E. J. HORNER.

Car Spring.

No. 83,855. Patented Nov. 10, 1868.

Fig: 1.

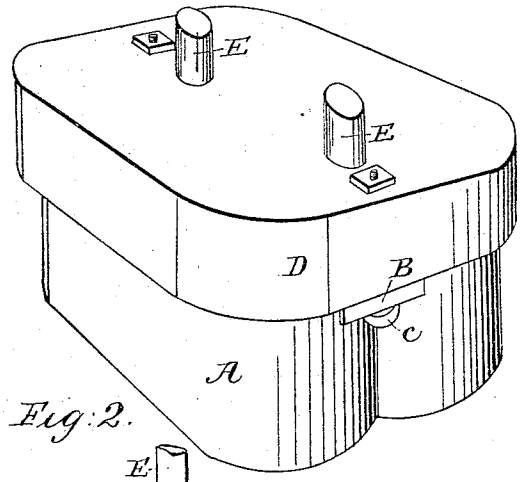


Fig: 2.

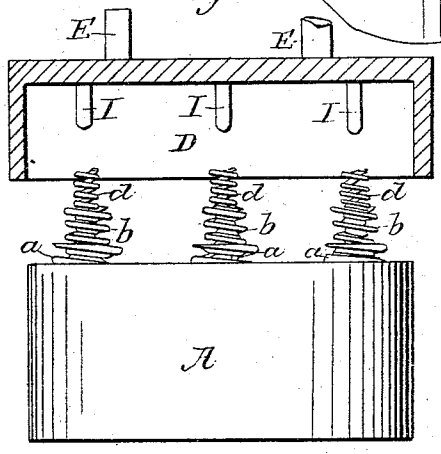
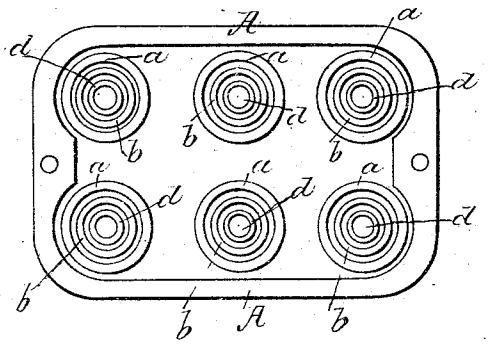


Fig: 3.



Witnesses.

Leopold Evert

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UNITED STATES PATENT OFFICE.

EDWIN J. HORNER, OF WILMINGTON, DELAWARE.

IMPROVED CAR-SPRING.

Specification forming part of Letters Patent No. **83,855**, dated November 10, 1868.

To all whom it may concern:

Be it known that I, EDWIN 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.

The nature of my invention consists in the arrangement of spiral springs, of different size and strength, placed inside of each other, and all of them in a box, on the top of which the cross-beam rests.

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 drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view; Fig. 2, a side elevation in section, with the lid of the box raised; and Fig. 3, a plan view with the lid removed.

A represents a box, of cast-iron, which is indented at the ends, and these indentations, at the upper edge, provided with a block or flange, B, through which a screw-bolt, C, passes, to secure the lid or cover D. This lid D fits around the box A, and is provided on its top with two upright pins, E E, which are intended to fit into holes on the under side of the cross-beam of the car, so as to secure the same.

It is evident that the box and lid may be of any shape and dimensions desired. Inside of this box I place a number of spiral springs, *a*, and within each one of these another spiral spring, *b*. This latter spring *b*, to be placed inside of the former, must, of course, be smaller—that is, the coils are smaller, but should extend above the spring *a*. Inside of the spring *b* is still another and smaller spring, *d*, which extends above the spring *b*.

It will be seen that when, now, weight is put on the car, the springs *d d* will first be pressed down before the springs *b b* are touched. These, in turn, will be pressed down before the springs *a a* receive the weight, thus making a gradual sagging down of the car.

On the under side of the lid D is a number of pins, I I, which fit inside of the springs *d d*, to hold them in proper position.

I am fully aware that a coil-spring for cars is not new; also, that a series of helical springs arranged in a concentric form is not new; nor their application to car-springs.

What I claim is—

In combination with a suitable box, A, provided with an overlapping lid, D, with inner pins I, the arrangement of the concentric springs *a*, *b*, and *d*, the three being graduated and extending one above the other, as shown, and held in position by the pins I, for the purpose of suiting the light, medium, and heavy weight of a railroad-car, all as shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 17th day of September, 1868.

EDWIN J. HORNER.

Witnesses:

A. N. MARR,

LEOPOLD EVERT.