W. B. BAKER.

Vehicle-Spring.

No. 221,716. Patented Nov. 18, 1879.

Fig. 1.

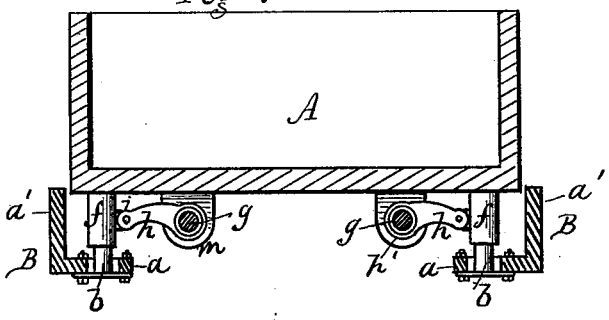


Fig. 2.

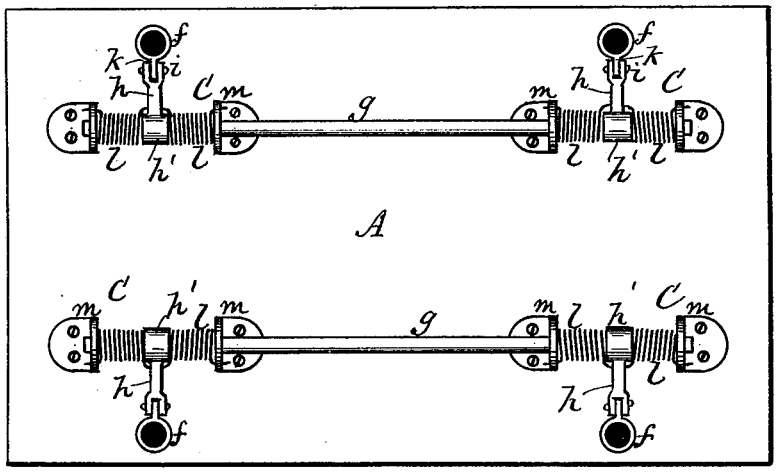


Fig. 3.

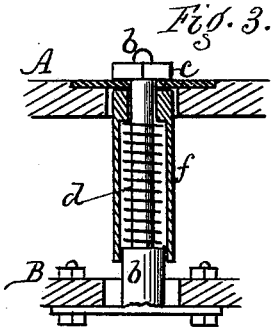
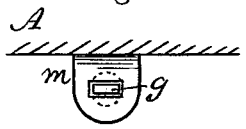


Fig. 4.



Attest.

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UNITED STATES PATENT OFFICE.

WILLIAM B. BAKER, OF LIMA, NEW YORK.

IMPROVEMENT IN VEHICLE-SPRINGS.

Specification forming part of Letters Patent No. **221,716**, dated November 18, 1879; application filed July 12, 1879.

To all whom it may concern:

Be it known that I, WILLIAM B. BAKER, of Lima, Livingston county, New York, have invented a certain new and useful Improvement in Vehicle-Springs; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a cross-section of a vehicle showing my improvement. Fig. 2 is a bottom view of the vehicle-body, showing a plan of the springs. Figs. 3 and 4 are detail views.

My improvement relates to side-bar carriages; and it consists of springs of peculiar construction interposed between the carriage-body and side bars, as hereinafter more fully described.

A represents the carriage-body, which is of ordinary construction. B B are the side bars, which extend from axle to bolster, and are made fast to said parts by bolts or clips. For use with the compound spring hereinafter described, these side bars, in cross-section, are made of the right-angled flanged form shown in Fig. 1, the horizontal flanges *a a* receiving and holding the springs, while the vertical flanges *a' a'* give strength and serve to receive the carriage-body within their sides.

C C C C are the springs, of which four are preferably used; but a greater or less number may be employed. These springs are each constructed as follows: *b* is a standard, secured in any suitable manner to the side bar. It is preferably secured by a plate on the under side of the side bar, bolted thereto, the standard passing up through a hole in the side bar. The standard also extends up through the side piece of the carriage-body, and has a nut, *c*, on its end.

d is a coiled spring on the standard, and resting on a shoulder at the bottom of the same.

f is a tube or thimble, which rests over the standard *b*, and incloses the spring *d*. It has an interior shoulder, which rests on top of the spring, and it will be seen that as pressure is applied upon it the spring will be compressed.

g is a rod or shaft, extending longitudinally on each side, and attached on the under side of the carriage-body in any suitable manner to keep it from turning. Two of the springs are attached to each of these shafts; or, if desired, a separate short shaft may be used for each spring.

h is an arm, having a thimble, *h'*, which rests and turns on the rod. The outer end of this arm is pivoted at *i* to a lug, *k*, attached to the tube *f*.

l l are two right and left coiled springs resting around the rod on opposite sides of the thimble *h'*. The inner ends of said coiled springs are attached to the thimble, while the outer ends are attached to the stationary bearings *m m*, or other fixed parts of the carriage-body. As the carriage-body is pressed down torsion is produced on the springs *l l*, and they resist the action.

By the means above described a compound spring is produced consisting, first, of the standard *b* and tube *f*, inclosing spring *d;* and, second, of the rod *g*, arm *h*, and coiled springs *l l*.

Under light vibration of the carriage-body the spring consisting of the parts *b f d* receives the first impulse, and little if any action comes upon the torsion-spring; but under heavy vibration the action comes upon the torsion-spring in addition to the other, and both work in unison.

The right-angled form of the side bars above gives additional strength, and the vertical flanges of the same serve to inclose the carriage-body and keep it in position. If desired, bars may be used made of steel tube, and the same would be effective with the torsion-spring.

Having thus described my invention I claim—

1. The compound spring herein described, consisting of the standard *b*, coiled spring *d*, tube *f*, arm *h*, the coiled springs *l l*, and the rod *g*, all combined and arranged to operate as and for the purpose specified.

2. In a vehicle-spring, the combination, with the tube *f*, resting and sliding upon the standard *b*, of the arm *h*, pivoted to said tube, and the coiled springs *l l*, resting upon rod *g*, and reacting upon the arm to produce elasticity under compression, as herein shown and described.

3. In a vehicle, the combination, with the

springs C C C C, sustaining the body A, of the side bars, B B, constructed with the right-angled flanges *a a'*, the lower flanges supporting the springs and the outer flanges receiving the carriage-body between their sides, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

WILLIAM BRIDGE BAKER.

Witnesses:
GEO. W. ATWELL, Jr.,
J. FOREMAN.