W. MARSHALL.

Car Spring.

No. 43,121. Patented June 14, 1864.

Fig. 1.

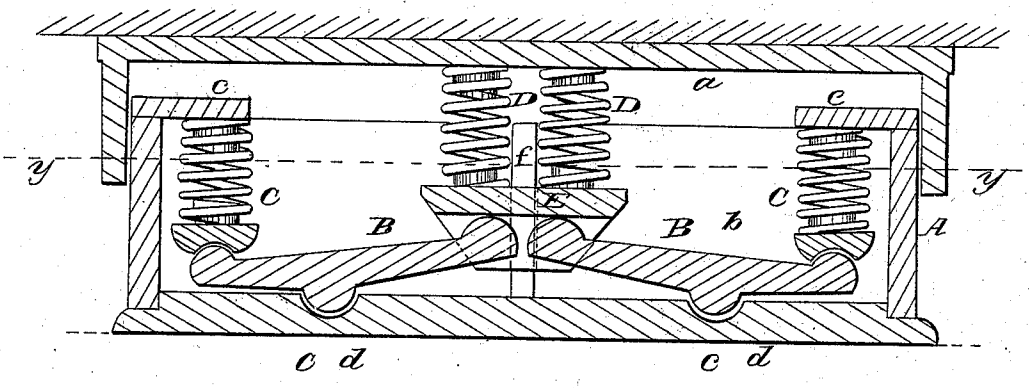
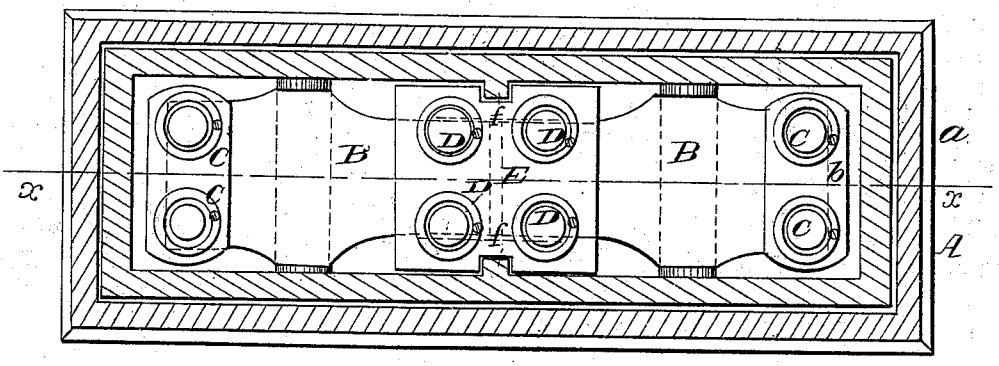


Fig. 2.



Witnesses

Chas. O. Hale

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UNITED STATES PATENT OFFICE.

WILLIAM MARSHALL, OF NEW YORK, N. Y.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. **43,121**, dated June 14, 1864.

To all whom it may concern:

Be it known that I, WILLIAM MARSHALL, of the city, county, and State of New York, have invented a new and Improved Spring for Railroad-Cars and other Wheel Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 2. Fig. 2 is a horizontal section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate like parts.

This invention consists in the employment or use of spiral springs arranged and combined with levers in such a manner that a strong and durable spring will be obtained, and one which may be constructed at a very moderate cost.

The object of the invention is to obtain a spring which will possess as much elasticity as the ordinary elliptic or semi-elliptic springs and be equally as durable, and still be capable of being cheaply constructed and readily repaired when necessary. The elliptic or semi-elliptic springs, although far preferable to any hitherto constructed, are too expensive for general use, and are applied only to the more expensive style of cars.

For railroad cars I construct my invention of a rectangular box, A, provided with a lid, *a*, which is allowed to freely rise and fall over the lower part, *b*, and within this box I place two levers, B B, each of which has a transverse semicylindrical projection, *c*, at its under side, said projections working in similar recesses, *d*, in the bottom of the box, as shown in Fig. 1.

C C are spiral springs which are interposed between the outer ends of the levers B B and lateral projections *e e* at the upper end of the lower part, *b*, of the box A, and D D D D are spiral springs which are interposed between the inner ends of the levers B B and the top or cover *a* of the box A. The springs D do not bear directly on the levers B, but rest on a plate, E, which bears on the inner ends of the levers and works between guides *f f* at the sides of the lower part, *b*, of the box A, two opposite sides of the plate E being notched to receive the guides *f f*, as shown in Fig. 2.

The boxes A, when the invention is applied to railroad-cars, are inserted in pedestals in the usual way, the weight of the car resting on the tops or covers *a*, the boxes being between the car and the bearings of the axles. By this arrangement it will be seen that the six springs sustain the weight, the levers B transmitting the weight from the springs D to the springs C. Thus I obtain within a limited space a strong, durable, and economical spring, one equally as good as the expensive elliptic or semi-elliptic ones.

I would remark that I do not confine myself to the precise arrangement or disposition of the parts as herein shown, for that may be varied as circumstances may require, and the box A dispensed with in certain cases, especially when the device is applied to ordinary road-vehicles, such as drays or trucks.

I claim as new and desire to secure by Letters Patent—

The combination of the springs C D and levers B, arranged substantially as shown, and either with or without the box A, to operate in the manner as and for the purpose set forth.

WILLIAM MARSHALL.

Witnesses:
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