W. S. WIDGER.

Spring-Brace for Vehicles.

No. 222,760. Patented Dec. 16, 1879.

Fig. 1.

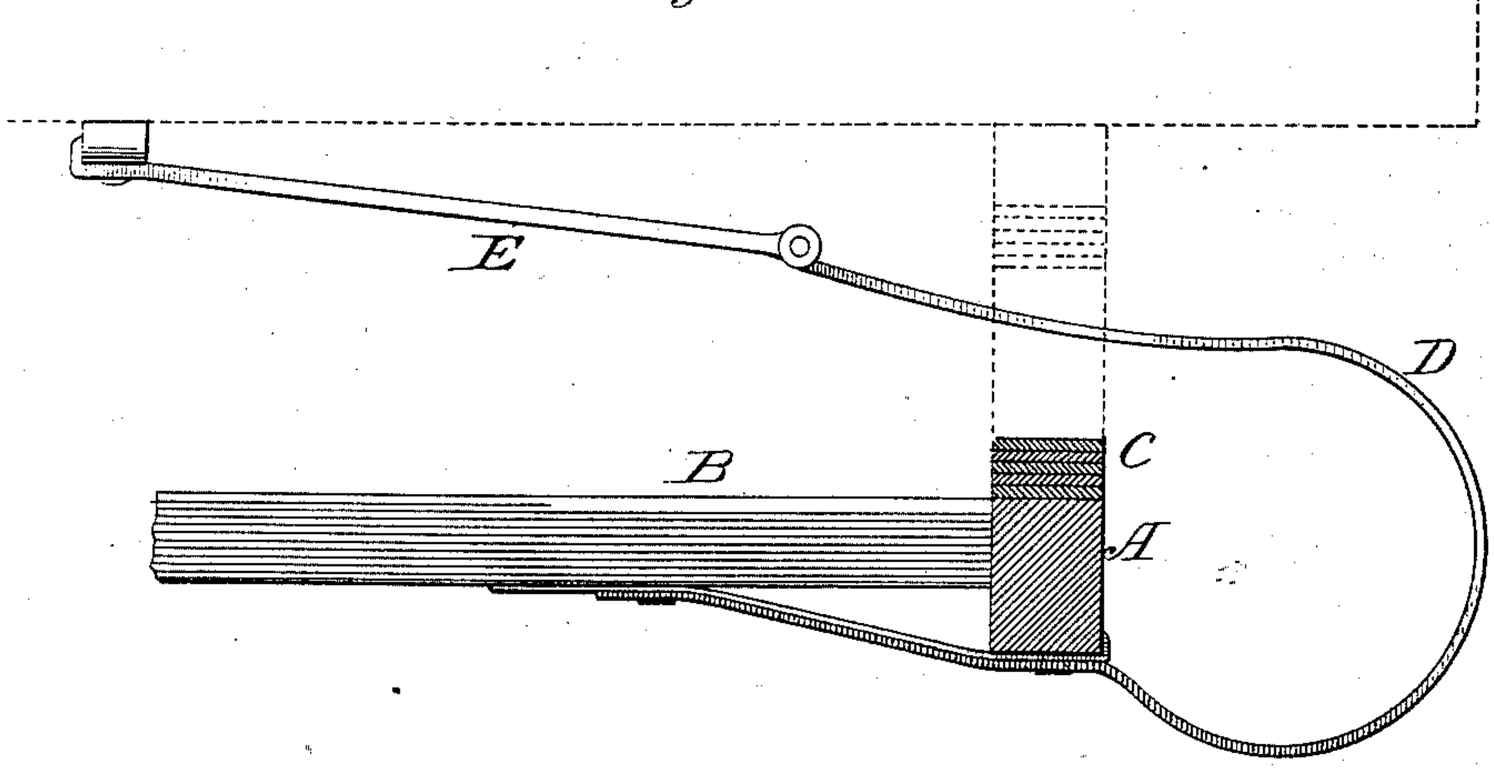
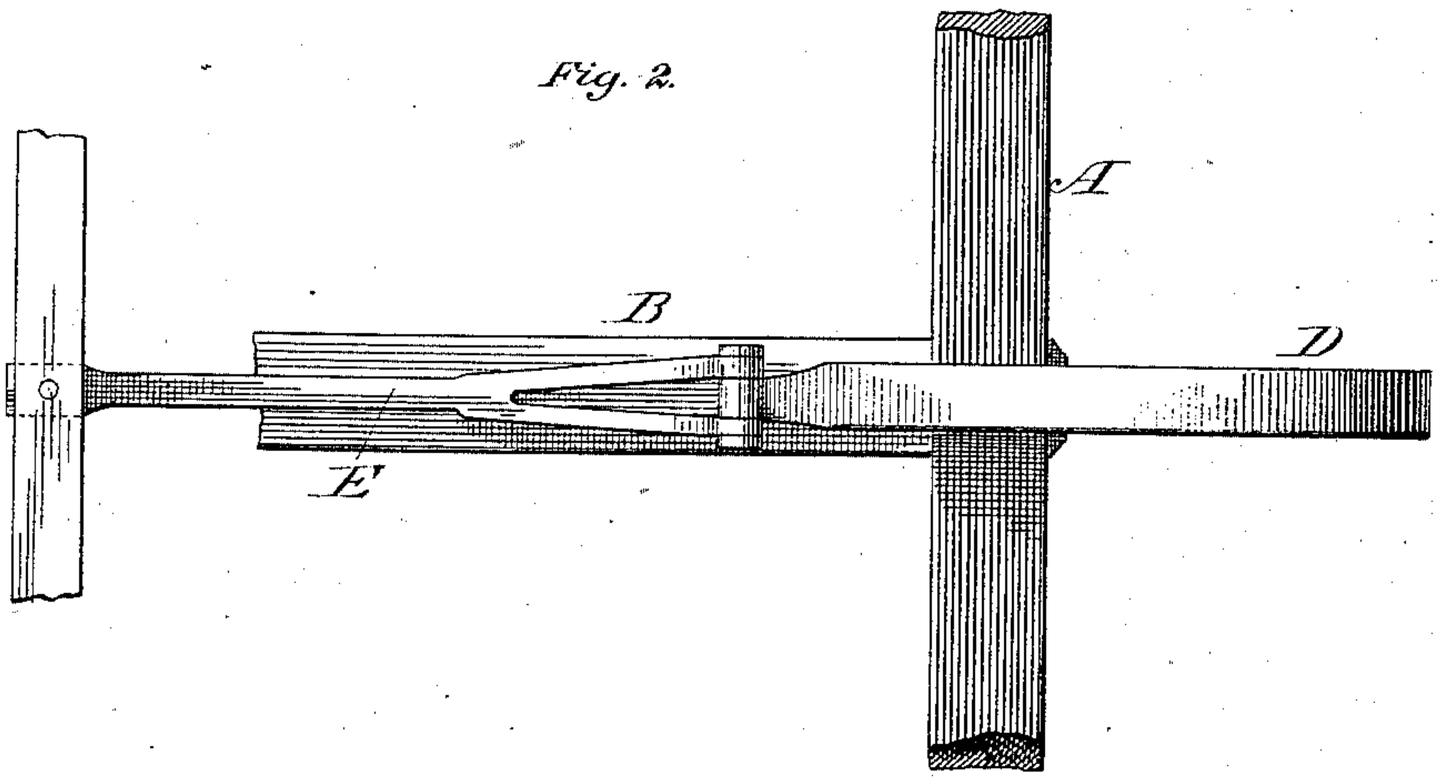


Fig. 2.



Witnesses:

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UNITED STATES PATENT OFFICE.

WILLIAM S. WIDGER, OF PLEASANT MOUNT, PENNSYLVANIA.

IMPROVEMENT IN SPRING-BRACES FOR VEHICLES.

Specification forming part of Letters Patent No. **222,760,** dated December 16, 1879; application filed November 3, 1879.

To all whom it may concern:

Be it known that I, WILLIAM S. WIDGER, of Pleasant Mount, in the county of Wayne and State of Pennsylvania, have invented certain new and useful Improvements in Spring-Braces 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 pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to an improved construction of spring-brace for carriages and wagons; and its object is to so construct and apply the brace to the vehicle that the strain on the ordinary elliptic springs will be relieved and the entire running-gear made more durable and less inclined to break down and give way under the severe strain to which these portions are sometimes subjected on rough roads.

In order that a full and clear understanding may be had of my invention, it may be well to state that on many roads, especially in hilly portions of the country, there are formed ridges or jumpers, over which the vehicle must necessarily pass. As the wagon rises over these ridges and settles down on the other side the elliptic springs are necessarily thrown forward out of the perpendicular, and the bolts that hold them are racked and wrenched, and after a time the displacement becomes permanent, and the spring is finally unfit for use. Moreover, in passing over these ridges there is a constant tendency to throw the elliptic spring violently open, which frequently results in the breaking of the spring.

My invention is designed to obviate both these difficulties, as well as to relieve the spring from undue strain at all times.

In the drawings accompanying this specification, Figure 1 is a side view of the rear axle and a portion of the reach, showing the manner of attaching my spring-brace; and Fig. 2 is a top view.

In these drawings, A represents the rear axle, B the reach, and C the elliptic spring, all of which are of ordinary construction.

To the under side of the reach is securely bolted the flat metallic spring-brace D, whose shape is shown in the side view, Fig. 1. The spring may be composed of a single flat steel-plate, or it may be re-enforced and stiffened for the whole or a portion of its length by another similar metallic strip. Usually the stiffening-piece would only extend back to the rear axle.

The spring D is bolted to the under side of the axle, and then curves around, as shown, passing through the elliptic spring C just above the bottom of the same.

E is a metallic rod, having a forked or bifurcated end, in which holes are made for the passage of a bolt. The end of the spring D is turned on itself, forming an eye, and the bolt is passed through and fastened, thus forming a hinge-joint and giving freedom of motion to both parts.

The forward end of the rod E is connected to one of the cross-bars of the wagon box or body, so that such body is in a measure supported by such rod and the spring.

When, therefore, the vehicle passes over a ridge in the road, the forward motion of the body is brought to bear on the spring D, which is given a forward motion also, and thus relieves the elliptic spring, on which the strain would otherwise have come, while the hinge-joint gives the parts an easy play, and prevents any danger of fracture of either the spring D or the connecting-rod. Likewise, when there is any tendency to throw the wagon-box violently upward the strain is brought upon the brace D, and not on the elliptic springs.

The advantages of this device will be readily appreciated by those skilled in the art, and any further enumeration of them, as well as any further description of the operation of the device, is deemed unnecessary.

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

1. The combination, with a vehicle, of the

curved spring-brace D, secured at one end to the reach, passing below the axle and bolted thereto, and connected at its other extremity to the wagon-body by means substantially as described.

2. The combination, with a vehicle, of a forked rod attached directly to the wagon-body, and a spring-brace pivoted to such rod and bolted to the axle, as set forth.

3. A spring-brace for vehicles for use in connection with an elliptic spring, consisting of a curved spring-brace attached at one end to the reach and passing through the said elliptic spring, and a forked connecting-bar attached directly to the wagon-body at one end and at the other to said curved spring, whereby the strain on the elliptic spring is relieved, substantially as described.

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

WILLIAM S. WIDGER.

Witnesses:
WARREN LUKE,
J. D. WHEELER.