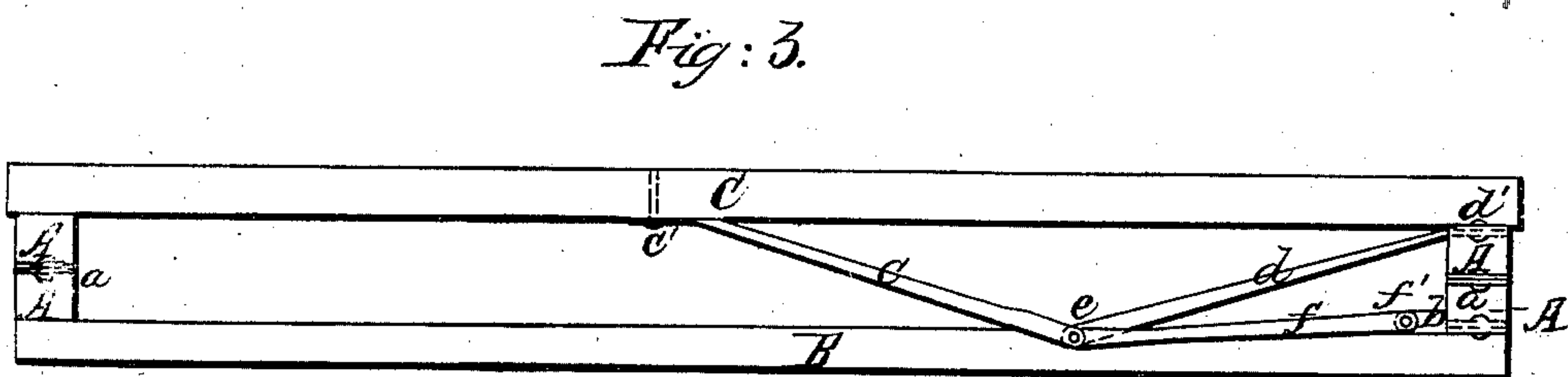
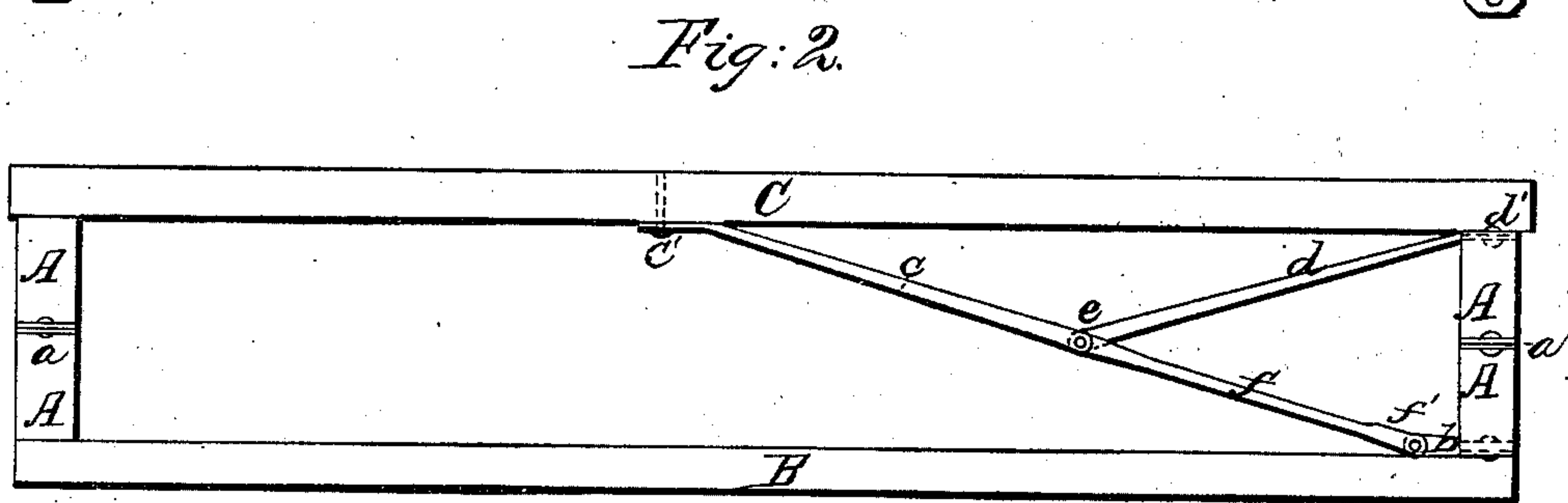
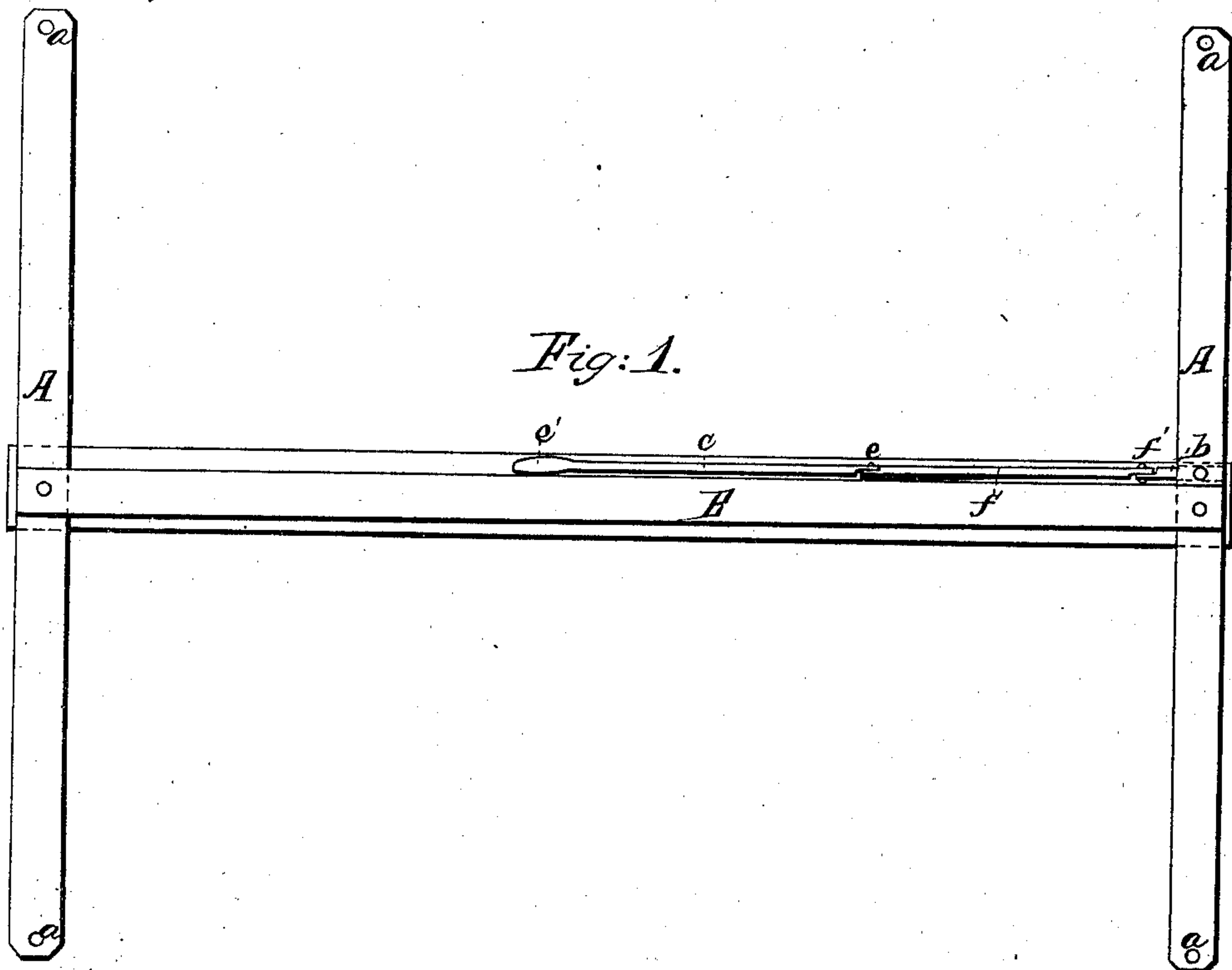


J. H. Chadwick.

Carriage Spring.

N<sup>o</sup> 74,499. Patented Feb. 18, 1868.



Witnesses:

W. E. Mans  
L. L. Cotton

Inventor:

J. H. Chadwick

# United States Patent Office.

JOSEPH H. CHADWICK, OF WHEATON, ILLINOIS.

*Letters Patent No. 74,499, dated February 18, 1868.*

## IMPROVEMENT IN CARRIAGE-SPRING BRACES.

*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, JOSEPH H. CHADWICK, of Wheaton, in the county of Du Page, and State of Illinois, have invented a new and useful Improvement in Carriage-Spring Braces; and I do hereby declare and make known that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

My said invention relates to an attachment to elliptic carriage-springs, and it consists in a novel device for bracing said springs, so as to prevent any lateral displacement of the upper member of the spring, which is thus kept in the desired position over the lower member, while, at the same time, the spring is perfectly free in its action, said brace operating alike when the carriage is lightly or heavily laden, and the springs more or less compressed, as hereinafter described.

To enable those skilled in the art to understand how to construct and use my said invention, I will proceed to describe the same with particularity, making reference in so doing to the aforesaid drawings, in which—

Figure 1 is a bottom view of my invention as applied for use.

Figure 2 is a side view or elevation of the same; and

Figure 3 is a similar view thereof when the springs are compressed.

Similar letters of reference in the several figures denote the same parts of my invention.

A A represent two sets of elliptic springs, arranged respectively over the axles of the carriage-wheels; B being the reach, connecting the axles or the bolsters thereupon, upon which the said springs are attached, as shown. C represents a central longitudinal piece of timber, also firmly secured to the springs upon the top, as shown, which forms the sill upon which the carriage-bottom is constructed, as desired.

It will readily be seen that springs arranged as above described would be very liable to have their upper members displaced by sudden starting or stopping, which would tend to throw the upper members forward or back of the lower members, and thus weaken and ultimately destroy the spring; but, to prevent this, I secure to the waggon-bottom, or its sill, a brace, *c*, and to the upper member of the spring, or to said sill, as may be preferred, a brace, *d*, having shoulders resting against each other, or said braces *c d* may be constructed of a single piece of metal, of the desired form, and said arms may be of any required or suitable length, and may be inclined to each other at any desired angle, greater or less than that shown. At the point *e*, which always remains at the same distance from the sill C, an arm, *f*, is pivoted, which is pivoted at its opposite end, at *f'*, to a short arm, *b*, which is rigidly attached to the lower member of the spring at its central point, as shown, so that said arm *f* has a joint at each end to allow of a vertical movement of said arm with respect to and about its points of attachment. By fixing the point *e* at such a distance from the rear spring, or from either spring, as only one device is necessary, that the arc described by the end of the arm *f*, at *e*, as the springs are compressed, shall substantially correspond with a vertical line, it will readily be seen that the springs will act unimpeded by the brace, while the brace will act upon the springs to keep them in the desired position with respect to the members of each, as aforesaid, whether said springs be compressed to a greater or less degree.

I am aware that braces have been used heretofore in connection with the springs of carriages for the same purpose as my invention, and I do not therefore claim carriage-spring braces broadly; but my peculiar device for effecting the desired result I regard as new.

Having described my improved brace, I will now specify what I claim and desire to secure by Letters Patent.

I claim the combination and arrangement of the spring A, the sill C, or its equivalent, the braces *c d*, and jointed arm *f*, in the manner and for the purposes set forth and shown.

JOS. H. CHADWICK.

Witnesses:

W. E. MARRS,

L. L. COBURN.