

A. S. HOPSON.
Vehicle-Spring Equalizer.

No. 162,655.

Patented April 27, 1875.

Fig. 1.

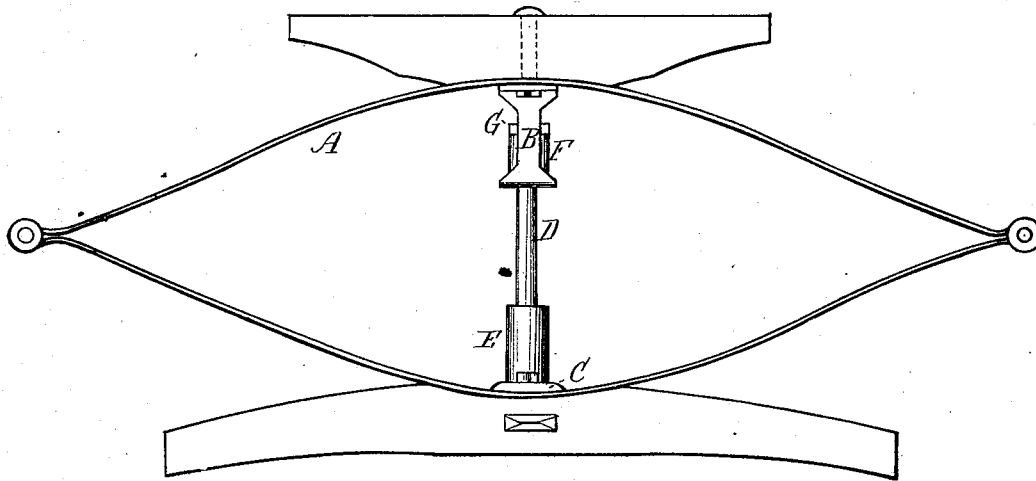
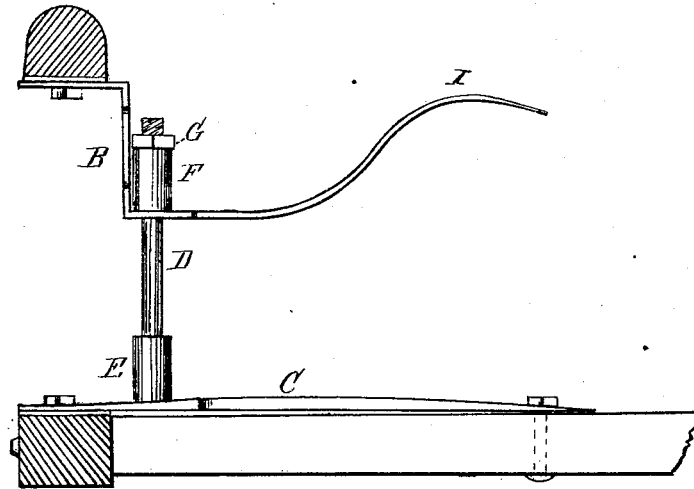


Fig. 2.



WITNESSES
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ALBERT S. HOPSON, OF PLAINVIEW, MINNESOTA.

IMPROVEMENT IN VEHICLE-SPRING EQUALIZERS.

Specification forming part of Letters Patent No. **162,655**, dated April 27, 1875; application filed March 6, 1875.

To all whom it may concern:

Be it known that I, ALBERT S. HOPSON, of Plainview, in the county of Wabashaw and State of Minnesota, have invented a new and valuable Improvement in Spring-Supporters; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of my improved spring-supporter. Fig. 2 is a part section and side elevation of the same.

This invention has relation to spring-supporters for vehicles, and consists in the employment, in combination with elliptic springs, of a curved brace working upon a vertical guide-rod, the latter being provided with suitable springs encircling such, as will be hereinafter more fully set forth.

In the drawing, A is designed to represent an elliptic spring, constructed in the usual manner, and fastened between the axle and bolster of the vehicle. To the upper half of this spring is firmly secured a brace, B, by means of a bolt and nut or other suitable device, said brace being of the form shown in Fig. 2 of the drawings, its curved end I being attached to the carriage-body. To the lower half of the spring is connected, by a suitable bolt and nut, a brace, C, having rigidly formed

thereon a guide-rod, D. Encircling this guide-rod, at its lower end, is a rubber or cork spring, E, or, if desired, a spiral spring may be employed. The rod D passes up through an opening in the brace B, and has secured thereto, above such brace, a spring, F, held in place upon the rod by a suitable nut, G, screwed down over the threaded end of the rod, by which construction the elliptic spring is prevented from spreading too far apart at the center, and also preventing the liability of breaking, straining, or otherwise injuring the spring.

I am aware that the employment of guide-rods, encircled by a tubular rubber spring, is not new. I therefore do not wish to be understood as claiming broadly such construction; but

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

The combination of the elliptic spring A, curved brace B, of the form shown, the lower brace C, guide-rod D, and springs E F, all constructed to operate as specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

ALBERT S. HOPSON.

Witnesses:

A. B. W. NORTON,
THOMAS SMITH.