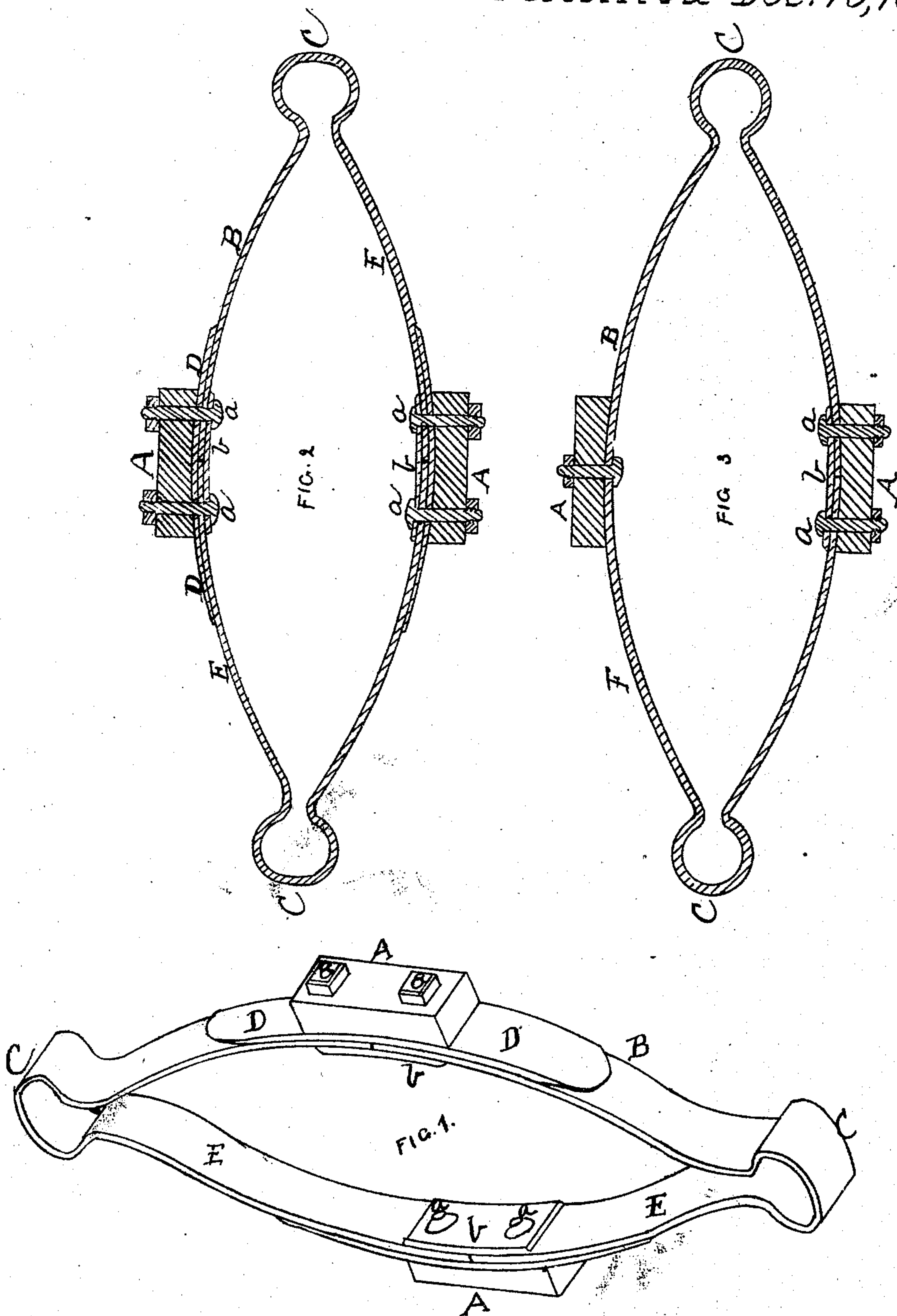


H. R. Hawkins.

Elliptic Carriage-Spring.

N^o 72035

Patented Dec. 10, 1867.



Witnesses

D. L. Miller

Geo. H. Miller

Inventor

H. R. Hawkins

By his Attorney

Thos. H. Dodge



HORACE R. HAWKINS, OF AKRON, OHIO.

Letters Patent No. 72,035, dated December 10, 1867.

IMPROVEMENT IN ELLIPTIC CARRIAGE-SPRING.

The Schedule referred to in these Letters Patent and making part of the same.

KNOW ALL MEN BY THESE PRESENTS:

That I, H. R. HAWKINS, of Akron, in the county of Summit, and State of Ohio, have invented certain new and useful Improvements in Elliptic Springs for Carriages; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a perspective view of my improved spring.

Figure 2 represents a longitudinal central section of the spring as shown in fig. 1, and

Figure 3 represents a modification of my spring.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it.

In the drawings, A A represent the parts of the carriage to which the spring B is attached. Spring B is made with a bow, C, at each end, and it may be made from a single piece of steel, or from two separate pieces, and united at the middle, as indicated in the drawings, by means of the bolts *a a* and metal piece *b*.

In figs. 1 and 2, the spring is shown, made from two separate pieces of steel, E E, while in fig. 3 it is shown made from a single piece, F, and united at the bottom.

To render the spring stronger, when light stock is employed, the steel leaves D D may be used.

My improved spring is very simple in construction, not liable to get out of order, and yet very effective in use, and can be made at a much less cost than the common elliptical springs, which it excels, since, by the use of the bows C C, there are no dead-points at the ends of the spring.

Having described my improved elliptic spring for carriages and other purposes, what I claim therein as new and of my invention, and desire to secure by Letters Patent, as an improved article of manufacture, is—

An elliptical carriage-spring, composed of a single piece, F, or two separate pieces, E E, of steel, united by means of blocks and bolts, substantially as herein shown and specified.

HORACE R. HAWKINS.

Witnesses:

O. J. BERNARD,

WM. H. UPSON.