(No Model.)

S. W. CATELY.

CARRIAGE TOP SPRING.

No. 382,293. Patented May 8, 1888.

Fig. 1.

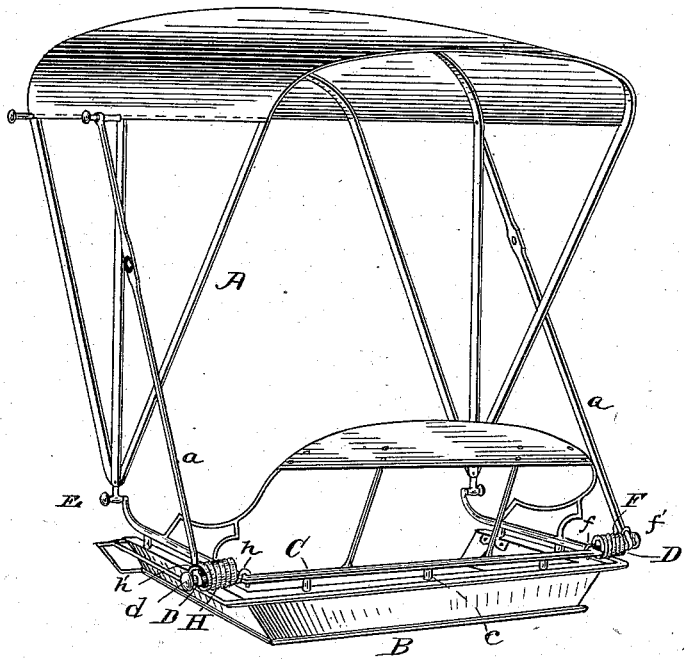


Fig. 2.

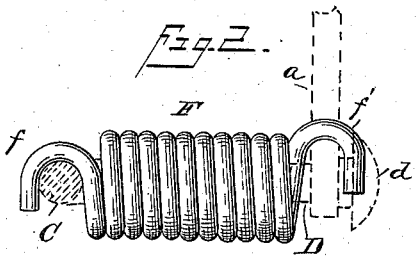


Fig. 3.

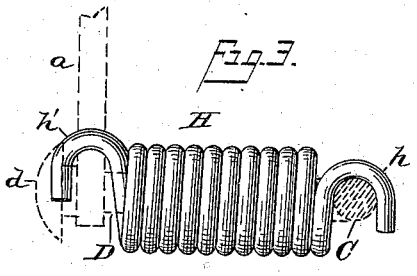
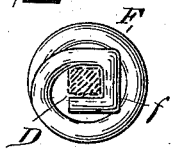


Fig. 4.



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UNITED STATES PATENT OFFICE.

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CARRIAGE-TOP SPRING.

SPECIFICATION forming part of Letters Patent No. 382,293, dated May 8, 1888.

Application filed January 26, 1888. Serial No. 261,960. (No model.)

To all whom it may concern:

Be it known that I, SHEPARD W. CATELY, a citizen of the United States, residing at Cortland, in the county of Cortland and State of New York, have invented certain new and useful Improvements in Carriage-Top 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, which form part of this specification.

My invention relates to a spring attachment for covered carriages, and has for its object to provide strong coiled springs in pairs, with hooks so constructed on each of their ends as to adapt them for ready application to any of the well-known styles of carriage-tops in common use without alteration or disfigurement; to aid in raising and holding the top steady when up, and to prevent injury by the falling of the top when it is let down; and it consists in the construction hereinafter described, and more particularly pointed out in the claims.

I am aware that coiled springs have been used heretofore on the arms projecting out from the seat-rails by permanently securing their ends within a perforation in the arm or within the end of a sleeve; but such constructions have been found objectionable, because the perforation weakens the arm, and whether used within the sleeve or upon the perforated arm of the seat the ends of the spring are rigidly secured, causing it to be broken much more easily when chilled or when there is more than an ordinary amount of strain upon it, as in throwing the top up or down, than is the case when the ends of the spring are left free to slightly move upon their attachments when the torsion of the body takes place. The forms of springs used heretofore have also been objectionable, because it has been found necessary to prepare the projecting seat arms and braces of the top for the reception of the springs or sleeves containing the springs when the top is manufactured, or to be to the expense of taking the top apart for this purpose when it is desired to apply them.

Referring to the drawings, Figure 1 is a perspective view of an ordinary carriage-top on a seat, with my improved spring applied thereto ready for use. Fig. 2 is an enlarged side view of the right-hand coiled spring, with the parts to which it is attached shown in dotted lines. Fig. 3 is a like side view of the left-hand spring. Fig. 4 is an end view of a spring, of a slightly-modified construction.

Like letters of reference refer to corresponding parts in each figure of the drawings.

A represents the top of a carriage, of usual construction, mounted upon a seat, B, adapted for that purpose.

C is a seat-rail slightly elevated from the top of the seat and secured thereto by the ordinary downwardly-projecting angle-irons *c*, fastened to the wood of the seat by screws; or the rail may be fastened by other suitable means, as by short rods from the rail extending into the seat. The seat-rail has laterally-projecting arms D on the sides of its rear portion, and arms E at the sides of its front end, to which the braces of the top are attached.

The braces *a* of the top are of the usual construction, having a hinged joint within their length and an eye at their lower ends adapted to pass over and fit the screw end of the arm D, projecting from the seat-rail, and to be removably secured thereon by an ornamental nut, *d*.

In constructing my improvement strong coiled springs are employed of a length equal to the distance between the seat-arm and inside of the brace *a* of the top, and of a diameter somewhat greater than that of the arm. These springs are made in pairs, the right-hand one being formed differently from that of the left, so that two of a different construction are required as set to fit the different sides of a carriage.

The right-hand spring, F, has its inner end, *f*, extended up on the rear side to near the top of the coil, where it is bent outward at right angles to the spring in a line with the length of the coil and downward to form a hook, the extreme end of which is turned outward and back of the plane of the outside of the body of the coil, to adapt it, when the spring is in position on the arm, to fit over and hold upon the rail C of the seat.

The outer end, *f'*, of the coil is extended above the body from the front side, and is bent

outward at right angles to the spring in the direction of the length of the coil, having its extreme end slightly turned inward, forming a hook, which is caught over the brace *a* of the top near its point of attachment to the arm when the coil is placed upon the arm D. The left-hand coil-spring, H, has its inner end, *h*, and outer end, *h'*, upon different ends of the coil from that of spring F and are bent in substantially the same form. By this construction of right and left hand spring-supports it will be observed that they are adapted to be applied to any ordinary carriage-top when in an erect position by simply unscrewing the nut *d* and removing the end of the brace *a* from the arm.

The coil is readily slipped on the arm, and its inner end, *f*, is hooked over the seat-rail C, when it is made slightly taut by any suitable instrument and the brace replaced and the nut screwed upon the arm. The coil is then released, and as it relaxes the outer end, *f'*, locks over the brace *a* of the top just above the plane of the arm D, and the lower end of the hook rests against the inner body of the nut. The spring is thus held in position locked over the seat rail and brace by its own tension, as against any jarring or sudden action of the top that would have a tendency to displace it from its bearings.

The inner end of the springs is held fast upon the rail, while torsion of the coils is produced by the action of the braces upon their outer ends, winding the springs up and making them more taut when the top is let down, thereby preventing injury to the top by a sudden fall, and by their resistance the springs aid in raising the top again to its upright position and holding it there by the tension of the coils.

In my ready-adjustable spring I do not, however, confine myself to a hook, *f*, bent outward in the line of the length of the coil to be locked over the seat-rail for holding one end of the spring from turning, as this hook may be made square and on a line with the coil, as shown in an end view in Fig. 4, so that the hook will fit the usually-square arm near the seat and thereby hold and prevent the inner end of the coil from turning. This form of square hook *f* on the inner end of the coil is especially useful in application to that class of top-buggies that have the seat-rail enveloped within the seat, or where there is no seat-rail and the arm D is secured directly to the seat.

If desired, these springs may be enveloped in a tight-fitting cover of ornamental leather, or of the same kind of leather as the top, extending the length of the coil, with the hooked ends projecting beyond the cover, which would not interfere with their application to the vehicle nor to their operation thereon.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A coil-spring for the arms of carriage-seat rails, having on its inner end a hook to prevent the inner end of the coil from turning, and on its outer end a hook integral with the coil, adapted to fit over the vertical brace of the top, as set forth.

2. A coil-spring for the arms of carriage-seat rails, having hooks on its ends at right angles to and integral with the spring and on a line with the length of the coil, the hooks on the inner end fitting over the seat-rail and the hooks on the outer end fitting over the brace of the top, as and for the purpose set forth.

3. The combination, with a seat-rail having laterally-extending arms with top braces attached thereto, of coil-springs on said arms, having hooks on their ends integral therewith, the hooks on their inner ends adapted to fit over the seat-rail and hooks on their outer ends adapted to fit over the brace of the top, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

SHEPARD W. CATELY.

Witnesses:
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