

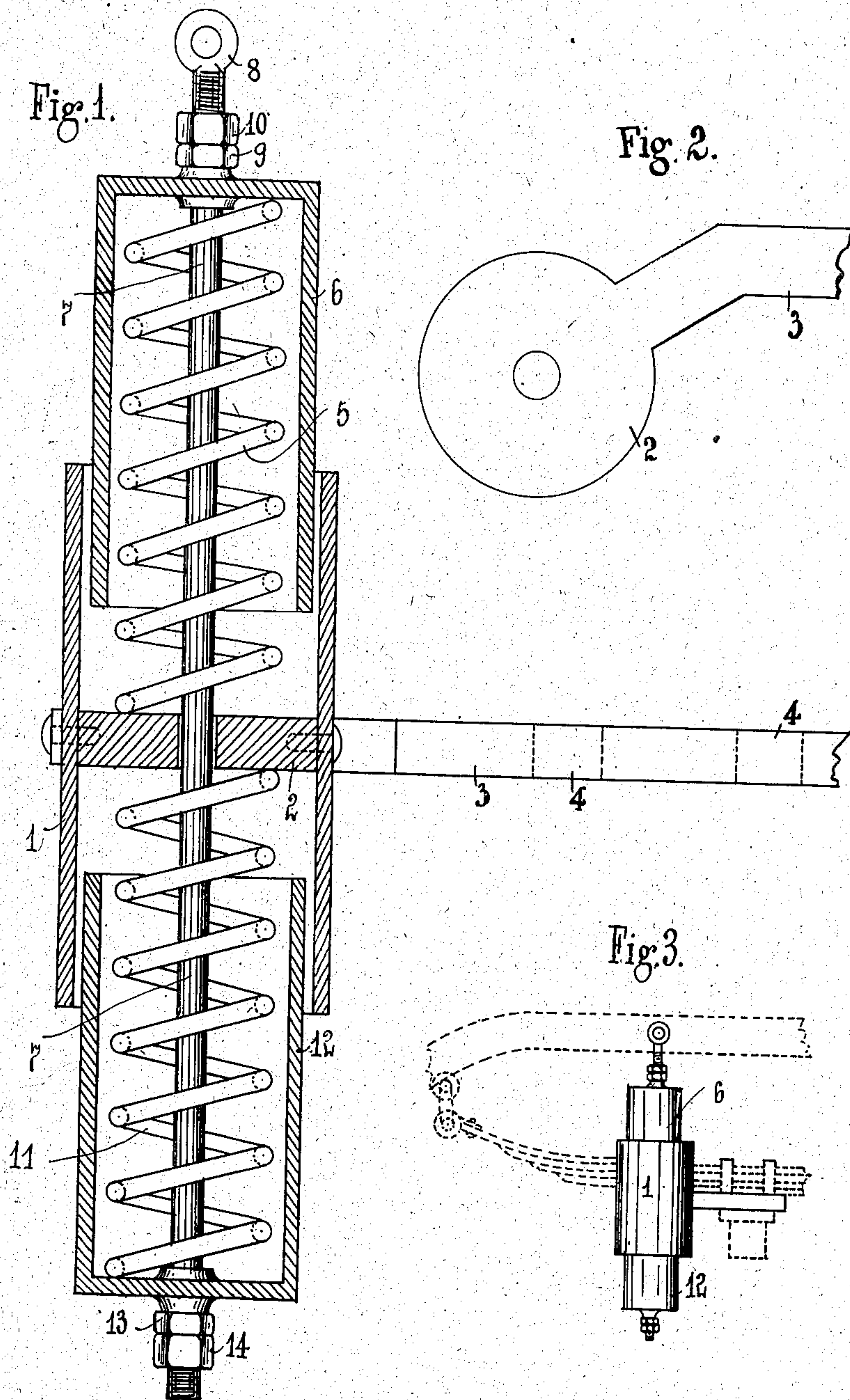
No. 815,188.

PATENTED MAR. 13, 1906.

A. MANS.

ANTIVIBRATION DEVICE FOR CARRIAGE SPRINGS.

APPLICATION FILED JUNE 21, 1905.



Witnesses:

C. H. Crawford  
Harry M. Pearson

Inventor:

Albert Mans  
by O. Singer.  
Attorney



# UNITED STATES PATENT OFFICE.

ALBERT MANS, OF DIEGHEM, BELGIUM.

## ANTIVIBRATION DEVICE FOR CARRIAGE-SPRINGS.

No. 815,188.

Specification of Letters Patent.

Patented March 13, 1906.

Application filed June 21, 1905. Serial No. 266,273.

*To all whom it may concern:*

Be it known that I, ALBERT MANS, artist, a subject of the Belgian King, residing at Dieghem, Belgium, have invented new and useful Improvements in Antivibration Devices for Carriage-Springs; and I do hereby declare the following to be a full, clear, and exact description of the same.

My present invention relates to antivibration or compensating devices for motor and other vehicles, the object being to provide an improved means adapted to effectively avoid jerks and shocks produced by roughness of the ground.

A further object of my invention is to provide means whereby a considerable saving of motive power may be obtained and whereby the parts of the motor (in motor-cars) and the vehicle are effectively protected against injury, so that these parts may have a much longer life.

These and other objects are attained by a novel combination of spiral springs acting between the axle and the vehicle-frame to render the movements of the frame progressive, as fully described hereinafter.

In the accompanying drawings, Figure 1 is a vertical sectional view of the improved device. Fig. 2 is a plan view of the attaching or fastening plate, and Fig. 3 shows the arrangement of the device between the axle and vehicle-frame.

The improved antivibration device comprises a metal sleeve 1, secured in any suitable way to a plate 2, provided with a suitable extension 3, having holes 4 4 for fastening the same by means of bolts to the lower portion of the carriage-spring, Fig. 3. Arranged above the plate 2 is a spiral spring 5, housed and guided in a socket or cap 6, the upper closed end of which is provided with a screw-threaded hole, into which is screwed the upper end of a central rod 7, provided with an eye 8, by means of which said rod is pivotally connected with the vehicle-frame, as shown in Fig. 3. Said rod permits of adjusting the tension of the spring by means of the nut 9 and lock-nut 10.

The central rod 7 passes freely through a hole in the plate 2, and arranged under the latter is a second spiral spring 11, which is also housed and guided in a closed socket or cap 12, through which passes the lower end of the central rod 7, adjustably held by means of a nut 13 and a lock-nut 14.

My improved device operates as follows: When the axle is moved upward by the action of a jerk or shock and the carriage-spring is flattened, the normal distance between the axle and the frame has a tendency to be decreased suddenly. This movement of the frame with relation to the axle is reduced progressively by the compression of the upper spring 5, produced by the upward movement of the plate 2. On the other hand, the reaction acting after the flattening of the carriage-spring has the tendency to push the frame suddenly upward, and this movement is also reduced progressively by the compression of the lower spring 11, produced by the central rod 7. In this way the jerks and shocks of the vehicle are almost completely neutralized, whereby the parts of the motor and the vehicle are considerably spared. Moreover, the stability of the vehicle is increased by the avoidance of jerks and shocks, because a better contact is secured between the wheels and the ground.

As already described, the spiral springs 5 and 11 serve to prevent excessive deformations of the ordinary carriage-springs which would be produced by jerks and shocks. However, said springs do not decrease the flexibility of the carriage-springs, as the tension of the spiral springs may be adjusted so as to be normally *nil*. In this case the spiral springs do not act unless the carriage-springs are flattened beyond a given extent. On the other hand, when the load of the vehicle is too light the spiral springs may be adjusted so as to make up the want of weight upon the carriage-springs in order to take up the jerks and shocks in any case.

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

1. In a device of the class described, the combination with a vertical open sleeve, a perforated plate secured centrally and horizontally within said sleeve, and an outer extension on said plate capable of being attached to a wheel-axle, of upper and lower caps telescopically arranged in said sleeve, a vertical rod extending through said caps and the central plate, means for adjustably securing said rod to the closed ends of said caps, a spiral spring within the upper cap and surrounding the portion of the rod above the plate, a spiral spring within the lower cap and surrounding the portion of the rod below



said plate, and means for pivotally connecting said rod with a vehicle-frame, substantially as set forth.

2. In a device of the class described, the  
5 combination with a vertical open sleeve, a perforated plate secured centrally and horizontally within said sleeve, and an outer extension on said plate capable of being attached to a wheel-axle, of upper and lower  
10 caps telescopically arranged in said sleeve, a vertical rod extending through said caps and the central plate, screw-threaded holes in the closed ends of said caps, screw-threaded ends on said vertical rod and adapted to be ad-

justed in said holes of the caps, a spiral 15 spring within the upper cap and surrounding the portion of the rod above the plate, a spiral spring within the lower cap and surrounding the portion of the rod below said plate, and means for pivotally connecting said rod with 20 a vehicle-frame, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALBERT MANS.

Witnesses:

CHARLES HOUNOR,  
GREGORY PHELAN.