

E. J. HORNER.

Car Spring.

No. 89,999.

Patented May 11, 1869.

Fig. 1

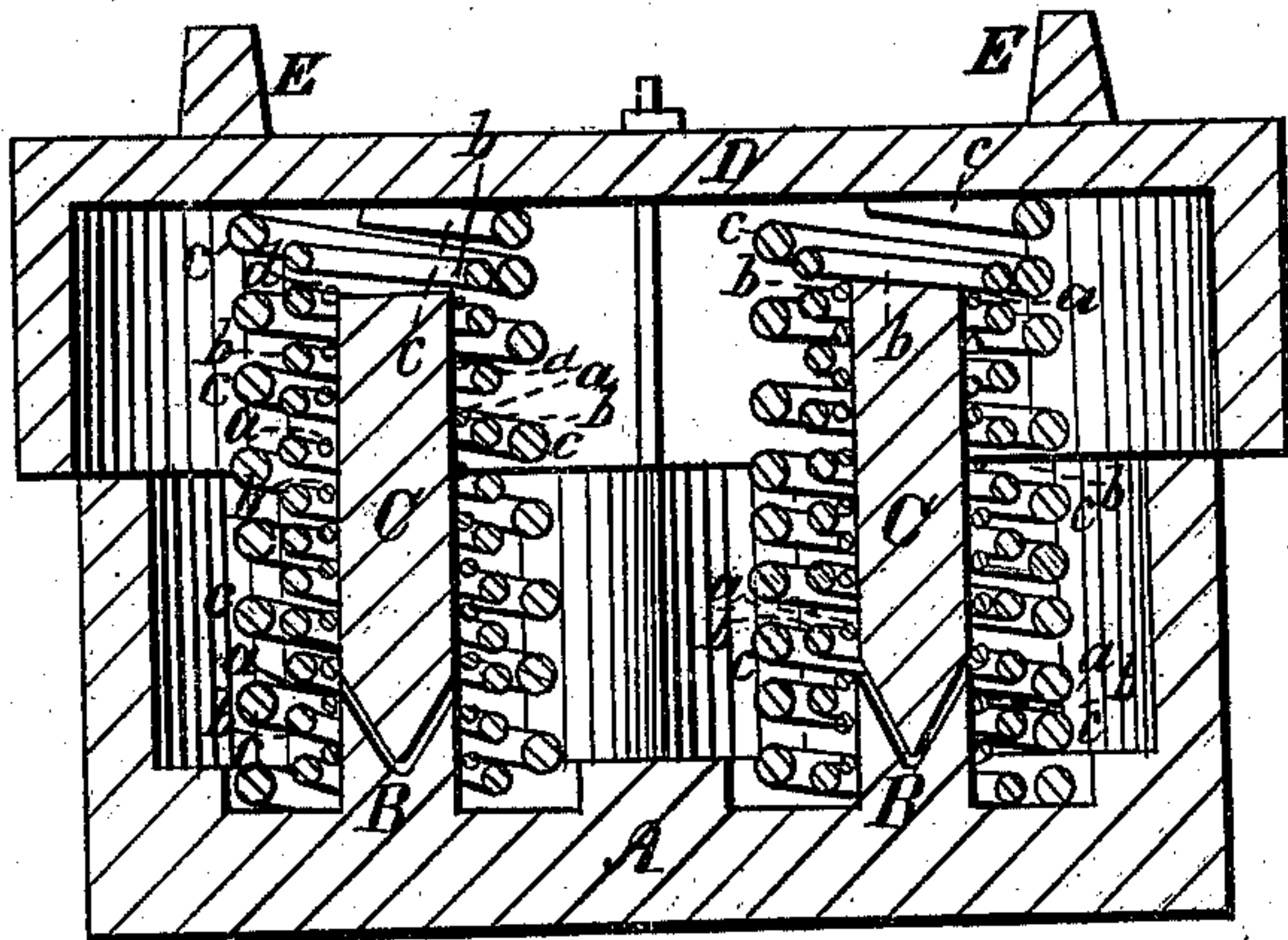
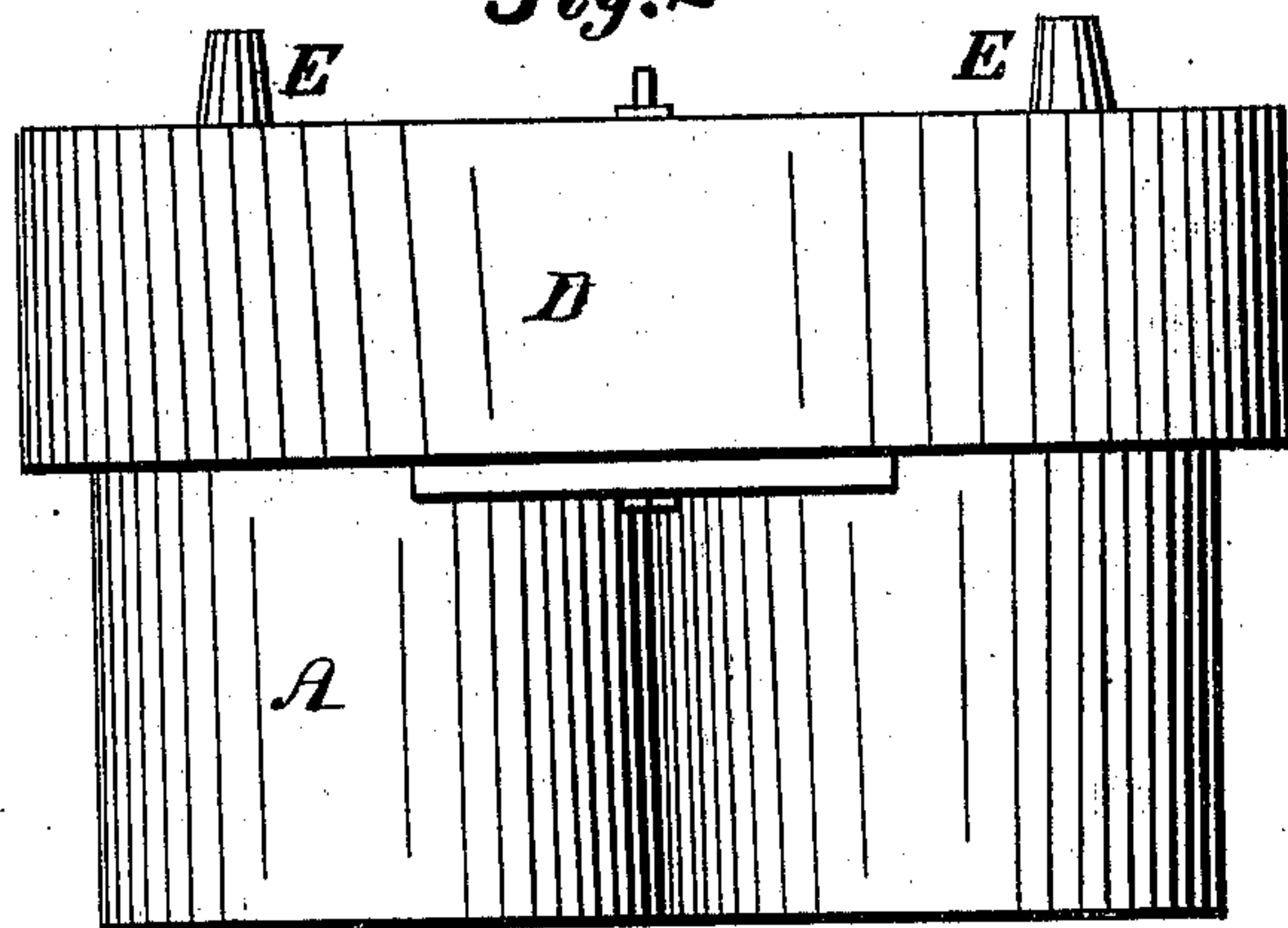


Fig. 2



Witnesses:  
Leopold Over  
A. A. Yeatman

Inventor  
E. J. Horner  
per Alexander Mason  
Attorney

# UNITED STATES PATENT OFFICE.

E. J. HORNER, OF WILMINGTON, DELAWARE.

## IMPROVED CAR-SPRING.

Specification forming part of Letters Patent No. **89,999**, dated May 11, 1869.

*To all whom it may concern:*

Be it known that I, E. J. HORNER, of Wilmington, in the county of New Castle, and in the State of Delaware, have invented certain new and useful Improvements in Car-Springs; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention relates to an improvement on the car-spring patented by me November 10, 1868; and consists in the arrangement of one or more series of spiral springs placed outside each other, and increasing in size from the inner spring to the outer, the inner spring being placed around a rubber pin.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, which forms a part of this specification, and in which—

Figure 1 is a longitudinal vertical section, and Fig. 2 is a side elevation.

A represents a box in which the springs are placed. In the bottom of said box are one, two, or more pins, B, projecting a suitable distance upward, the upper end of which is cut out in the shape of a funnel, as shown in Fig. 1. On the pin B is placed a rubber pin, C, the lower end of which is pointed to correspond with the shape of the pin B and fit in the same. Around the pins C and B is placed a spiral spring, *a*, which rests on the bottom of the box A, and may extend a trifle above

the rubber pin C. Around the spiral spring *a* is placed another spiral spring, *b*, which is heavier than the first spring, and rests also on the bottom of the box A, but extends a suitable distance above the first spring, *a*. Around the spring *b* is placed a still heavier spring, *c*, also resting on the bottom of the box and extending above the spring *b*; and so on I may continue placing still larger and heavier springs around the former, according to the weight desired to be carried. On top of the box A is placed the lid D, which is, on its upper side, provided with pins E E, for the purpose of securing the cross-beam of the car.

Any number of such series of springs as above described may be used, and I do not confine myself to the particular shape of the box shown in the drawings, nor, in fact, to a box at all, as the springs may be used without being so inclosed.

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

In combination with one, two, or more spiral springs, constructed as herein described, the rubber pin C, tapering at its lower end, and resting on the stationary pin B, substantially as and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of January, 1869.

E. J. HORNER.

Witnesses:

LEOPOLD EVERT,  
A. A. YEATMAN.