(No Model.)

J. G. ROTH.

VEHICLE SPRING.

No. 331,215. Patented Nov. 24, 1885.

Fig. 1.

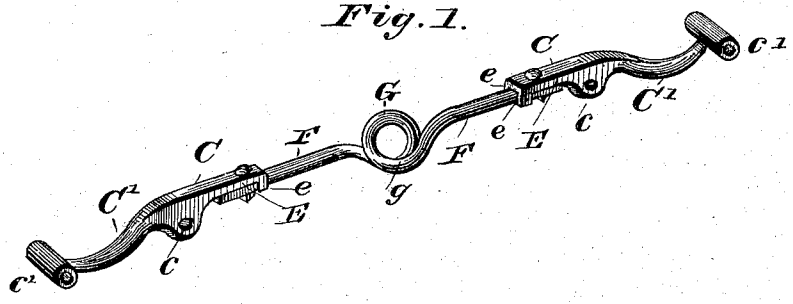
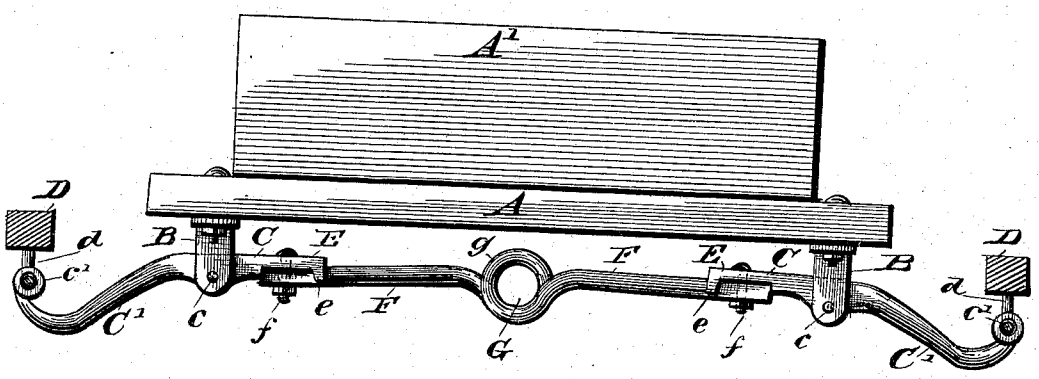


Fig. 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

J. GEORGE ROTH, OF SOUTH BEND, INDIANA.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 331,215, dated November 24, 1885.

Application filed May 19, 1885. Serial No. 166,026. (No model.)

To all whom it may concern:

Be it known that I, J. GEORGE ROTH, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Vehicle-Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 represents a perspective view of the spring complete, but detached from the spring-bar; and Fig. 2, a side view of the spring attached to the spring-bar.

The invention relates to springs for vehicles, its object being to provide a strong, simple, and cheap spring having enough vertical elasticity to make the vehicle-body ride easily thereon, and constructed in such manner as to prevent the body from swinging laterally and prevent either side from tipping or being depressed when loaded more than the other side. There are two springs, attached, respectively, to the front and rear spring-bars of the vehicle; and the invention consists, essentially, in bending into one or more circular loops the central portion of the elastic steel bars that form the central and main portion of each spring. The said loops form the spring proper, and are acted on by the pressure of the load, so that, being central, the said action is central and the body remains level. They are compressed by any lateral jar or pressure, and thus compensate for or take up any lateral swing of the vehicle-body.

Referring to the accompanying drawings by letter, A designates one of the spring-bars of a vehicle, attached to the body A′ in the usual manner.

B B are forked brackets secured to and depending from the lower surface of the spring-bar, near to and at equal distances from the ends thereof.

C C are bars, each of which is pivoted at *c* between the arms of a bracket B, as shown. The outwardly-curved arm C′ of each bar C has a loop or thimble, *c′*, made upon its ends, by means of which it is secured to a shackle, *d*, on the side bar, D, of the corresponding side. The inner arm, E, of each bar C is squared, and has upon its end two depending points, *e e*, which lie on each side of the end of central bar, F, which forms the main portion of the spring. The end of the said bar is squared to lie against the end of the arm E, and is secured thereto by bolt *f*, as shown, the points *e e* embracing the sides of the end of the bar F.

G is the central coiled portion of the bar F, which portion may consist of only one coil, *g*, or several. These coils are preferably made on the arcs of circles. The bar F is made of tough and highly-elastic steel.

Now, it is evident that, the coils being central, and being acted on by the vertical pressure of the body, however unequally the body may be loaded, the pressure of the load will act at the center, and the body will be kept level. Any jar or pressure from one side will tend to compress or make smaller the coil or coils *g*, so that lateral motion of the body will be prevented; also, the short coils *g* (as the ends of bars F are supported by means of the bars C, brackets B, and side bars, D) have enough vertical elasticity to make the body ride easily.

The springs attached to the front and rear spring-bars are of identical construction, and but two springs are necessary for each vehicle.

For heavy vehicles the bars F C are made heavier, and more coils *g* are made on the bars F.

Having described my invention, I claim—

1. A spring for vehicles, composed of two similar bars, each pivoted at its outer end to a shackle on the side bar, and at about its middle portion to a bracket depending from the spring-bar, and a central elastic metal bar having its ends secured to the inner ends of the two similar bars, and its central portion formed into one or more elastic coils, substantially as specified.

2. The combination, with the spring-bar A, brackets B B, depending therefrom, side bars, D, and shackles *d*, of the elastic bar F, having the central coils, *g g*, and the two similar bars, C, secured by their inner ends to the ends of the bar F, pivoted upon the brackets B, and having their ends pivoted to the shackles *d*, substantially as described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

J. GEORGE ROTH.

Witnesses:

JAMES DU SHANE,

A. ANDERSON.