No. 42,519.

PATENTED APR. 26, 1864.

U. B. VIDAL.
CAR SPRING.

Fig: 1.

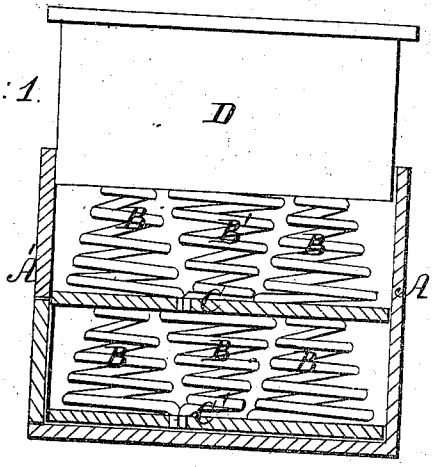


Fig: 2.

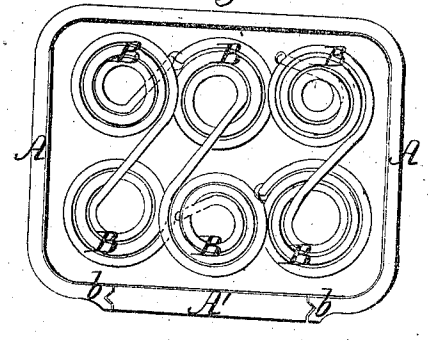
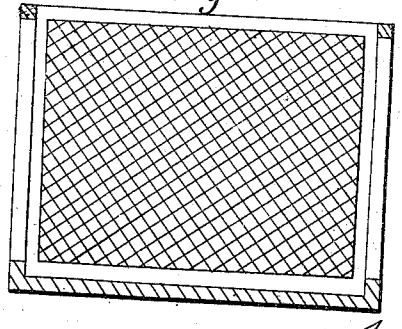


Fig: 3.



Witnesses
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UNITED STATES PATENT OFFICE.

ULYSSES B. VIDAL, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN CAR-SPRINGS.

Specification forming part of Letters Patent No. 42,519, dated April 26, 1864.

To all whom it may concern:

Be it known that I, ULYSSES B. VIDAL, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Springs for Cars and other Vehicles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable any person skilled in the art to make and use the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional elevation of my improvement. Fig. 2 is a plan view. Fig. 3 is an outline view of a proposed method of constructing the sides of the box.

Similar letters of reference indicate the same parts.

A is the box which contains the springs, made of metal or other suitable material, in the rectangular form shown or in any other convenient form. The box may be made solid, if desired, or its sides may have openings through it in the style of net-work to allow the escape of dust, as represented in Fig. 3.

B B′ are the springs, made in the form of spiral pyramids or cones and arranged to stand in alternate positions—that is to say, one set or row of springs, B, rest upon their bases, while the next adjoining row or set of springs, B′, are inverted, the larger ends of the cones being uppermost. By this arrangement a greater number of pyramidal spiral springs can be introduced within a given area than would otherwise be possible, while all the advantages of the pyramidal spiral spring is secured—namely, greater extent of motion, because the folds of the springs fall within each other when pressed, instead of upon each other, as with the ordinary form of spiral springs. The springs B B′ rest upon loose plates C C′, arranged, as shown, within the box A, and the springs are held in place by having their extremities bent down, so as to pass into holes *a* in the plates C C′, as shown in Fig. 1. The springs may be arranged in series, one above the other, with a plate, C, between each series, as shown in Fig. 1. As many tiers or series of springs and plates may be thus arranged together as desired. This arrangement permits the employment of short and therefore stiff springs.

D is a plunger fitting into the mouth of the box A and resting upon the upper series of springs. The plunger may be composed of metal or any suitable material. The weight to be sustained by the springs rests upon or is attached to the plunger D. This is the method usually employed for car springs, but other devices besides the plunger D for transferring the weight to the springs will readily suggest themselves to the skilled mechanic, and in the application of my improvement to some kinds of vehicles not only the plunger D but the case or box A may be dispensed with.

To permit convenient access to the interior of the box A for the purpose of examining the springs, removing and replacing any that become broken, &c., I have one side of the box provided with sliding sides A′ A″, which may be moved vertically between grooves *b b*, as shown in Fig. 2. The parts A′ A″ correspond with the two series or tiers of springs. To obtain access to the upper series of springs it is only necessary to remove the upper side piece, A′. Access to both series of springs is had by removing both of the parts A′ A″. Each pair of springs or each series or tier may be composed of a single wire, if desirable. The several springs may have one or more additional nest-springs arranged or coiled within them of the same form as the springs B B′, but of course of less diameter. These interior or nest springs will assist in supporting the burden and tend to relieve the springs B B′.

I however do not claim the making of several springs of one piece of wire, nor do I claim the invention of conical spiral springs; but,

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

1. The arrangement of the pyramidal spiral springs B B′ to stand in alternate inverted positions, in the manner and for the purpose herein shown and described.

2. Having one side of the box divided into as many separate movable parts A′ A″ as there are tiers of springs, as and for the purpose herein shown and described.

ULYSSES B. VIDAL.

Witnesses:

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