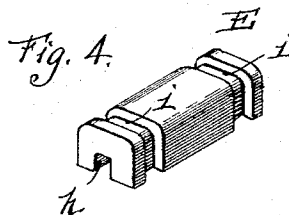
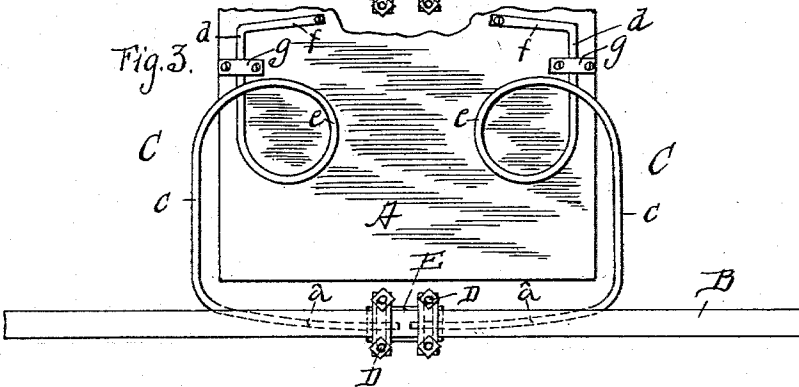
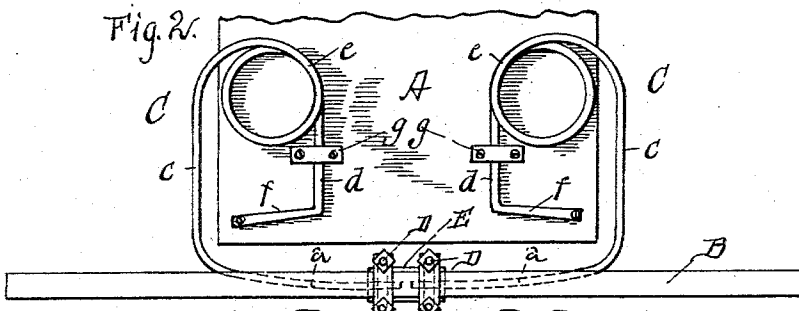
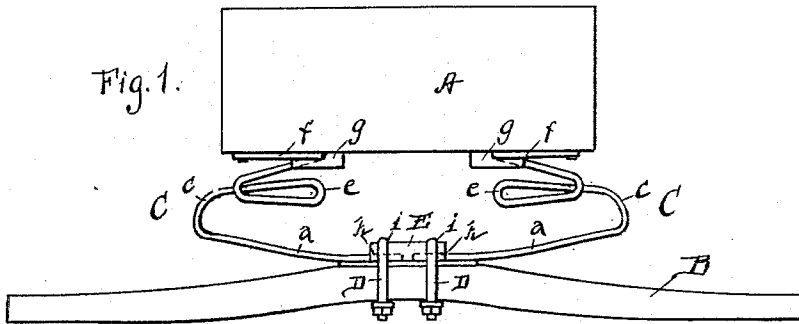


(No Model.)

C. L. THOMAS.
VEHICLE SPRING.

No. 533,757.

Patented Feb. 5, 1895.



WITNESSES

Geo. M. Anderson
Philip Masini

INVENTOR

C. L. Thomas.
By E. W. Anderson
his Attorney

UNITED STATES PATENT OFFICE.

CHARLES L. THOMAS, OF BUFFALO, NEW YORK.

VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 533,757, dated February 5, 1895.

Application filed May 16, 1894. Serial No. 611,442. (No model.)

To all whom it may concern:

Be it known that I, CHARLES L. THOMAS, a citizen of the United States, and a resident of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Vehicle-Springs; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is an end view of spring applied. Fig. 2 is a bottom plan of same. Fig. 3 is a bottom plan of modification. Fig. 4 is a detail of clip plate.

This invention has relation to certain new and useful improvements in vehicle springs, the object being to provide a simple and efficient spring of improved character free from joints and the rattle and squeak attendant upon jointed springs.

With this object in view, the invention consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claim.

Referring to the accompanying drawings the letter A designates the body portion of a vehicle, and B the axle thereof, said body and axle being shown as provided with my improved spring. This spring comprises two similar parts C, C, formed each from a single piece of spring metal shaped to form the transverse arm *a* which is secured to the axle B or to the bolster thereof; oblique arm *c*, terminating under the body A in a horizontal coil *e*, the coils of the two parts being coiled oppositely to each other; and the reversely directed arm *d*, terminating in an outwardly and laterally extending short arm *f*, which is secured to the body A. The arm *d* is also secured to the body by means of clips *g*.

The body A rests directly upon the upper arms of the coils, which with the arm *d* and lateral arm *f*, give said body a broad bearing and support.

The transverse arms *a, a*, of the two parts are brought together at the center with their ends abutting, or nearly so, where they are secured by clips D, and clip plate E.

The clip plate E is formed on its under face with a longitudinal groove *h* of sufficient depth to seat the end portions of the arms *a, a*, therein, and with grooves *i* in its upper face for the clips D.

Fig. 3 shows a slightly modified form of the spring sections, wherein the coil is formed with one-half turn less, the arms *c, c*, leaving the coil from the outer instead of from the inner portion thereof, and the lateral arms *f* turned inwardly instead of outwardly.

It will be understood that although I have shown and described a spring at one end only of the vehicle, a similar spring is intended to be applied at the opposite end.

The wagon body is usually made sufficiently short, and the arms *a, a*, with sufficient spread to permit said body to settle between said arms.

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

The combination with a vehicle body, and its running gear, of the four springs C, two under each end portion of said body, each of said sections having a coil *e*, the coils of each pair being made oppositely, said coils being near the lateral edges of the body, an angular arm *d, f*, leaving the upper portion of each coil and rigidly secured to said body, and an angular arm *c, a*, leaving the said coil and running free to the bolster, the two arms *a* of each pair of the springs being brought together on the axle or bolster and the grooved clip plate E for securing said arms, substantially as specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES L. THOMAS.

Witnesses:

ISRAEL RICH,
ROBERT J. WAGNER.