G. W. McMINN.

Vehicle-Spring.

No. 513, } Patented Feb. 19, 1861.
31,517. }

Fig. 1.

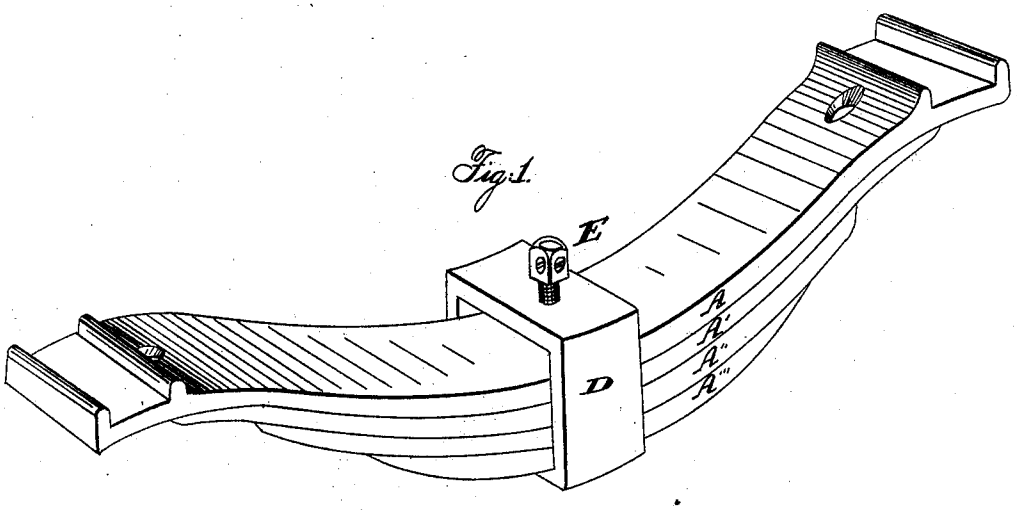


Fig. 2.

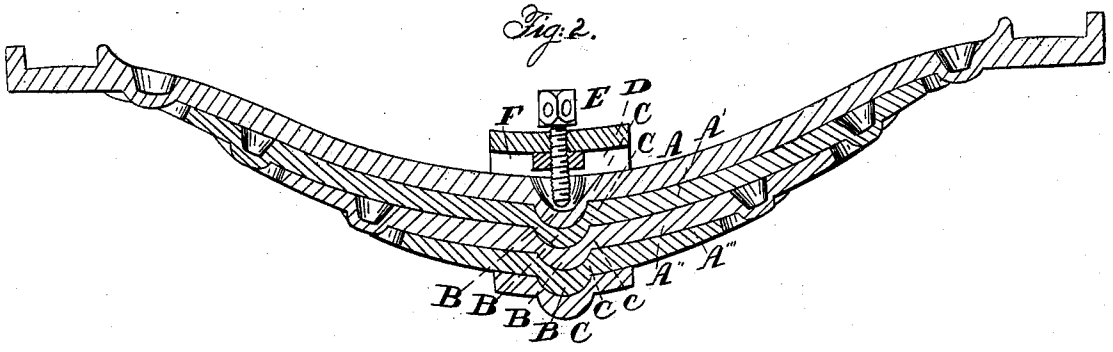
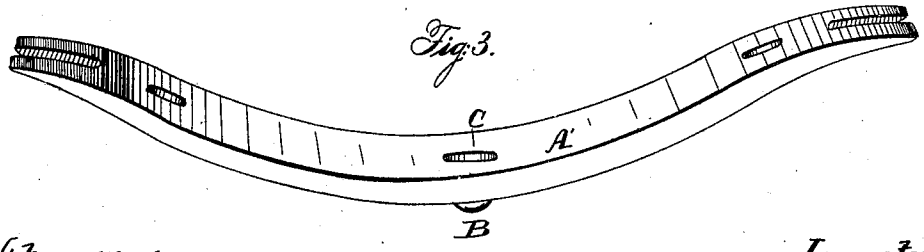


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

GEO. W. McMINN, OF COVINGTON, KENTUCKY, ASSIGNOR TO HIMSELF, AND R. T. REILEY, OF CINCINNATI, OHIO.

METALLIC SPRING.

Specification of Letters Patent No. 31,517, dated February 19, 1861.

To all whom it may concern:

Be it known that I, GEORGE W. McMINN, of Covington, Kenton county, Kentucky, have invented a new and useful Improvement in Metallic Springs, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification.

This is an improvement in the class of elliptical and like springs composed of a bundle of flat metallic bars (called leaves) confined by a band or strap and consists in first, a provision of nesting teats or bosses and cavities in place of the customary bolt and perforation at the place where the spring is most subject to fracture by use. Second. An arrangement of adjustable clamp in place of the usual closely fitting shrunk strap.

Figure 1 is a perspective view of a spring embodying my improvements. Fig. 2 is a longitudinal section thereof. Fig. 3 represents a single leaf detached.

Instead of the usual perforation and bolt at that part of the spring where most strength is required, I form each leaf A, A′, &c., with a teat or boss B and a corresponding socket or cavity C, so that the leaves being laid together in place the teats and sockets shall nest together in manner represented, thus preventing either lateral or longitudinal displacement.

Springs thus arranged may be secured by means of the customary closely fitting shrunk strap, but instead thereof I prefer to employ a strap D whose opening in its vertical diameter somewhat exceeds the thickness of the bundle.

A set screw E, tapped through the strap and entering the cavity of the upper leaf A, enables the tightening up of the bundle as the leaves wear or its liberation for repairs or replacement of a leaf.

F is a pinching or lock nut.

The teat or protuberance on the outside of the strap assists in holding the spring in place.

Several decided practical advantages over other leaf or elliptical springs result—for example. The central and most exposed part of the leaf, instead of being weakened by a bolt hole, is actually strengthened by the described boss or rising. The contiguous surfaces of the teats and sockets being rounding play easily over each other and are found to be free from the cutting and chafing action of the customary bolt and perforated plates. The spring being clamped only at its middle is elastic throughout its length and not being confined by the edges of the strap is not subject to the usual chafing bending and fracture at that part. The strap and leaves are not liable to be broken in the act of taking a spring apart for repair.

This improved spring is found to be remarkably elastic and enduring and to be easily and cheaply made or repaired.

I claim herein as new and of my invention and desire to secure by Letters Patent—

1. Forming the leaves of a metallic spring with alternate bosses B and depressions C adapted to nest one within another in the manner and for the purposes set forth.

2. In the described combination with the above I claim the clamp D, E, adapted to confine or release the parts of the spring in the manner set forth.

In testimony of which invention, I hereunto set my hand.

GEORGE W. McMINN.

Witnesses:
GEO. H. KNIGHT,
ROBT. T. REILEY.