E. P. CARTER.
Side-Spring.

No. 206,086. Patented July 16, 1878.

Fig. 1.

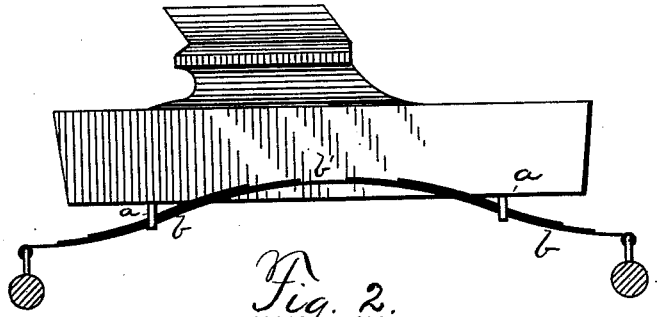
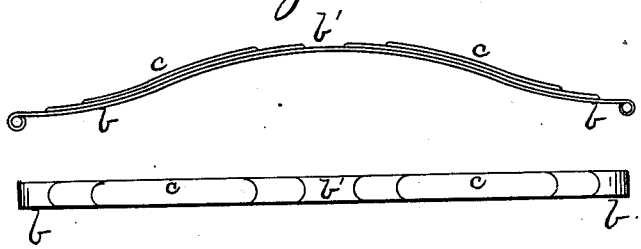


Fig. 2.



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UNITED STATES PATENT OFFICE.

EGBERT P. CARTER, OF ARCADE, NEW YORK.

IMPROVEMENT IN SIDE SPRINGS.

Specification forming part of Letters Patent No. **206,086,** dated July 16, 1878; application filed April 16, 1878.

To all whom it may concern:

Be it known that I, EGBERT P. CARTER, of Arcade, in the county of Wyoming and State of New York, have made certain Improvements in Side-Spring Vehicles, of which the following is a specification:

The object of this invention is to obviate the side motion and forward and back swaying of what are known as "side-spring wagons" or other vehicles; also, to lighten the springs, and also get easier riding from them than those now in use; and the invention consists in forming the foundation-spring in the shape of an arch having its feet curved outward, this arch being re-enforced by sectional reversely-curved leaves arranged upon its top side at each side of its center, which is left free. By this construction is obtained a "give" the whole length of the spring, and its ends are adapted for attachment to the tops of the axles.

In the drawings, Figure 1 is a side elevation; Fig. 2, two detail views of the spring.

A represents the wagon-body; *a a*, two clips fastened to or forming a part of the rod underneath the wagon, on which it rests, and which are attached to the side springs at a point between the end of the spring and the center, as shown. This side spring is constructed as follows: *b* is a long bent foundation-spring, running the entire length of a single piece of steel. To this is attached a double set of leaves, *c c*, (two or more,) which are set between the center of the foundation-piece *b* and the ends, leaving a space, *b'*, in the center, with the graduated leaves each side, as shown. The leaves are fastened together as usual, or in any suitable manner.

The advantage of this construction is that the spring or "give" of the spring is where it is wanted—viz., in the center as well as the ends—while, with the usual half-elliptic spring, the stiffness is all in the center without any "give," and the ends make all the action, rendering them liable to break there, as they often do. In mine a spring action is got the entire length of the spring—in fact, comprising a double spring in one.

My manner of hanging the body of the vehicle to the springs is also very important, the usual method being to attach the body at or near the center, by which the ends alone of the springs have any play, and thereby, in riding, gives a forward-and-back or rocking motion of the body, and a side tipping, that is very objectionable. I set my body on the springs, at a short distance from the ends, by a clip or other device, in connection with the body, and on that part where the extra leaves are arranged, as shown. By this means I get the strength where it is wanted, leave the center of the springs free and light, andp revent any rocking or side tipping, and allowing the springs to be made of one-half the weight of those usually employed. Besides, they are not liable to break, and the riding of the vehicle is easy and equable.

The clips, hangers, or bars by which the body is attached to the side springs can be of any desirable construction, and can be attached to the body and springs in any suitable manner.

As shown, the clips are a part of or connected to the rod underneath the body, on which the bottom of the buggy rests, and are attached loosely, so as to roll a little as the springs give.

The action of the spring can be graduated by merely moving the clips or hangers from the body forward or back on the springs, as by setting them nearer the center makes the spring more active, and by setting them nearer the ends greater stiffness is obtained if required. The ends of the spring are attached to the axle-trees or a spring-bar in any suitable manner.

I claim—

The side spring consisting of the foundation-leaf *b*, formed in the shape of an arch with its feet curved outward, and the sectional reversely-curved leaves *c* attached closely upon the top of said foundation-leaf at each side of its center *b'*, which is left free, substantially as described.

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

E. P. CARTER.

Witnesses:
J. R. DRAKE,
T. H. PARSONS.