

(No Model.)

2 Sheets—Sheet 1.

A. L. H. MESSMER.
VEHICLE SPRING.

No. 543,038.

Patented July 23, 1895.

Fig. 2.

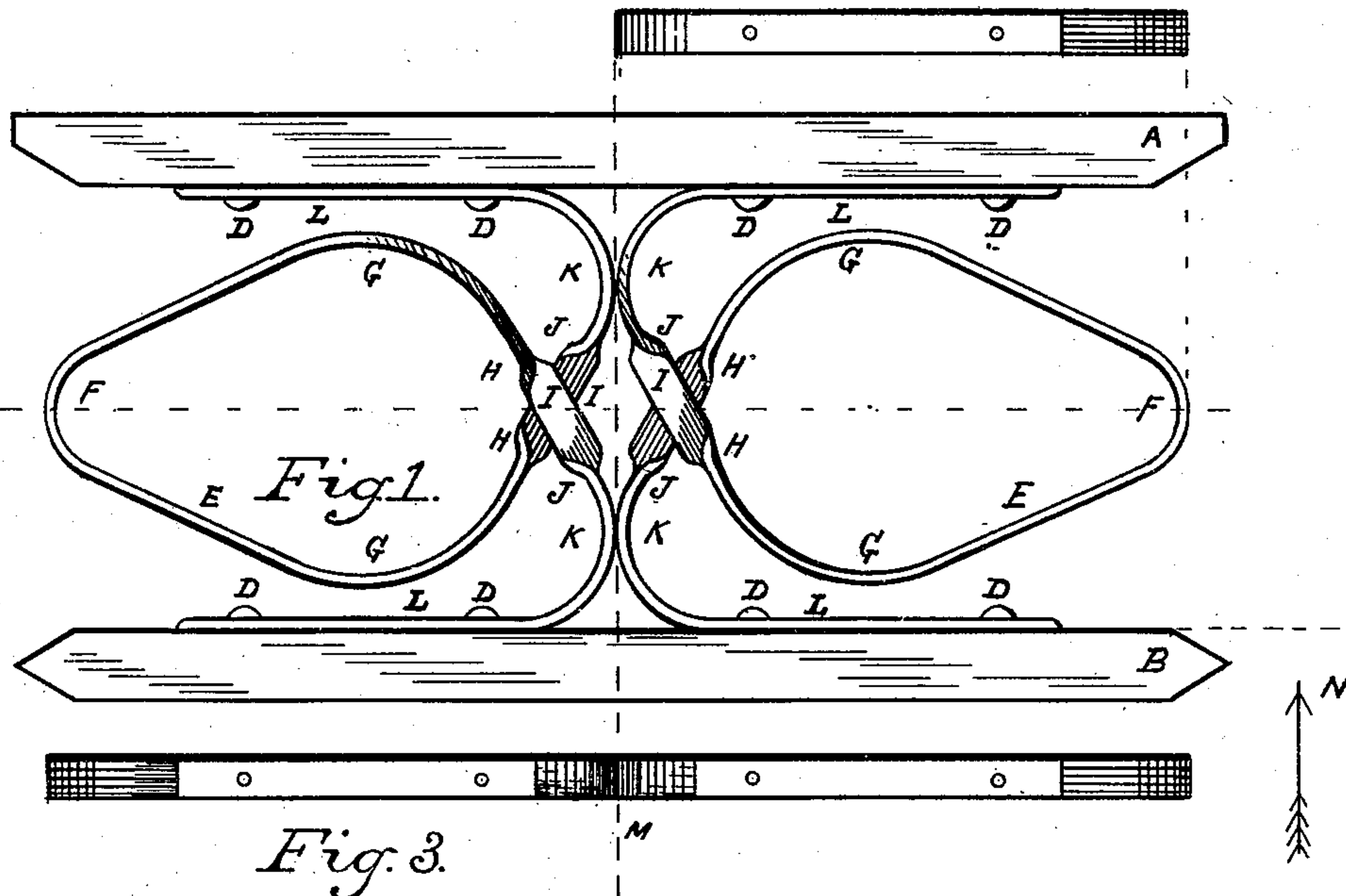


Fig. 3.

Fig. 8.



Fig. 7.



Fig. 4.



Fig. 5.



WITNESSES.

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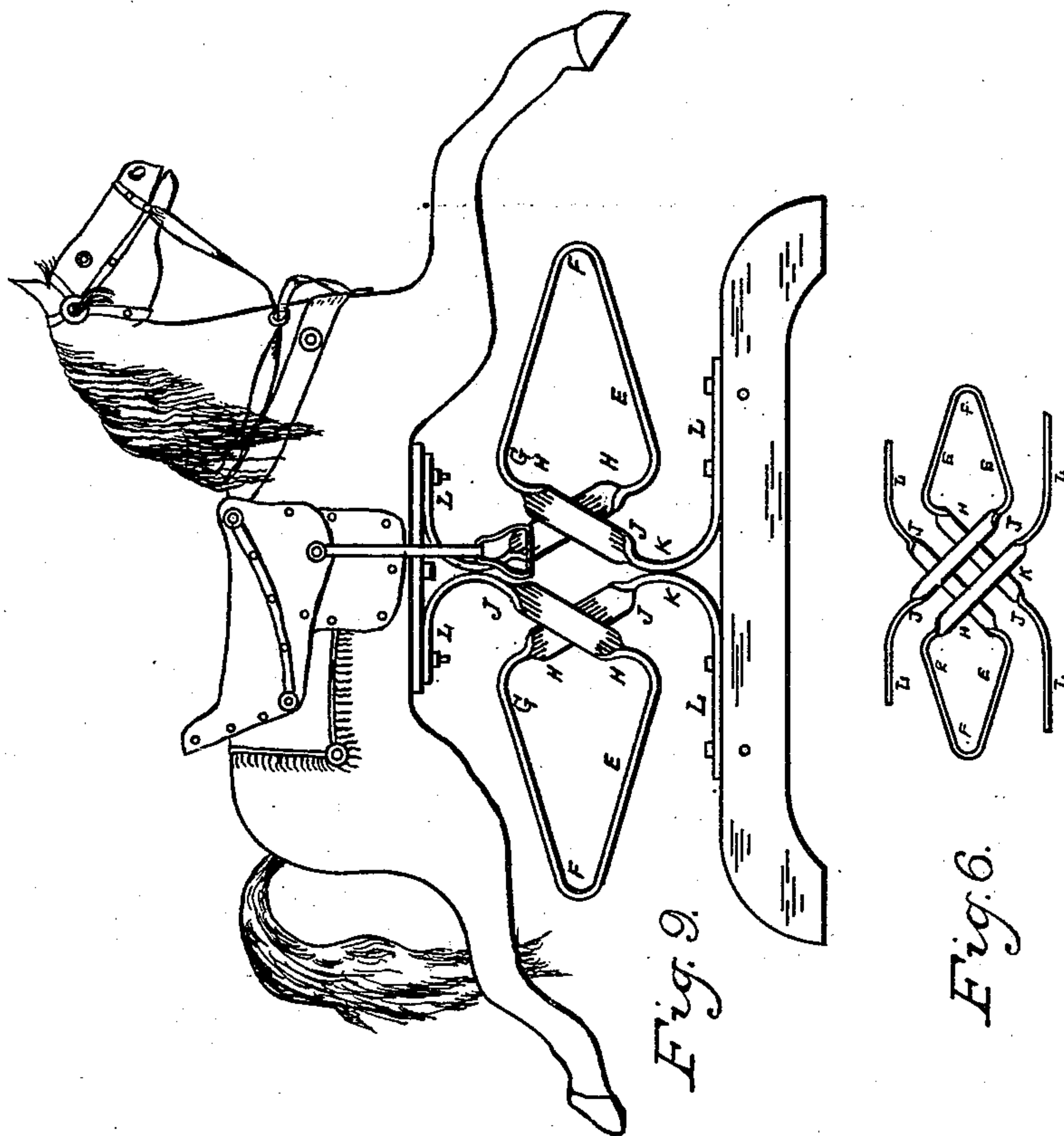
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Fred L. Butler
Ed. C. Mott

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UNITED STATES PATENT OFFICE.

ALEXANDER LUDWIG HEINRICH MESSMER, OF GARDNER, MASSACHUSETTS,
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VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 543,038, dated July 23, 1895.

Application filed February 21, 1895. Serial No. 539,232. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER LUDWIG HEINRICH MESSMER, a citizen of the United States, residing at Gardner, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Vehicle-Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in vehicle-springs of the variety known as "elliptical," and the objects of my improvements are, first, to provide an excellent and remarkably efficient spring at a normal cost; second, to provide such springs in form adapting them to be grouped together in desirable numbers and arrangement to best serve the uses to which they might be applied; third, to construct such a spring from common merchant-bar metal (commonly from spring-steel) of rectangular or of oval cross-section, these forms being such as to adapt the said spring to be made by simply bending and without the drawing common to the formation of most elliptical springs made from similar materials. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical side elevation of a pair of springs attached to a pair of supporting-bars. Fig. 2 is a plan or top view of a single spring. Fig. 3 is a plan of a group of two springs. Fig. 4 is a plan of a group of three springs. Fig. 5 is a plan of a group of four springs. Fig. 6 is a vertical side elevation of a pair of springs having their ends or extremities projecting in an opposite direction from those shown in Fig. 1. Fig. 7 is a rectangular form illustrating a form of a cross-section of a spring. Fig. 8 is an oval form illustrating a form of cross-section of a spring, Fig. 9 representing a pair of my springs applied to a rocking-horse.

Similar letters apply to similar parts throughout the several views.

A is a top and B a bottom bar, to which a

pair of my springs are attached by means of screws or bolts D.

A single piece of metal of a rectangular or an oval form (shown in Figs. 7 and 8) is formed into a spring E, as follows: Commencing near the center of its length a circular bend F is formed; thence, continuing, two circular bends G are formed, which, farther on, extend into quarter-turns H, thence into the overlapping plates or members I, lying immediately adjacent to each other; thence, continuing, through the circles K to and forming the terminals L, extending in lines substantially parallel with each other, and thereby adapted to be secured to common parallel supports A and B.

It will thus be observed that by means of the quarter-turned plates I the full width of the spring at this part is narrowed to twice the thickness of the said plate I and the crossing-parts brought within the width of the other members of the said spring, whose widths are shown in plan in Figs. 2, 3, 4, and 5. It is to be further observed that the said quarter-turns H and J, combined with the intervening plate I, impart additional strength to that part of the spring lying between the members H and G without largely adding to their weight. It is to be further observed that in consequence of the close proximity of the outside line of the curves K and the outer edges of the plates I to the line M the said springs are especially well adapted to be grouped for various uses and applications, notably, to carriage-bodies, wagon-seats, toys, and machinery, some of which groupings are illustrated in Figs. 1, 3, and 9, where two springs are grouped; in Fig. 4, where three springs are grouped, and in Fig. 5, where four springs are grouped. In Fig. 9 the application is to a toy horse, to which it is remarkably well adapted.

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

A vehicle spring of substantially uniform cross section having the bend F, the bends G, the overlapping one quarter turned sec-

tions I, in combination with bends K, and
with terminals L, lying substantially par-
allel with each other and inclosing the bended
portions F and G, by which disposition of
5 parts two of such springs are adapted to be
grouped together with their corresponding
bends K, placed adjacent to each other, and
their terminals L secured to common par-
allel supports A and B substantially as shown.

In testimony whereof I have affixed my sig- 10
nature in presence of two witnesses.

ALEXANDER LUDWIG HEINRICH MESSMER.

Witnesses:

HARRY T. DUNN,

HARRY E. ROLFE.