E. T. WESTERFIELD.
Vehicle Spring.

No. 198,717. Patented Dec. 25, 1877.

Fig: 1.

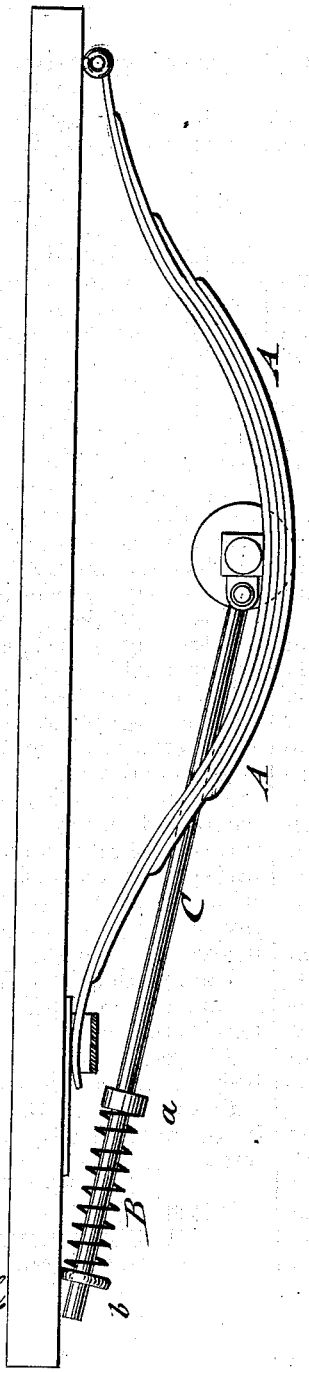
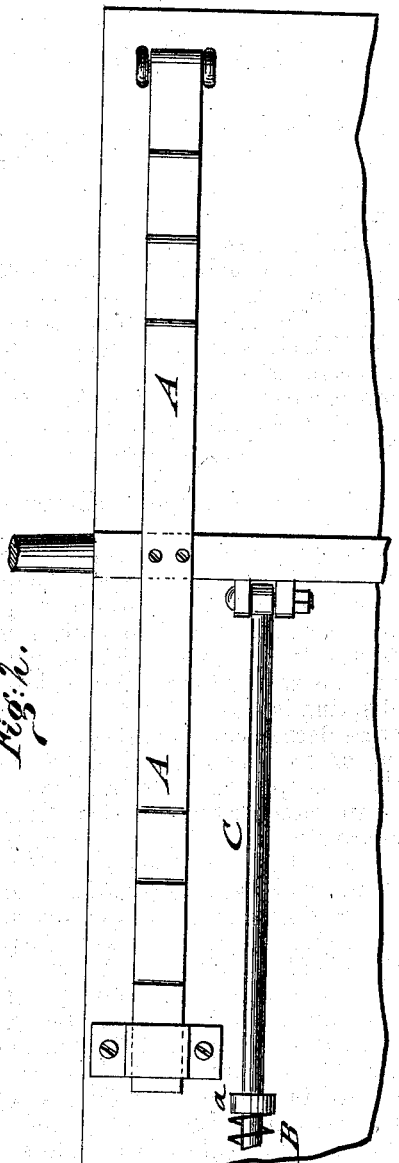


Fig: 2.



WITNESSES:

Chas. Nida.
J. H. Scarborough.

INVENTOR:

E. T. Westerfield.
BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EUGENE T. WESTERFIELD, OF NEW YORK, N. Y.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **198,717**, dated December 25, 1877; application filed September 1, 1877.

To all whom it may concern:

Be it known that I, EUGENE T. WESTERFIELD, of New York city, in the county and State of New York, have invented a new and Improved Vehicle-Spring, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a side elevation of my improved vehicle-spring, and Fig. 2 a bottom view of the same.

Similar letters of reference indicate corresponding parts.

The object of my invention is to furnish for vehicles of all kinds an improved compound spring, the elasticity of which under light or heavy burdens is equalized, and which is not liable to break by a sudden jolt or jar. By the use of this spring the number of leaves in the mainspring is lessened, and also the cost of the same decreased, while it is not as liable to get out of order as the ordinary semi-elliptic or platform springs in general use.

The invention consists of a semi-elliptic mainspring, in combination with an auxiliary spiral spring, that is thrown into action by the presence of the load, and a connecting lever-rod, working by a shoulder on the spiral spring.

In the drawing, A represents the mainspring, made of semi-elliptic shape, and with a suitable number of leaves. The mainspring A is fastened to the axle, the body of the vehicle resting on the mainspring. The mainspring is attached to the body of vehicle at one end, and arranged to slide or play along a bottom plate and casing or clip at the other end. The mainspring is made lighter, with a less number of leaves, than customary in this class of springs, and the decrease in power provided for or equalized by an auxiliary spiral spring, B, which rests on a shoulder, *a*, of a lever-rod, C, that is pivoted to the axle of the vehicle near the point of attachment of the mainspring. The free end of the lever-rod C passes through a guide-ring, *b*, at the under side of the body, the spiral spring B being placed between the shoulder *a* and the guide-ring *b*, so that when the load presses the body down the spiral spring is thrown into action at a certain point to re-enforce the mainspring. For light loads, the mainspring may be sufficient; but for heavy loads the spiral spring forms an auxiliary to the mainspring, and takes up the surplus weight.

The spiral spring may be made of any suitable strength, according to the weight to be sustained, while the mainspring is made lighter, and thereby cheaper, as less leaves are required.

The auxiliary spring is called into action whenever the load exceeds a certain weight, the shoulder of the lever-rod compressing the spiral spring, and taking up thereby the additional weight.

In this manner a cheaper and more effective compound spring for vehicles of all kinds is furnished, that is not as liable to break as the leaf-springs, and that will bear a heavier load with greater facility than a mainspring of corresponding power, and with a more uniform degree of elasticity.

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

The rod C, pivoted to axle, sliding through body-ring *b*, having shoulder *a*, and provided with spiral spring B, as shown and described, in combination with the mainspring A, for the purpose specified.

EUGENE T. WESTERFIELD.

Witnesses:

W. WESTERFIELD,

PAUL GOEPEL.