(No Model.)

N. H. DAVIS.

CAR SPRING.

No. 385,917. Patented July 10, 1888.

Fig. 1.

Fig. 2.

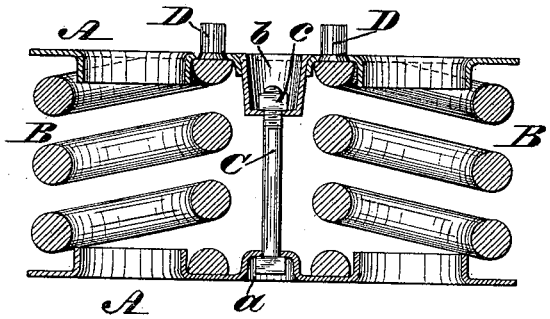
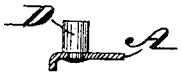


Fig. 3.



WITNESSES:
Robt. Aitcheson
Arthur Hitchcock

INVENTOR:
Nathan H. Davis.
BY Wiedersheim & Steinmetz
ATTORNEYS.

UNITED STATES PATENT OFFICE.

NATHAN H. DAVIS, OF PHILADELPHIA, PENNSYLVANIA.

CAR-SPRING.

SPECIFICATION forming part of Letters Patent No. 385,917, dated July 10, 1888.

Application filed August 12, 1887. Serial No. 246,759. (No model.)

To all whom it may concern:

Be it known that I, NATHAN H. DAVIS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Car-Springs, which improvement is fully set forth in the following specification and accompanying drawings.

It is well known that wrought or sheet metal plates are quite serviceable for car-springs; but they have been made flat or right lined, and as a consequence when the connecting-bolts are tightened the centers of the plates yield or become concave, which is injurious and disadvantageous.

My invention has for its object the remedy of the aforesaid defect; and it consists in the employment of plates of convex form, so that when the plates are connected and the spring loaded the plates assume a right line or flat position, or approximately so, and thus render proper service.

The invention also consists of means for connecting a car-spring with the spring plank, bolster, or seat.

Figure 1 represents a vertical section of a portion of a car-spring embodying my invention. Fig. 2 represents a vertical section of the complete spring. Fig. 3 represents a vertical section of a modification.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings, A represents the upper and lower plates of a car-spring, B the spring proper, and C the connecting-bolt, the latter passing through a countersink, *a*, in one plate and a cup or socket, *b*, in the other plate, and being secured by a nut, *c*, all of which features, excepting, however, the special construction of the plates A to be hereinafter described, being shown in Letters Patent heretofore granted to me.

The plates A are made of wrought or sheet metal and primarily convex, taken from the outside, whereby when the bolt C is tightened the plates are deflected inwardly at their centers and in a measure or entirely flattened out, thus being assisted by the resistance of the springs B, which are disposed around the center, and further accomplished by the load of the car or vehicle subsequently superimposed upon the spring. By this provision the spring is not weakened at its center nor the head and nut of the bolt liable to be drawn through the plates, as the centers of the plates preserve their strength and are prevented from yielding or breaking through.

In order to secure the spring to the plank, bolster, or seat, I employ dowels D, which are formed of metal fitted in the plates and project outside of the same, so as to enter openings in said plank, &c., and thus prevent lateral motions or shifting of the spring.

The dowels may be held in position on the plates by the contact of the coiled springs, or by having dovetailed inner ends or heads formed on said ends, as shown in the drawings; but other means of fastenings may be employed, as shown in Fig. 3. The advantage of these removable dowels is that if any one or more is broken off it or they may be replaced, thereby avoiding throwing away the entire plate.

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

1. A spring-plate constructed of sheet or wrought metal of convex form, as a new article of manufacture.

2. A car-spring consisting of spring-plates and a connecting-bolt, said plates being of convex form, substantially as described.

3. A car-spring having spring-plates provided with removable dowels which project through said plates, substantially as described.

NATHAN H. DAVIS.

Witnesses:
THEO. C. WARNER,
JAS. F. KELLY.