

(No Model.)

J. B. N. BERRY.  
CAR SPRING.

No. 279,907.

Patented June 26, 1883.

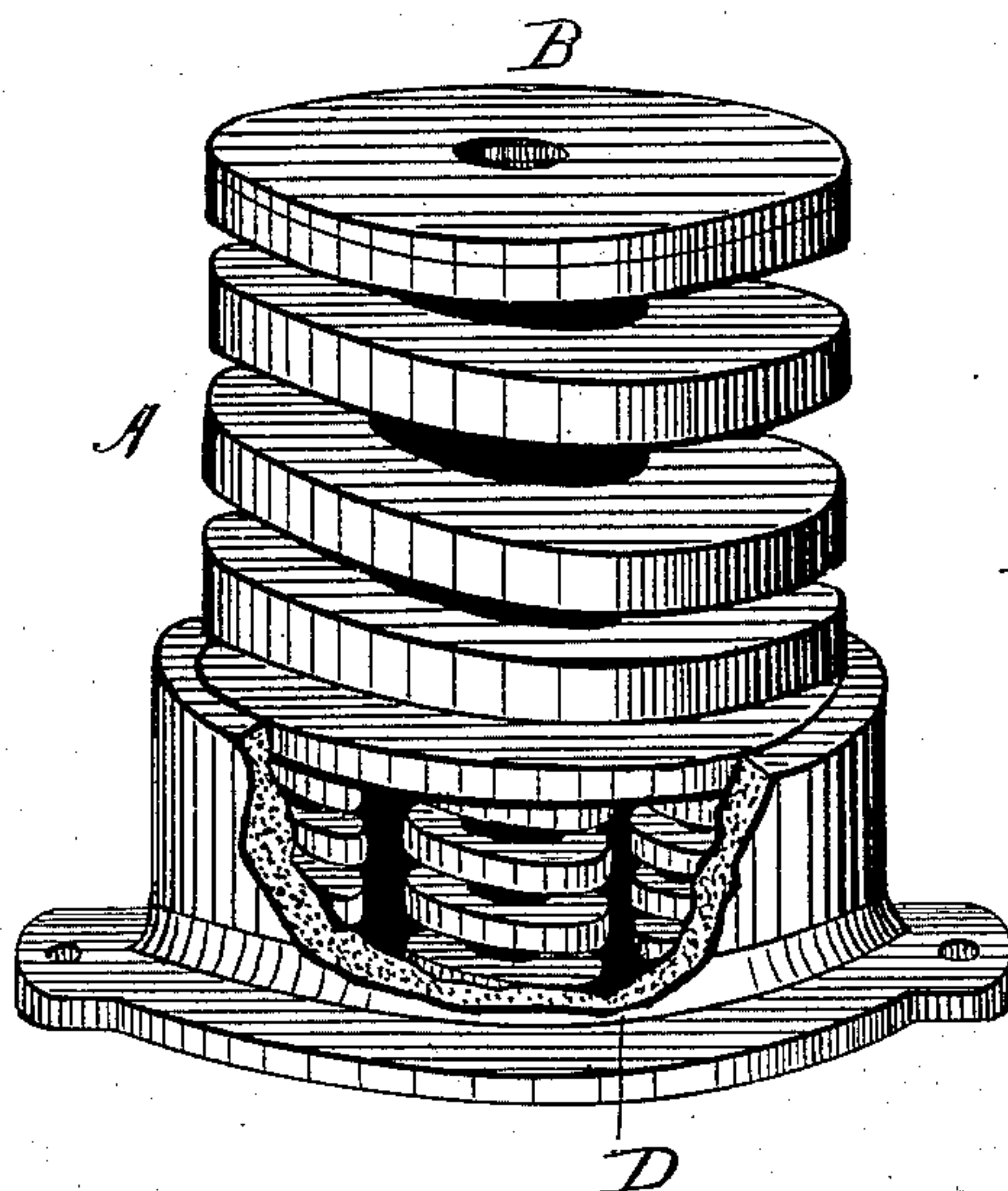


Fig. 1.

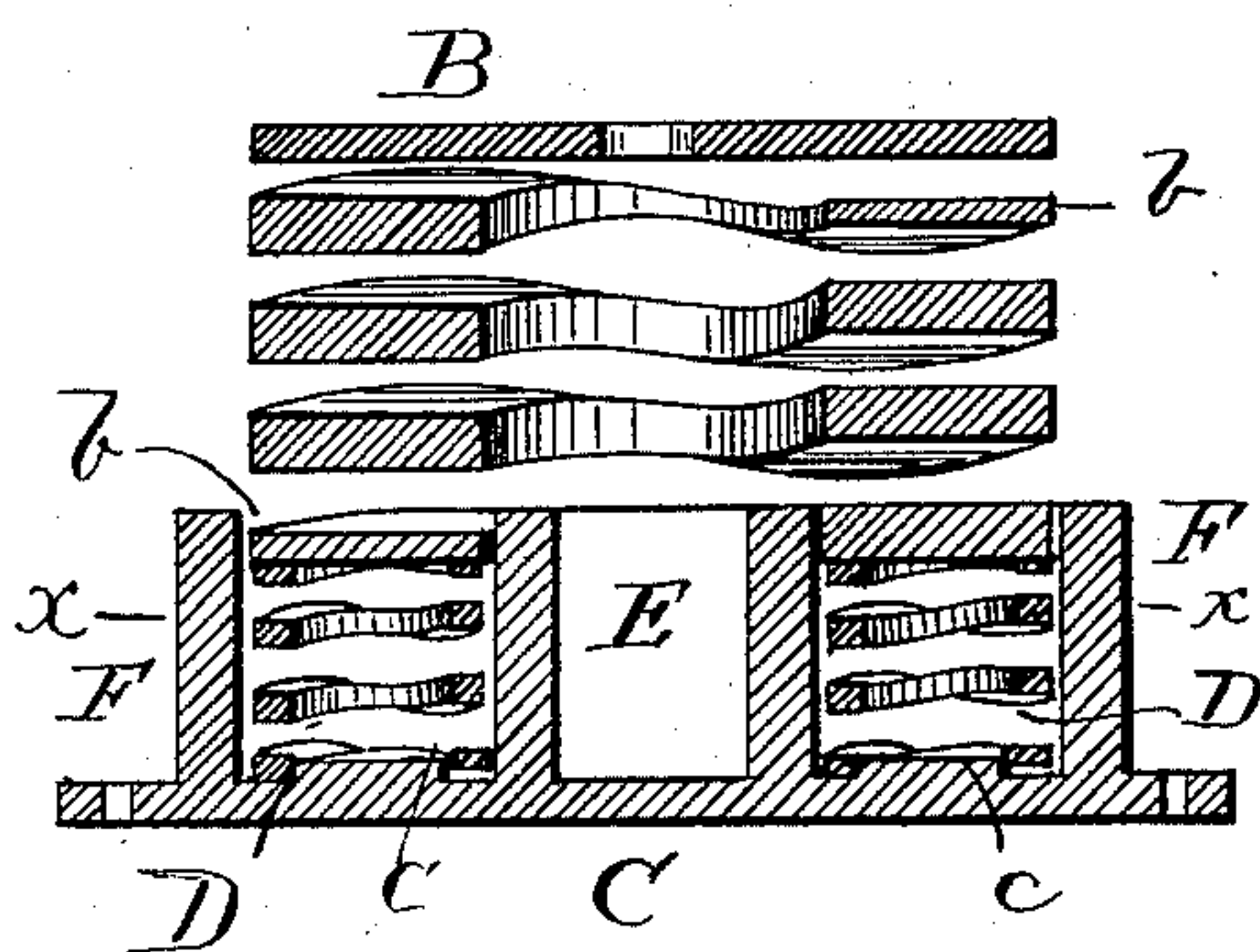


Fig. 2.

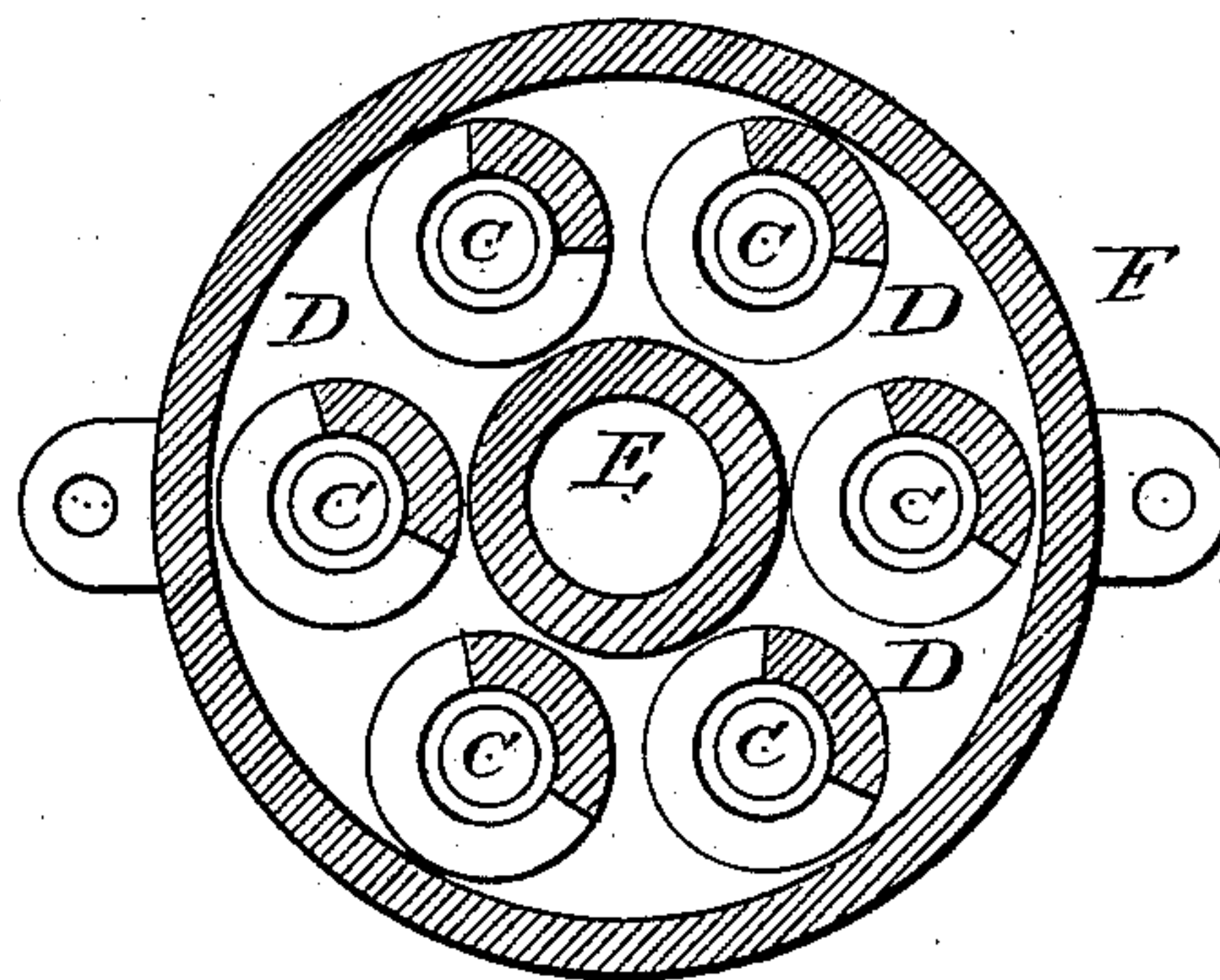


Fig. 3.

Witnesses

Andrew B. McLaughlin,

H. Lemuth

Inventor

John B. N. Berry.

by  
Brashears & Williams  
Attorneys.



# UNITED STATES PATENT OFFICE.

JOHN B. N. BERRY, OF BALTIMORE, MARYLAND.

## CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 279,907, dated June 26, 1883.

Application filed November 1, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. N. BERRY, a citizen of the United States, residing at Baltimore, Maryland, have invented new and useful Improvements in Car-Springs, of which the following is a specification, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a perspective view of a spring made according to my invention, a portion of the base-flanges being broken away. Fig. 2 is a vertical longitudinal section of the same, and Fig. 3 is a section on line *x x* of Fig. 2.

Like letters mark the same parts in all the figures.

My invention relates to that class of car-springs composed of spiral coils; and it consists in an improved arrangement and combination of parts, whereby the strength of spring in action is graduated according to the amount of weight superposed upon it, as will now be fully described, and particularly pointed out in the claims.

Referring by letter to the drawings, A is a spring composed of several coils of flat edge-rolled steel of considerable weight, the ends *b* of which are tapered flatwise, which spring is surmounted, if desired, by a flat metal ring or plate, B.

Beneath the spring A, on a base, C, are arranged a series of smaller springs, D, which may, if desired, be separated from the large spring A by a circular metal plate, similar in form to the plate B on top of the large spring A. The base C, upon which the smaller springs rest, is provided with projections *c*, which enter the mandrel-holes of the small springs. It will be understood that these projections must not be higher than the smaller springs when entirely compressed. I prefer to make the smaller springs about equal in diameter to the width of the bar of which the larger spring A is composed, but do not limit myself to this exact proportion, as under some circumstances this may be varied.

The base C is provided with upright circular flanges E and F, between which the springs are guided in their upward and downward movements, the lower coil of the large spring A resting within said flanges when both the large and small springs are expanded.

The operation of my spring is as follows:

When the car under which the springs are placed is empty or lightly loaded, the smaller springs only will be compressed, they being heavy enough to support such weight, and the large spring will remain expanded until sufficient weight has been imposed upon it to compress the smaller springs, which would then act as solid base pieces or supports for the large spring, which will receive the impress of and support any further weight which may be placed upon it.

The advantages of my construction will be apparent at a glance. No matter what weight may be placed upon my spring within its capacity to support, there will always be a portion of the spring in action appropriate to the imposed weight.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The combination, in a car-spring, of a series of coiled springs circularly arranged, and a superposed coiled spring composed of an edge-rolled steel bar of a width equal substantially to the diameter of each of the smaller springs, as set forth.

2. The combination, in a car-spring, of a circularly-arranged series of coiled springs, and a superposed coiled spring of such greater relative weight and strength that it will remain expanded until the smaller springs are compressed, as set forth.

3. The combination, in a car-spring, of a base provided with a circularly-arranged series of projections, *c*, and flanges E and F, a series of coiled springs, D, and the larger superposed spring, A, substantially as set forth.

4. The combination, in a car-spring, of the base C, the flange F, the smaller springs, D, and the superposed larger spring, A, substantially as set forth.

5. The combination, in a car-spring, of the base C, flange F, projections *c*, a circularly-arranged series of springs within said flange, and the larger superposed spring, A, as set forth.

In testimony whereof I have hereunto set my hand.

JOHN B. N. BERRY.

In presence of—

S. BRASHEARS,  
JNO. T. MADDOX.