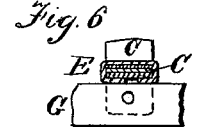
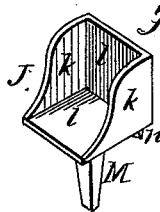
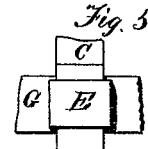
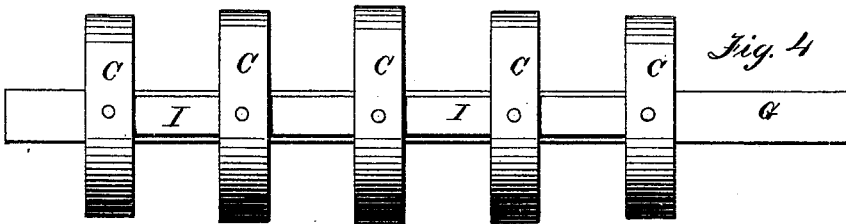
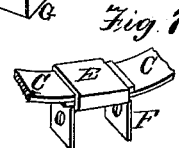
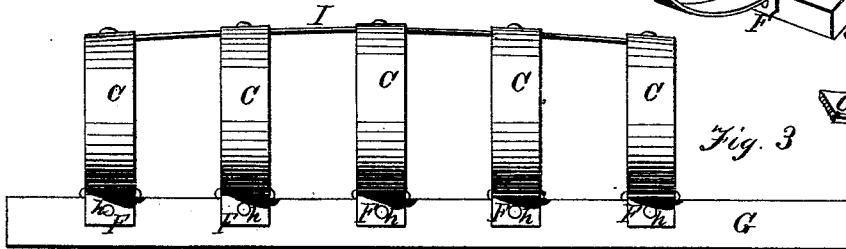
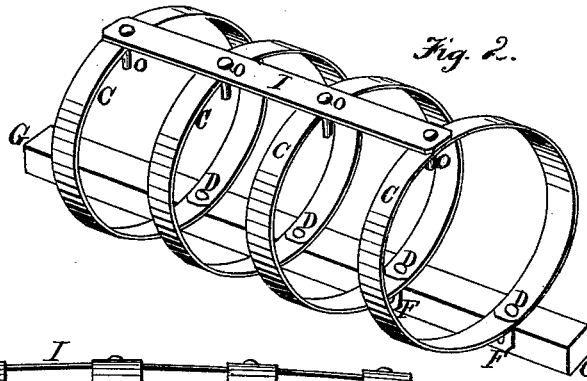
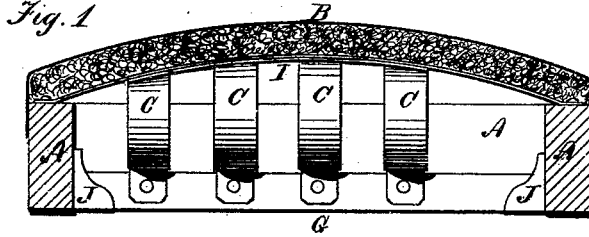


H. B. COBB.
 SPRING-SEAT.

No. 185,851.

Patented Jan. 2, 1877.



Witnesses;
 Grenville Lewis
 Jasper C. Turner

Inventor
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UNITED STATES PATENT OFFICE.

HENRY B. COBB, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN SPRING-SEATS.

Specification forming part of Letters Patent No. **185,851**, dated January 2, 1877; application filed February 5, 1876.

To all whom it may concern:

Be it known that I, HENRY B. COBB, of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Spring-Seats; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a transverse section of a railroad-car seat, showing the application of my invention. Fig. 2 is a perspective view of the springs applied to a seat-slat. Fig. 3 is a side elevation of a detached seat-slat and its springs. Fig. 4 is a plan view of the same. Figs. 5 and 6 are sectional views, showing one method of fastening the springs to the seat-slats; and Fig. 7 is a perspective view of the same. Fig. 8 is a perspective view of the metallic socket by which the slats are held in the seat-frame.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention has for its object to improve the construction of car-seats, sofas, cushioned chairs, and other upholstered articles; and it consists, first, in providing for each article a series of removable spring-sections, which are each composed of several upright circular or elliptical steel springs mounted side by side upon a cross-bar, and connected at the top by an elastic steel strip, the several sections being adapted for application and removal from the article without disturbing the upholstering. It further consists in adapting the springs to be separately applied to or removed from the cross-bars of a seat-frame, for the purpose of repairs or for renewing the springs. It further consists in so attaching the tops of the springs to the metal-connecting strip that they can be separately disconnected therefrom and removed from the seat to facilitate repairs, &c. It further consists in graduating the sizes of a series of springs for the purpose of imparting the necessary form to the upper surface of the upholstering. It further consists in holding each series of springs within the seat-frame by the pressure of the springs against the upholstering, and by a resisting-ledge upon the frame. It further consists in

the combination of the springs and their supporting-bar with sockets attached to or formed in the seat-frame, for the purpose of holding the springs in a vertical position. It further consists in forming the sockets of cast metal, with a tang to hold them in the seat-frame, one or more points on the back to prevent them from turning in the frame, and with two cheeks to hold the ends of the cross-bars or spring-supports from turning or slipping out of place. It lastly consists in the construction and combination of parts, as I will hereinafter describe.

In the accompanying drawings I have shown the invention applied to a railway-car seat, in which A is the frame, and B the upholstering, made in the usual manner, excepting that there is somewhat less hair-filling in the upholstering than is contained in seats which are unprovided with my improved springs. C C are the springs, made from steel wire in wide ribbons or strips, which are bent into elliptical or circular form, and secured together at the ends by a rivet, D, as shown in Fig. 2, or by a metal clasp, E, as shown in Figs. 5, 6, and 7. The clasp and rivet, in addition to holding the ends of each spring, also serve to fasten the latter to an angular clasp, F, by which the springs are secured in an upright position, and at the requisite distance apart upon the cross-bars G of the frame. The clasps F prevent the springs from turning upon the bars, being firmly nailed or tacked thereto, as shown at *h*. The tops of the springs attached to each cross-bar are fastened together by a steel strip or ribbon, I, or by other suitable connection, which shall allow the springs to yield to vertical pressure without yielding to lateral or longitudinal pressure. By this means the springs of each bar are combined to strengthen and support each other, making in effect one continuous spring, which cannot be displaced or tipped laterally when the seat is in use.

The sections of springs thus formed are placed within the seat-frame from the under side, so that the springs shall bear against the upholstering, while the ends of the cross-bars are fastened to the sides of the frame. The springs are thus left free to exert their pressure against the upholstering, and as the

latter stretches or becomes loose from any cause, the springs expand to take up the slack, and therefore preserve the tension of the upholstery, and prevent it from wrinkling or becoming misshapen. It is not necessary, in order to produce this result, that the springs should be made in the manner herein described, nor that they should be attached to the cross-bars by the angular clasps F, the only essential requisite being that the springs should be so formed and connected to the cross-bars as to dispense with the ordinary tying down, and to be limited in their expansion only by the upholstery or covering. J are metal sockets for holding the spring-sections within the seat-frame. They are cast with two cheek-pieces, *k k*, between the faces *l l*, and with a tang, M, at the back, which is to be driven into the side pieces of the frame for holding the sockets in place. The backs of the sockets are also cast with one or more short pins or studs, *n*, which penetrate the side pieces and prevent the sockets from turning upon the tangs. The cheek-pieces prevent the cross-bar G from tipping and therefore hold the springs steadily in an upright position. The spring-sections are separately applied, and held within the seat-frame by means of the sockets in the following manner: One end of a cross-bar is first placed within a socket, and then, by pressing the springs against the upholstery, the opposite end of the cross-bar is pushed inward until it clears the cheek-pieces of its socket, when it is swung sidewise over the latter and released so as to spring into it, as will be readily understood. To remove a section, one end of the cross-bar is pushed inward beyond the socket, then moved sidewise sufficiently to clear it, when the section will readily drop out of the frame. Other means may be employed to form ledges for the support of the cross-bars against the tension of the springs, but I prefer the sockets as being simple, strong, and cheap, and, at the same time, easily applied without the use of nails, tacks, or screws.

The connecting-strips I may be either riveted to the springs or attached thereto by headed pins *o*, as shown in Fig. 2. If the latter is employed, they facilitate the removal of the springs separately from the strip, because the spring has only to be compressed sufficiently to slip off the end of the pin. If rivets are used, they must necessarily be cut before the springs can be removed from the strip. Both methods, however, permit the removal of the springs separately, and, by drawing the nails from the angular clasps, the springs may be also separated from the

cross-bars, whether the latter are in or out of the frame.

In order to impart the preferred convexity to the top of the seat, the springs may be graduated in size, so that the connecting-strip I shall be curved upward, as shown in Fig. 3. This is effected by making the middle spring the largest in diameter, and gradually decreasing the diameter of the others from the middle one outward in both directions.

Having thus described my invention, I claim as new—

1. In car seats, sofas, chairs, and other upholstered articles, a series of removable spring-sections, each composed of several circular or elliptical steel springs, C C, mounted side by side upon a cross-bar, G, and connected at the top by an elastic metal connecting-strip, I, substantially as described.

2. In car-seats and other upholstered articles, the circular or elliptical springs C C, adapted, substantially as described, to be separately applied to and removed from the cross-bar G and seat-frame without disturbing the upholstery.

3. In car-seats and other upholstered articles, the circular or elliptical springs C C, adapted, substantially as described, to be separately applied to and removed from the top-connecting strip I without disturbing the upholstery.

4. The combination of the headed pins *o* with the connecting-strip I and springs C, substantially as described.

5. A series of springs of graduated sizes, supported upon the bottom cross-bar G, and connected by a top strip, I, combined with a seat for the purpose of imparting a convex form to the upper surface of the upholstery, substantially as described.

6. A section of springs held within the seat-frame by the pressure of the springs against the upholstery, and a resisting-ledge upon the frame, substantially as described.

7. The combination of the springs and their supporting-bar with the sockets attached to the seat-frame, for the purpose of holding the springs in a vertical position, substantially as described.

8. The metal sockets J, having the cheek-pieces *k h*, the tang M, and one or more pins or studs, *n*, substantially as described.

9. The clasps F, constructed as described, to attach the springs in an upright position upon the cross-bars G.

HENRY B. COBB.

Witnesses:

F. MCKENNY,
M. CHURCH.