

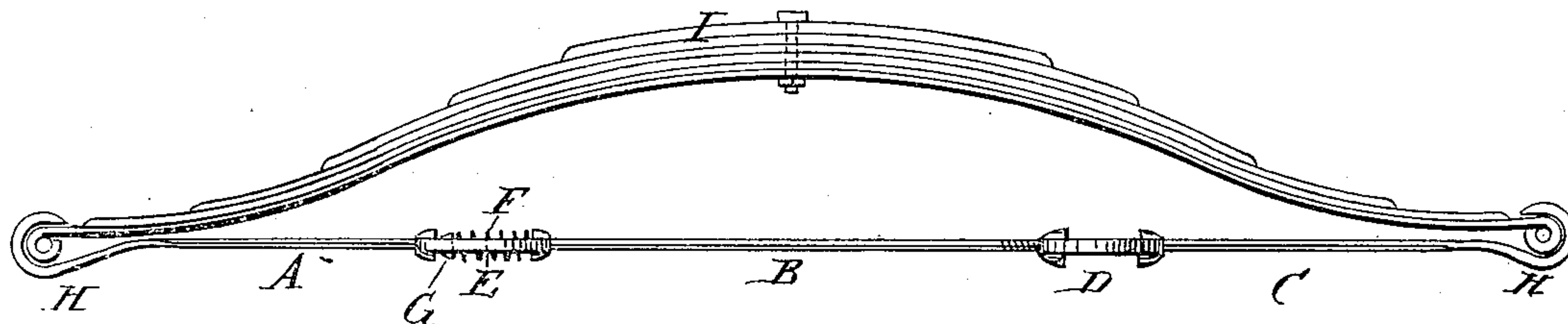
(No Model.)

R. L. DOBLE.  
CARRIAGE SPRING.

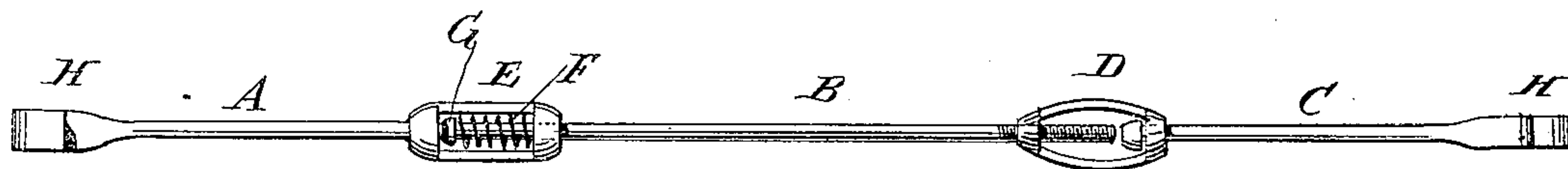
No. 246,479.

Patented Aug. 30, 1881.

*Fig: 1.*



*Fig: 2.*



WITNESSES:

*Chas. Nida*  
*C. Sedgwick*

INVENTOR:

*R. L. Doble*  
BY *Munn & Co*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

RONELLA L. DOBLE, OF LA GRANGE, MAINE, ASSIGNOR OF TWO-THIRDS TO  
W. E. RICHARDSON, OF TREMONT, AND B. W. DOBLE, JR., OF LA GRANGE,  
MAINE.

## CARRIAGE-SPRING.

SPECIFICATION forming part of Letters Patent No. 246,479, dated August 30, 1881.

Application filed May 31, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, RONELLA LEWIS DOBLE, of La Grange, in the county of Penobscot and State of Maine, have invented certain useful  
5 Improvements in Carriage-Springs, of which the following is a specification.

Figure 1 is a front elevation of my improvement shown as applied to a half-elliptic spring. Fig. 2 is a plan view of the improvement de-  
10 tached.

Similar letters of reference indicate corresponding parts.

This invention relates to the use of a chord-rod in combination with elliptical springs, and  
15 has for its object to strengthen said springs.

The invention consists in the peculiar construction of the chord-rod, whereby provision is made for a longitudinal yielding movement and a longitudinal adjustment of the chord-  
20 rod.

The invention further consists in the combination of the said longitudinally yielding and adjustable chord-rod with the elliptical spring, as will be hereinafter fully described.

25 The chord-rod is made in three parts or sections, A B C. To the inner end of the side section, C, is swiveled a long nut, D, into which is screwed the end of the middle section, B. The screw-thread of the section B is made of  
30 a length equal to the entire expansion of the spring to which the chord-rod is to be attached. The other end of the middle section, B, is passed into the loop E, formed upon or attached to the inner end of the other end sec-  
35 tion, A. The end of the section B passes through a spiral spring, F, placed within the loop E, and has a nut or head, G, screwed upon it. The loop E is made of such a length as to give the sections A B a play equal to the  
40 range or expansion of the spring to which the chord-rod is to be applied. Upon the outer ends of the side sections, A C, are formed hooks

H, to be hooked upon the ends of the half-elliptic spring I. When the chord-rod is to be applied to an elliptic spring the outer ends of  
45 the side sections, A C, are made forked, and have holes in the ends of their branches to receive the bolts that connect the ends of the upper and lower parts of the said spring to each other; or the ends of the sections A C  
50 can be connected with the ends of the spring by any suitable means.

With this construction, by adjusting the swiveled nut D upon the end of the middle section, B, the expansion of the spring to which  
55 the chord-rod is applied can be limited to any desired extent.

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

1. A chord-rod for carriage-springs, constructed substantially as herein shown and described, consisting of three sections, A B C, connected by the nut, loop, and spring D E F, whereby provision is made for a longitudinal  
65 yielding movement and a longitudinal adjustment of the said chord-rod, as set forth.

2. The combination, with the elliptical spring I, of the longitudinally yielding and adjustable chord-rod A B C, substantially as herein  
70 shown and described, whereby the spring is strengthened, as set forth.

3. The combination, with the spring I, of the chord-rod made in three sections, A B C, connected by the long nut D and by the long loop  
75 E, the spiral spring F, and the nut or head G, substantially as herein shown and described, whereby the said spring is strengthened and its expansion limited, as set forth.

RONELLA LEWIS DOBLE.

Witnesses:

WM. BANTON,  
NELSON DURGIN.