

DESCRIPTION

The present invention concerns an arrangement for attaching strands of a bracelet to a watch case including a crystal and a caseband, said arrangement comprising for each of the strands at least one horn attached to the caseband and a lug for connecting the horn to the strand in a manner to permit pivoting of said strand on said horn according to the preamble of claim 1.

Horns subsequently connected onto the caseband have often been proposed. Where the caseband is round, this method of proceeding greatly facilitates the manufacture of the case as much for the machining as for the termination thereof since the caseband may be machined on a lathe without such machining being hindered by horns which would form an integral part of the caseband.

Such an arrangement is described for instance in the document CH-A-321 188 in which the caseband-bezel exhibits a circular groove in which is engaged a curved part of each horn which can be maintained in place within this groove in two manners. The first manner consists in giving the cross section of the groove and the curved part of the horn a form which enables fastening of this horn to the caseband and maintaining it in place by a bezel. The other manner consists in securing the horns to the caseband by screws which traverse their curved parts and the heads of which are concealed by the bezel. In the two cases, this method necessitates a relatively complicated machining of the horns, initially for the part which is engaged in the groove and thereafter for the visible and curved part of the horn which receives the bracelet...

Another arrangement appears from reading the document CH-A-368 427 in which the horn penetrates into a housing provided in the caseband and is maintained there by means of a fastening pin. The horn exhibited by this document is massive and necessitates likewise a long and complicated machining

since one of its ends - that which is introduced into the caseband - is cylindrical and the other of its ends - that which serves for attaching the bracelet - is a parallelepipedon.

The present invention has as its purpose to furnish an attachment arrangement in which the attached horns can be formed in a much simpler manner than those described in the above-cited documents.

For this the attachment arrangement according to the invention also comprises horns each of which has a portion introduced into a blind housing exhibited by the caseband and pins introduced into first holes provided in this caseband and crossing the horns in order to rigidly secure the latter to the case and the sought-after purpose is attained thanks to the fact that in this arrangement each horn includes at least two thin plates cut out to shape, juxtaposed and exhibiting second holes in which crosses one of the pins just as is defined in the characterizing part of claim 1.

It is to be noted that thanks to document FR-A-2 554 691 an arrangement is known for attaching a bracelet to a watch case which comprises for each strand or each end of this bracelet an element formed from two juxtaposed parts, a portion of which is introduced into a housing in the caseband of the watch in order to assemble this element with the caseband and a bar for attaching the strand or the end of the bracelet to this element. However in this arrangement the element in question is not a horn which is rigidly secured to the caseband by a pin but an element which is held by a pivot around which it can turn in a manner to be movable towards the top of the case, this in order to facilitate fastening the watch to the wrist. Additionally, the parts of the element, which are only two in number, are necessarily thick parts which cannot be easily obtained by blanking but for example by milling. If these parts were thin they could not long resist

the bending and torsion stresses to which they would be subjected at the instant of attaching the watch to the wrist and while this watch were worn. To the contrary, in the case of the attachment arrangement according to the invention, the juxtaposed thin plates are rigidly connected to the caseband and, consequently, between them and the choice of the number of plates per horn can be made as a function of their thickness, the number of horns, etc., which establishes that these horns can be as resistant as known massive horns.

The invention will now be described by means of the description to follow and with the aid of the drawings which illustrate it by way of example and in which :

- Figure 1 is a face view of a first embodiment of a watch on which appears the attachment arrangement according to the invention, such arrangement employing cut out horns;

- figure 2 is a face view of a second embodiment of a watch on which appears the attaching arrangement according to the invention;

- figure 3 is a cross-section along line III-III of figure 1;

- figure 4 is a cross-section showing a variant of the cross-section illustrated by figure 3;

- figure 5 is a partial face view of a watch equipped with the arrangement according to the invention and according to a variant of figure 2;

- figure 6 is a partial face view of an attaching arrangement utilizing cut out and bent horns according to a first embodiment;

- figure 7 is a partial view of an attaching arrangement utilizing horns which are cut out and bent according to a second embodiment; and

- figure 8 shows a special execution of a plate forming the horn as a variant to that shown on figure 3.

There has been shown on figure 1 a wristwatch including a case 3 to which are attached two strands 1 and 2 of a bracelet. The case 3 includes a caseband 10, a crystal 9 through which one may distinguish time displaying hands 12 and a back cover 11. The attachment arrangement comprises, for each of strands 1 and 2, a horn 4 which is attached to the caseband. A lug 5 connects the horn to the strand so as to permit in a known manner pivoting of the strand on the horn.

According to an essential characteristic of the invention, horn 4 includes at least two plates 6 cut out to shape and juxtaposed, then partially introduced into a blind housing 7 provided in caseband 10. A pin 8 is received at the same time in a hole 14 provided in the caseband and in second holes 15 provided in the plates in order to secure the horn to the case. By blind housing it is here necessary to understand a housing provided within the thickness of the caseband and leaving material between the interior of the case and the exterior of the latter. Such housing includes a bottom 25 (see figure 3).

Figure 3 which is a cross-section along line III-III of figure 1, clearly shows how a plate 6 of horn 4 is fitted relative to the caseband 10. In the caseband 10 there is formed the blind housing 7 which exhibits bottom 25. One next introduces the plates into the housing, then one drives the pin 8, initially into the first hole 14 provided in the caseband, then into the second hole 15 provided in the plate, and finally into the first hole 14 provided in the caseband (see also figure 1). Figure 3 further shows that strand 2 of the bracelet is attached to horn 4 by means of the lug 5 introduced into a hole 16 provided in plates 6 of horn 4.

To eliminate all mobility from plate 6 when it is secured to the caseband, the arrangement is such that

an edge face of plate 6 comes into elastic abutting contact with the bottom 25 of housing 7 when the pin 8 is introduced into holes 14 and 15. This is brought about advantageously, as may be seen on figure 3, by providing on the edge face of the plate a clearance 21 which defines two support zones 18 and 19, the means permitting the elastic deformation of the edge face consisting in weakening the plate between the bottom of the clearance 21 and the hole 15 which brings about flexing of the edge face when the pin 8 is introduced into holes 14 and 15.

Figures 1 and 3 further show that one may take advantage of the presence of horns 4 in order to secure crystal 9 onto caseband 10 in a sealed manner. For this purpose plate 6 includes a projection or overhang 17 which engages the crystal and presses it onto the caseband. Sealing is assured by a packing 13 squeezed between the crystal and the caseband.

Figure 4 is a cross-section showing a variant of the cross-section shown on figure 3. The sole difference consists in securing crystal 9 in a bed 26 situated on the top portion of the caseband 10, a packing 27 assuring sealing, the plate 6 here contributing nothing to the securing of the crystal onto the caseband.

Figure 2 shows a face view of a second embodiment of the attaching arrangement according to the invention. Here each strand of the bracelet is attached to case 3 by means of two horns 4 each showing two plates 6. The securing of the plates is brought about in a manner similar to that which has been described hereinabove.

Figures 1 and 2 further show horns 4 formed by a plurality of plates 6 cut into form and juxtaposed. In these examples, the plates forming the horn all show a same cutting. In the case of figure 5 on the other hand,

each horn is formed of three plates 30, 31 and 32 the cuttings of which are different and this with the purpose of seeking an original design. If the three plates are secured to the case by pin 8 already described hereinabove, strand 2 of the bracelet is attached to the horns 4 only by the end of the plate 32 by means of lug 5.

Reference will now be had to figures 6 and 7. In these two figures the horns are made from plates 33 and 34 which are cut out, then bent into U form. In the case of figure 6, the free ends of the U are supported on the bottom of the blind housing provided in the caseband and the base of the U is arranged to receive the pivot lug for the bracelet strand. Inversely, in figure 7 it is the base of the U which is supported on the bottom of the blind housing, while the free ends of the U are arranged in order to receive the pivot lug for the bracelet strand.

The embodiments which have been described show that the arrangement claimed and which calls for blanked plates enables a large number of variants thanks to which the final aspect of the watch may be modified. There will be mentioned in addition that the plates may be blanked from a same band by means of a die. In this case all the plates would have the same colouring. The base material may be steel or gold. One can also envisage alternating the two materials, for instance steel and gold in order to obtain a bicoloured aspect. Whatever be the material employed, it will be noted that the plates forming the horn are easy to manufacture without any complex machining since obtained by blanking. From this fact the attachment arrangement is inexpensive while showing an attractive and novel allure.

Figure 8 shows a particular form of plate 6. Here there is recognized the support zones 18 and 19, projection 17, clearance 21 and holes 15 and 16 respectively receiving

the securing pin for the plate onto the caseband and the attaching lug for the bracelet strand to the plate. Beyond the configuration described hereinabove, the plate exhibits an interior cut out 20 which is blanked at the same time as the outer contour of the plate, this cut-out enabling an economy of the material, particularly if the plate is made of gold.

CLAIMS

1. Arrangement for attaching the strands (1, 2) of a bracelet to a watch case (3) including a crystal (9) and a caseband (10), said arrangement comprising horns (4) attached to the caseband and each having a part introduced into the blind housing (7) exhibited by this caseband, pins (8) introduced into first holes (14) provided in said caseband and crossing said horns in order to rigidly secure said horns to said case, and lugs (5) for connecting said horns to the strands of the bracelet in a manner to permit pivoting of said strands on said horns, characterized by the fact that each of said horns includes at least two thin plates (6; 30, 31, 32; 33, 34) cut out to shape, juxtaposed and exhibiting second holes (15) in which crosses one of said pins.

2. Arrangement according to claim 1, characterized by the fact that said plates (6) exhibit a projection (17) in order to assure together the securing of the crystal (9) onto the caseband (10).

3. Arrangement according to claim 1, characterized by the fact that each blind housing (7) exhibits a bottom (25) against which an edge face exhibited by the part of each plate (6) introduced into this housing comes into abutting contact, the bearing force being assured by means (18, 19, 21) bringing about elastic deformation of said edge face when a pin (8) is introduced into said first (14) and second (15) holes.

4. Arrangement according to claim 3, characterized by the fact that said edge face exhibits a clearance (21) arranged in a manner such as to form two bearing zones (18, 19) for said edge face against the bottom (25) when the pin (8) is introduced into said first (14) and second (15) holes.

5. Arrangement according to claim 1, characterized by the fact that the cut plates (33, 34) each forming one of said horns (4) are bent into U form, the free ends of each U



bearing against the bottom of one of said blind housings and the base of the U being arranged to receive the pivot lug (5) for one of the bracelet strands (1, 2).

6. Arrangement according to claim 1, characterized by the fact that the cut plates (33, 34) each forming one of said horns (4) are bent into U form, the base of the U bearing against the bottom of one of said blind housings and the free ends of the U being arranged to receive the pivot lug (5) for one of the bracelet strands (1, 2).

7. Arrangement according to claim 1, characterized by the fact that each horn (4) includes a plurality of cut out and juxtaposed plates (6) and that each of the plates exhibits an identical cutting.

8. Arrangement according to claim 1, characterized by the fact that each horn (4) includes a plurality of cut out and juxtaposed plates (30, 31, 32) and that each of the plates exhibits a different cutting.

9. Arrangement according to claim 7 or claim 8, characterized by the fact that the plates (6; 30, 31, 32) are cut out from the same material.

10. Arrangement according to claim 7 or claim 8, characterized by the fact that the plates (6; 30, 31, 32) are cut out from different materials.

11. Arrangement according to claim 1, characterized by the fact that the plates (6) exhibit an interior cutout (20).

12. Arrangement according to claim 1, characterized by the fact that the plates (6) are made of gold.

