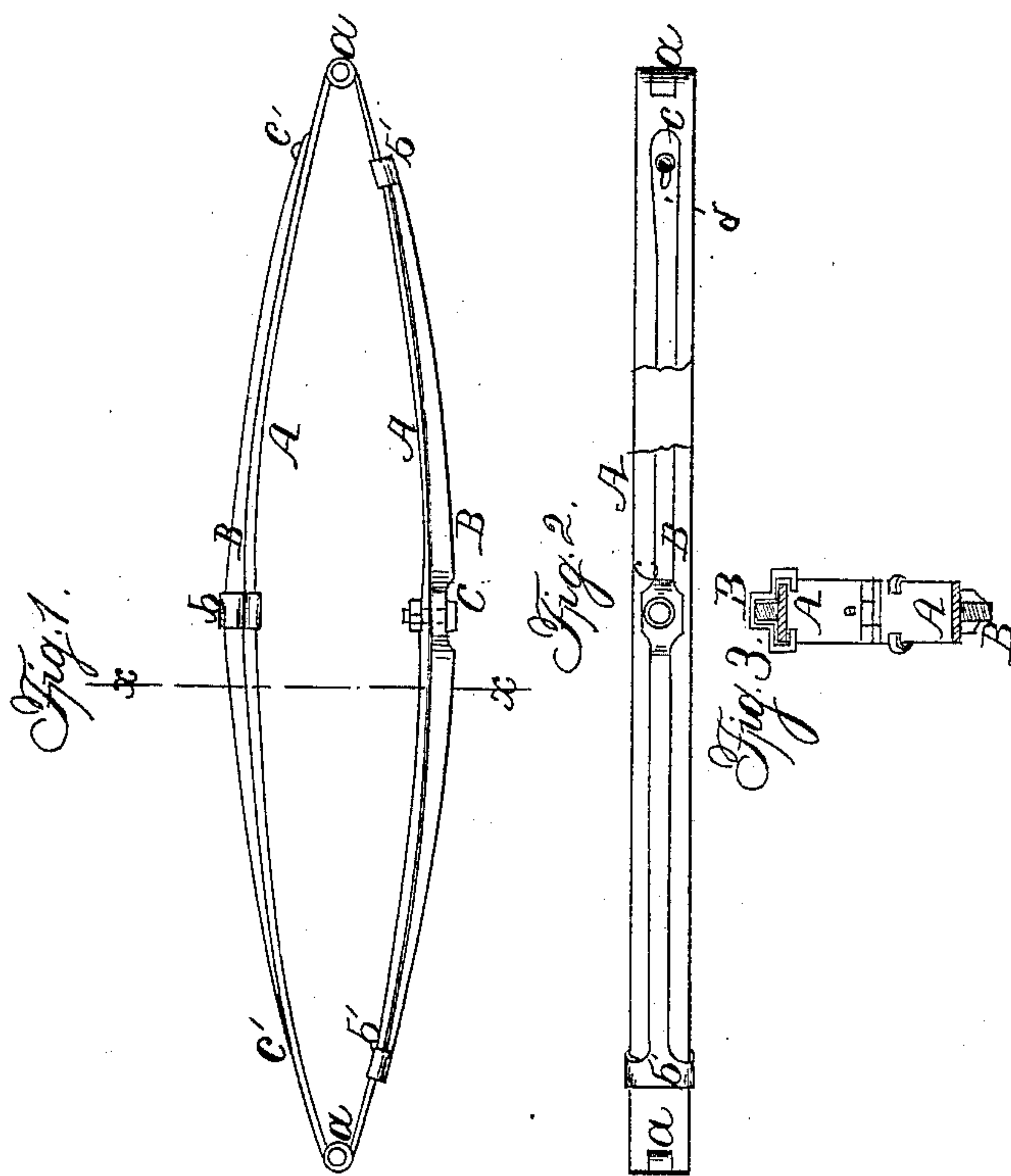


W. H. ENGLISH.

Wagon-Spring.

No. 69,197.

Patented Sept. 24, 1867.



Witnesses:
Thos Fische
Wm. Spurrin

Inventor.
W. H. English
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United States Patent Office.

W. H. ENGLISH, OF MACON, GEORGIA.

Letters Patent No. 69,197, dated September 24, 1867.

IMPROVEMENT IN CARRIAGE-SPRINGS.

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

TO ALL WHOM IT MAY CONCERN:

Be it known that I, W. H. ENGLISH, of Macon, in the county of Bibb, and State of Georgia, have invented a new and improved Spring for Vehicles, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from all others of a similar class, together with such parts as I claim and desire to have secured to me by Letters Patent.

This invention has for its object the obtaining of a spring for vehicles which will be light, or composed of a small weight of metal, and still be strong and durable, and far less expensive to manufacture than the ordinary springs in use.

The invention consists in applying a rib or ribs to an elliptic or semi-elliptic spring, as hereinafter set forth in the accompanying sheet of drawings—

Figure 1 is a front view of an elliptic spring constructed according to my invention.

Figure 2, a plan or top view of the same.

Figure 3, a transverse section of the same, taken in the line *z z*, fig. 1.

Similar letters of reference indicate like parts.

A A represent two steel plates, properly tempered and curved, and connected at their ends by joints *a a*, and to the exterior of each steel plate A there is secured a steel rib, B, either by clips *b b'* or bolts *c c'*. If clips are used the central one, *b*, should be a rigid fastening, but those, *b'*, at the ends should admit of a free movement of both the ribs and plates. The same may be said of the bolts *c c'* if used. The central one, *c*, should form a rigid connection of the ribs and plates, passing centrally through both, while the bolts *c'* at the ends of the ribs pass through oblong slots *d* in the plates, to admit of the compression of the ribs and plates, and the consequent elastic movement of the spring as a whole. The spring may be made of any required strength by having ribs B of greater or less depth. They are quite thin, but deep, and give great strength to the spring, being far superior to the numerous leaves now used, and admit of the springs being manufactured at a much less cost.

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

An elliptic or semi-elliptic spring for vehicles, constructed of curved elastic steel plates, with a narrow or thin rib of steel applied to their exterior surfaces, substantially as shown and described.

The above specification of my invention signed by me this 31st day of May, 1867.

W. H. ENGLISH.

Witnesses:

WM. F. McNAMARA.

J. A. SERVICE.