A watch strap is disclosed which comprises a pair of strap elements having mating connecting means at one end for securing a watch about the wrist of the wearer and means at the other end of each strap element for readily attaching the strap element to the case assembly without removal of the spring bars. The attaching means includes a keeper plate mounted between layers of the strap element at the outer portion thereof and a stud plate similarly mounted between said layers at a predetermined distance from the outer portion. The strap is readily assembled or removed from a watch case assembly by inserting the outer portion of each strap element between the spring bar and the case and then joining the keeper plate to the stud plate by the application of pressure.

4 Claims, 5 Drawing Figures
WATCH STRAP WITH PLASTIC CLIP

BACKGROUND OF THE INVENTION

The present invention relates to watch straps and more particularly to watch straps which are readily assembled or removed from the watch case assembly without removing the spring bars.

In the horological field, the advantages of quick-fastening straps or bracelets are well-known. Conventional watch straps are manufactured with a relatively small loop at one end through which a spring bar is inserted. The projecting ends of the spring bar which are resiliently urged apart are then assembled to recesses in the lug portions of the case. A quick-fastening strap, however, need only be wrapped about the spring bar and fastened onto itself. Not only is the assembly operation faster resulting in a labor savings but the spring bar can be an integral part of the case assembly rather than a relatively costly subassembly.

The use of such quick-fastening straps has accelerated with the emphasis on fashion in watch styles. It is now quite possible and, in fact, popular to have one or more bands for each watch.

Typical prior art strap arrangements of the type discussed above are shown in U.S. Pat. No. 1,614,246 issued January 1927 to Lederer and U.S. Pat. No. 2,439,274 issued April 1948 to Spector. The Lederer patent discloses a fastener for watch straps wherein a button, located on the end portion of the strap, is adapted to fit into a pocket in an adjacent portion of the strap to secure the strap portions together about a spring bar. The Spector patent discloses a wrist band or strap for watches wherein a flap is wrapped around a spring bar and attached to a button to secure the watch to the band.

Among the more pertinent prior art disclosures, not mentioned above, are Swanson U.S. Pat. No. 1,702,835 issued February 1929, Dinhofer U.S. Pat. No. 2,129,494 issued Sept. 1938, Epiard U.S. Pat. No. 3,685,107 issued August 1972 and Broido U.S. Pat. No. 3,668,890 issued June 1972. This listing is not intended to be all inclusive but merely representative of the state of the art since other patents may exist which are pertinent to the present invention.

SUMMARY OF THE INVENTION

As distinguished from the prior art described above, the present invention relates to a quick-fastening watch strap which comprises a pair of strap elements having mating connecting means at one end for securing a watch about the wrist of the wearer and means at the other end of each strap element for readily attaching the strap element to the case assembly without removal of the spring bars. The attaching means includes a keeper plate mounted between layers of the strap element at the outer portion thereof and a stud plate similarly mounted between said layers at a predetermined distance from the outer portion. The strap is readily assembled or removed from a watch case assembly by inserting the outer portion of each strap element between the spring bar and the case and then joining the keeper plate to the stud plate by the application of pressure. The engagement between the stud plate and keeper plate is made below the exposed surface of the strap material.

Accordingly, it is an object of this invention to provide a new and improved watch strap of the quick-fastening type having no projecting elements on the attaching means.

Another object of this invention is to provide a new and improved watch strap which may be readily assembled about the spring bar of a watch case assembly and which provides a secure and economical assembly.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages will be more clearly seen when viewed in conjunction with the accompanying drawings wherein:

FIG. 1 is a side view showing the attachment of the watch strap of the present invention to a watch case;

FIG. 2 is a perspective view of the end portion of the subject strap showing the stud plate and keeper plate in greater detail;

FIG. 3 is a perspective view showing the cooperation of the stud plate and keeper plate in securing the watch strap about the spring bar portion of a watch case assembly;

FIG. 4 is a cross-sectional view taken along the line 4—4 of FIG. 3 and

FIG. 5 is a perspective view of a second embodiment of the invention showing the ladies version of the subject watch strap.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, the invention relates to a unique watch strap or bracelet 10 which may be readily attached or removed from a watch case assembly 11. The strap 10 comprises a pair of strap elements 12, one of which is shown for purposes of illustration, having conventional connecting means (not shown) at one end and the fastening means of the present invention at the other end. The fastening means comprise a stud plate 13 and a keeper plate 14 which cooperate to secure the strap 10 about the spring bar 16 which extends between opposite lugs 17a and 17b of the watch case 11.

In greater detail, the watch strap 10 comprises an outer plastic layer 18 and an inner plastic layer 19 which extends along a substantial portion of the outer layer 18 and is molded or otherwise affixed thereto along the edges 21, for example by high frequency or heat welding. An intermediate layer 22 of flexible plastic material may be positioned between the layers 18 and 19 and extends a predetermined distance beyond the inner layer 19. A layer 23 of flexible plastic material is also welded to the edges of the outer layer 18 at the end portion of the strap 10 thereby forming a pocket 24. The flexible plastic layer 22 provides added strength about the spring bar 16 and while the layers 23 and 24 could be made integral in another embodiment, they are separate in the preferred embodiment to provide a more flexible arrangement.

The fastening means of the present invention comprises a stud plate 13 which is positioned between the inner layer 19 and the flexible plastic layer 22 and a mating keeper plate 14 which is positioned in the pocket 24 between the layers 18 and 23. The stud plate 13 comprises a plastic plate having a base 26 and a pair of transversely spaced hollow cylindrical studs 27 with an enlarged lip portion 28 to facilitate a locking engagement with mating apertures 29 in the keeper plate 14. The stud plate 13 may also include an aperture 31 to permit integral molding with the plastic layer 19. On the other hand, the aperture 31 may be omitted and the plate 13 may be merely inserted between the layer 22
and inner layer 19 with the studs 27 projecting through apertures 32 in the inner layer 19.

The keeper plate 14 includes a base portion 33 having a plurality of spaced apertures 29 and 34 with the larger apertures 29 transversely spaced and designed for engagement with the studs 27, and the smaller apertures serving as a locking or anchor means for the plate 14 when the layer 23 is welded to the outer layer 18.

The attachment of the band 10 to a watch is shown in FIG. 1. The operation is quite simple and expeditious and merely involves inserting the end of the strap 10 between the case assembly 11 and the spring bar 16 and then folding the strap back upon itself in a loop. The keeper plate 14 is snapped onto the stud plate 13 by the application of finger pressure. The stud members 27 engage the apertures 29 in the plate 14 to securely lock the band in place. As shown in FIG. 4, the lip portions 28 of the studs 27 overhang the apertures 29 but lie within apertures 36 in the outer layer 18. Therefore, there is no necessity for the ends of the studs 27 to project beyond the surface of the strap as in many prior art arrangements. Thus, the invention provides an economical quick-fastening means for attaching a strap 10 to a watch without the complicated arrangements or manipulations of the prior art.

FIG. 5 shows a further embodiment of the invention suitable for narrow straps 40 such as those used in conjunction with ladies watches. The strap 40 comprises an arrangement similar to that disclosed above with reference to FIGS. 1-4 with the exception of the stud plate 41 and keeper plate 42. The stud plate 41 includes a single stud member 27 which snaps into a single aperture 29 in the keeper plate 42.

It is to be understood that the above-described arrangements are merely illustrative examples of the application. For example, the intermediate layer of flexible material may be omitted in some designs and only inner and outer plastic layers employed. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

We claim:

1. A quick-fastening watch strap adapted to be secured about the spring bar of a watch case comprising a pair of strap elements, each including:
   an outer plastic layer having at least one aperture and an inner plastic layer which extends along a substantial portion of the outer layer and is affixed thereto along the edges of said layers, said outer layer having an end terminating a predetermined distance from an end of the inner layer and said inner layer further including at least one aperture therethrough,
   a stud plate having a base portion positioned between the outer plastic layer and the inner plastic layer, said plate having at least one stud projecting upwardly therefrom through the aperture in the inner layer,
   the stud plate including at least one hollow cylindrical stud having an enlarged lip portion at the end thereof to facilitate locking engagement with a corresponding aperture in the keeper plate in a snap fit, said lip being of no greater length than the thickness of said outer layer so as not to project therefrom,
   a keeper plate disposed on the terminating end of said outer layer having at least one aperture extending therethrough in alignment with the aperture in the outer layer to receive and retain the end of said projecting stud within said outer layer aperture without projecting therefrom when the strap end is folded back about a spring bar, said keeper plate including anchoring means, and, connecting means mounted to the strap element at the other end and adapted to be secured to mating connection means to hold the watch in place about one's wrist.

2. A quick-fastening watch strap in accordance with claim 1 including:
   a flexible layer of flexible plastic material positioned between the inner and outer layers and also having a portion attached to the end of said outer layer thereby forming a pocket, and, having at least one aperture aligned with the aperture in the outer layer, said keeper plate being disposed in said pocket.

3. A quick-fastening watch strap in accordance with claim 2 wherein:
   the inner and outer layers are affixed together and the outer layer and layer of flexible plastic material are affixed together by welding, and, said anchor means of said keeper plate comprising at least one anchoring aperture wherein the flexible plastic layer is molded to the outer layer through said anchoring aperture.

4. A quick-fastening watch strap in accordance with claim 1 wherein:
   the stud plate and keeper plate include respectively a transversely spaced pair of studs and a pair of transversely spaced mating apertures, and said inner and outer layers likewise each include pairs of transversely spaced apertures for receiving said pair of studs.

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