Aug. 14, 1951 L. W. HUBBELL 2,564,435

PIVOTED CLASP

Filed Nov. 14, 1945

Fig. 1.

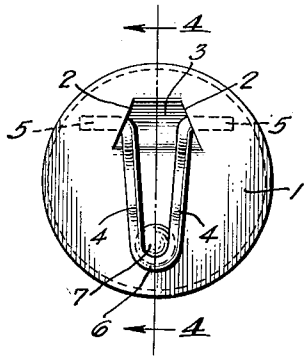


Fig. 2.

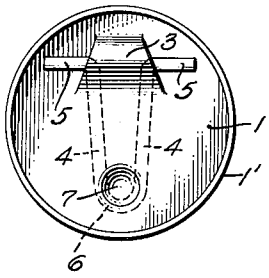


Fig. 3.

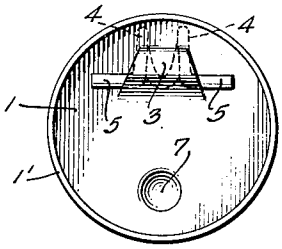


Fig. 4.

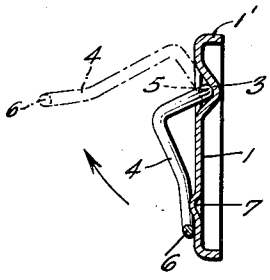


Fig. 5.

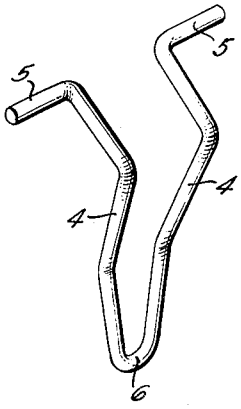
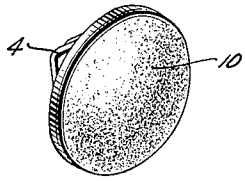


Fig. 6.



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PIVOTED CLASP

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3 Claims. (Cl. 24—252)

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This invention relates to clips and more particularly to a type useful in nonpiercing earrings.

It is the object of the present invention to provide a clip construction for earrings which is rugged and economical and which may be worn with comfort and with certainty of retention over long periods of time.

It is a further object of the present invention to adapt conventional button backs for the reception thereby of a resilient metallic wire clip to attain a resilient clip assembly which may be worn with comfort upon the ear lobes. The invention comprehends the combination of all types of ornamental surfaces with metallic button backs in accordance with the present invention, so that earrings of all types may be had by different combinations of ornamental fronts with the metallic backs such as ornamental button shells of metal, plastics, fabric or cabochons of all types.

This invention presents an improvement over the clip type earring described and claimed in my Patent No. 2,377,688, June 5, 1945.

In my earlier patent, an economical clip type earring was disclosed by stamping a channel in a metallic back to form camming edges at the ends of the channel which protrudes from the external surface of the backing element and into which are inserted inwardly disposed trunnions of a bifurcated spring clip. The arms of the clip, having a common junction at the ends thereof opposite the trunnions, exhibit a tendency to spring back to their original position following a spreading of the arms. Normally the junction end of the spring clip is in contact with the external surface of the backing element. A pivotal movement of the spring clip, at the axis of the trunnions engaging the channel at the camming edges, results in a spreading of the arms of the spring clip by the movement of the arms adjacent to the trunnions towards the wider portion of the camming edges so that this spreading, acting against the resilient force of the spring wire material, gives rise to a force to return the spring clip to its normal position adjacent to the surface of the backing element.

The present invention seeks to improve the construction generally described above and disclosed in the patent in several respects. In the first place, the stamping of the channel outwardly of the surface of the backing element presents an objectionable protuberance which in some cases interferes with the engagement of the lobe of an ear of the wearer between the surface of

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the backing element and the spring clip. In the second place, the permissible length of the trunnions engaging the channel of the backing element is limited, since in any case the combined length of the trunnions must be less than the medial spacing between the camming slits. This gives rise to an easy dis-assembly of the resilient clip from the engaging channel which, in time, affects the resiliency of the unit and eventually tends to destroy its desired resilient effect. In the third place, the camming edges are of extended length as a result of the curved contour thereof formed by the extended lateral area of the pressed channel, and thus may result in a comparatively slight movement of the free ends of the resilient clip for the full range of angular movement thereof, which in some cases may result in the production of a weak and inadequate resilient clamping force between the backing element and clip.

The present invention seeks to eliminate the faults noted above in my earlier construction. Accordingly, instead of pressing the channel from the external surface of the backing element, camming slits are cut directly in the backing element and the channel is pressed inwardly of the backing element, thus eliminating the protuberance on the external surface thereof which might interfere with the clamping action of the body adapted to be disposed between the external surface of the backing element and the resilient clip. Secondly, the camming slits are arranged to flare towards the center of the backing element and the trunnions are disposed outwardly for cooperation with the slits. Thus, the length of these trunnions may be extended to nearly the complete medial spacing between the slits, whereupon a more secure pivotal action is attained, while rendering more difficult the separation of the resilient clip from the backing element, thereby assuring a longer effective life for the unit. Thirdly, the effective camming slits being in the plane of the backing element, exert a more positive and direct action upon the arms of the clip as they are pressed towards each other in consequence of the pivotal movement of the clip from the plane of the back.

The other objectives of the instant invention are common to those set forth in connection with my previous construction, as fully set forth in the above-mentioned Patent No. 2,377,688, and include the provision of an economical clip construction which requires no soldering, or the handling of sealing plastics or complicated spring structures to adapt a conventional button back

for use as a clip which may be used as an earring or other ornament independent of, or in supplement to, a conventional set of buttons having similar ornamentation.

Other objects and purposes will appear from the more detailed description of the invention following hereinafter, taken in conjunction with the accompanying drawing, wherein

Fig. 1 is a front elevation of a button back in accordance with the present invention;

Fig. 2 is a rear view of Fig. 1;

Fig. 3 is a rear view corresponding to Fig. 2 showing the clip in raised position, at which time it exerts its tendency to return to its position shown in Figs. 1 and 2;

Fig. 4 is a vertical sectional view along line 4—4 of Fig. 1 with the clip shown in solid lines in its normal position, and in dotted lines in its raised position;

Fig. 5 is a perspective view of the spring clip element which may be used with the button back in accordance with the present invention to complete the economical and rugged assembly; and

Fig. 6 is a perspective view of the finished earring in accordance with the present invention, illustrating an ornamental metallic button shell having the flange thereof surrounding the flange of the metallic back.

In Figs. 1 to 4 of the drawings is shown a circular button back 1 which may be formed of metal or any other suitable material, having a flange 1' (Fig. 4) which is adapted to embrace an ornamental insert or have spun thereover an ornamental shell or button to adapt the ornament to be used as a clip, earring or the like. The external face of the button back is shown in Fig. 1, and the obverse view thereof is shown in Fig. 2. The convergingly directed camming slits 2 are cut in the plane of the backing element and are disposed on one side of the center of the element and flare towards the opposite side thereof. A trapezoidal channel 3 is pressed from the surface of the backing element inwardly thereof in order to provide spaces between the ends thereof and the camming slits 2, into which spaces are adapted to be inserted the outwardly extending trunnions 5 of a resilient clip formed of bifurcated arms 4 terminating in a common junction point 6. The configuration of the resilient clip which may be formed of any suitable spring wire material is shown in Fig. 5.

In operation, a pivotal movement of the spring clip from its position shown in Fig. 1 and in Fig. 4 in solid lines, through an angle approximating 90°, as shown in dotted lines in Fig. 4, causes a movement of the ends of the arms adjacent to the trunnions towards each other, which is resisted by the natural resilience of the bifurcated arms spreading from the common junction point 6. Therefore release of the clip will automatically cause it to return to its original position and to resiliently clamp any body brought between the clip and the backing element.

A circular protuberance 7 is pressed outwardly from the backing element 1 equi-distantly below the camming slits 2 and is designed to cooperate with the junction point 6 of the resilient clip to enhance the clamping effect between the back and the clip.

When the clip 4 is pivoted around the axis of its trunnions 5 from the plane of the backing element, the ends of the arm adjacent to the trunnions travel towards the more restricted spacings between the slits 2, causing a pressing thereof towards each other against the normal resilience of the material which gives rise to a force tending to return the clip to its normal unstressed condition. Thus, when the clip 4 is turned upwardly, as is shown in Fig. 4, from its position shown in solid line to that shown in dotted lines for approximately 90°, or to the position shown in Fig. 3 from that shown in Fig. 2, the clip tends to assume its normal position adjacent to the back as shown in full lines in Fig. 4 or in Fig. 1. This action is automatic and is very simple in design.

As shown in Figs. 1 and 4, except for the small circular protuberance 7, the external surface of the backing element presents no hindrance to the engagement of any body between the backing element and the resilient clip. Furthermore, the trunnions 5 may be of extended length and may be nearly the length of the medial spacing between the camming slits 2 and in any case in excess of one-half the length of this medial length which presents a marked advantage over the size of the trunnions which is permissible with the arrangement shown in my earlier patent.

Furthermore, the camming slits 2 being formed directly in the plane of the backing element produce a more direct action upon the ends of the arms of the resilient clip to obtain a more reliable construction thereof.

In Fig. 6 is shown an ornamental button shell 10 spun over a button back as shown in Figs. 1 to 4, having as part thereof a resilient bifurcated clip 4 as shown in Fig. 5. Cabochons or other ornamental inserts of plastic, onyx or other ornamental materials may be inserted within the confines of the button back and have the flange 1' spun therearound to retain the same in place.

The features of the present invention may be applied to button backs of different geometrical configurations such as polygonal figures, or any other ornamental or odd design. The features of the invention are also applicable to combined arrangements wherein the button backs may be provided with stamped formations or openings to adapt the units for interchangeable use as clips or buttons, as fully described in my earlier Patent No. 2,377,688.

It is understood that while the invention is particularly applicable to the adaptability of conventional metallic button backs to the use of earrings, the features thereof may as well be applied to other jewelry clips of an ornamental nature, or to other utilitarian clips. Also, the resilient clip may be applied to backs of sheet material functioning in the same manner as sheet metal backs, which are extensively used at the present time. While I have described my invention as embodied in a specific form and as operating in a specific manner for purposes of illustration, it should be understood that I do not limit my invention thereto, since various modifications will suggest themselves to those skilled in the art without departing from the spirit of my invention, the scope of which is set forth in the annexed claims.

I claim:

1. A resilient clip assembly comprising a backing element, said element having a channel pressed inwardly from the outer surface thereof from boundary camming slits in said backing element from which the ends of the channel are pressed whereby no protuberance from the external surface of said backing element appears at said slits, said slits being disposed at one side of the center of said backing element and flaring outwardly from each other towards the opposite side of said center thereof, and a resilient clip

formed of spring wire having bifurcated arms terminating in outwardly extending trunnions insertable in said slits between the ends of the channel and the internal surface of said backing element adjacent to said slits whereby the clip may be swung approximately 90° from the backing element, with the junction end of said arms normally adapted to abut the metallic backing element, said last-mentioned end adapted to return automatically towards said backing element when said clip is moved pivotally from said element in consequence of the pressing of the arms towards each other by the narrower spacing between said camming slits in said backing element.

2. A device as set forth in claim 1 wherein each of said outwardly extending trunnions is of a length nearly that of the medial spacing between said camming slits.

3. A resilient clip assembly comprising a metallic backing element, said element having a channel pressed inwardly from the outer surface thereof from boundary camming slits in said backing element from which the ends of the channel are pressed whereby no protuberance from the external surface of said backing element appears at said slits, said slits being disposed at one side of the center of said element and flaring outwardly from each other towards the opposite

side of said center of said element, and a resilient clip formed of metallic spring wire having bifurcated arms terminating in outwardly extending trunnions insertable in said slits between the ends of the channel and the internal surface of said backing element adjacent to said slits whereby the clip may be swung approximately 90° from the backing element, each of said trunnions being of a length in excess of half the medial spacing between said slits with the junction end of said arms normally adapted to abut the metallic backing element, said last-mentioned end adapted to return automatically towards said backing element when said clip is moved pivotally from said element in consequence of the pressing of the arms toward each other by the narrower spacing between said camming slits in said backing element.

LESLIE W. HUBBELL.

REFERENCES CITED

The following references are of record in the file of this patent:

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Number	Name	Date
280,214	Miller	June 26, 1883
370,214	Smith	Sept. 20, 1887
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