

(No Model.)

H. J. MITCHELL.

CAR SPRING.

No. 292,248.

Patented Jan. 22, 1884.

FIG. 1.

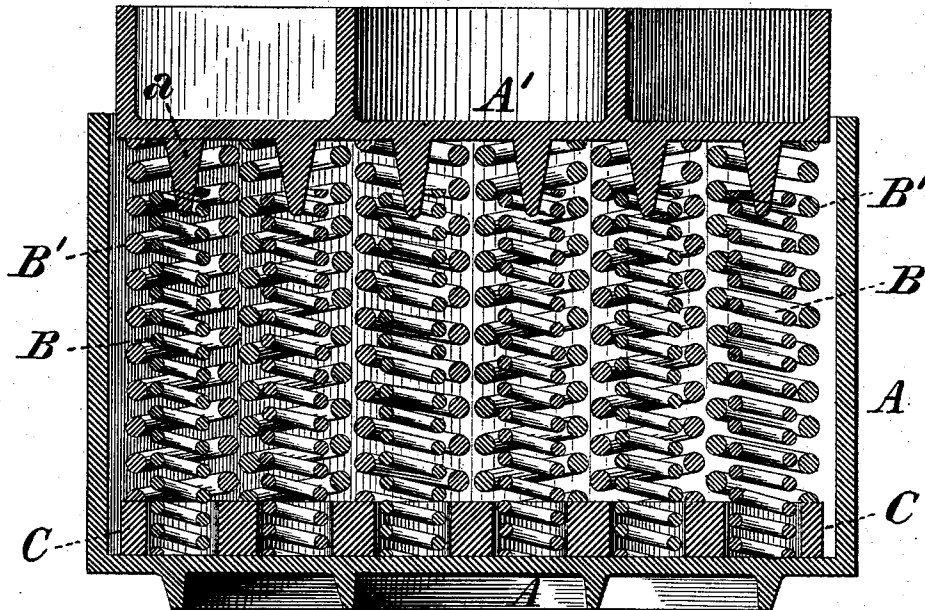
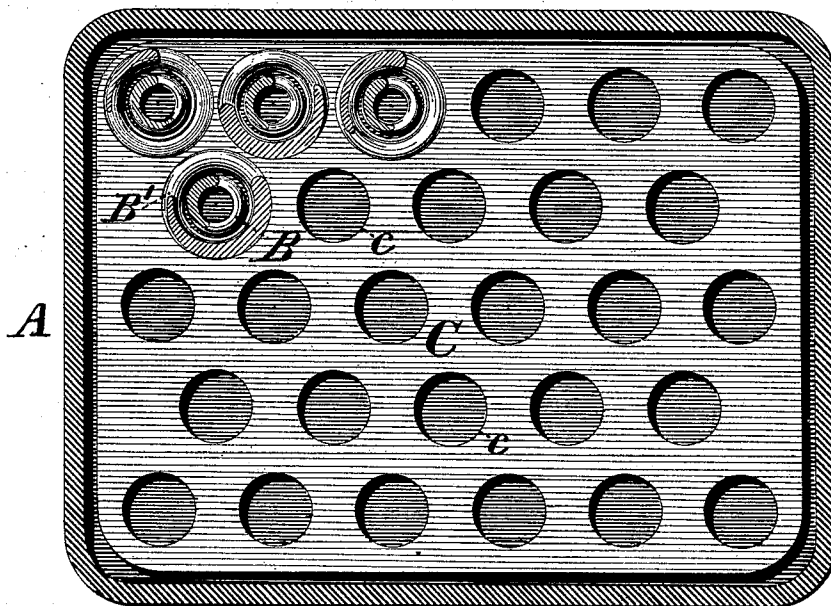


FIG. 2.



WITNESSES:

D. S. Wolcott.
L. M. Clarke

INVENTOR

H. J. Mitchell
by J. Snowden Bell,
att'y

UNITED STATES PATENT OFFICE.

HARVEY J. MITCHELL, OF PHILADELPHIA, PENNSYLVANIA.

CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 292,248, dated January 22, 1884.

Application filed September 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, HARVEY J. MITCHELL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Car-Springs, of which improvements the following is a specification.

My invention relates to that class of springs known as "graduated," and employed chiefly as bolster and journal springs for railroad-cars, in which one helical spring is located within another, the two being so relatively arranged in connection with proper abutments as to be successively acted upon by applied pressure.

It is the object of my invention to economize the construction and increase the effectiveness of a spring of such character, and this I effect by providing improved means for arranging and supporting a series of inner and outer coils relatively to a casing, a removable seat-plate, and a cap-plate, as hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a vertical central section through a bolster-spring for railroad-cars embodying my invention; and Fig. 2, a horizontal section through the same, some of the coils being removed.

In the practice of my invention I provide a box or casing, A, of dimensions suitable to contain a nest or series of graduated springs, each of which is composed of an inner helically-coiled bar or rod, B, and an outer similarly-coiled bar or rod, B'. A movable cover or cap-plate, A', upon which rests the weight to be supported by the springs, is fitted upon the top of the casing A, within which the several coils are located and supported in their respective positions, as follows: A removable seat-plate, C, having a series of openings, c, corresponding in number and relative location with the series of graduated springs employed, is fitted into and rests upon the bottom of the casing A, the diameter of the openings c being such as to admit freely the inner coils, B, each of which is fitted into one of said openings, and rests therein upon the bottom of the casing. An outer coil, B', surrounds each of the coils B, said outer coil resting upon the top of the seat-plate and bearing at its

upper end against the lower side of the cap-plate, A', which is provided with a series of downward projections or stems, a, each of which fits within one of the outer coils, B', and acts as a guide to maintain the upper end of the same in proper position. The seat-plate conforms in outline with the interior of the casing, or may be provided with one or more projections on each of its sides to abut against the walls thereof, so as to properly hold the lower ends of the inner coils as against displacement from their proper relative positions.

In operation, weight applied to the cap-plate acts first upon the outer coils, B', and upon the increase of the load sufficiently to compress the same to the level of the tops of the inner springs the latter are then brought into action in the usual manner of springs of this class.

It will be obvious that the inner and outer coils may be either of the same or of different heights, as preferred, as the difference between the levels of their tops, due to the thickness of the seat-plate, will afford sufficient space for the required compression of the outer coils. The seat-plate holds the entire series properly in position without the aid of bolts or other fastenings, and its insertion and removal or that of any one or more of the several coils can be readily effected whenever desired.

I am aware that a perforated washer adapted to receive a coil in its inner opening and support a surrounding coil is not new, and such, therefore, I do not claim. A multiple series of perforated washers, if employed in lieu of the seat-plate hereinbefore described, would differ substantially therefrom in the particular that with said washers there would be necessitated the use of bolts or other fastenings to enable them to maintain the proper relative location of the several coils, the necessity for which is obviated by my improvements.

I claim herein as my invention—

1. A perforated seat-plate adapted to fit and be maintained in position horizontally within a box or casing, said seat-plate having a series

of openings each adapted to admit a coiled spring, substantially as set forth.

2. The combination of a box or casing, a perforated seat-plate fitting therein, a series
5 of inner coils fitting in the openings of the seat-plate, a series of outer coils resting upon the seat-plate, and a cap-plate resting on said outer coils, substantially as set forth.

In testimony whereof I have hereunto set my hand.

HARVEY J. MITCHELL.

Witnesses:

J. W. HAMPTON, Jr.,

H. NICHOLSON.