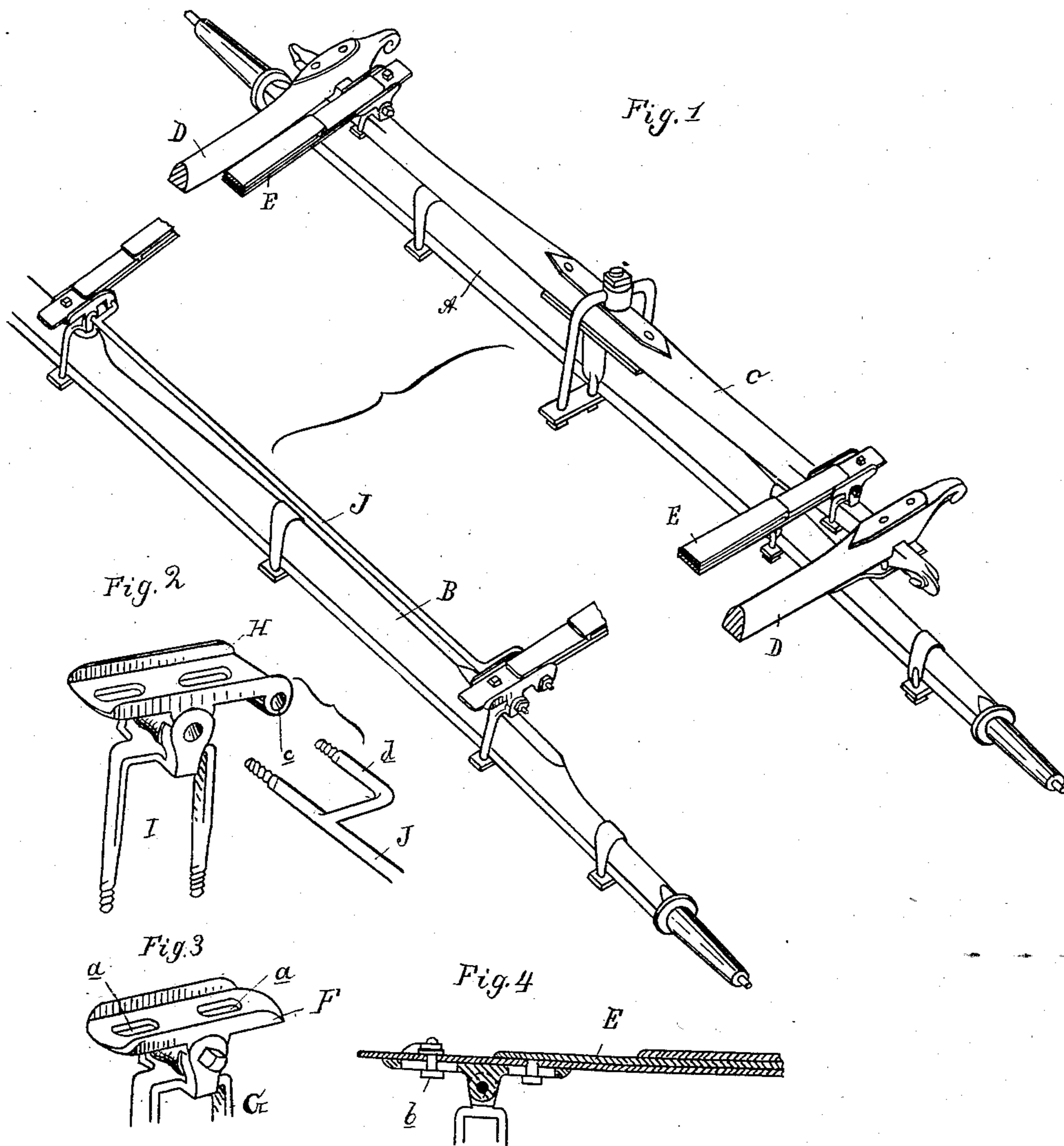


(No Model.)

J. PRIEST.  
VEHICLE SPRING.

No. 314,978.

Patented Mar. 31, 1885.



Attest:  
John Schumann  
*[Signature]*

Inventor:  
Joram Priest.  
by his Atty  
*[Signature]*

# UNITED STATES PATENT OFFICE.

JORAM PRIEST, OF GROSSE POINT, MICHIGAN.

## VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 314,978, dated March 31, 1885.

Application filed October 10, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JORAM PRIEST, of Grosse Point, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Vehicle-Springs; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention relates to certain new and useful improvements in vehicles, the gearings of which are provided with half-elliptic side-springs; and the invention consists in the peculiar means employed for attaching the ends  
15 of these springs to the bolster or head-block at the forward end and to the axle at the rear end in such a manner that the bearing of the springs at these points will be susceptible of an oscillating or rocking movement upon the  
20 clips which secure them to place, while at the same time provision is made in securing the springs to these bearing-plates whereby such springs are free to adjust themselves by longitudinal expansion, and in the peculiar construction, arrangement, and various combinations of the parts, all as more fully herein-  
25 after set forth.

Figure 1 is a perspective view of the front and rear axle of a so-called "side-bar" running-  
30 gear, showing the manner of attaching my springs to the same. Fig. 2 is a detached perspective of one of the bearing-plates at the rear end, also showing one end of the equalizer-bar. Fig. 3 is a detached perspective of one of the bearing-plates; and Fig. 4  
35 is a vertical longitudinal section of the same, showing the manner of securing the spring.

In the accompanying drawings, which form a part of this specification, A represents the  
40 forward axle, and B the rear axle, of any of the so-called "side-bar" constructions provided with the bolster C and side bars, D.

E represents half-elliptic springs, the forward ends of which are secured to the bearing-plates F, which in turn are pivotally secured upon the heads of the clips G, which are secured to the bolster C, as in the ordinary manner. The bearing-plates F are provided with one or more elongated slots, *a*,  
45 (though two are preferable,) through which bolts *b* pass from the bottom and engage in

any suitable manner with the superimposed spring E.

H represents other bearing-plates, one being secured to the rear end of each of the  
55 springs E substantially in the manner described above for securing the bearing-plates F. These bearing-plates are likewise pivotally secured upon the heads of the clips I, the ends of the equalizing-bar J serving as the  
60 bolt for making this connection, as will be clearly seen upon reference to Fig. 1 of the drawings. The inner ends of these bearing-plates H are each provided with an eye, *c*, to receive an arm, *d*, of the equalizing-rod. 65

Upon reference to the drawings and the description above given it will be readily understood at a glance that the side springs, E, are susceptible of an expansion in the direction of their lengths upon their respective  
70 bearing-plates, and that they will therefore equalize and adjust themselves to the weight which may be superimposed upon them, while at the same time it is a well-known fact that a torsional equalizing-bar connecting opposite  
75 springs, as herein shown, has the effect of depressing the springs equally, or, in other words, of compelling the one spring to follow the movements of the other.

It will be observed that the bearing-plates 80 F and H are provided with upwardly-projecting flanges, between which the ends of the springs rest, and these flanges are for the purpose of keeping the parts in alignment; and while I have described and shown the  
85 employment of bolts and slots in the bearing-plates for securing the springs to place, it is evident that the flanges of these bearing-plates may be formed in the manner of clip-flanges, with a stop at the rear, within which the springs  
90 can have their movement, without departing from the spirit of my invention.

What I claim as my invention is—

1. A vehicle-spring the ends of which have substantially flat bearings upon plates pivotally secured, as described, such springs being free to move in the direction of their  
95 length over the flat surfaces of said plates, substantially as and for the purposes described.

2. In combination with a semi-elliptic spring, 100 E, the bearing-plates F H, pivotally secured to the clips G I, when constructed substan-

tially in the manner and for the purposes described.

3. In a vehicle, and in combination with the axles A B and bolster C, the side semi-elliptic  
5 springs, E, oscillating bearing - plates F H, clips G I, and equalizing - bar J, when constructed, arranged, and operating substan-

tially in the manner and for the purposes specified.

JORAM PRIEST.

Witnesses:

H. S. SPRAGUE,  
E. SCULLY.