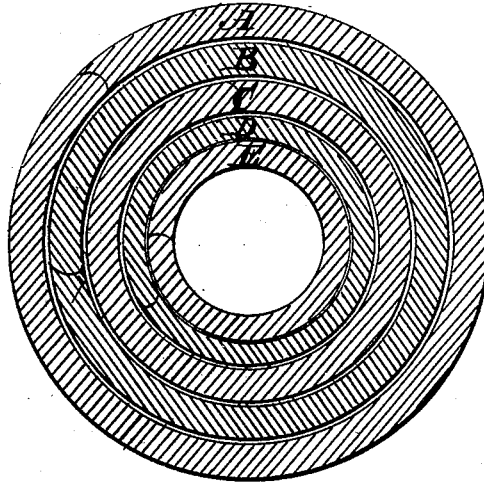
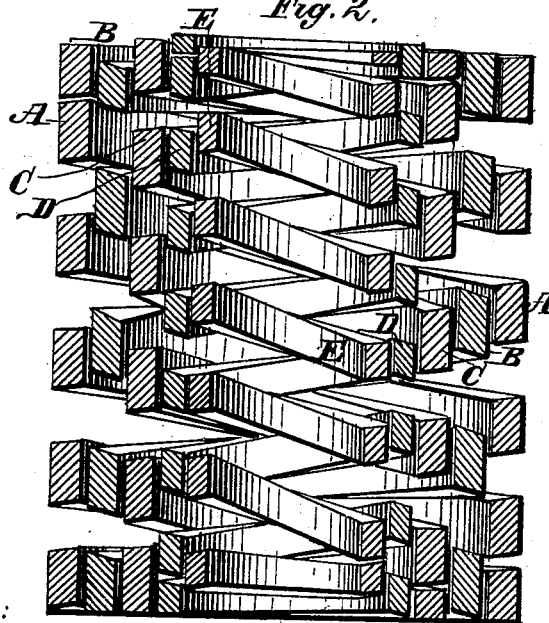


Fig. 2.



Witnesses:

Chas. M. Garity
H. W. Fordush

Inventor:

Albert Hebbard

UNITED STATES PATENT OFFICE.

ALBERT HEBBARD, OF BUFFALO, NEW YORK, ASSIGNOR TO HIMSELF AND JOHN P. ONDERDONK, OF SAME PLACE.

IMPROVED CAR-SPRINGS.

Specification forming part of Letters Patent No. 53,222, dated March 13, 1866.

To all whom it may concern:

Be it known that I, ALBERT HEBBARD, assignor to myself and JOHN P. ONDERDONK, both of the city of Buffalo, county of Erie, and State of New York, have invented a new and Improved Spiral Nest-Spring for Railroad-Cars and for other Purposes; and I do hereby declare that the following is a full and exact description thereof, having reference to the accompanying drawings, making a part of this specification, in which—

Figure I is a plan thereof, and Fig. II a vertical section.

The nature of this invention relates to a spiral nest-spring for railroad-cars and other like purposes; and it consists in constructing and arranging a metallic spiral spring within a metallic spiral spring in a manner to form a nest of spiral springs—three, four, or more in number—each spring being distinct from the other, and the whole acting together as one spring.

Letters of like name and kind refer to like parts in each of the figures.

A represents a spiral spring, made of metal of any given diameter, length, and strength of metal, constructed according to any well-known method of making spiral springs. B is a similar spring of lesser diameter and equal length, or nearly so, and placed within the spring A. C is a similar spring of lesser diameter than B, but of equal length, or nearly so, and placed within B. D is a similar spring of lesser diameter than C, but of equal length, or nearly so, and placed within C. E is a similar spring of lesser diameter than D, but of equal length, or nearly so, and placed within D. These several springs—three, four, or more—arranged together as described, form a nest-spring of great strength and durability and of sufficient elasticity. In making this nest-spring I coil the distinct springs alternately to the right and left, so that when placed in nest, the first or outside spring being coiled to the right, the second or next inside will be coiled to the left, and so on. This secures a more perfect action and enables one spring to support the other in a vertical position, the space between the layers of the one being crossed by the solid metal of the other, the nest operating as one spring.

I have contemplated making a nest of springs from one continuous bar or strand of metal coiled in like manner; but this I do not consider as useful as the method already de-

scribed of making each spring separate from the other.

I have also contemplated making a slight difference in the length or height of the several coils constituting the nest, so as to adapt the nest to a light or heavy load—for instance, the two outer coils being of a given length, the third a little shorter, and the fourth a trifle shorter than the third, and so on, so that with a light load the two outer springs would sustain the weight. The load being increased, the first, second, and third coils would mutually act, and with a still heavier load the fourth would also act, and so on.

It will of course be understood that the spiral nest-springs will vary in size, strength, and elasticity according to the place and purpose for which they are to be used. They are believed to be much superior to rubber springs or metallic springs of any other construction heretofore in use for railroad-cars, and for all places where springs of great strength and durability are required.

In case one coil should prove defective, or should break, it can be easily replaced by another, so that the breaking of one does not impair the usefulness of the others, and the nest can be kept good at all times.

Springs constructed coiled alternately from right to left and put together in nest, as herein described, are self-supporting—that is, they need no central bolt or outside case, like other spiral springs, to insure them to work in a vertical position. Nor is it necessary to put two or more nests into combination within an encompassing spring or case. One nest, as herein described, is sufficient for the purpose, and may be limited to the space and position of a solid-rubber spring for like purpose. It is cheaper in construction and more perfect in action than any other kind of metallic spring for railroad-car trucks.

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

A metallic nest-spring, the several separate springs thereof being coiled, the first right and the second left, and so on alternately, and placed in nest, for the purposes and substantially as described.

ALBERT HEBBARD.

Witnesses:

CHAS. MCCARTHY,
W. H. FORBUSH.