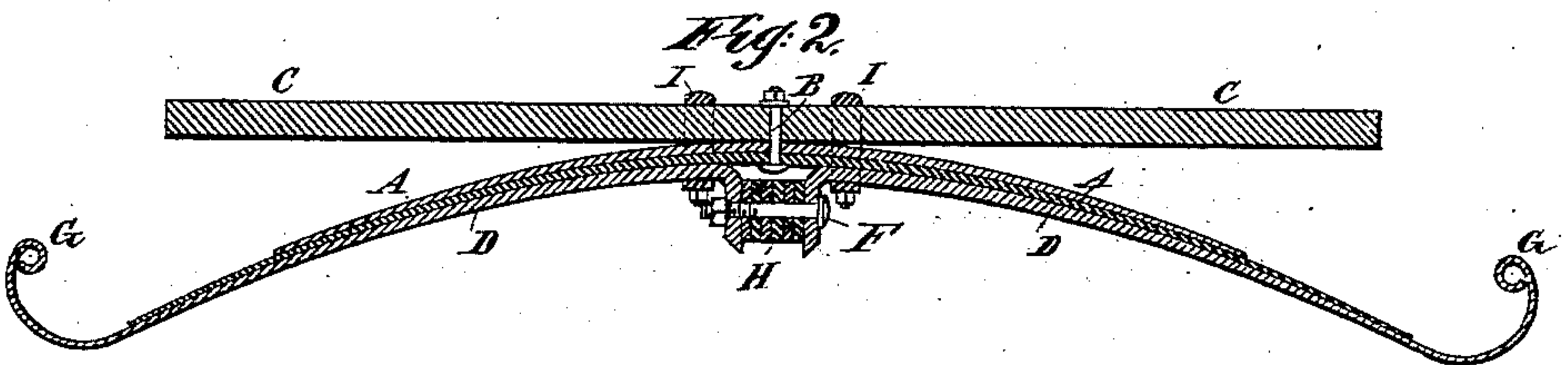
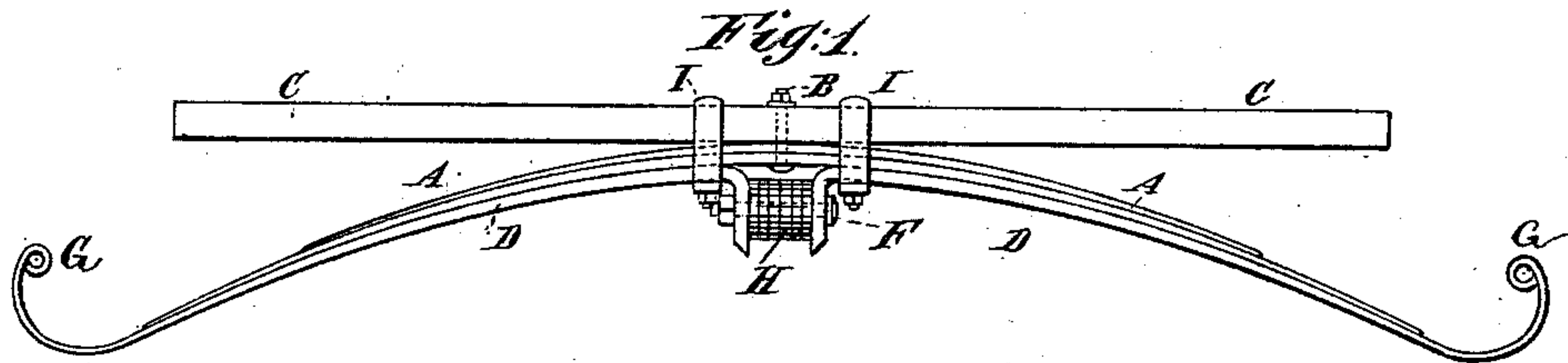


(No Model.)

L. F. BETTS.  
VEHICLE SPRING.

No. 277,204.

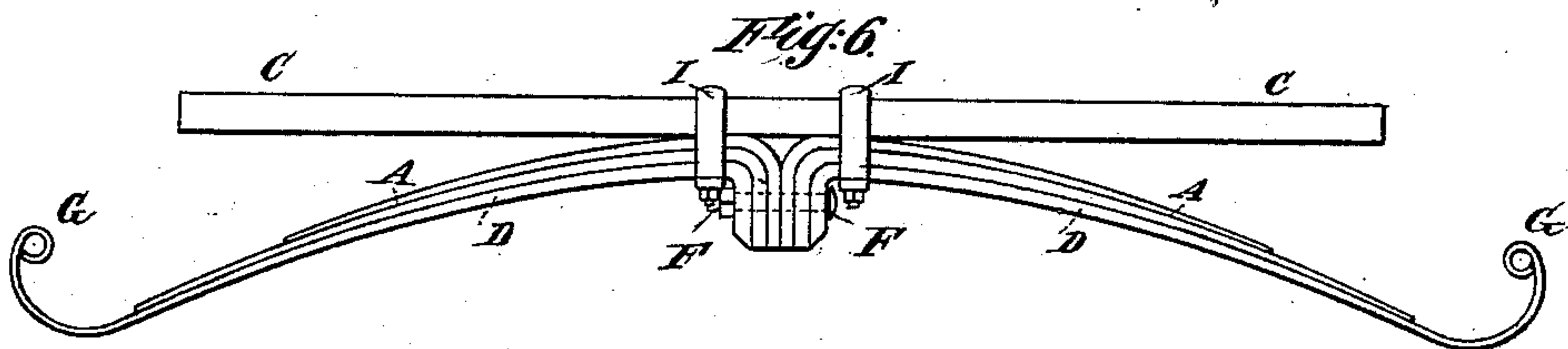
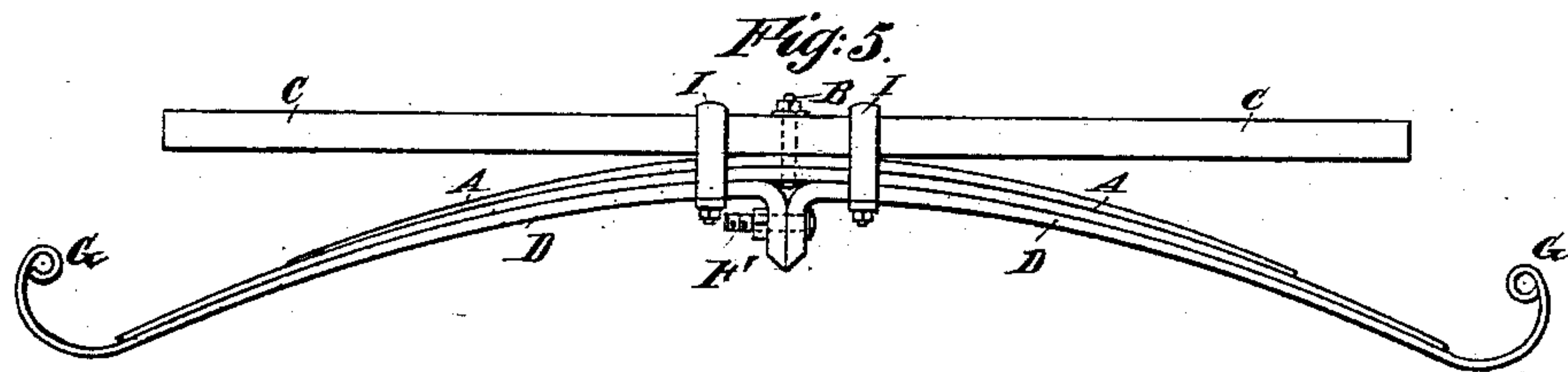
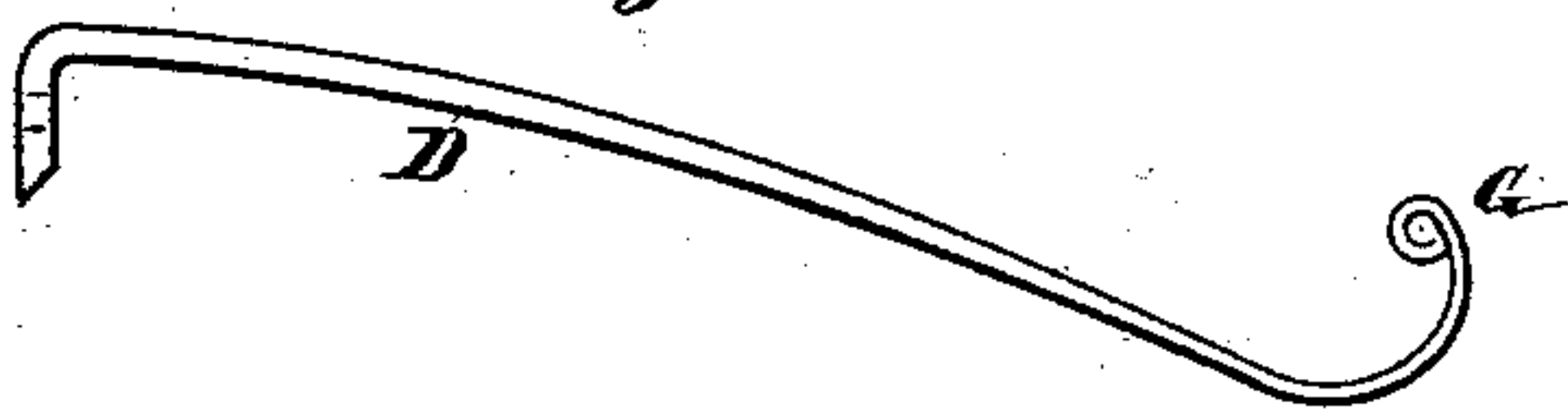
Patented May 8, 1883.



*Fig. 4.*



*Fig. 3.*



Witnesses—  
*Charles R. Searle*  
*Wm. A. Lowe*

Inventor—  
*Lewis F. Betts*  
By *A. M. Pierce*  
Atty

# UNITED STATES PATENT OFFICE.

LEWIS F. BETTS, OF NEW YORK, N. Y.

## VEHICLE-SPRING.

SPECIFICATION forming part of Letters Patent No. 277,204, dated May 8, 1883.

Application filed February 9, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, LEWIS F. BETTS, of the city, county, and State of New York, have invented certain new and useful Improvements in Vehicle-Springs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates especially to springs employed upon wagons or vehicles; and it has for its object the production of a device wherein provision is made for adjusting the spring in accordance with the length of the axle as may be required, and in such a manner that one size of spring may be easily and quickly adjusted to the required length.

To attain this end my invention consists, essentially, in a spring the upper leaf or leaves whereof are made in the usual manner, while the lower leaf is made in two pieces. The inner ends of these pieces are bent downward, and are perforated for the reception of a bolt, upon which any number of washers may be placed to throw the outer extremities of the spring apart the requisite distance to fit different widths of vehicles. The upper leaves of the spring may be bolted together in the usual manner and secured to a cross-bar, the lower leaf being secured thereto by movable clips, of suitable shape and construction.

My improved spring is simple and cheap to construct, costing but little more than ordinary springs, while by reason of its adjustability of length a carriage-maker or wheelwright need carry but little stock, as the one spring answers all lengths, whereas heretofore it has been necessary to have a number of sizes of springs on hand to be prepared for any emergency.

In the drawings, Figure 1 is a side elevation of my improved spring, and Fig. 2 is a vertical longitudinal section thereof. Fig. 3 is a side elevation of one-half of the lower leaf, and Fig. 4 is an end elevation of the same. Fig. 5 is a side elevation of a spring, showing all the washers as removed and the length reduced. Fig. 6 is a side elevation of a modified form of spring, showing all the leaves as divided, having their inner extremities turned downward,

and secured together by a bolt passing there- 50 through.

Like letters of reference, wherever they occur, indicate corresponding parts in all the figures.

A are the upper leaves of the spring, formed in the usual manner, and secured together by a bolt, B, which in the present instance passes therethrough and through cross-bar C. If desired, the upper leaves may be secured together by a bolt or bolts passing therethrough independent of the cross-bar. The lower leaf, D, is divided into two parts, as plainly shown. The inner extremities of the two parts are turned down and perforated with a bolt-hole, E, through which passes an adjusting-bolt, F. The outer extremities of leaf D are provided with eyes G, for engaging with the side bars or other supports, in the usual manner.

H are washers, of suitable material, placed between the two halves of the lower leaf, D, bolt F passing therethrough. The lower portion of the spring is secured to the upper leaves and to the cross-bar by clips I. In adjusting the spring the required length is first ascertained, and the number of washers necessary to throw out the bottom leaf to such length are placed in position between the inner extremities of the divided leaf, and the same is firmly united by the bolt F, and clips I are moved to the proper position for holding all the parts in place upon the cross-bar. It will be seen that all of the leaves of the spring may be divided, if desired, as illustrated in Fig. 6, without departing from my invention.

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

1. An adjustable vehicle-spring having one or more of its leaves divided in the center, and adapted and arranged to be lengthened or shortened by means of washers secured between the inner extremities of the divided parts, substantially as shown and described.

2. In an adjustable vehicle-spring, the combination, with one or more leaves divided at the center, the inner extremities being turned at right angles, as set forth, of washers located between said divided parts, and a bolt passing



through the perforations therein and through the washers, substantially as shown and described.

3. The combination, with the upper leaves of  
5 a spring, of a lower leaf divided in the center, the inner extremities being bent downward and placed opposite to each other, and adjustably connected, substantially as shown and described.

In testimony that I claim the foregoing I do have hereunto set my hand in the presence of two witnesses.

LEWIS F. BETTS.

Witnesses:

F. W. HANAFORD,  
A. M. PIERCE.