(No Model.)

R. T. BISHOP.

VEHICLE SPRING.

No. 268,989. Patented Dec. 12, 1882.

Fig. 1.

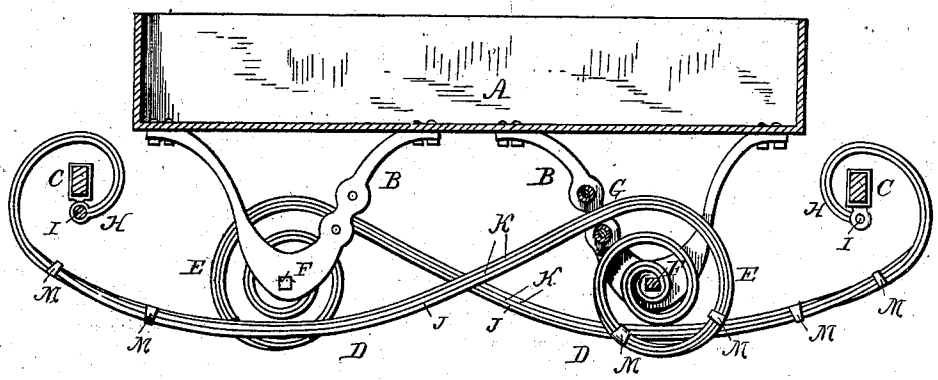
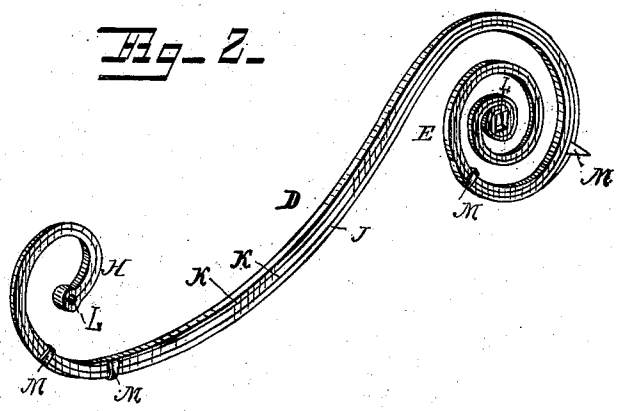


Fig. 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

RICHARD T. BISHOP, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF TO THEODORE HUNT, OF SAME PLACE.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 268,989, dated December 12, 1882.

Application filed September 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, RICHARD T. BISHOP, a citizen of the United States, residing at St. Louis, in the county of St. Louis, State of Missouri, have invented a new and useful Vehicle-Spring, of which the following is a specification, reference being had to the accompanying drawings.

Figure 1 is an end view, illustrating my invention as applied to a side-bar vehicle; and Fig. 2 is a detail view, illustrating one of the springs detached.

Similar letters of reference indicate corresponding parts in both figures.

This invention relates to vehicle-springs; and it consists in certain improvements in the construction and arrangement of the same, which will be hereinafter fully described, and particularly pointed out in the claims.

In the drawings hereto annexed my invention is shown applied to a side-bar vehicle. A represents the box or body, which is provided at each end with a pair of downward-projecting brackets, B B. C C are the side-bars.

D D are the springs, which are elongated S-shaped, and provided at their inner ends with coils E, wound several times around the bolts F, by which they were connected to the lower ends of the brackets B. From thence the springs are extended outwardly, crossing each other centrally under the buggy-box. Each of the brackets is provided on its inner side with a pair of friction-rollers, G, between which the spring connected to said bracket passes, said rollers forming guides and supports for the springs, said brackets and rollers also serve to hold together the several leaves of which each spring is constructed. The outer end of each spring has a single coil, H, encircling and connected to the under side of the side bar, C, by a bolt, I.

Each of the springs D is constructed of a main leaf, J, and one or more supplemental leaves, K. The ends of the main leaf are doubled upon itself, so as to form the eyes or bolt-holes L. The supplemental leaves K are provided at their ends with lugs or lips M, encircling and clamped around the main leaf, to which they are thus secured.

It will be observed that in the construction of the springs bolts, rivets, clips, and other rigid fastening devices are entirely avoided. I thereby obtain the greatest elasticity, and enable every individual leaf of each spring to move freely and independently without detracting from, but on the contrary assisting, the successful operation of the whole.

The operation and advantages of my invention will be readily understood from the foregoing description.

I would have it understood that the invention may be applied to any kind and to any class of vehicles by making certain modifications of details, which will readily suggest themselves, without departing from the spirit of my invention.

I claim and desire to secure by Letters Patent of the United States—

1. The combination, with the vehicle-body A, having downward-projecting brackets B, of the two pairs of elongated S-shaped springs D, having their inner ends secured to said brackets, their outer ends to the side bars or equivalent supports, and crossing each other under the vehicle-body, as set forth.

2. The combination, with the spring, D of the brackets B, having rollers G, as and for the purpose set forth.

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

RICHARD THOS. BISHOP.

Witnesses:

JAMES T. WATSON,

THEODORE HUNT.