

J. WAYLAND.
Car Spring.

No. 102,340.

Patented April 26, 1870.

Fig. 1.

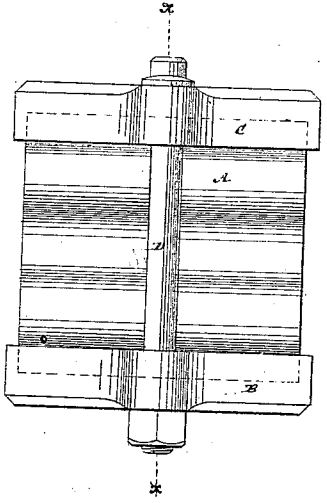
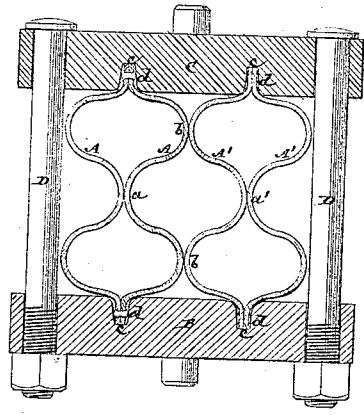


Fig. 2.



Witnesses:

Geo. Haynes

R. L. Kaban

James Wayland

United States Patent Office.

JAMES WAYLAND, OF NEW YORK, N. Y.

Letters Patent No. 102,340, dated April 26, 1870.

IMPROVEMENT IN SPRINGS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JAMES WAYLAND, of the city, county, and State of New York, have invented a new and useful Improvement in Springs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 is a side view of a spring constructed in accordance with my improvement, and

Figure 2, a sectional view of the same, taken as indicated by the line $x x$ in fig. 1.

Similar letters of reference indicate corresponding parts.

My invention consists in a spring applicable as a car-spring and for other purposes, which is made up of a series of corrugated steel plates, arranged in a novel manner, to secure a large degree of elasticity and great lightness with strength.

Referring to the accompanying drawing—

A A and A' A' represent two pairs of corrugated steel plates, but I do not restrict myself to any precise number of pairs.

Each of these pairs A A or A' A' forms a spring, although the largest benefit is to be derived from a cluster of them, or succession of pairs, arranged side by side, as hereinafter described and represented in fig. 2.

The corrugated plates of each pair are arranged to occupy reversed positions to each other, and so that their corrugations which form inner convex surfaces meet, as at a or a' , while in a series of pairs of such corrugated plates, arranged side by side, as shown, the corrugations which form outer convex surfaces also meet, as at $b b$.

Said plates may be made up of any number of cor-

rugations, according to the required length of the spring, and the ends $c c$ of them, which lie in direction of the spring's movement, either be riveted together or left free.

The box or frame which carries such spring or springs will, of course, vary, according to the purpose to which the spring is designed to be applied, and other circumstances, but the same is here shown as made up of a bed or bottom, B, and follower C, sliding on tie-rods D D, and the ends or edges $c c$ of the plates made to enter grooves $d d$, formed in said bed and follower.

Such a combination and arrangement of corrugated plates materially differs from other corrugated or curved plate springs, and may be got up as cheap or cheaper, as, by the manner in which the plates brace each other, as at $a a'$ and $b b$, when pressure is applied to the spring, there is considerable stiffness imparted to the latter, that allows of comparatively thin plates being used, which insures the requisite elasticity to the spring between said bracing points or surfaces.

Thus the spring combines great tension with lightness and strength, and is devoid of all complicated fitting.

What is here claimed, and desired to be secured by Letters Patent, is—

A spring made up of a series of corrugated plates, the corrugations of which are made to abut at their convex portions against each adjacent plate, substantially as shown and described.

JAMES WAYLAND.

Witnesses:

FRED. HAYNES,
HENRY PALMER.