No. 848,864. PATENTED APR. 2, 1907.

L. N. STEWART.

SPRING SUPPORT FOR VEHICLE BODIES.

APPLICATION FILED MAR. 9, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

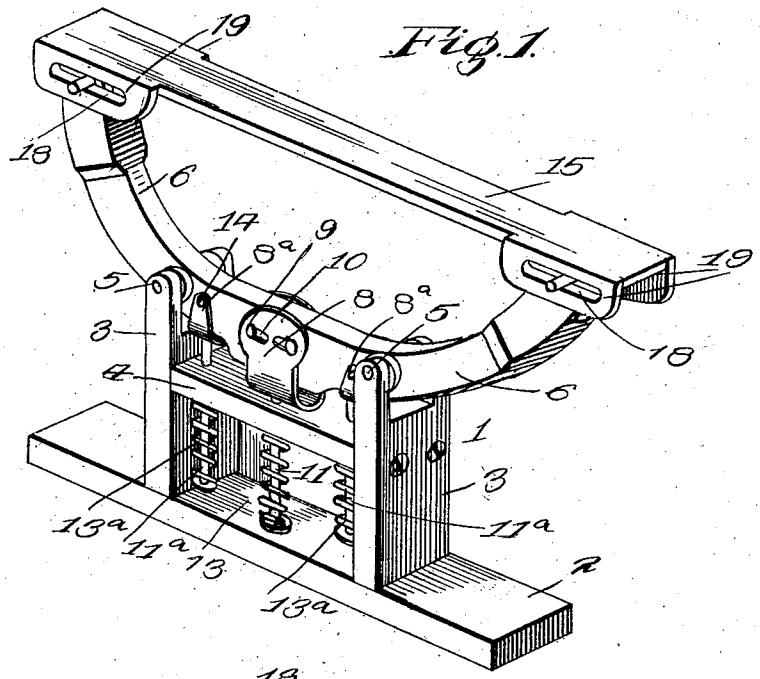
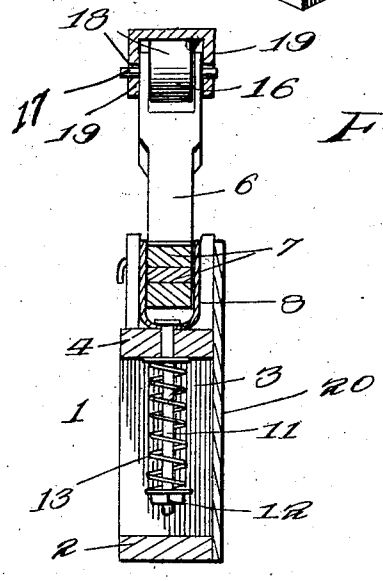



Fig. 2.




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Fig. 3.

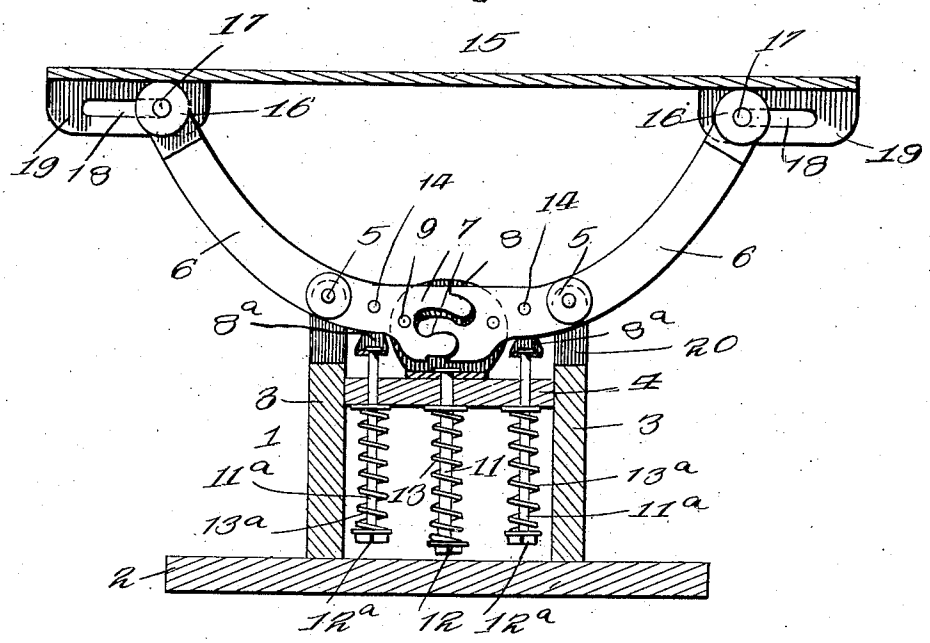
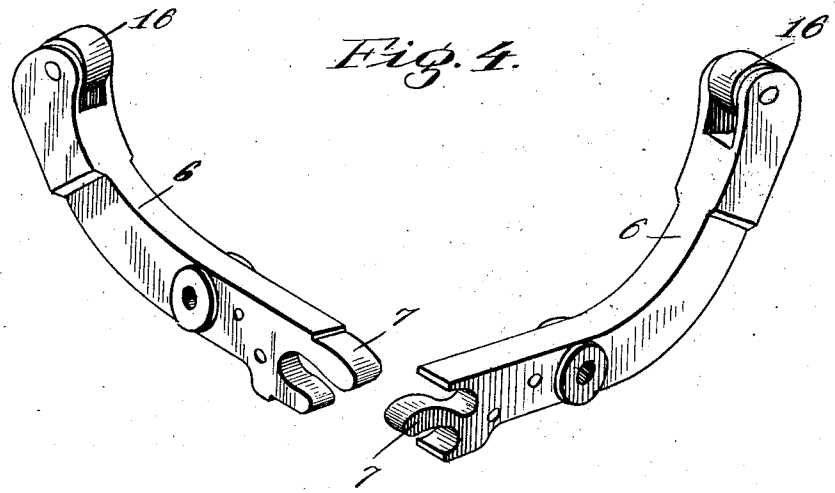



Fig. 4.




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# UNITED STATES PATENT OFFICE.

LEMUEL N. STEWART, OF AGENCY, MISSOURI.

## SPRING-SUPPORT FOR VEHICLE-BODIES.

No. 848,864. Specification of Letters Patent. Patented April 2, 1907.

Application filed March 9, 1906. Serial No. 305,149.

*To all whom it may concern:*

Be it known that I, LEMUEL N. STEWART, a citizen of the United States, residing at Agency, in the county of Buchanan and State of Missouri, have invented certain new and useful Improvements in Spring-Supports for Vehicle-Bodies, of which the following is a specification.

This invention comprises a novel construction of spring or elastic supporting means which is particularly designed for vehicle-bodies to take up jar and vibration incident to the use thereof, the principle of construction and general arrangement of parts contemplated in the preferred adaptation of the invention being susceptible of application with reference to the bodies of railway coaches, cars, or the like.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view showing a support embodying the essential features of the invention. Fig. 2 is a vertical longitudinal section through the support. Fig. 3 is a vertical transverse section. Fig. 4 is a detail perspective view of one of the levers carrying the floating bolster.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

Specifically describing the invention, the numeral 1 designates a suitable support which comprises a transverse axle-beam 2, adapted to be secured in any substantial way to an axle, spaced vertical members 3 being carried by the beam 2 and connected together intermediate of their ends by a horizontal bar 4. The upper extremities of the members 3 are provided with suitable bearings for pivots 5, which connect complemental supporting-levers 6 therewith. The levers 6 are curved and are pivoted at a point between the ends thereof, the lower extremities of the levers being connected with each other by means of toothed segments 7, integrally formed therewith in the preferred construction. The levers 6 are also connected together by means of a yoke 8, which embraces the segments 7 upon opposite sides, pins 9 projecting from opposite sides of the segments 7 and passing through horizontal slots 10 in opposite sides of the yoke 8 in order to connect said yoke with the levers by a sliding connection. A rod 11 is connected at its upper end with the lower extremity of the yoke 8 and passes downwardly through an aperture in the bar 4 of the support 1. The lower end of the rod 11 has an adjustable member 12 threaded thereon, and a spring 13 is interposed between the under side of the bar 4 and this member 12, the function of the spring 13 being to afford an elastic connection between the lower ends of the levers 6 and the support 1.

The levers 6 are not only connected with the support 1 by the elastic connection secured in the provision of the members 11, 12, and 13, but it is designed to use auxiliary flexible connections, one for each lever 6. The auxiliary connections consist of rods $11^a$, adjustable members $12^a$, and springs $13^a$, the rods $11^a$ passing through apertures in the bar 4 in a manner similar to the mounting of the rod 11. The upper end of each rod $11^a$ is connected with a small yoke $8^a$, the opposite sides of which have pivotal connection at 14 with the adjacent lever.

Mounted on the levers 6 is a floating bolster 15, which is laterally movable to accommodate for lateral jar and vibration of the body which is supported thereon in the practical use thereof said bolster 15 having anti-friction-bearings interposed between it and the upper extremities of the levers 6 aforesaid. Each lever 6 has a roller 16 mounted on its upper end, short axles 17 being provided for the rollers and having the ends thereof projected outwardly from each lever. The ends of the axles 17 of the rollers enter horizontal slots 18 in pendent longitudinal flanges 19, which are integrally formed with opposite ends of the bolster 15. The slots 18 and axles 17 afford a pin-and-slot connection between the upper ends of the levers 6 and the bolster 15, permitting of the lateral floating movement of the bolster, as hereinbefore premised. The rollers 16 are in contact with the under side of the bolster at the ends thereof, and said rollers reduce the friction between the bolster and the levers to a minimum, giving rise to various other advantages of obvious import.

The lower ends of the levers 6 being connected by segments 7 necessitates simultaneous movement of the levers as they yield under the weight of the load carried on the bolster 15, the upper extremities of the levers

being always movable in the same horizontal plane, obviating all likelihood of tilting of the body which is carried on the bolster 15 in a manner readily apparent.

The mechanism comprised in the elastic connections between the levers and the support 1 may be housed in said support by plates 20, attached upon opposite sides of the members 3 and inclosing the space therebetween, one of said plates being omitted from Fig. 2. The downward movement of the bolster 15 will be limited by contact thereof with the lower ends of the levers 6, which, of course, move upwardly as the outer upper ends thereof move downwardly.

Having thus described the invention, what is claimed as new is—

1. In means of the class described, the combination of a support including spaced vertical members, a horizontal bar connecting the said members, complemental supporting members pivoted between their ends to the vertical members and connected at adjacent extremities for simultaneous movement, a bolster mounted upon the upper ends of the levers, a yoke connected with the adjacent ends of the levers, a rod attached to said yoke and passing through the horizontal bar, an adjustable member on the said rod, and a spring interposed between the horizontal bar and the said adjustable member.

2. In means of the class described, the combination of a support, complemental supporting-levers pivoted at a point between the ends thereof to the support, connecting means between the adjacent ends of the levers for effecting simultaneous movement of said levers, a bolster mounted upon the outer or opposite ends of the levers and loosely connected therewith, a spring connected with the support and attached to the adjacent ends of both levers, and other springs auxiliary to the first-mentioned spring and each connected with one of the levers and adjustable independently of the first-mentioned spring to supplement the action thereof.

3. In means of the class described, the combination of a support including spaced vertical members, a horizontal bar connecting said members, complemental supporting-levers pivoted between their ends to the vertical members and connected at adjacent extremities for simultaneous movement, a bolster mounted upon the upper or remote ends of the levers, a yoke connected with the adjacent ends of the levers, a rod attached to said yoke and passing through the horizontal bar, an adjustable member on the lower end of said rod, a spring interposed between the horizontal bar and the adjustable member aforesaid, each lever having another yoke connected thereto, the last-mentioned yoke of each lever having a rod attached thereto and passing through the horizontal bar, an adjustable member on the last-mentioned rod of each lever, and a spring for said rod interposed between its adjustable member and the horizontal bar for the purpose specified.

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

LEMUEL N. STEWART. [L. S.]

Witnesses:

EUGENE W. MILLER,

PERRY C. MILLER.