July 25, 1939. W. W. GLEASON 2,166,989

SPRING ANCHORING DEVICE

Filed Sept. 22, 1938

Fig. 1.

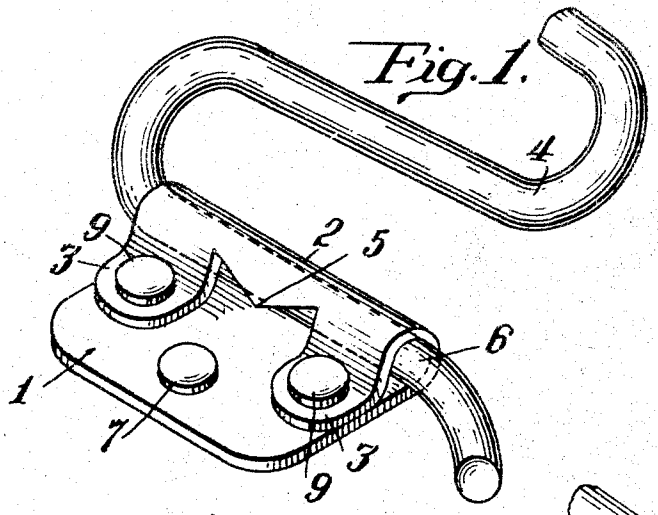


Fig. 2.

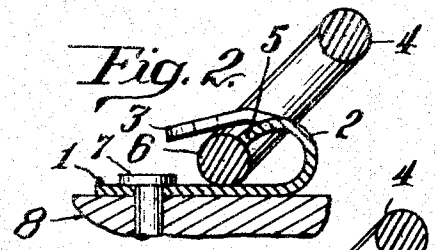


Fig. 3.

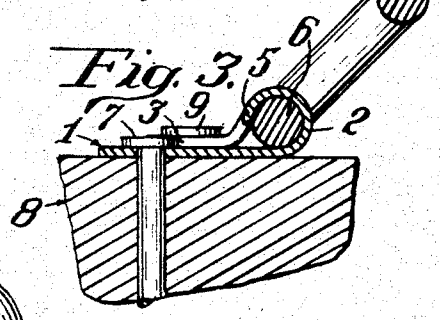


Fig. 4.

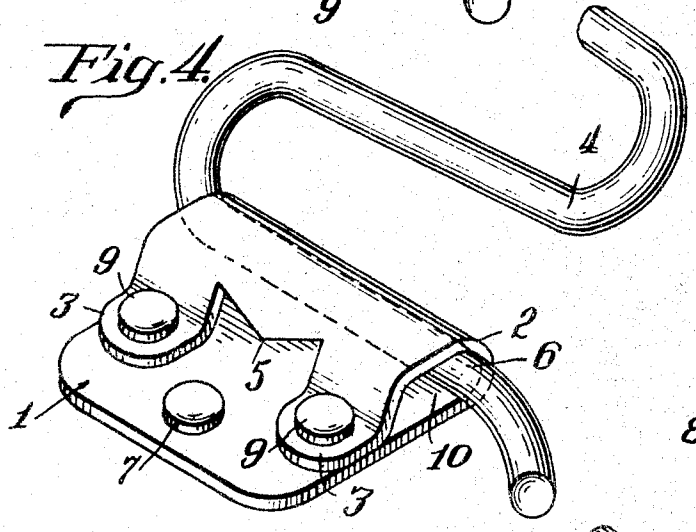


Fig. 5

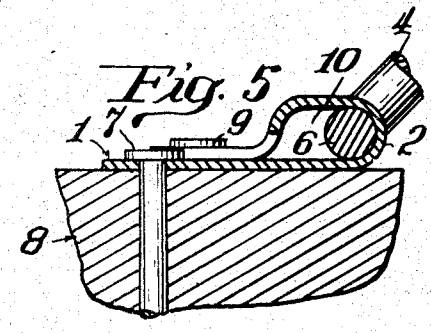


Fig. 6.

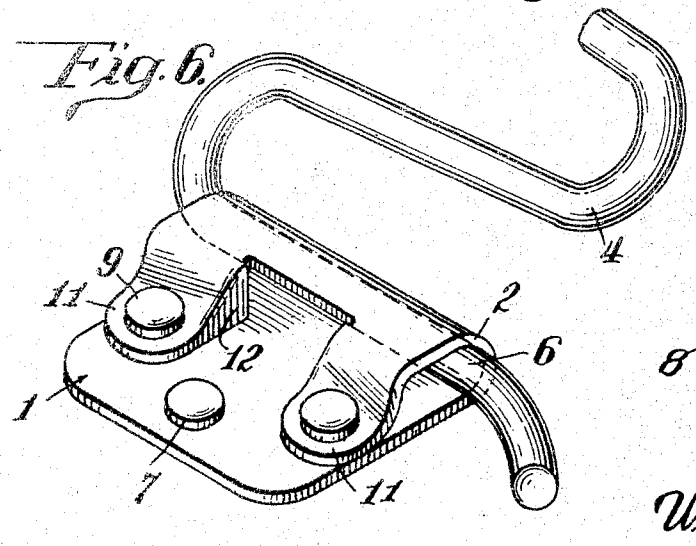
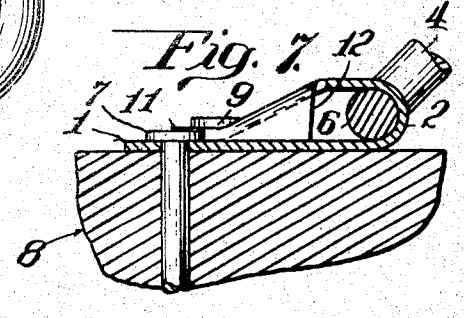


Fig. 7



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SPRING ANCHORING DEVICE

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Application September 22, 1938, Serial No. 231,203

3 Claims. (Cl. 155—179)

This invention relates to what is generally termed a "clip" adapted to be secured to a furniture frame element and to an end portion of a length of highly resilient zig-zag wire which is arched and spans the opening of a furniture frame, such as a chair seat frame, to constitute a yielding support for the occupant.

The main object of the invention is to provide an anchoring device for each end of such an arched spring which may be first secured to a furniture frame member in desired position and which is equipped with a socket formation that is initially open at one end to receive a terminal leg of such a spring and wherein means are provided for closing said socket about the said leg of the spring and at the same time further securing the plate to a furniture frame member, an essential feature of the device being the provision of means whereby stresses on the spring will not act to displace the fastening devices which secure the clip in place.

Other objects of the invention are pointed out in or will be readily understood from the following specification.

Suitable exemplary embodiments of the invention are illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a device constructed in accordance with the invention, engaged with one end of a zig-zag wire spring.

Fig. 2 is a detail central vertical sectional view of the same, showing it in its initial condition to receive a spring end.

Fig. 3 is a view similar to Fig. 2 showing the same in the spring end engaging position of Fig. 1.

Figs. 4 and 5 are views similar, respectively to Figs. 1 and 3 showing a slightly modified form of construction.

Fig. 6 is a view similar to Fig. 1 showing another or modified embodiment of the invention.

Fig. 7 is a vertical longitudinal sectional view of the structure of Fig. 6.

The device of this invention, as shown in Figs. 1, 2 and 3, comprises a substantially rectangular base plate 1 equipped along one edge with a flange 2 which terminates, preferably in a pair of parallel tongues 3 spaced from each other.

The said flange 2 is turned or bent to overlie an appreciable portion of the plate 1 and cooperates with the latter to provide a substantially U-shaped socket to receive a terminal leg of a spring 4 composed of zig-zag wire. The edge of the flange 2 lying between the tongues 3 is equipped with a projection 5 which, in the instance of Figs. 1 to 4 inclusive, is V-shaped and is initially so disposed relatively to the plate 1 as to be spaced therefrom a distance slightly less than the diameter of the wire of which the spring 4 is composed, so that a terminal leg 6 of the latter may be sprung past said projection 5 into the said socket.

The plate 1 is provided with a perforation spaced from the ends of the tongues 3, for the reception of a nail 7 or other fastening device for securing said plate to a furniture frame element 8 such as a rail of a seat frame of a chair.

The said plate 1 and tongues 3 are provided with substantially vertically aligned perforations for the passage of additional fastening devices 9 driven into the furniture frame element 8 for further securing the plate 1 thereto, said last-named fastening means being adapted to be driven down until the tongues 3 are brought into surface contact with the plate 1, the operation of driving the last-named fastening means to the limit serving also to bend or flex the flange 2 and lower the said projection 5 into position to be engaged by the said leg of the spring 4 to limit the movement of the latter outwardly from the socket, the main purpose of said projection 5 being to prevent said leg of the spring from exerting any wedging pressure on the flange 2 and tongues 3 tending to withdraw the last-mentioned fastening means from the furniture frame member 8. The said spring 4 is arched upwardly to span the space between opposed frame members 8 so that load upon said spring causes the terminal legs thereof, confined by the sockets of the clips, to move outwardly from the middle of the spring and to exert pressure against the said projections 5 of the pair of clips engaged with the respective terminal legs of the spring.

The clip is made of a resilient sheet metal such as sheet steel. In some instances the springs 4 are normally straight instead of being bowed and are of greater length than the distance between a pair of sockets of the above-described clips and are arched or bowed by the operator in mounting them in place initially. In such instances the springing of the terminal legs of the spring past the projections 5 into the clip sockets is very desirable because it relieves the operator of the necessity of maintaining the arch of the spring with one hand while driving down the fastening means extending through the perforation of the tongues 3.

In other instances the springs 4 are normally bowed, sometimes on a radius greater than that desired for the spring when secured in place. In such instances the operator, after springing

one terminal leg of the spring into the socket of one of the clips, pulls the other terminal leg past the ends of the tongues 3 of the companion clip and passes it under said tongues and past the projection 5. Said terminal legs are thus caused to hug normally the inner walls of the sockets of the clip, said sockets being then closed as above described.

In instances where said terminal legs of the spring normally hug the inner walls of the sockets of the clips, it is sometimes desirable to provide sockets of greater length than the diameter of the wire of the spring 4 so that in response to load on the spring, the terminal legs of the latter will first move outwardly into engagement with the projections 5 against which they bear with an appreciable degree of pressure as the load on the spring attains the maximum degree imparted by the load thereon.

In Figs. 4 and 5 there is illustrated a clip corresponding structurally in all respects with that of Figs. 1–3 inclusive except that the socket 10 thereof is elongated.

In the structure illustrated in Fig. 6 and Fig. 7, the projection 5 is omitted and in place thereof the tongues 11 corresponding with the tongues 3 of Figs. 1–5 inclusive, are each equipped along a side thereof with a downwardly projecting wedge shaped flange 12 having their rear edges opposed to and spaced from the inner wall of the socket formed by the plate 1 and flange 2, the forward ends of said flanges 2 meeting the lower faces of the tongues 11 rearwardly of the perforations of said tongues. The said rear edges of the flanges 12 are shown as so spaced from the inner wall of the socket as to allow play of the terminal leg of the spring engaged in the socket as in the instance of Figs. 4 and 5, but said spacing may be changed as desired.

The said device is very cheap, efficient and convenient of use for very rapid and easy installation and completion of spring base furniture units at minimum cost for labor.

I claim as my invention:

1. A device for the purpose specified comprising a base plate equipped with a plurality of spaced apart perforations, one thereof adapted to receive a fastening device for securing said plate in place, a flange at one end of said plate bent to overhang the latter and provide a socket for receiving a portion of a spring, said flange equipped with a downwardly projecting formation normally spaced from the plate a distance slightly less than the diameter of the wire of the spring for permitting a portion of the latter to spring past said formation into said socket, said flange terminating in a pair of perforated tongues overhanging and normally spaced from said plate and having said perforations aligned with perforations of said plate for the reception of fastening devices for further securing said plate in place and for bringing said tongues into contact with said plate and effecting further bending of said flange to cause said formation to be disposed to constitute a stop formation for limiting the movement in one direction of the portion of the spring engaged in said socket.

2. A device of the kind specified comprising a resilient sheet metal base plate, a flange along one edge thereof bent to overhang a portion of said plate and cooperating with the latter to form a socket to receive a portion of a spring, said flange equipped with a downwardly projecting formation normally spaced from said plate a distance slightly less than the diameter of the wire of the spring for permitting said portion of the latter to be sprung past said formation into said socket, there being substantially aligned perforations in said flange and said plate for the reception of fastening devices for securing said plate in place and holding said flange in contact therewith and thereby lowering said formation into position to limit movement of the said spring portion in one direction.

3. A device of the type specified comprising a flat plate equipped along one edge thereof with an overturned flange overlying a portion of said plate and cooperating with the latter to form a socket initially open at a point spaced from the flange of said plate opposite the flanged edge thereof to receive a portion of a spring, said flange and plate equipped with substantially vertically aligned openings for the passage of fastening devices for securing the plate to a furniture frame element and bending said flange at its free end portion to meet said plate to close said socket, said flange equipped between its ends with a projection opposed to the inner wall of the socket and in the path of said spring portion when said flange is bent down to meet said plate.

WILLIAM W. GLEASON.