

DESCRIPTION

The present invention concerns a watch bracelet comprising a plurality of elements articulated one after another, at least one of the elements bearing a timepiece and the other elements constituting the links of the bracelet, said elements being nested end to end and held together by means of two non-extensible flexible ties passing via channels formed in each of the elements and arranged on either side of the longitudinal axis of the watch bracelet, said watch bracelet further comprising at each of the bracelet extremities an end piece provided with anchoring means for said flexible ties.

In order to assemble the different elements which make up a watch bracelet, generally there have been employed hinges which permit articulation of the elements. A large number of designs employ spring bars or more simply pins which are run through the elements.

In order to avoid this type of connection which is costly both in material and in labour, it has already been proposed in order to couple the elements to employ one or several ties which maintain assembled the links of a bracelet, each tie traversing longitudinally a plurality of consecutive links. The ties are anchored in pieces arranged on each end of the plurality of links. Swiss patent CH-A-558 639 describes such a form of execution and in particular employs ties of a non-extensible flexible plastic material partially threaded. This arrangement presents several disadvantages. Initially, to have the ties threaded and to anchor them by means of nuts buried in the links requires links of a certain thickness. Further it will be necessary to provide bore holes having at their inlet

a dimension slightly greater than the diameter of the threaded tie in order that relative movement of the links be possible. Finally, it will scarcely be possible to provide an aesthetic of the bracelet integrated with the case which supports it since there is no continuity of the tie from one end to the other of the two portions of the bracelet.

There are also known watch bracelets in which there is employed an attachment cord which passes through a peripheral canal provided in the case. Swiss patent CH-A 197 915 illustrates such an arrangement where however the bracelet does not have links, giving to such realization a rigid aesthetic aspect and greatly limiting the possibilities of desirable variations.

Swiss patent CH-A 318 558 provides a watch bracelet of which the elements are connected together by at least one flexible tie and wherein each element comprises two lateral channels arranged on either side of the longitudinal axis of the bracelet and through which there passes a strand of flexible tie. However, in this arrangement there are provided sliding rings which surround the adjacent parts of the flexible tie included between the successive elements of the bracelet so that said elements are not fitted into one another, thus preventing an aesthetic form corresponding to the classical realization of a link bracelet.

Swiss patent CH-A-537 167 describes a flexible expansion bracelet composed of movable elements strung out on at least one preformed longitudinal spring. One of these elements may be hollowed out in order to receive a watch case. However, this bracelet does not provide any fitting of one link to another so that it becomes necessary to arrange a certain play between the several movable elements

in order to assure sufficient flexibility to the bracelet, this leading to discontinuity in the longitudinal line of the bracelet. In order to correct even slightly such a defect, the design of the cited document shows that inwardly curving links have been employed. Finally, when the bracelet is placed around the wrist, the two tempered wires forming the spring are no longer visible as is the case in the present invention.

Finally, if one refers to Swiss patent CH-A 490 827 it will be noted that the several elements of the bracelet are fitted into one another by articulations and maintained assembled by two flexible ties. At the same time in this document it is evident that the angle of articulation of one link on to another is greatly limited, that the ties do not pass via the watch case, and moreover that they are not visible as will be apparent from the description following.

To overcome these cited disadvantages and to provide a watch bracelet at the same time easy to manufacture and having a novel and attractive aesthetic aspect, the present invention is characterized in that the elements constituting the links of the bracelet are provided with necked down portions at the place of their two longitudinal extremities and that a channel is formed in each of said necked-down portions to receive one of said flexible ties.

The invention will be explained now in the following description with the reference to the drawings which show by way of example two forms of execution of the invention in which :

- Figure 1 is a plan view of the watch bracelet according to the invention in a first form of execution;
- Figure 2 is an elevational view of the watch bracelet of figure 1 to a larger scale;
- Figure 3 is a section taken along line III-III on figure 2;
- Figure 4 is a partial view from above of one of the end pieces shown on figure 1;
- Figure 5 is a section along line V-V of figure 4;
- Figure 6 is a partial plan view of the watch bracelet according to the invention according to a second form of execution;
- Figure 7 is a section along line VII-VII of figure 6.

Figures 1 and 2 illustrate a watch bracelet according to the invention and according to a first mode of execution. It is mainly formed of elements articulated one following another. One of these elements 1 supports a timepiece symbolized here by hands 2 displaying hours and minutes. The other elements constitute the links 3 of a bracelet in two parts 4 and 5. All the named elements are fitted one into another as may best be seen on figure 2. They

are held assembled by means of two flexible non-extensible ties 6 which are arranged on either side of the longitudinal axis of the watch bracelet. These ties 6 pass via channels (7, 8) provided in each of the elements as may be seen in dotted outline on the two lower half portions of figures 1 and 2. Figure 1 shows further that each of the ends of the bracelet comprises a terminal piece 9 which is provided with anchoring means 10 for the ties, as will appear further on when figures 4 and 5 are discussed.

As shown more particularly on figure 2 and in accordance with the preferred form of the invention, the elements are articulated one following another by fitting of a semi-cylindrical boss 11 borne for example by element 12 into a facing semi-cylindrical groove 13 borne by element 1. This arrangement enables the suppression of hinges articulated by means of bars, knuckles, and this even where the bracelets are attached to the watch case. One thereby obtains a perfect application of the elements to one another and thus a remarkable continuity of line. Such advantages will appear more particularly on the upper halves of figures 1 and 2 where the channels 7 and 8 have not been shown and where the watch bracelet is shown as it really appears.

It was mentioned hereinabove that the flexible ties 6 are arranged on either side of the longitudinal axis of the bracelet. In a preferred version of the invention, the elements 3 forming the links of the bracelet are provided with necked-down portions 14 at their outer extremities.

In each of these necked-down portions is provided the channel 7 in which is retained tie 6. This arrangement in addition to leaving the tie visible between two elements - which may be exploited aesthetically - allows a perfect

liberty for relative movement of the links. It should also be mentioned that the necked-down portions of elements 3 may bear a decorative motif as is shown at 15 on figure 1.

For its part, element 1 which supports the timepiece is provided with two lateral channels 8 provided on either side of the timepiece movement. As may be seen on figure 1, element 1 bears at six and twelve o'clock projections 16 which form part of the watch case and are formed to resemble the links of the bracelet. In this execution channel 8 appears initially in the form of a hole provided in the projection, then in the form of an open conduit surrounding the movement. Figure 3 shows how the tie is disposed in channel 8 which in this case is arranged in the caseband 17 bearing the timepiece 18. This arrangement enables moulding element 1 from a single piece as will appear further on.

The two flexible ties are brought out to end pieces 9 arranged at each of the ends of the bracelet. Figures 4 and 5 show a possible form of realization of such end piece 9 which is only partially shown. On figure 4 tie 6 coming from the last link, not shown, penetrates the end piece 9 (seen from above) via hole 19. Tie 6 is anchored onto piece 9 by means of screw 20. As will be best seen on figure 5 which is a section along line V-V of figure 4, screw 20 terminates in a depression 21 which notches the tie and maintains it solidly in place. End piece 9 includes means for connection to a buckle. Here the blind hole 22 is intended to receive a bar so as to attach said bar to an arm of the buckle, for instance of the type described in Swiss patent CH-A-633 698.

Although realizable in any suitable material, elements 1 and 3 will be preferably made of plastic material. If such plastic material is moreover charged with carbon fibres there will result an assembly which is both functional and aesthetic. In this case element 1 which supports the timepiece will be moulded in one piece.

For the flexible ties 6 preferably there will be also employed a plastic material. The type of material will be chosen to respond to requirements of flexibility and strength. Particularly adapted and matching perfectly from the colour viewpoint to carbon fibre, a thread of plastic impregnated with graphite, such as is known for stringing tennis rackets, responds to these requirements.

Figures 6 and 7 show a second form of the invention where there has been shown only the element of the watch bracelet bearing the timepiece. This element comprises a caseband in steel 25 the periphery of which and the surrounding flexible ties 6 are overmoulded with the plastic material 26 charged with carbon fibres. The projections 16 which form a part of this overmoulding are executed in the same manner as described hereinabove to fit with the first links of the bracelet. This realization enables greater distinguishing of the watch from the watch bracelet.

In taking advantage of what has been explained in the description hereinabove, one may obtain a watch bracelet of a new style, elegant, simple to manufacture and of low price. If moreover synthetic materials charged with carbon fibres are employed for the realization, there will be obtained an assembly of black matt colour of the most beautiful effect.



C L A I M S

1. A watch bracelet comprising a plurality of elements articulated one after another, at least one of the elements (1) bearing a timepiece and the other elements (3) constituting the links of the bracelet, said elements being nested end to end and held together by means of two non-extensible flexible ties (6) passing via channels (7, 8) formed in each of the elements and arranged on either side of the longitudinal axis of the watch bracelet, said watch bracelet further comprising at each of the bracelet extremities an end piece (9) provided with anchoring means (10) for said flexible ties, characterized in that the elements (3) constituting the links of the bracelet are provided with necked down portions (14) at the place of their two longitudinal extremities and that a channel (7) is formed in each of said necked-down portions to receive one of said flexible ties (6).

2. A watch bracelet according to claim 1 characterized in that the elements are articulated one after another by nesting of a longitudinal semi-cylindrical boss (11) borne by an element (12) into a longitudinal semi-cylindrical groove (13) borne by the facing element (1).

3. A watch bracelet according to claim 1 characterized in that the element bearing the timepiece is provided with two lateral channels (8) formed on either side of the movement of said timepiece.

4. A watch bracelet according to claim 1 characterized in that each of said necked-down portions bears a decorative pattern (15).



5. A watch bracelet according to claim 1 characterized in that the flexible ties (6) are anchored to the end pieces (9) by means of cup screws (20).

6. A watch bracelet according to claim 1 characterized in that said elements (1, 3) are formed from plastic material reinforced with carbon fibres.

7. A watch bracelet according to claim 1 characterized in that the flexible ties (6) are formed from plastic material impregnated with graphite.

8. A watch bracelet according to claim 1 characterized in that the element bearing the timepiece includes a steel caseband (25) the periphery of which and the flexible ties (6) which surround it being overmoulded with plastic material (26) reinforced by carbon fibres.