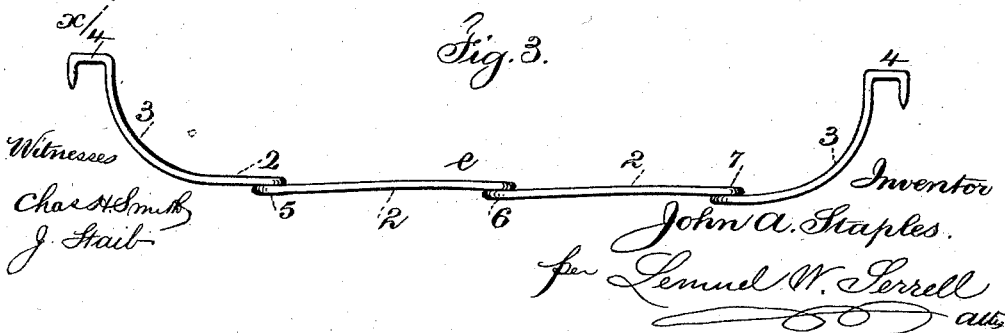
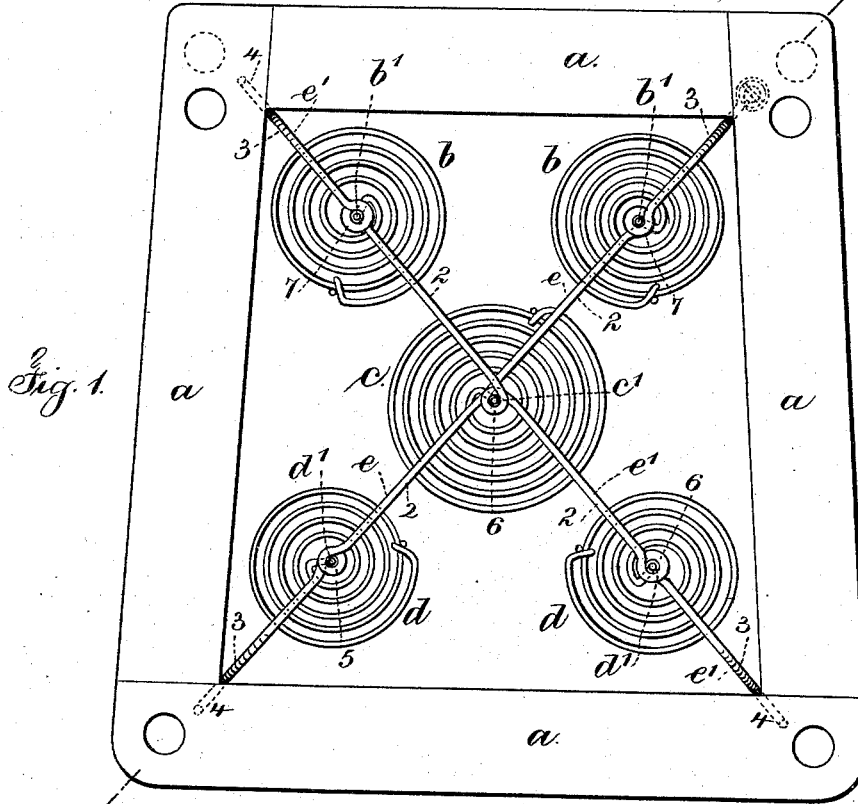
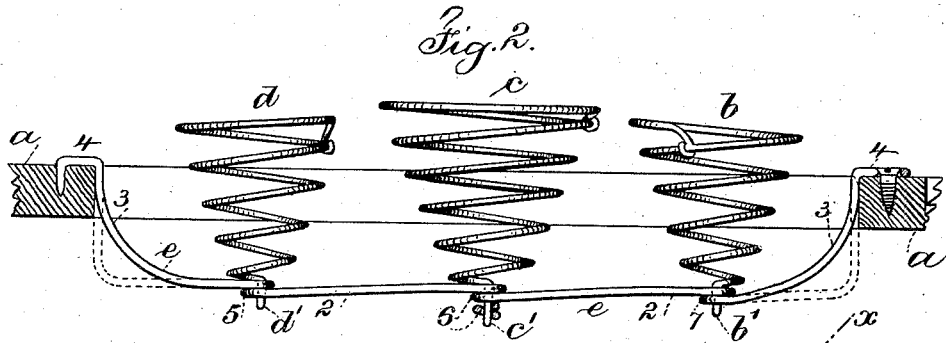


J. A. STAPLES.
SUPPORT FOR CHAIR SEAT SPRINGS.

No. 474,536.

Patented May 10, 1892.



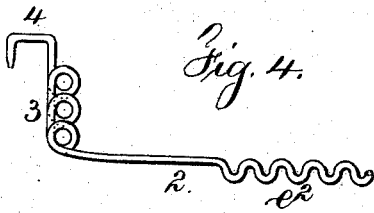
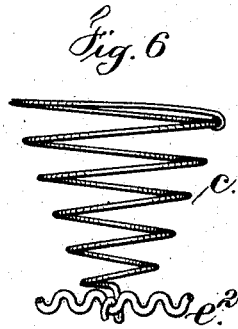
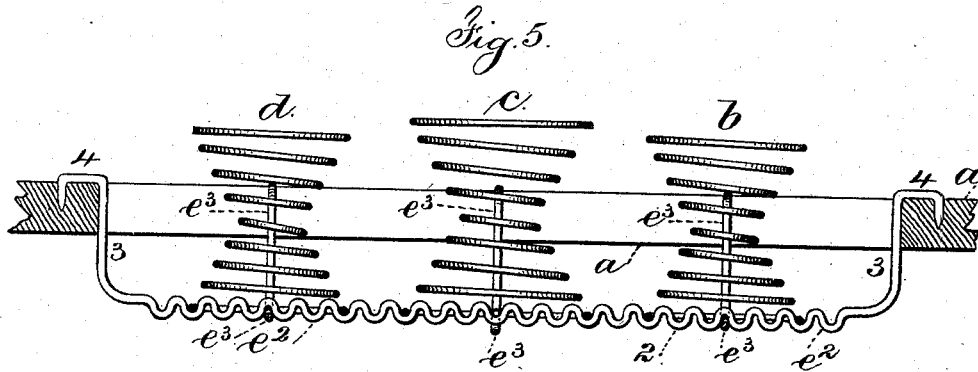
Witnesses
 Char. H. Smith
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UNITED STATES PATENT OFFICE.

JOHN A. STAPLES, OF NEWBURG, NEW YORK.

SUPPORT FOR CHAIR-SEAT SPRINGS.

SPECIFICATION forming part of Letters Patent No. 474,536, dated May 10, 1892.

Application filed October 19, 1891. Serial No. 409,112. (No model.)

To all whom it may concern:

Be it known that I, JOHN A. STAPLES, a citizen of the United States, residing at Newburg, in the county of Orange and State of New York, have invented a new and useful Improvement in Supports for Chair-Seat Springs, of which the following is a specification.

Heretofore in upholstering chairs and sofas it has been common to support the spiral or hour-glass springs upon crossed bands of webbing nailed to the frame of the seat, and other bands of webbing are passed across the tops of the said springs, and a bagging or covering is nailed to the seat-frame, and horse-hair and suitable upholstering rests upon the springs, and usually the under side of the seat is closed by a piece of colored muslin nailed to the seat-frame. This manner of upholstering, although extensively employed, is not permanent, as the webbing stretches and the springs sag and become uneven and the upholstery unsightly, besides being a repository for dust and insects. The aforesaid springs have also been supported by bands of metal secured to the seat-frame, and in this case the bases of the springs were connected to the metal bands, and the top parts were connected together and to the seat-frame by interlaced cords. In this case the under side of the seat was not covered, but was open and dust could not collect; but these metal bands are expensive to make and have to be fitted to the chair-seat and bored with holes for attachment and are unsightly, heavy, and clumsy. My invention consists of a hanging wire support having a horizontal portion adapted to receive the lower ends of the springs, and the respective ends of said support are bent upwardly and finished with eyes or points for attaching the same to the chair-seat frame. The horizontal portion of the hanging wire support is bent or corrugated, so as to adapt it either singly or when crossed with other similar supports in a frame to hold and support the bases of helical springs such as are employed in upholstering furniture. These hanging wire supports are quickly and cheaply made by any suitable automatically-operating machine, and they are to be of different sizes to suit the chair-seat, and they require no fitting to place, and they are adapted to

hang down more or less below the seat-frame. Hence it is not necessary to use any box for the springs, as heretofore provided with shallow seat-frames.

In the drawings, Figure 1 is an inverted plan of a chair-seat, showing my wire supports. Fig. 2 is a cross-section of the same diagonally of the seat-frame at the line $x x$. Fig. 3 is an elevation of a wire support detached. Fig. 4 is a partial elevation of a modified wire support detached. Fig. 5 is a cross-section showing springs and such modified support, and Fig. 6 is a detached view showing a modified lower end to the spiral springs. a represents the frame of the chair-seat, with holes for the upper ends of the legs at the respective corners, and the dotted lines represent the openings for connecting the back-frame to the seat-frame.

$b c d$ represent the helical springs, whose lower ends rest upon the wire supports, and the upper ends of the said springs are connected and held by an interlaced network of cords, whose ends are connected to the seat-frame in the usual manner. These connecting-cords are omitted from the drawings for greater clearness.

$e e' e^2 e^3$ represent my improved hanging wire supports. These wire supports have a horizontal portion 2, and the respective ends are bent upwardly at 3, and said ends are turned over at 4 and finished with points, which can be driven into the upper face of the seat-frame, or with eyes for attaching nails or screws for connecting the wire supports in place.

The horizontal portions 2 of my hanging wire supports may be formed with eyes or return-bends 5 6 7, bent in said horizontal portions at either side of the line of the wire or central thereto. The wire supports $e e'$ in Figs. 1 and 2 are shown as placed diagonally across the seat-frame, and the springs $b c d$ are shown as having downwardly-projecting lower ends $b' c' d'$, and said ends are received in the eyes of the horizontal portions 2, the end e' passing through two eyes 6, so that lateral swaying is prevented.

The horizontal portions 2 of my hanging wire supports $e^2 e^3$ may be made, as shown in Figs. 4 and 5, with return-bends or vertically-

disposed corrugations, the depressions of which when the supports are crossed receive and retain the large bases of the hour-glass springs or the hook-shaped end of the spiral spring shown in Fig. 6, and these corrugated supports interlock with each other at the crossings.

The respective ends of said wire supports are bent upwardly at 3 either upon a gradual curve, as shown in full lines, Figs. 2 and 3, or nearly at right angles, as shown by dotted lines in Fig. 2 and full lines in Fig. 5, or said ends may be convoluted, as shown in Fig. 4, which latter construction permits the bend to yield slightly in placing the support in the seat-frame and to conform to slight inequalities in sizes of seat-frames.

The form of the hanging wire supports permits of their being introduced into the opening in the seat-frame with the horizontal portion sufficiently below the top of the seat-frame to provide ample space for the springs *b*, *c*, and *d*. With said supports it is not necessary to build a box in a shallow seat-frame to get sufficient depth for the springs.

These hanging wire supports are to be made of lengths suitable for different sizes of chairs, sofas, and settees or similar articles of furniture where springs and upholstery are employed, and I do not limit myself to the manner of placing the same in the seat-frame, as with the long opening of a sofa seat-frame they will usually be placed lengthwise and crosswise to carry the springs.

In my improvement the wire forming the spring-support is bent upwardly near the ends. Hence the operative length of the spring-support can be varied to suit different sizes of seat-frames by bending the wire to a greater or less inclination, and when the extreme ends of the wire are bent downwardly they can be driven into holes in the seat-frame similar to nails and form a very strong attachment and one that is not liable to be pried out or become loose under the action of the springs. Besides this, the portions of the wire supports upon which the springs rest are approximately the measurement of the opening in the seat-frame and nearly level, and they are suffi-

ciently below the seat-frame for properly filling the frame with a number of similar conical or hour-glass springs usually employed in upholstery, and the bends in the wires in the form of eyes or corrugations hold the springs so that they do not slip upon the spring-supports.

I claim as my invention—

1. The combination, with the seat-frame, of spring-supports formed of wire, with horizontal portions of approximately the measurement of the opening of the seat-frame and having bends in the wire to receive the springs, and end portions extending upward and laterally to rest upon the upper surface of the seat-frame and adapted to be bent to fit various sizes of frames, and means for permanently attaching the ends of such spring-supports to the upper surfaces of the seat-frame, substantially as set forth.

2. The combination, with the seat-frame, of spring-supports formed of wire, with corrugated horizontal portions of approximately the measurement of the opening of the seat-frame to receive the springs, and end portions extending upward and laterally to rest upon the upper surface of the seat-frame and adapted to be bent to fit various sizes of frames, and means for permanently attaching the ends of such spring-supports to the upper surfaces of the seat-frame, substantially as set forth.

3. The combination, with the seat-frame, of spring-supports formed of wire, with horizontal portions of approximately the measurement of the opening of the seat-frame and having bends in the wire to receive the springs, and end portions extending upward and laterally to rest upon the upper surface of the seat-frame and adapted to be bent to fit various sizes of frames, and downwardly-projecting ends to enter holes in the seat-frame, substantially as set forth.

Signed by me this 14th day of October, A. D. 1891.

JOHN A. STAPLES.

Witnesses:

GEO. T. PINCKNEY,
HAROLD SERRELL.