

[54] **BAR LUG FOR WRIST WATCH CASE**

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[58] **Field of Search**..... **24/265 B; 224/4 D, 4 E**

[56]

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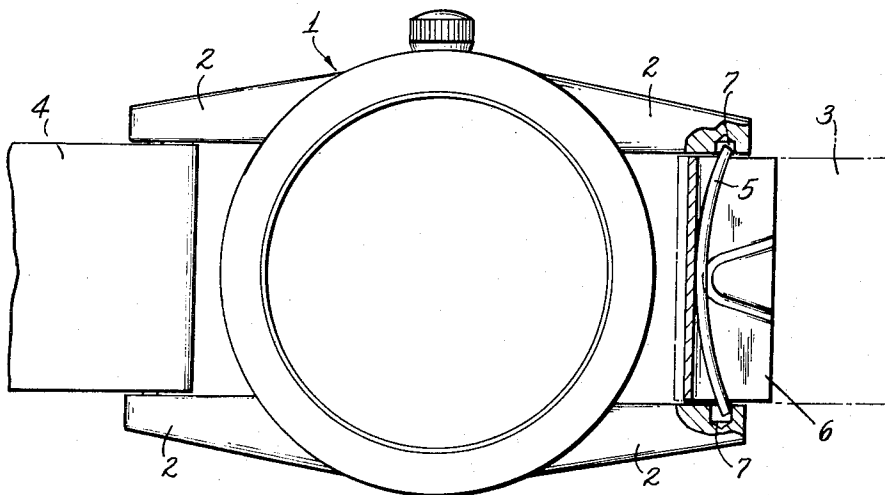
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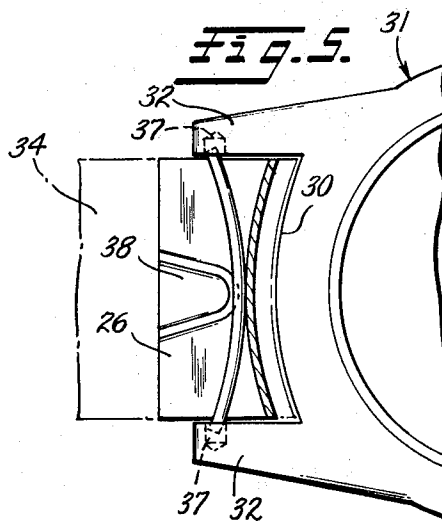
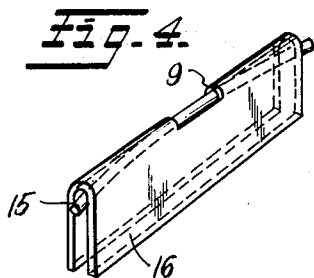
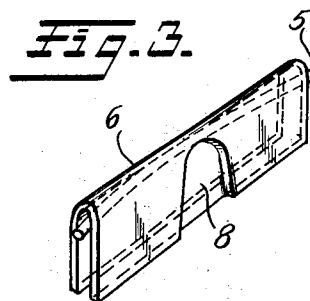
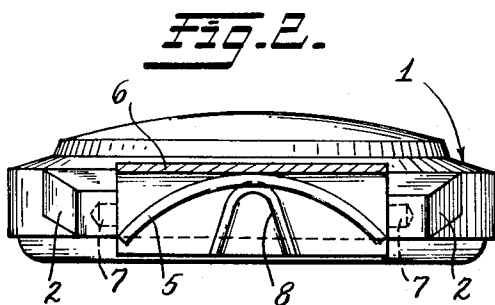
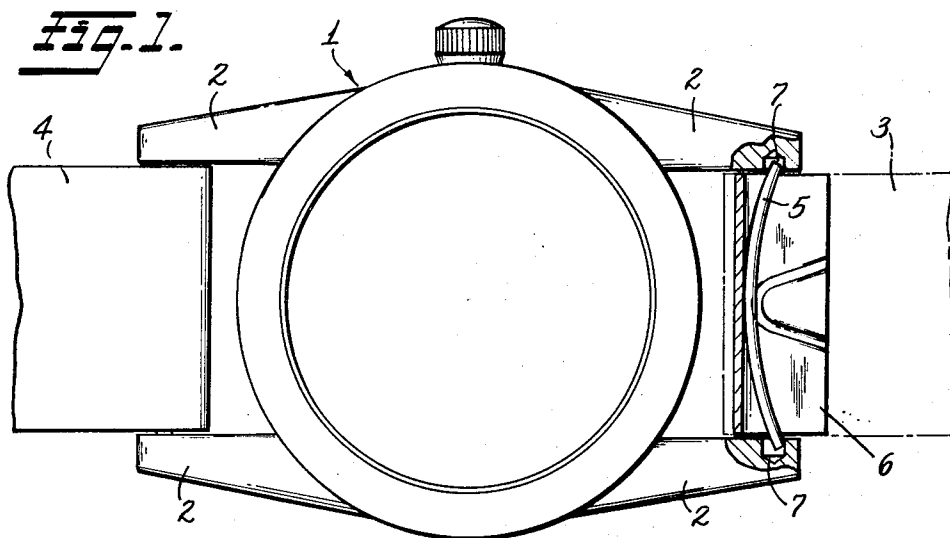
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ABSTRACT

A bar lug comprising a resilient wire element confined in an envelope so that the ends thereof can flex only in a single plane. The envelope is fitted on the end of a watch strap or band, and the bar lug is connected to the horns of a watch case by inserting the envelope between the horns while such is held at about a 90° angle to the plane of the watch case. After the ends of the bar lug have engaged with the horns the envelope is turned to lie generally parallel with the watch case, whereby the bar lug is prevented from disengagement and the strap or band is secured to the case.

5 Claims, 5 Drawing Figures





BAR LUG FOR WRIST WATCH CASE

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to bar lugs for connecting watch strap or band elements to a watch case. More particularly, it relates to an improved bar lug construction that can be easily installed and removed without the need for tools, and which remains firmly engaged once installed.

2. Description of the Prior Art

At present bar lugs for attaching a strap or band to a wrist watch case commonly comprise a tubular element in which a spring is housed, as well as the inner ends of two pins, the outer ends of which protrude from the opposite ends of the tubular element. At least one of the pins is moveable relative to the tube against the spring, and the bar lug is installed and removed by depressing the pin or pins against the springs to thereby reduce the overall length of the lug, so that the outer ends of the pins can be engaged in confronting sockets in the horns carried by the watch case. This type of bar lug is usually difficult to remove, it being required that one of the moveable pins be worked back into the tubular element with a tool so that disengagement from the horn sockets can occur.

It is desirable in some instances today to provide that the watch strap ends fill as completely as possible the space between the horns of the watch case, and that they remain oriented in the plane defined by the horns. Attempts have been made to modify the conventional bar lug described in the preceding paragraph to accomplish these ends, but generally such attempts have failed because the modified structure has been too cumbersome to manufacture, and too expensive for the marketplace.

To overcome these problems it has been proposed to construct a bar lug simply from a rigid wire engaging itself inside of a tubular element which is longitudinally slitted and arranged so as to tighten the wire. The latter is engaged from outside across one of the horns of a watch case, and then simultaneously in the tubular element and in the end of the watch strap or band until its other extremity penetrates in the socket or aperture provided in the opposite horn. The use of this type of bar lug requires, however, that at least one of the horns be pierced through, which is not provided in nearly all watch cases now in use, and which in any instance is not considered desirable.

It has also been proposed to eliminate bar lugs altogether as a means for attaching straps or bands to wrist watch cases. In one instance, one or more elastic lamellas connected to the strap ends or to the watch case bear nipples which engage in an elastic manner in apertures of the other part to be connected. But the watch case in this instance is of unusual design, and the concept is of no use with currently available watches equipped with conventional horns.

There is thus a need for a bar lug of simple construction that can be used with all types of watch cases provided with horns they are currently in use, and which is easy to install and remove without the need for tools. In addition, there is also a need for a bar lug construction that can maintain the strap ends aligned with the horns, and which allow such ends to occupy substantially all the space defined between the horns. The present

invention is directed toward satisfying both of these needs.

SUMMARY OF THE INVENTION

The bar lug of the present invention comprises a resilient wire element, mounted within an envelope so that the ends thereof can move in only a single plane. The envelope member is inserted in a transverse pocket formed on the end of the wrist strap or band, or if desired it can actually be incorporated with the strap or band, especially when such is of the metallic expansion type.

The opposite ends of the wire element project beyond the ends of the envelope, and are intended to engage within the confronting sockets provided in the horns provided on a conventional wrist watch case. To install the band or strap using the bar lug of the invention, the strap end is held so that the plane of the envelope lies at around 90° to the plane of the wrist watch, or so that the strap end can move between the horns without being blocked by the watch case. The strap end is then moved between the horns, and the opposite ends of the wire element flex within the envelope until they clear the edges. The wire element ends then slide on the interior horn surfaces until they reach the sockets, whereupon the resilient wire element returns to its original configuration, causing the ends thereof to enter said sockets.

The watch strap or band end is then turned so that such lies in the same general plane as the watch case, whereupon the watch case blocks any further movement of the envelope in a direction such as would tend to disengage the ends of the wire element from the horn sockets. The wrist watch is then firmly attached to the strap or band.

When it is desired to remove the band from the watch, the band or strap end is again turned at an angle to the plane of the watch, so that it can be moved through the space between the horns without being blocked by the watch case. Then the strap end is moved relative to the horns in the same direction as when the strap was installed, whereupon the ends of the resilient wire element flex inwardly to allow disengagement from the horns.

The present bar lug can thus be easily installed and removed without the use of any tools, and when installed effectively secures the watch case to the ends of the band or strap. Further, since no space is required between the strap ends and the horns for the insertion of a removal tool, the width of the strap or band can occupy the full space between the horns. In addition, the resilient wire element is also effective in holding the ends of the strap or band in engagement with the watch case body at the base of the horns, if this feature is desired.

It is the principal object of the present invention to provide a bar lug for connecting the ends of a strap or band to the horns on a wrist watch case, designed so that such can be installed and removed without the use of tools.

Another object is to provide a bar lug that is economical to manufacture and market, and which is compatible with existing watch cases now in use.

A further object is to provide such a bar lug, designed to make possible having the ends of the strap or band occupy the full space defined by the horns of a wrist watch case.

Other objects and many of the attendant advantages of the present invention will become readily apparent from the following Description of the Preferred Embodiments, when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a plan view from above in partial section of a wrist watch equipped with a first embodiment of the bar lug of the invention;

FIG. 2 is a side elevational view of the wrist watch of FIG. 1, showing how the bar lug is installed;

FIG. 3 is a perspective view of the bar lug of FIGS. 1 and 2;

FIG. 4 is a perspective view of a second embodiment of the invention; and

FIG. 5 is a partial plan view from above of the wrist watch of FIG. 1, with a third embodiment of the invention wherein the lug is designed to urge a rounded strap end into engagement with a rounded watch case.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the drawings a wrist watch 1 is provided with two pairs of horns 2, for connection to the ends of two elements 3 and 4 of a strap or band preferably made of leather or plastic material. The strap or band elements 3 and 4 are connected to the pairs of horns 2 by the bar lugs of the invention, each composed of two pieces, i.e., an elastic or resilient wire element 5 and an envelope 6. By way of example, the wire element 5 can be made of steel, and in the instance of a gentleman's wrist watch can have a diameter of about 0.6 mm. For ladies' watches of smaller dimensions, for which the use of the bar lug of the invention is particularly advantageous, it is possible to use wire of smaller diameter.

The envelope 6 is formed from a rectangular shaped brass or stainless steel plate, folded along one of its axes so as to present a U-section with a rectilinear border at the center part, the distance between the two U-shaped branches thereof being slightly greater than the diameter of the wire 5. The length of the plate 6 is equal to the distance between the horns 2, while the length of the wire 5 is slightly greater so that its ends can engage themselves within the recesses 7 provided in the interior faces of the horns 2. If needed, the ends of the wire element 5 can be rounded or cut after the wire is cut to length, so as to present a cylindrical section and plane outer faces, or slightly blued ones, allowing an absolute engagement inside the recesses or sockets 7.

To assure a bar lug element that is easy to manipulate, the wire 5 and envelope 6 are connected to each other by a setting 8 formed by compression of the central parts of the two branches or legs of the U-shaped envelope 6 against each other. Thus, the central part of the wire 5 is pressed against the fold of the plate 6, and gripped. Due to the resultant form of the plate 6 the wire 5 can bend about the rounded setting 8, from either side of its central part in the semi-plane defined by the border of the fold of plate 6 and the direction of the two U-shaped branches.

The insertion or installation of the bar lug of the invention is effected in the following manner. The bar lug is engaged in the transverse pocket formed on the end of the strap or band elements 3 or 4, and such strap or band end is then introduced between the horns 2 on

one side of the watch case by displacement in a plane running at an angle of around 90° to the plane of the watch case, as shown in FIG. 2. The angle is not important, it only being necessary that the end of the band or strap be allowed to move between the horns 2 without contacting the watch case, and such movement can be up or down. When the ends of the resilient wire 5 engage the horns 2 during such displacement, the end portions of the wire 5 curve by bending between the branches of the envelope so that the latter can be displaced up to the moment when the ends of wire 5 engage themselves in the recesses 7. The envelope 6 (and thus the end portions of the band or strap) is then returned to the general plane of the horns 2 and the watch case, to ensure that any casual disengagement will not take place. As seen in FIG. 1, when the envelope 6 is lying in the plane of the horns 2 displacement thereof in the direction of the watch case cannot be pursued far enough to allow the wire 5 to disengage, and a pull effected on the watch strap or band away from the watch case causes the wire 5 to lean against the interior border of the fold of the envelope 6. The ends of the wire 5 then work with pure shearing stress, thus making any disengagement impossible.

Removal of the band or strap from the horns 2 is effected by reversing the above installation process. The envelope 6 is again arranged at an angle to the plane of the horns, so that translation movement of the envelope is not blocked by the watch case. The strap end carrying the envelope 6 is then pushed through the horns in the same direction as upon installation, and the ends of the wire 5 flex inwardly to permit disengagement from the recesses or sockets 7.

Referring now to FIG. 4, in the modification shown therein the envelope 16 is folded as in the case of the envelope 6 into a U-shaped embodiment. But the fold thereof is provided with a cut-out 9 in its central part, which allows the gripping of the central part of the wire 15 in a much easier way than in the envelope 6. Apart from this particularity of the envelope 16, the embodiment of FIG. 4 is utilized and functions in the same manner as the embodiment of FIGS. 1-3.

In FIG. 5 a bar lug is shown including a U-shaped envelope 26, which is stretched in such a way that the border of its fold extends as a circular arc according to a radius in such a manner that if the bar lug is in its installed position, said border is approximately parallel to the convex surface portion 30. Whereas in the other forms of the invention the wire 5 when at rest is rectilinear, in the embodiment of FIG. 5 it is possible to slightly curve it. In this case, owing to the setting 38 the wire will lean itself by its ends against the recesses 37 of the horns 32 and will press the fore part of the end of the strap or band 34 against the face 30 of the case 31. Thus, under normal conditions the entire space defined by the lugs 32 and the surface portion 30 of the watch case will be filled by the watch strap end.

Other embodiments of the invention, and modifications thereof, are also possible. For example, the wire 5 can be prepared in such a manner that its ends are more rigid than its intermediate parts. This can be done by folding the ends of the wire 5 back upon themselves, or by installing small sleeves on the ends of the wire adjusted to the dimensions of the recesses provided in the internal faces of the horns.

Further, instead of a U-shaped folded plate, it is also possible to utilize an ovalized tubular element for the

envelope. Such a tube could present cut-outs at its ends in order to enable the elastic wire to bend free in the half-plane determined by the flanks of the envelope and the front border of its fold.

Referring again to FIG. 5, it would also be possible to provide the fold of the envelope with a protruding tenon which would pass through a hole in the strap or band end, and which could then engage in a hole in the face of the watch case so as to fix the envelope 26 in the plane defined by the horns and the watch case. If desired, this arrangement could also be done by extending the width of the rear portion of the envelope beyond the confronting inner surfaces of the horns, so that the extended envelope portions could then make a fixing engagement with a portion of the horns.

It is to be understood that while the bar lug of the invention has been shown as a separate unit inserted into a transverse pocket formed on the end of a watch band or strap, such could also be constituted as the end element of a watch band of the expansion type, particularly one made entirely of metal. Different gripping arrangements for the wire are also possible. In another embodiment of the invention, for example, the wire is set with one of its ends, rather than the central portion thereof, secured to the envelope. This arrangement is especially suited for watches of small dimension, in that it gives the wire a greater possibility of flexure.

Further, in FIG. 5 it is possible to provide one or two setting points by withdrawing the concave border of the envelope, so that the wire cannot bend beyond its rectilinear position when pulling at the bracelet.

Obviously, many other variations and modifications

of the invention are possible.

What I claim is:

1. A bar lug for attaching a strap to a wrist watch, comprising: a wire element capable of bending elastically; and an envelope wherein said wire is fixed by its central part, in such a manner that it cannot bend from its resting position but only in a half-plane determined by said envelope, the ends of said wire projecting laterally from said envelope when said wire is at rest.

2. A bar lug for attaching a strap to a wrist watch, comprising: a wire element capable of bending elastically; and an envelope wherein said wire is fixed, in such a manner that it cannot bend from its resting position but only in a half-plane determined by said envelope, the ends of said wire projecting laterally from said envelope when said wire is at rest, said envelope being formed from a rigid plate folded into a U-shape, and said wire element being engaged with the fold of said plate and being fixed to said plate by its central part.

3. A bar lug as recited in claim 2, wherein said wire is fixed to said plate by means of a setting of the central part of the branches of said U-shaped envelope, one against the other.

4. A bar lug as recited in claim 2, wherein said rigid plate has a cut-out in the central part of its U-shape, and the wire is fixed on said plate by setting of the borders of the said cut-out.

5. A bar lug as recited in claim 2, wherein said plate is shaped so that the fold therein extends according to the arc of a circle, and presents a concave outer surface.

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