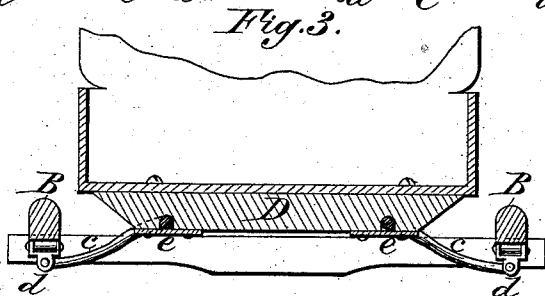
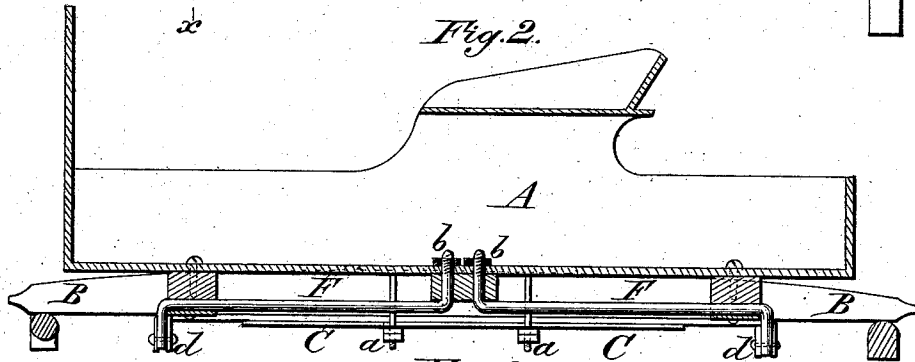
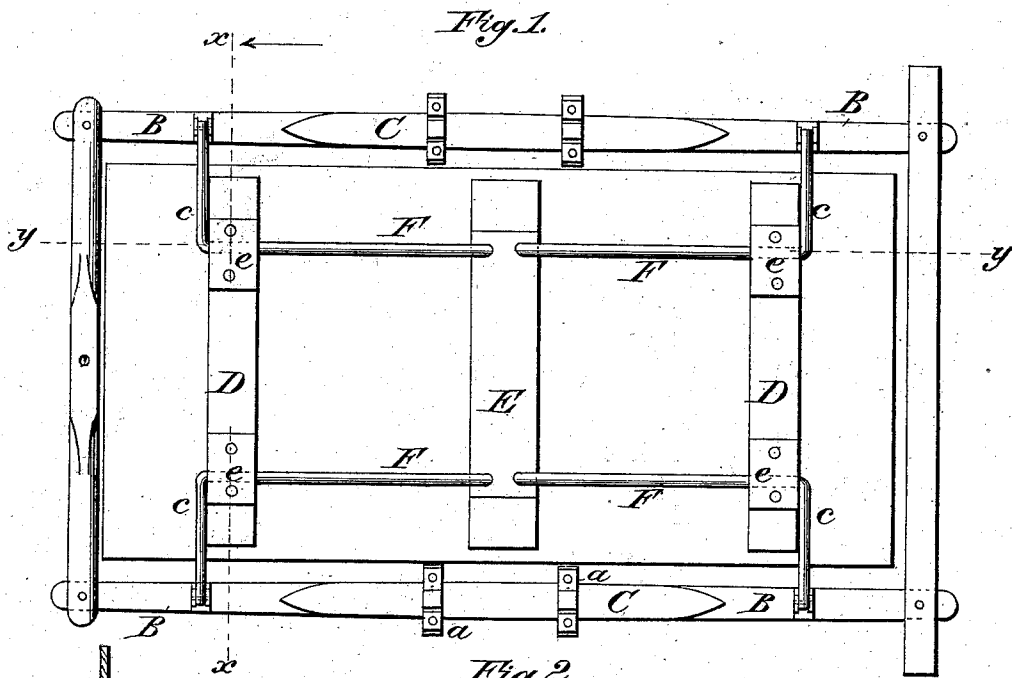


W. H. BRACE.
Carriage-Spring.

No. 225,334.

Patented Mar. 9, 1880.



Attest:
H. H. Schott.
D. P. Cowl

Inventor:
Wm. H. Brace
per J. C. Parker atty

UNITED STATES PATENT OFFICE.

WILLIAM H. BRACE, OF CASTILE, NEW YORK, ASSIGNOR TO HIMSELF, JOHN COLVIN, AND DARIUS P. CARGILL, OF SAME PLACE.

CARRIAGE-SPRING.

SPECIFICATION forming part of Letters Patent No. 225,334, dated March 9, 1880.

Application filed September 22, 1879.

To all whom it may concern:

Be it known that I, WILLIAM H. BRACE, of Castile, in the county of Wyoming and State of New York, have invented certain new and useful Improvements in Carriage-Springs; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of vehicles usually called "side-spring buggies," the object being to unite the semi-elliptic plate-springs commonly used upon carriages of this class with a series of torsion-springs attached to the body in such a manner as to give the latter support at each corner, instead of only in the middle of its length, as is the case in most vehicles of this class now in use. By this arrangement the teetering or pitching motion of the body is avoided and an easy yielding movement, as the wheels pass over obstructions, substituted therefor; and the invention consists in the combination, with a vehicle-body and its running-gear, of the semi-elliptic and torsion springs, connecting them together, as will be hereinafter fully described.

In the drawings, Figure 1 is a bottom plan of the carriage body and springs. Fig. 2 is a vertical longitudinal section on the line *y y* of Fig. 1. Fig. 3 is a vertical cross-section on the line *x x* of Fig. 1.

The vehicle-body *A* may be of any pattern used for carriages of this kind, and the running-gear requires no novel or special construction over that of the side-spring wagons now in use to adapt it to receive the springs which connect it with the body.

Bare the side bars, to which the semi-elliptic leaf-springs *C* are connected by the clips *a a*.

Attached to the bottom of the body *A*, and crossing it in the middle of its length and near each end, are the bars *D D* and *E*. These bars

serve to retain the torsion-springs *F F* in position, as well as to stiffen the body. These torsion-springs are preferably formed of round steel bars of suitable size, one end of the bar being bent at right angles to the body of the spring, and then passed upward through an orifice in the bar *E* and bottom of the body, where they are secured by the nuts *bb*, screwed upon a screw-thread formed upon their ends, thus securing them firmly to the body in a manner to successfully resist any rotative force which may be applied to them. The opposite ends of the spring-bars *F* are also bent at right angles, forming the arms *c c*, by means of which the torsion-springs are connected to the side springs, *C C*, through the agency of the clips *d d*, which are pivotally attached to the ends of the side springs and arms, *c c*, of the torsion-springs, so that weight applied to the body *A* will first act upon the torsion-springs, which, turning freely in the bearings *e e* upon the bars *D*, in turn act upon the side springs, thus bringing the whole system into operation, and forming a compound spring of great elasticity and durability, supporting the body at four points, either of which has a capability of movement independent of the others, and supplying a want long felt in vehicles of this class.

Having thus described my invention, I claim as new and desire to secure by Letters Patent the following:

The vehicle-body provided with the cross-bars *D E* and torsion-springs *F*, in combination with the springs *C* and side bars, *B*, all constructed and arranged for joint operation in the manner shown and described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 19th day of September, 1879.

WM. H. BRACE. [L. s.]

Witnesses:

H. W. SMITH,
F. H. SMITH.