No. 789,241. PATENTED MAY 9, 1905.

J. A. STAPLES.

CLIP FOR SPRINGWORK.

APPLICATION FILED NOV. 17, 1902.

Fig. 1.

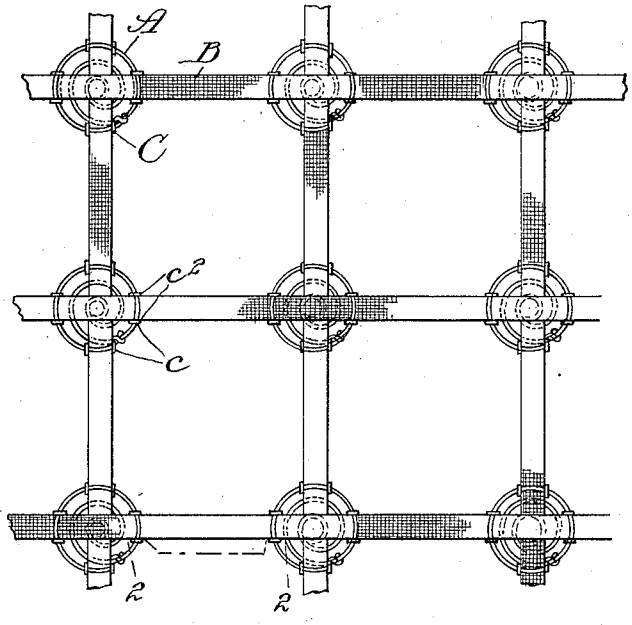


Fig. 2.

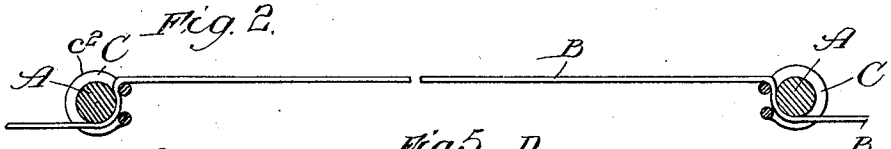


Fig. 3

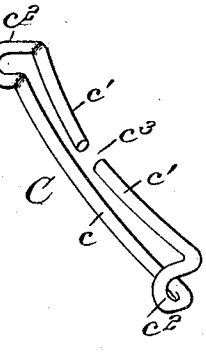


Fig. 5

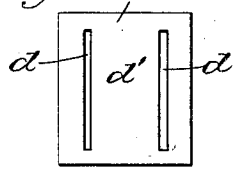


Fig. 6.

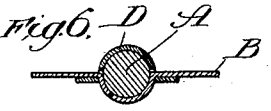
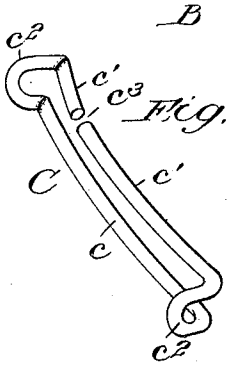


Fig. 4



Witnesses.

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No. 789,241. Patented May 9, 1905.

UNITED STATES PATENT OFFICE.

JOHN A. STAPLES, OF NEWBURGH, NEW YORK, ASSIGNOR TO STAPLES & HANFORD COMPANY, OF NEWBURGH, NEW YORK, A CORPORATION OF NEW JERSEY.

CLIP FOR SPRINGWORK.

SPECIFICATION forming part of Letters Patent No. 789,241, dated May 9, 1905.

Application filed November 17, 1902. Serial No. 131,641.

To all whom it may concern:

Be it known that I, JOHN A. STAPLES, a citizen of the United States, residing at Newburgh, in the county of Orange and State of New York, have invented certain new and useful Improvements in Clips for Springwork, of which the following is a specification.

My invention relates to clips for springwork, and especially to a novel and useful clip adapted for use in connecting the webbing to the coils of the springs and edge wires.

The invention consists in the matters hereinafter described in connection with the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a plan view of a section of springwork provided with clips embodying my invention. Fig. 2 is a sectional view on the line 2 2 of Fig. 1. Fig. 3 is a detail perspective view of the clip of Fig. 1. Fig. 4 is a similar view of a slightly-modified form of clip. Fig. 5 is a detail view of another form of clip embodying my invention, and Fig. 6 shows the manner of uniting the clips of Fig. 5 to the wires.

In making springwork such as for bed-bottoms, chair-seats, and sofa-frames it is customary to arrange the spring-supports, such as base-wires, in proper longitudinal and transverse relation and to attach the coiled springs to the supports in any suitable manner. It is also usual to connect the top coils of the springs to each other and to the edge wires by webs, cords, wires, chains, or the like which have been arranged in various ways. The purpose of these connecting devices is to bind together the edges of the adjacent top coils of the springs and also to bind the top coils of the springs to the edge wires to make a compact and rigid top surface for the springwork.

According to my invention the connecting webs or tapes of cloth are attached to the top coils of the springs and edge wires by means of clips which bind the webs securely in place upon the wires, so as to hold the webs taut.

Referring especially to Fig. 1, the springs A are of any suitable type, being shown in this figure by the top coils only for the purpose of convenience of illustration. The desired number of springs are arranged in rows or banks upon their associated supports in any well-known manner, with their top coils disposed to constitute the usual top surface. The edges of the adjacent coils are connected by suitable webs or strips of fabric B, and the webs are secured to the springs by the clips C. These clips are made so as to lock upon the wires of the springs and hold the webs securely in place. In the form shown in Figs. 1, 2, 3, and 4 the clip C is composed of opposite jaws c and c', which are brought together, more or less, at their central portions, so as to form an opening that is smaller than the diameter of the wire to which it is attached. It is obvious that either of the jaws or both of them may be bent or inclined toward the central portion of the clip to form the grip on the wire and that in either form the two lengths of wire will constitute gripping-jaws. At their ends the jaws are provided with offset angular seats c^2, in which the wire of the springs or edge wires rest when the parts are assembled. In forming this clip I use a suitable length of wire bent angularly at the extremities of the jaw c and formed with a return-bend to constitute the seats c^2, the wire then being again bent angularly to return in the general vertical plane of the jaw c to form the jaw c', with the ends or legs of the wire terminating in an opening c^3 at any suitable point, as at the center in Fig. 3 or near one end, as in Fig. 4. The clips may be of any shape to coact with the various parts of the springwork. For example, when they are to be used on the springs they are struck on the arc of the general curvature of the top coil, which will vary with springs of different sizes, and when used on the edge wires they correspond with the conformation of these parts. In applying these clips to the springs or to the edge wires one of the clips is presented with the open ends of its seats toward the wire. The end of the web or tape is then passed between the jaws, thence around the wire from the outside, and back through the clip, all as shown in the sectional view in Fig. 2. When the parts are thus arranged,

a pull on the ends of the web, as toward the center of the spring, will cause the jaws to slip over the wire into the position of Fig. 2, whereby the clip is secured in place on the wire and holds the web against displacement by binding it against the wire above and below the central line thereof. The top of the web is then carried across to the next wire, as to the opposite side of the top coil of the spring, and is thence passed through the clip, which faces the wire as before, the web then passing around the wire and again through the clip. The web is now drawn taut across the spring, when a sharp pull on the free end of the web will cause the clip to seat itself as before. The operation is continued in the same way until all of the wires constituting the top surface of the springwork are tied together. It is obvious that the clips may be employed for connecting together the contiguous edges of the adjacent top coils of the springs and also for connecting the outside rows of springs with edge wires when the latter are employed. When a long web is used, it may be passed into the clip by inserting it edgewise through the opening c^3, which is formed between the legs, instead of running the clip down a long length of the web and then again threading the web through the clip, and the opening for this purpose is preferably placed at one side of the center of the clip, as in Fig. 4, to more readily receive the web.

In the form shown in Fig. 5 I provide a sheet-metal blank D, having a pair of parallel slits d of sufficient length to receive the web. The clip is adapted to be bent to position about the wire by any suitable means either before or after the web has been threaded through the slits, the intermediate portion d' being of such width as to firmly grip the wire when the parts are assembled, and the slits will be located on the same side of the wire and respectively above and below its central line.

I prefer to construct the clips of suitable lengths of round wire, as the shape of the wire does not injure the cloth.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A clip for connecting webs to the wires of springwork, having a pair of parallel spring-jaws provided with end seats and adapted to be sprung over and seat upon the wire and by their resiliency to bind the web between such jaws and the wire.

2. A clip for connecting webs to the wires of springwork, having a seat to receive the wire and provided with a pair of spring-jaws spaced apart to provide a contracted opening to the seat.

3. In combination with a wire and a flexible web arranged transversely to the wire, of a clip having a seat receiving the wire and provided with a pair of spring-jaws extending parallel with the wire, the web passing between the wire and the jaws and the latter binding the web against the wire.

4. In combination with a wire and a flexible web arranged transversely to the wire, of a clip having seats receiving the wire and provided with spring-jaws extending parallel with the wire, the web passing between the wire and the jaws and the latter binding the web against the wire.

5. A wire-clip for connecting webs to the wires of springwork composed of a length of wire providing a pair of parallel jaws spaced apart a distance less than the thickness of the springwork-wire and adapted to spring over the wire, and having offset seats at the ends of the jaws to receive the wire.

6. A wire-clip for connecting webs to the wires of springwork composed of a length of wire providing a pair of parallel spring-jaws, one of which is provided with an opening to receive the web, and offset seats between the jaws to receive the wire after it has passed through the jaws.

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

JOHN A. STAPLES.

Witnesses:
C. H. HANFORD,
ALEX. DARRAGH.