(No Model.)

R. VOSE.

CAR SPRING.

No. 292,773. Patented Jan. 29, 1884.

Fig. 1.

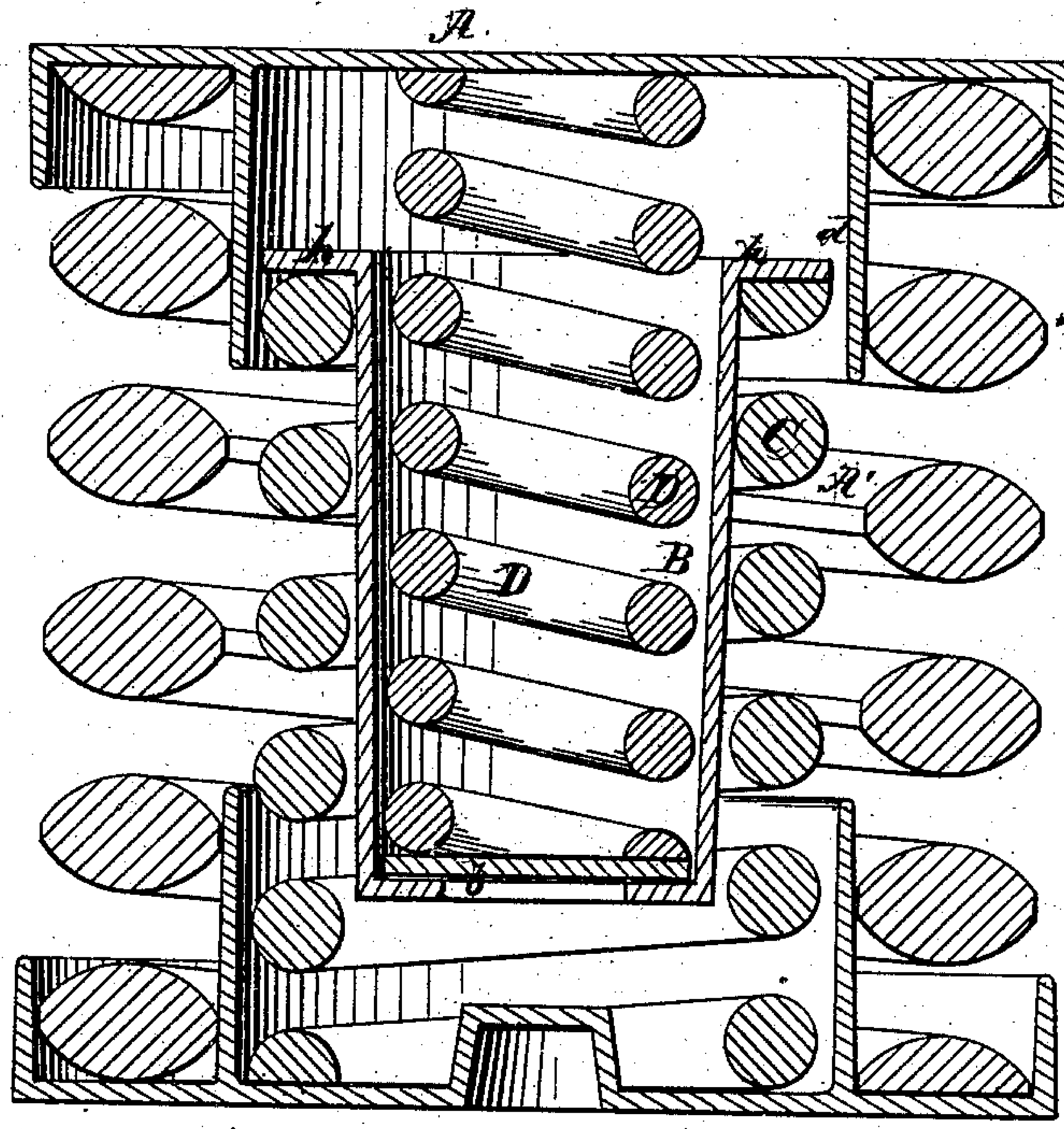
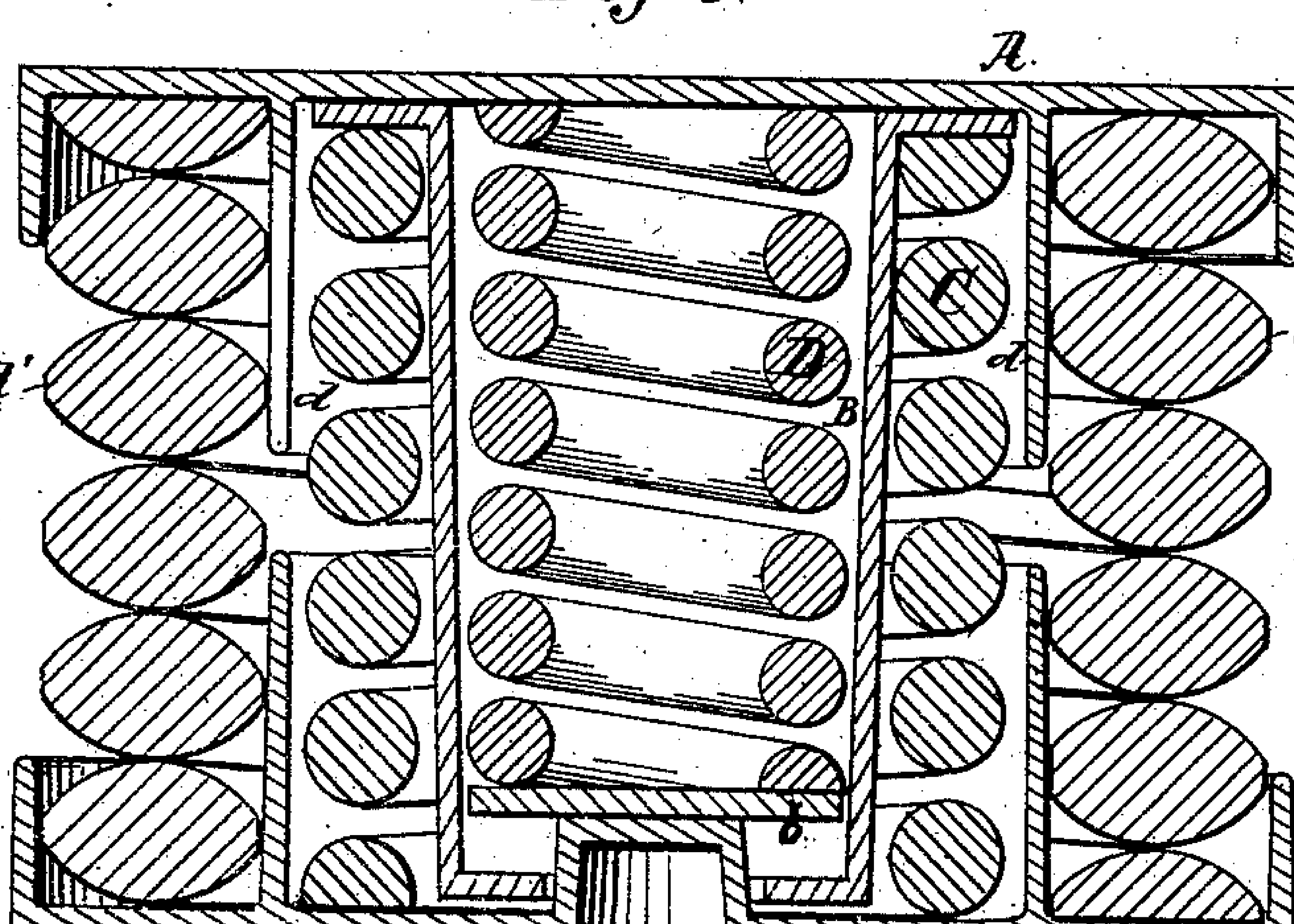


Fig. 2.



Witnesses:
Henry Eichling
[illegible]

Inventor
Richard Vose

UNITED STATES PATENT OFFICE.

RICHARD VOSE, OF NEW YORK, N. Y.

CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 292,773, dated January 29, 1884.

Application filed May 24, 1883. (No model.)

To all whom it may concern:

Be it known that I, RICHARD VOSE, of the city of New York, county and State of New York, have invented a new and useful Improvement in Caps for Car Spiral Springs, of which the following is a specification, reference being had to the drawings, in which—

Figure 1 is a sectional view showing my improvements before the spring is exhausted, and Fig. 2 is a sectional view showing the relation of parts when the spring is exhausted.

In two separate applications made by me on the 24th day of May, 1883, and filed in the Patent Office, and known as Serial Nos. 96,004 and 96,005, I show the different parts of the improvements here claimed in combination, as follows: In Serial No. 96,005 I show the lug projection *d* cast on and forming part with the cap or covering A, and extending at right angles to the face or plane of said cap down between the two spiral coils. In Serial No. 96,004 I show the use of the cup B, as designated in this application, with its movable bottom *b;* but in this application I have reversed the position of the bottom of said cup—that is, I have turned the cup upside down.

What I show in this application for Letters Patent is the combination, as differing above, of these two principles of construction in car-springs.

In the drawings, A′ is the outer, C the next, and D the inner, coil. These coils or spirals may be of the same length, resting on unequal bases, or of unequal lengths on the same bases; also, the action of weight acts in a different manner from that set forth in said application, as follows: Weight, pressure, or a load is placed on the spring as constructed. The cap A, receiving it, presses down into the coil A′ and D. The projections *d* on said cap A prevent the coils A′ and C from coming in contact, as they extend down enough below the face or end of spiral C to hold it from contact with A′. The sides of cup B prevent coil D from contact with coil or spiral C. The pressure on coil D, pressing D onto the bottom *b*, brings the cup B to bear onto the coil C, on which, by its rim *h*, the cup B rests. It will be thus readily seen that a complete graduating spring is obtained, no spirals coming in contact, and no space lost or employed, which, in the construction of graduated springs, is a great consideration. The cap A, with its lips *d*, may be duplicated on the other end; but it is unnecessary to have a double cup, B.

The spirals A′ may be duplicated, or as many used as desired to make a heavy bearing-spring.

What I claim, and desire to secure by Letters Patent, is—

The combination, in a spiral spring composed of three or more spirals, with the cap A, having projections *d*, of cup B, having movable bottom *b* and rim *h*, the said spirals of unequal length, or of equal length resting on uneven bases, substantially as described, and for the purpose specified.

RICHARD VOSE.

Witnesses:
JAMES SCHENCK,
F. T. RANDELL.