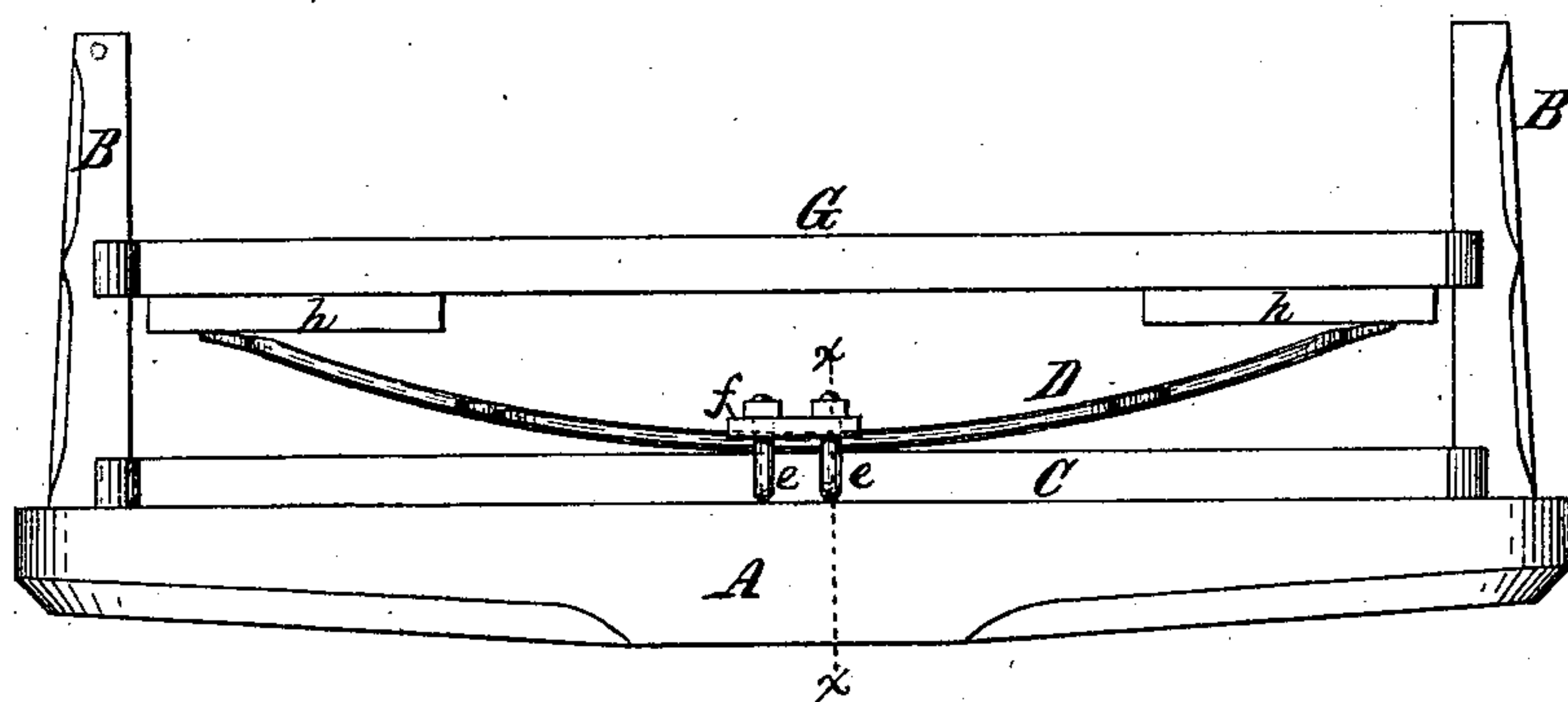


L. SPALDING & L. WIEDE.  
Vehicle-Spring.

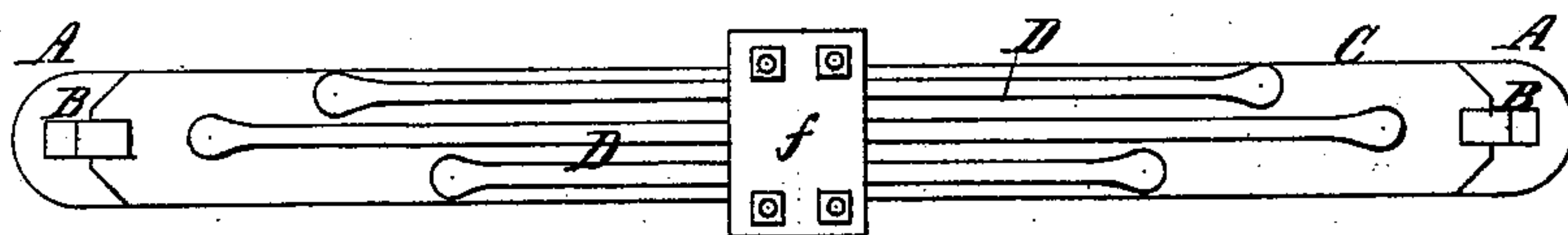
No. 215,986.

Patented May 27, 1879.

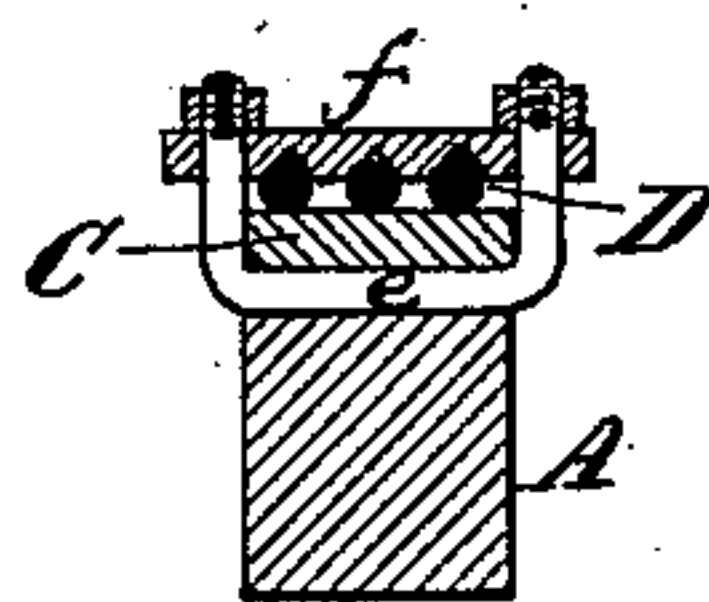
*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



Chas. J. Buchheit  
Geo. J. Brady } Witnesses.

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Louis Wiede Inventors.  
By *Michael J. Donnan*  
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# UNITED STATES PATENT OFFICE.

LOREN SPALDING AND LOUIS WIEDE, OF WILLIAMSVILLE, NEW YORK;  
SAID SPALDING ASSIGNOR TO SAID WIEDE.

## IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **215,986**, dated May 27, 1879; application filed January 25, 1879.

*To all whom it may concern:*

Be it known that we, LOREN SPALDING and LOUIS WIEDE, both of Williamsville, in the county of Erie and State of New York, have invented new and useful Improvements in Vehicle-Springs, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to that class of vehicle-springs in which each spring is composed of a series of independent parts or members, so arranged with reference to each other that the several component members of each spring come into action successively, thereby supporting the vehicle-body when light upon one member or part of the spring, and increasing the resistance or supporting capacity of the spring in the same measure as the load of the vehicle is increased.

The object of our invention is the construction of a simple, cheap, and durable spring of this character.

It consists of a vehicle-spring composed of two or more independent spring-bars of different lengths, arranged side by side, as will be hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a front elevation of our improved spring applied to the bolster of a vehicle. Fig. 2 is a plan view thereof with the spring-board removed. Fig. 3 is a cross-section on line *x x*, Fig. 1.

Like letters of reference refer to like parts in each of the figures.

A represents a vehicle-bolster, of ordinary and well-known construction, and B B the uprights secured thereto.

C is the spring-supporting board, arranged loosely upon the bolster A, and provided in its ends with notches fitting over the uprights B B, whereby the board C is held in place.

D represents our improved spring secured to the supporting-board C. It is composed of several bars or rods of spring-steel arranged side by side and made of unequal lengths, as clearly shown.

The several bars composing the spring may

all have the same curvature, as shown, whereby the bending of the bars is greatly simplified.

The spring D is secured to the upper side of the supporting-board C by means of clips *e* and a clip-plate, *f*, having on its under side A-shaped recesses, in which the spring-bars are securely held.

The A-shaped recesses in the clip-plate enable the latter to firmly hold bars of various sizes of diameters.

G is the spring-board, resting upon the spring D, and provided in its ends with notches fitting loosely over the uprights B, to permit the board G to move freely up or down. The vehicle-body resting upon the spring-board G is supported ordinarily by the longest bar of the spring D.

In the same manner, as the board G is depressed, either by loading the vehicle or by violent oscillations of the vehicle-body, the shorter bars of the spring D come successively into play and assist in supporting the vehicle-body.

The supporting-board C, to which the spring D is secured, can be readily removed with the spring from the bolster if the spring is not required to be used, or the spring may be applied, if desired, in a reversed position and the spring-board G removed.

Our improved spring is readily and cheaply constructed of bar-steel, and all the bars constituting a spring may be bent to the same curvature and simply be made of different lengths.

The ends of the bars are preferably flattened, and the spring-board G is preferably provided with bearing-pieces *h*, against which the ends of the bars work.

Compared with a spring composed of several leaves of different lengths, placed one upon the other, our improved spring has the advantage of greater simplicity and cheapness of construction, and of greater freedom of movement, as the different bars or rods constituting our spring are not liable to be impeded in their action by dirt or other ob-

structions, which, in leaf-springs, will accumulate in the narrow spaces between the several leaves, and impair the operation of the same.

We claim as our invention—

A vehicle-spring composed of two or more independent bars or rods of different lengths,

arranged side by side, substantially as and for the purpose set forth.

LOREN SPALDING.  
LOUIS WIEDE.

Witnesses:

JNO. J. BONNER,  
CHAS. J. BUCHHEIT.