

J. W. EVANS.

Improvement in Railway-Car Spring.

No. 128,292.

Patented June 25, 1872.

Fig. 1.

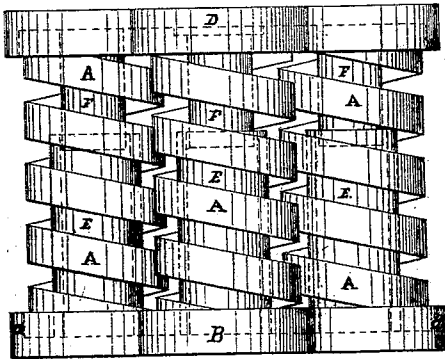


Fig. 2.

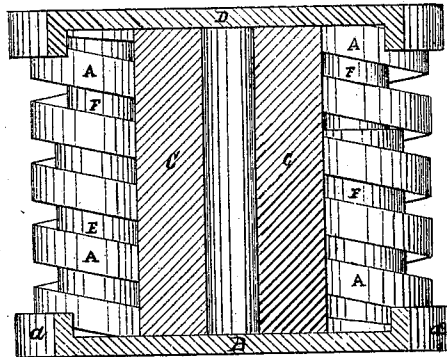


Fig. 3.

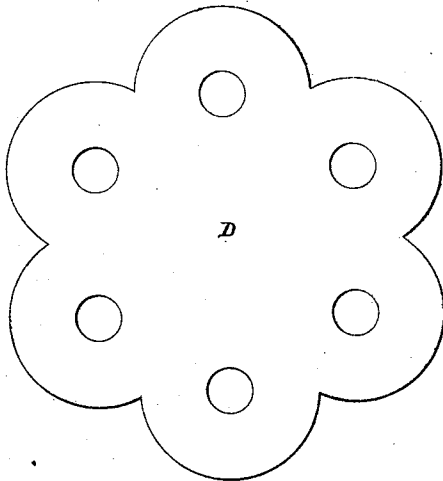
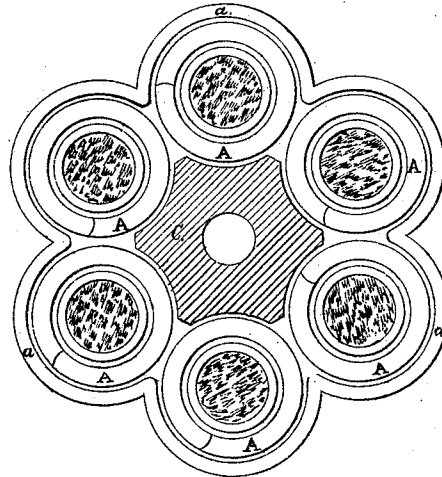


Fig. 4.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES W. EVANS, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND VOSE,
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IMPROVEMENT IN RAILWAY CAR-SPRINGS.

Specification forming part of Letters Patent No. 128,292, dated June 25, 1872.

To all whom it may concern:

Be it known that I, JAMES W. EVANS, of the city, county, and State of New York, have invented a new and useful Improvement in Railway Car-Springs, of which the following is a specification, reference being had to the accompanying drawing forming part thereof.

Figure 1 is an elevation of my group of combined spiral and rubber springs, forming together a single car-spring. Fig. 2 is a vertical section of the same. Fig. 3 is a top view of the same, showing simply the cap. Fig. 4 is also a top view of the same with the cap removed, showing the springs.

My invention relates to a railway car-spring, composed of a number of steel spirals arranged and held in a circle within a suitable cap and base, and surrounding a central column of vulcanized rubber, the latter being formed with several external concave surfaces to fit the convexity of the several steel spirals, so that it is in contact with and supported by them throughout nearly or quite its entire surface. It relates also to uniting with the base, upon which the spirals rest, a series of hollow metal columns or tubes, upon and surrounding which the several spirals are placed, and then uniting with the cap that rests upon the top of the springs a series of iron posts or studs, which, when the cap is in place, enter and fit loosely into the before-named hollow pillars. It also relates to packing into each of the said hollow pillars a quantity of wool or some equivalent elastic fibrous material, that shall act as a spring when pressed by the studs as they may be forced downward into the hollow columns.

A represents a series of spiral steel springs, made in the ordinary manner, of such a size that the group shall exert the bearing power required. These are arranged in a circle, as shown fully in Fig. 4, and placed upon an iron base, B. A flange or rim, *a*, upon said base holds the spirals in place. C is a column of vulcanized rubber, placed centrally within the circle of spirals. It is formed with six concave surfaces, as shown in Fig. 4, made to fit the convexity of the several spirals with which it is in contact or nearly so. D is a cap, corresponding in form to the base B. The whole may be held together by bolts passing through

the cap and base. E represents a series of hollow metal columns or tubes, fixed onto the base B. They may be made of short pieces of iron tubing, united to the base by the latter being cast onto them. They should be of such diameter as to allow the spirals to fit loosely upon them, and of such length as not to interfere with the action of the spirals. These hollow columns serve also as the receptacles for compressed wool or some other elastic fibrous material or rubber, to be brought into action as springs, when the studs F upon the cap D are pressed down against it within the hollow columns. F represents a series of studs cast onto the under surface of the cap D, corresponding in position with the spirals and the hollow columns E of a diameter to fit easily into the said columns, and of a length to extend just within the same when the springs are at rest.

The compressed wool or its equivalent to be placed within the hollow columns E may nearly fill the same; or, if preferred, a vacant space may be left between the studs F and the same, so that the elastic contents of the said columns will not be brought into action until the combined springs are heavily loaded, and then be made by the additional resistance furnished to augment the bearing power just when most needed.

The column of rubber may have a longitudinal opening through the center, as shown in the drawing, and, if preferred, it may be made a plane cylinder, in place of having concave sides to fit the convexities of the spirals.

It is evident that in this combination the advantages of the concurrent action of the spiral steel springs and the mass of rubber forming the central column is secured. The lateral outward spread of the rubber is controlled by the surrounding spirals very effectually by reason of the several concave sides of the same, bringing nearly the entire external surface in contact with the spirals.

The hollow columns serve the double purpose of maintaining the spirals in an upright position, and holding an elastic substance, that is brought into action in the combination, as a spring by means of the studs F.

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

1. The combination of the series of spirals A with the central column of rubber C, the whole contained in the cap D and base B, as and for the purposes specified.

2. The combination of the spiral springs A, the base B, the hollow columns E that are fixed rigidly and permanently to said base, and the studs F, as and for the purposes specified.

3. With the combination of second above claimed, the compressed wool or equivalent within said columns E, and the studs F, as and for the purposes specified.

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Witnesses:

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