

W. J. HARRISON.  
LEAF SPRING.  
APPLICATION FILED APR. 6, 1909.

933,441.

Patented Sept. 7, 1909.

Fig. 1.

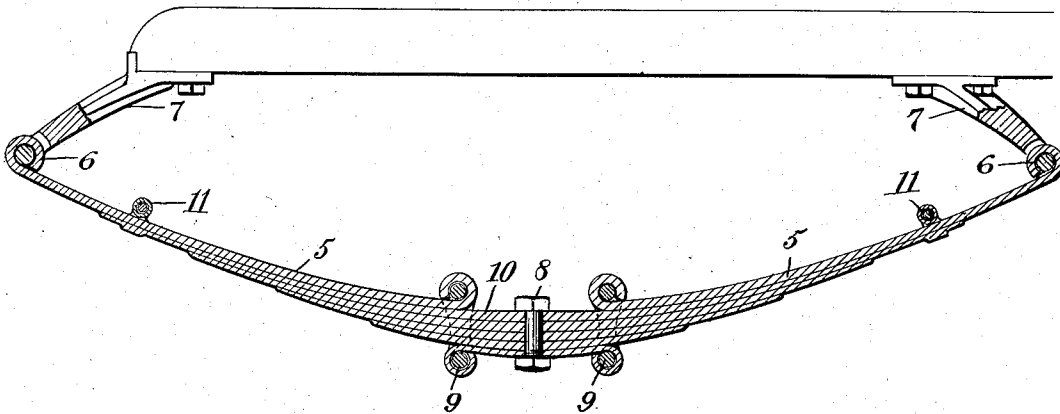


Fig. 2.

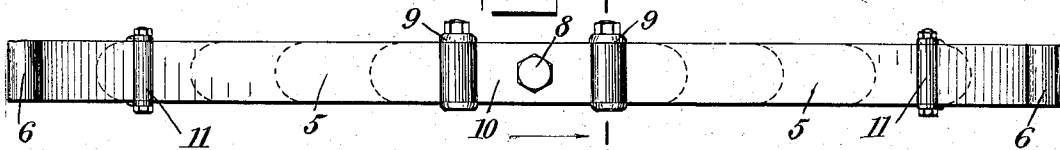
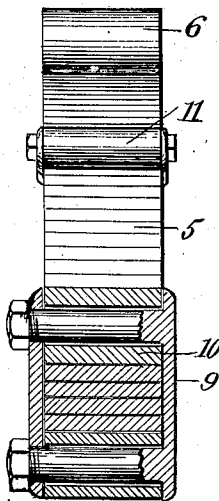


Fig. 3.



WITNESSES  
*Ben Loffe*  
*W. J. Harrison*

INVENTOR  
*William J. Harrison*  
BY *Mumford*  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

WILLIAM JOHN HARRISON, OF WEST DERBY, VERMONT, ASSIGNOR OF ONE-HALF TO  
GEORGE C. ADAMS, OF WEST DERBY, VERMONT.

## LEAF-SPRING.

933,441.

Specification of Letters Patent.

Patented Sept. 7, 1909.

Application filed April 6, 1909. Serial No. 488,211.

*To all whom it may concern:*

Be it known that I, WILLIAM JOHN HARRISON, a subject of the King of Great Britain, and a resident of West Derby, in the county of Orleans and State of Vermont, have invented a new and Improved Leaf-Spring, of which the following is a full, clear, and exact description.

The invention is an improvement in leaf springs particularly adapted to motor vehicles, and is designed to arrest the rebound which the conventional spring ordinarily gives when the vehicle is in motion. This I accomplish by providing the vehicle frame with spring hangers, and a leaf spring contractible in length under the weight of the load, having its opposite ends connected to the hangers.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a side view, partly in central vertical section, of a spring embodying my invention as applied to the frame of a motor vehicle; Fig. 2 is a plan of the spring detached from the spring hangers; and Fig. 3 is a cross-section through the spring on the line 3—3 of Fig. 2.

The spring as shown is semi-elliptical in form and of leaf construction. The inner leaf (by which I mean the leaf adjacent to the concave side of the spring) is constructed of two sections 5, 5, each terminating a slight distance from the center of the spring, and at its opposite and outer end provided with an eye 6 to support the spring from the hangers 7, 7, ordinarily secured to the frame of the motor vehicle. The several leaves of the spring, as is the usual practice in spring construction, successively diminish in length at each end in passing from the inner or concave side of the spring to the outer or convex side of the spring, all of the leaves, with the exception of the inner leaf or leaf sections 5, being secured together at the center of the spring by a bolt or other

equivalent device 8. The leaves of the spring are further bound together by clips 9 which are respectively arranged at opposite sides of the bolt 8 and each having side members connected together by cross-bolts, with one of the cross-bolts secured to one end of the outer and shortest leaf of the spring, and the other cross-bolt secured to one of the leaf sections 5, the connection of the leaves to the cross-bolts being effected by bending the ends of the leaves around the cross-bolts, in the form of eyes. The second leaf 10 from the inner side of the spring, at each end carries a roller 11 arranged over and bearing on the upper face of one of the spring sections 5 and adapting the leaf 10 to move over the sectional leaf with the least possible friction when the spring is loaded.

With the spring applied as shown in Fig. 1, it will be shortened in straightening out under the weight of the load and will regain its form as the vehicle passes over a rough place in the road, without rebounding, this being prevented by reason of the construction and assemblage of the leaves and the restraining of the spring ends. The manner in which the spring is applied to a vehicle tends to prevent the breaking of the spring at the center where it is clipped to the axle, since the weight of the load is equally distributed to all points of the spring.

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

The combination of a vehicle frame, and a leaf spring contractible and extensible in length under pressure, having its opposite ends secured to fixed points of the frame.

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

WILLIAM JOHN HARRISON.

Witnesses:

HENRY KIMBALL,  
MORTON FLINT.