

(No Model.)

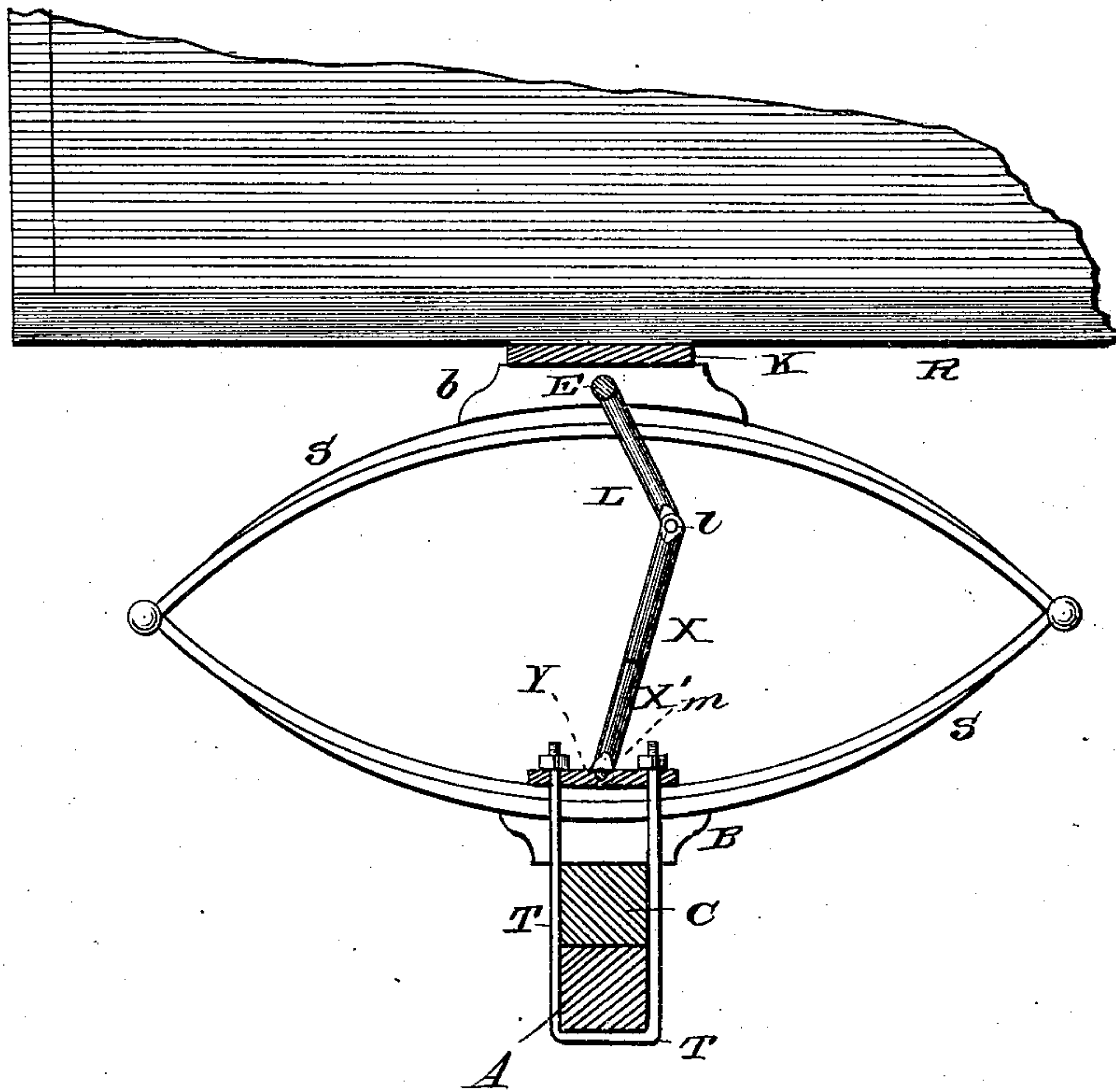
F. L. F. EZELL.

SPRING EQUALIZER FOR VEHICLES.

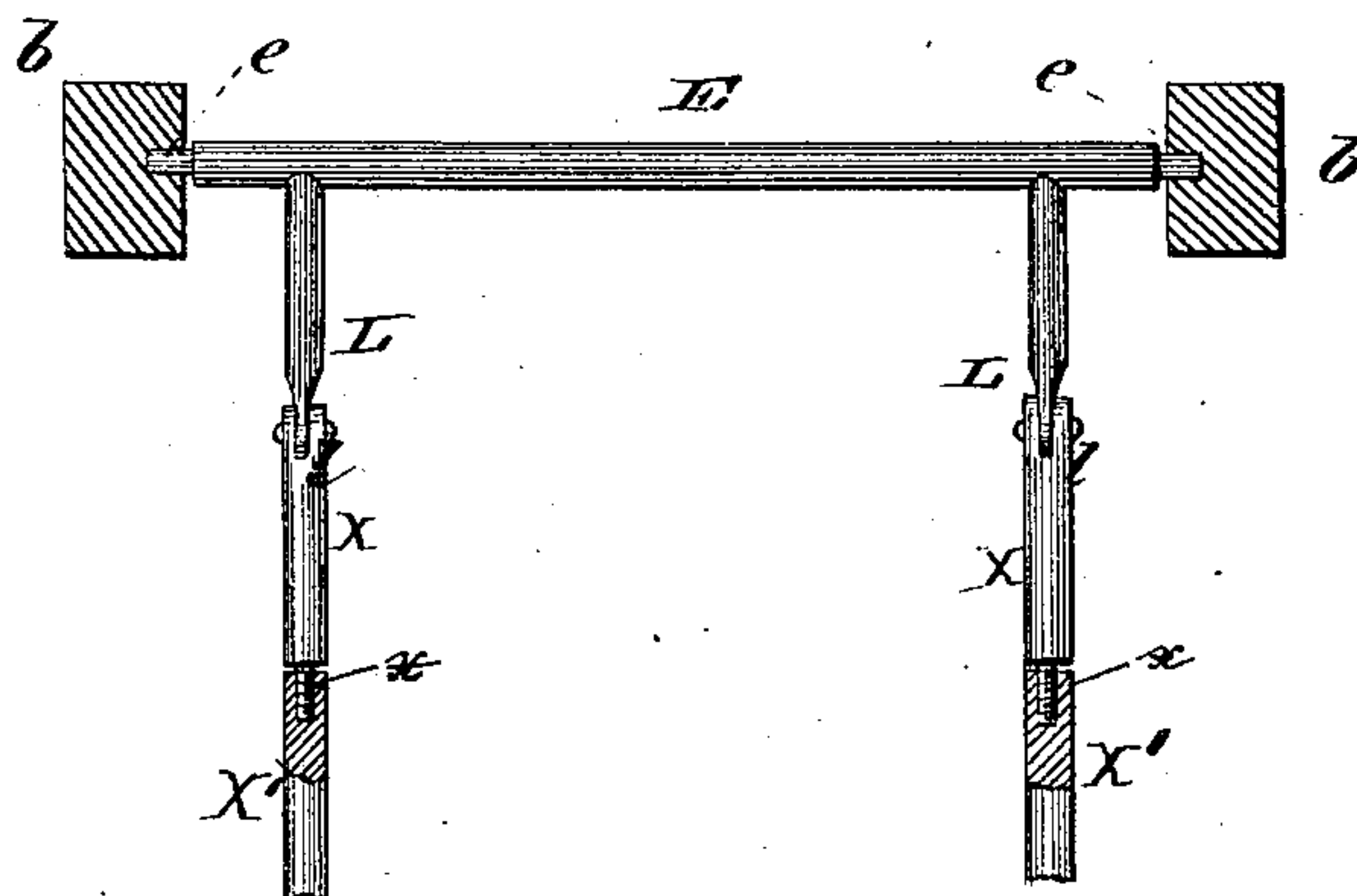
No. 260,960.

Patented July 11, 1882.

*Fig. 1.*



*Fig. 2.*



WITNESSES:

*Med. L. Dieterich.*  
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# UNITED STATES PATENT OFFICE.

FRANCIS LA FAYETTE EZELL, OF NASHVILLE, TENNESSEE.

## SPRING-EQUALIZER FOR VEHICLES.

SPECIFICATION forming part of Letters Patent No. 260,960, dated July 11, 1882.

Application filed April 21, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS LA FAYETTE EZELL, of Nashville, in the county of Davidson and State of Tennessee, have invented certain  
5 new and useful Improvements in Spring-Equalizers for Vehicles; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make  
10 and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side elevation, partially in section, of one of the side springs of a vehicle  
15 provided with my spring-equalizer; and Fig. 2 is a detail view of the rock-shaft which forms part of the same, with its lever-arms and bearing-blocks.

Similar letters of reference indicate corresponding parts in both the figures.

My invention has relation to devices or appliances for equalizing the strain upon the springs of vehicles; and it consists in the construction and combination of parts hereinafter  
25 more fully described and claimed.

In the accompanying drawings, S represents one of the springs, which is secured upon the usual spring-block, B, and cap C of the axle A by means of the clip T and yoke Y.

30 The letter R denotes the bed-rail of the wagon box or body, and K the spring-bar appropriate to spring S and its mate on the other side of the vehicle. Bar K rests, as usual, upon the upper spring-block, b, of which  
35 of course there are two, one for each spring.

E is a shaft or bar of round iron, the tenoned or shouldered ends e of which are journaled in the upper spring-blocks, b b, as shown in Fig. 2 of the drawings. Shaft E has two  
40 rigid downward-projecting arms, L L, the lower ends of which are jointed at l to arms X, which are pivoted or hinged in the yoke Y at m, one on each side.

From the foregoing description, taken in  
45 connection with the drawings, the operation of my invention will readily be understood. When the wagon-box is depressed, and the spring with it, the pivoted arm X will push its appropriate arm L of shaft E in an upward  
50 direction, thus tilting or rocking the latter in its bearings, and thereby exercising a corre-

sponding downward pressure on the spring opposite. Hence if the wagon is loaded unevenly or the pressure is greater on one side than on the other, both springs will be affected  
55 equally through the connecting-shaft E with its arms L L and X, and the wagon-bed will be evenly depressed on both sides and exercise an even downward pressure on the springs, irrespective of the distribution of its load. 60

This device also prevents the springs from breaking when expanding in suddenly unloading the wagon (by dumping its load, for example) or from the reaction of the spring when the vehicle passes over ruts in the ground,  
65 thus operating as a brace to strengthen the several connecting parts.

In order to regulate the play or "throw" of the springs, the arms X X are each made in two parts or sections, X and X', as shown in Fig. 70 2, the upper part, X, having a screw-threaded tenon, x, so that it may be screwed into the lower part, which is affixed to the yoke Y. In this manner the arms X may be lengthened or shortened to regulate the "stroke" or play  
75 of the spring and to permit of the application of the device to springs of different sizes. It is obvious that the device may also be applied with advantage to buggies and other vehicles having but one spring on each axle to prevent  
80 tilting of the body.

I am aware that it is not new to provide a spring or pair of springs with a rock-shaft having a lip adapted to catch one of the leaves of the spring as it opens, and thus stop the  
85 motion upward, the bar being rocked in its bearings by an arm which connects it to the opposite leaf of the spring, as shown in the patent to B. J. Corey and E. Neff, No. 169,524, bearing date of November 2, 1875, nor do I  
90 claim such construction; but I am not aware that a device has been constructed before provided with the extensible arms X X' for regulating the play or stroke of the springs and causing the pair of springs to move in unison  
95 at all times and under all stages or conditions of tension. Hence

What I claim as my improvement, and desire to secure by Letters Patent of the United States, is— 100

In a spring-equalizer for vehicles, the combination of the transverse rock-shaft E, hav-



ing its bearings in the middle of the head-  
blocks *b* above the upper leaves of the spring  
and provided with the fixed downward-pro-  
jecting arms *L L*, extensible arms *X X' X X'*,  
5 pivoted at their upper ends in arms *L* and at  
their lower ends at *m* in the yoke *Y*, and  
springs *S*, whereby the play or stroke of said  
springs may be regulated by regulating the  
length of the extensible arms *X X'*, substan-  
10 tially as shown and set forth.

In testimony that I claim the foregoing as  
my own I have hereunto affixed my signature  
in presence of two witnesses.

FRANCIS LA FAYETTE EZELL.

Witnesses:

A. L. WATSON,  
H. C. EARLS.