(12) UK Patent Application (19) GB (11) 2 249 709 (13) A

(43) Date of A publication 20.05.1992

(21) Application No 9024721.4

(22) Date of filing 14.11.1990

(71) Applicant
Tai Wai Luk
Block 2,26/F., Fook Yip Building, 53-57 Kwai Fung Crescent, Kwai Chung, New Territories, Kowloon, Hong Kong

(72) Inventor
Tai Wai Luk

(74) Agent and/or Address for Service
Batchellor, Kirk & Co
2 Pear Tree Court, Farringdon Road, London, EC1R 0DS, United Kingdom

(51) INT CL[5]
G04B 37/16, A41D 20/00

(52) UK CL (Edition K)
A3H H31A

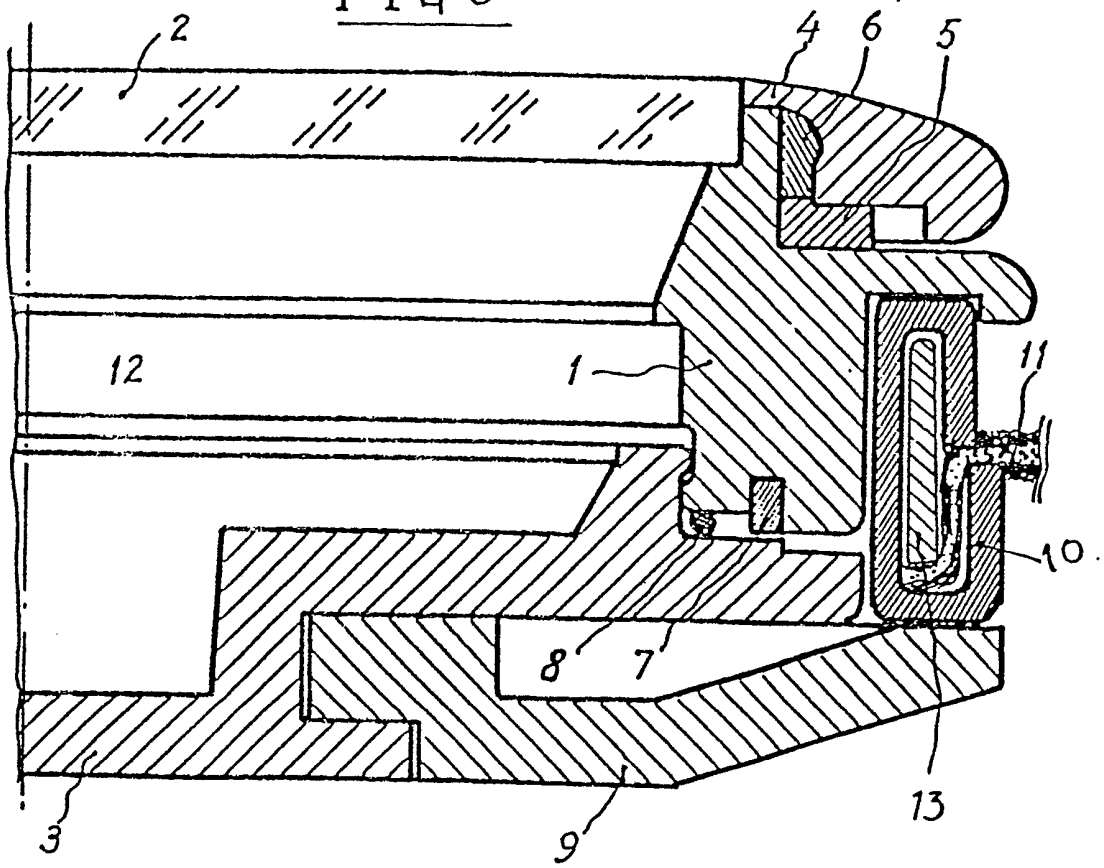
(56) Documents cited
GB 1242693 A **GB 1228413 A** **GB 1156894 A**
US 4958279 A **US 4645102 A**

(58) Field of search
UK CL (Edition K) **A3H**
INT CL[5] **A44C**

(54) Attaching watch to sweatband

(57) A sweatband watch is disclosed in which a watchset is securely mounted in a wrist sweatband. The sweatband 11 is provided with an aperture to the periphery of which a collar 10, of metal is clamped. The watchset is received into the aperture and a peripheral part 1 thereof engages one side of the collar 10. A removable clamping member 9 is then secured to the backside of the watch to clamp the collar 10 and hence secure the watchset.

FIG 3



GB 2 249 709 A

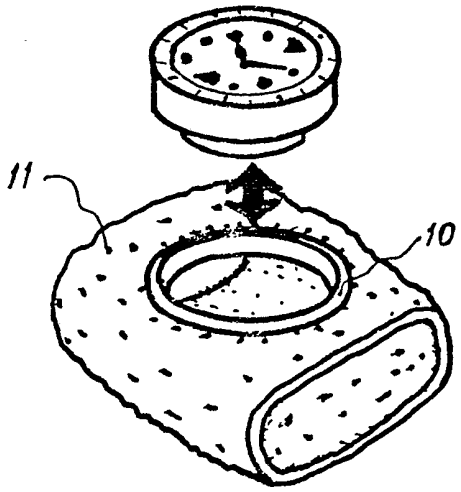


FIG 1

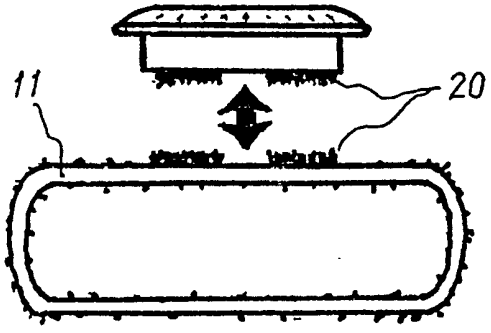
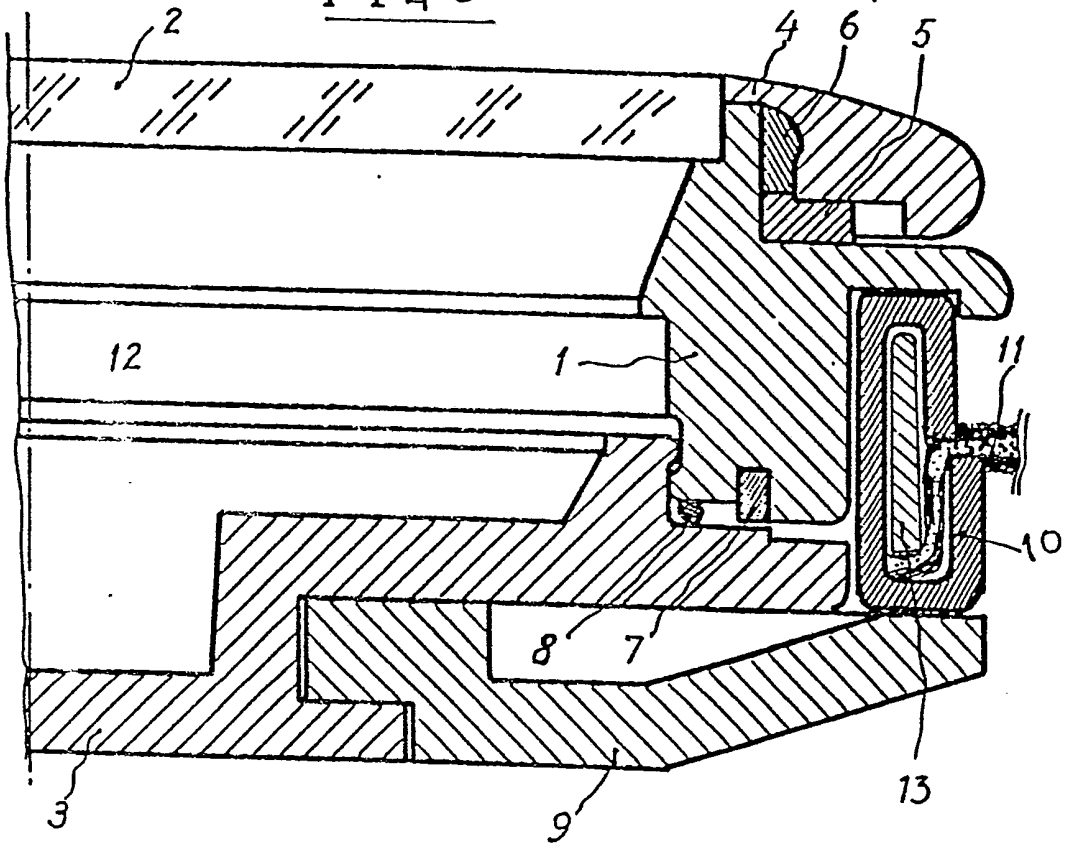


FIG 2

FIG 3



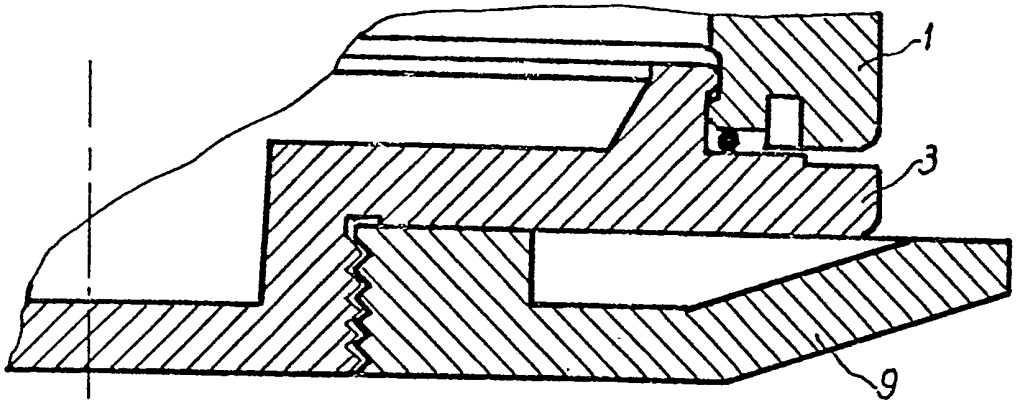


FIG 6

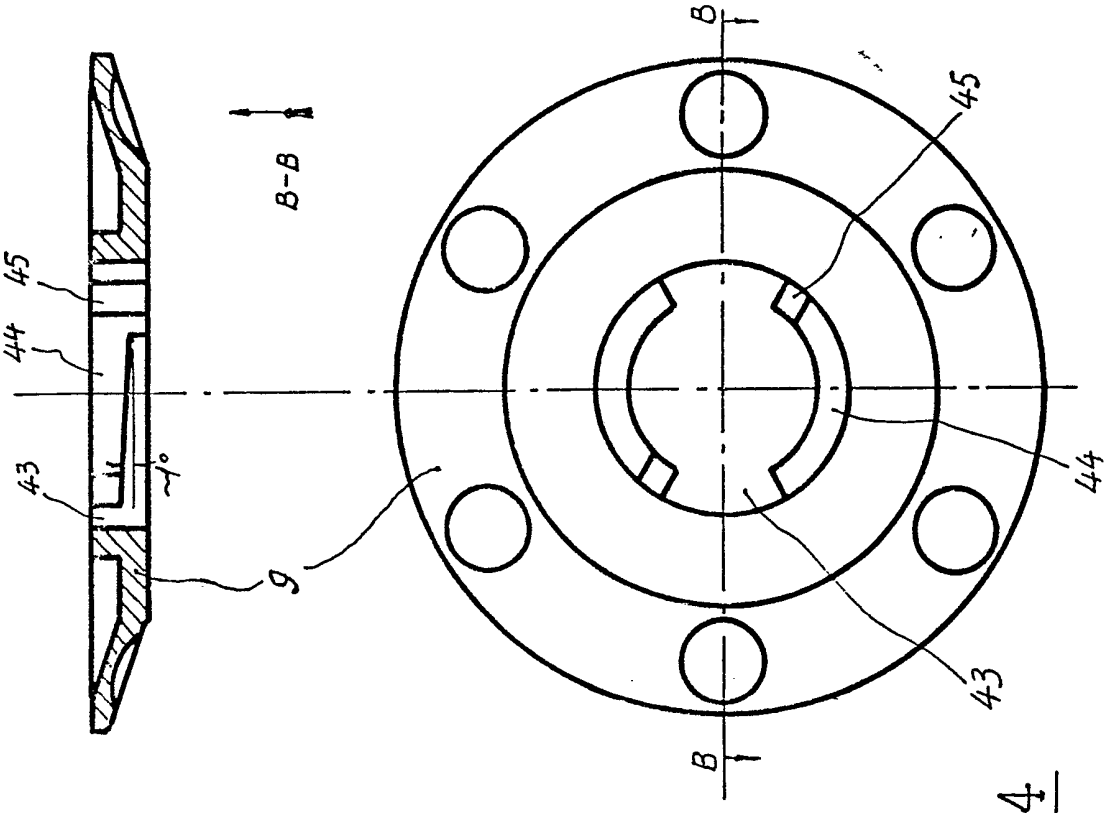
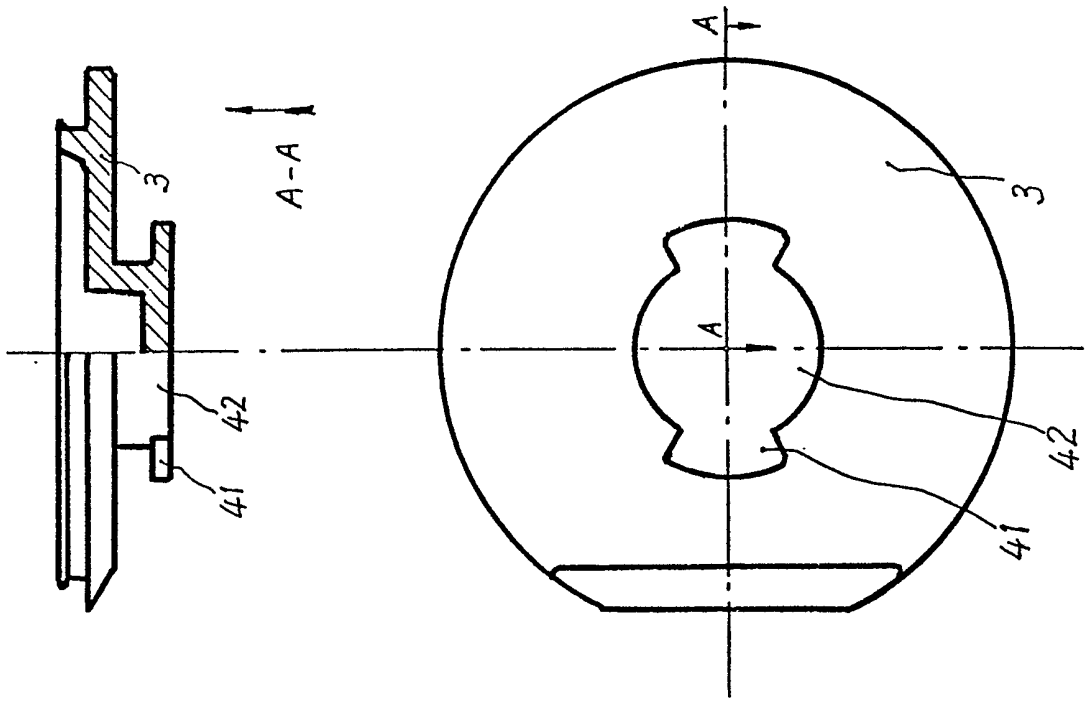


FIG 4



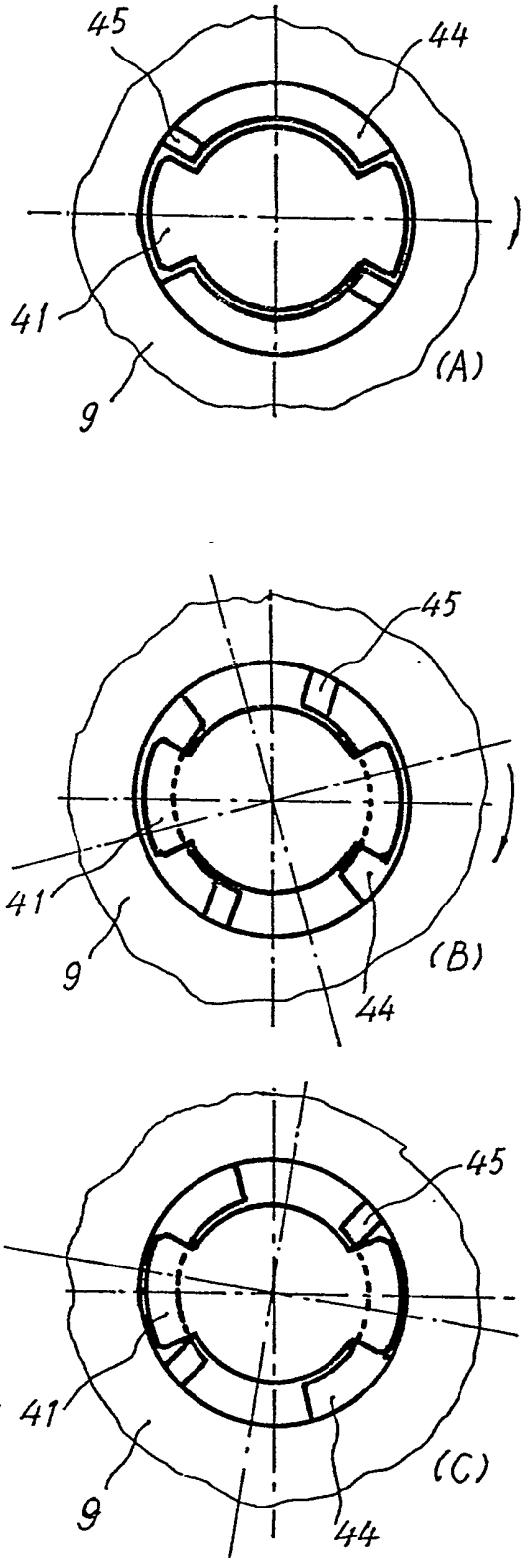


FIG 5

2249709

WRIST WATCH

The invention relates to a wristband sports watch, and particularly to a mounting structure for the watchset to be mounted onto a wrist sweatband.

In the prior art there is a known structure for mounting the watchset onto the wrist sweatband. As shown in FIG. 2. a fastener of so called nylon thrift mate 20 is attached part on the back surface of the watchset, and another part on the external surface of the wrist sweatband 11. Upon contacting the parts,
the watchset is mounted.

The principle problem with this type of mountign is that the watchset is liable to be dislodged by the sudden shocks commonly experienced in sports.

According to the present invention there is provided a structure for mounting a wristwatch in a wristband comprising, a wristband having an aperture formed therein to receive a watch housing, the rim of said aperture being permanently engaged by a rigid collar,

said watch housing having a portion which engages the collar to prevent the housing passing through the aperture and a part formed on the back of the housing which is adapted to releasably engage a holding member on the other side of the collar whereby the holding member is urged towards the back of the housing to clamp the collar.

According to a second aspect of the invention there is provided a wristwatch having a structure according to the preceding paragraph.

By virtue of the present invention the watchset can be securely but easily mounted in the sweatband and is conveniently demountable when it is dersired to clean the sweatband.

The watchset may be mechanical or electronic, or a combination thereof, and the washable sweatband may be made of cotton or any other sort of fabric.

The mounting structure may be made of metal or plastic or any other suitable materials.

Embodiments of the invention will now be described by way of example, with reference to the accompanying drawings, in which:

Figure 1 shows the general assembly of the wristband sport watch while the watch set is detached from the wristband with the holder disengaged;

Figure 2 shows one of the existing mounting structure in the prior art in respect of the wristband sport watch,

Figure 3 is a vertical fragmentary sectional view of the wristband sport watch showing the watch set and the mounting structure of the invention;

Figure 4 shows the enlarged sectional and elevational views of a first embodiment;

Figure 5 illustrates the engagement of the holder with the back cover in the first embodiment: (A) disengagement, (B) in the way of full engagement, (C) full engagement;

Figure 6 is the enlarged sectional view of a second embodiment.

Referring now to the drawings, as shown in Figure 3, the watch set in accordance with the invention comprises watch 12, a housing 1, a glass front cover 2 and a back cover 3. An annular one-way rotatory scale 4 is placed on the top annular end of the housing 1 and engaged with a pawl ring 5 being fixed on the housing 1, which prevents the scale 4 from movement in the opposite direction. The glass 2 is placed on the upper opening of the housing 1 to seal the upper part of the housing 1. In order to make the sealing between the glass 2 and housing 1 more firm, an upper tension ring 6, preferably made of brass, is mounted tightly on the outer surface of the top of housing 1 for guarding the pawl ring 5 against being detatched from the housing 1. The lower opening of the housing 1 is covered over and engaged with the back cover 3 for closing hermetically. A lower tension ring 7 is disposed in a groove near the lower opening of the housing 1, and a sealing ring 8, preferably made of rubber, is placed between the housing 1 and the back cover 3 for the watch enclosed in the housing 1 to be free from the sweat.

The mounting structure provided by the invention lies in that a watch set holder 9 shall take and keep a firm

hold of the housing 1 where the watch is in a predetermined position relative to the wrist band 11. The holder 9 engages with the back cover 3 of the housing 1 such that an annular metal ring 10 grasping the wrist band 11 in an opening in the band 11 (as shown in Figure 1) shall be pressed from both sides, where one side is the flange of the housing 1 being placed in the annular metal ring 10 and the other side is the watch set holder 9. It will be seen from Figure 3 that the ring 10 is hollow and includes a plastic insert 13 whereby engagement of the ring 10 with the wristband is enhanced. Thus, the watch set shall be mounted onto the wrist sweatband 11 firmly.

When the watch set holder 9 disengages with the back cover 3 of the housing 1, the watch set shall easily be pushed out upwards from the metal ring 10.

Being simply put into the annular metal ring 10 and upon the engagement of the holder 9 with the back cover 3 of the housing 1, the watchset shall be firmly mounted through the metal ring 10 onto the wrist sweatband 11.

When the battery needs to be changed or the wrist sweatband is to be washed, the holder 9 can be simply disengaged from the back cover 3 of the housing 1. The watch-set can then be easily pushed out upwards from the metal ring 10.

The mounting structure provided by the invention may be made of metal or plastic or any other suitable materials.

Now the mounting structure provided by the invention and the engagement thereof shall be described in detail in connection with the following embodiments.

First Embodiment

As shown in Figure 4, the back cover 3 has a pair of arcuate cam-like tenons 41 on its underside 42, and the holder 9 has a complementary mortise aperture 43 for receiving the tenon 41. To secure the holder 9 to the back cover 3, the tenons 41 are inserted into the aperture and rotated to engage one each with a pair of platforms 44 each provided with a ramp surface inclined at approximately 1 degree to resist disengaging rotation of the tenons 41 and platforms 44. When the tenon 41 comes fully into the mortise space 41 (Figure 5,A) and turns to the platform 44 (Figure 5,B), it will be frictionally held against the platform 44 due to the slope up till a protrusion 46 is met (Figure 5,C). Thus, the holder 9 is engaged with the back cover 3 of the housing through simple turning action such that engagement is accomplished. The annular metal ring 10, which is fixed in the opening of the band 11 grasping the edge of the opening around its external rim, will then be compressed tightly between the holder 9 and the back cover 3 such that the watch-set will be firmly mounted onto the band 11. When the tenon 41 turns and stops at any position between the positions A and C, as shown in Figure 5, for example position B, the engagement compression shall be effective as well, but is not firm and tight enough.

To detach the watch-set, it is needed to turn the holder 9 in the opposite direction to the position A as shown in Figure 5, then to push the watch-set out upwards from the metal ring 10.

Second Embodiment

As shown in Figure 6, the engagement of the holder 9 with the back cover 3 is realised by means of screw thread, that is something like a nut and a bolt. The holder 9 acts as the nut, and the lower end of the back cover 3 functions as the bolt.

While preferred embodiments of the invention have been described using specific terms, such description is for illustrative purposes only, and it is to be understood that changes and variations may be made without departing from the scope of the claims.

Claims:

1. A structure for mounting a wristwatch in a wristband comprising a wristband having an aperture formed therein to receive a watch housing, the rim of said aperture being permanently engaged by a rigid collar,

said watch housing having a portion which engages the collar to prevent the housing passing through the aperture and a part formed on the back of the housing which is adapted to releasably engage a holding member on the other side of the collar, whereby the holding member is urged towards the back of the housing to clamp the collar.

2. A structure according to claim 1, wherein the housing part engages the holding member by means of a tenon element projecting from one of the housing part and holding member, and adapted to engage in a hole provided in the other of the housing part and holding member, said hole being formed with an inclined ramp on the periphery of the hole with which the tenon engages upon relative rotation of the housing part and the holding part, said ramp being inclined to promote the engagement.

3. A structure according to claim 1, wherein the housing part and the holding member are adapted for screw-threaded engagement.

4. A wristwatch having a structure according to any one of claims 1 to 3.

5. A mounting structure of wristband sport watch, comprising: a housing, an annular ring and a holder, said housing comprises a transparent front cover for hermetically covering the upper opening of said housing and a back cover for hermetically covering the lower opening of said housing, said back cover has at its lower end a first means for engaging with said holder, said holder has at the relevant part where the engagement takes place a corresponding second means for engaging said first means, and said annular ring being fixed in an opening of the wristband by grasping around its external rim, the edge of said opening is compressed tightly between said back cover and said holder while said housing with said back cover tightly covered being placed into said annular ring is engaged with said holder by virtue of said engagement of said first means with said second means.

6. A mounting structure as claimed in Claim 5, wherein said first means is a cam-like tenon, and said second means is a corresponding mortise space for receiving said tenon.

7. A mounting structure as claimed in Claim 5, wherein said first means is a male screw thread, and said second means is a corresponding female screw thread for engaging said male screw thread.

8. A mounting structure as claimed in any of claims 5 to 7, wherein said housing back cover and holder are made of plastic.

9. A mounting structure as claimed in one of claims 5 to 8, wherein said annular ring is made of metal.

10. A wristband sport watch comprising the mounting structure of any one of claims 5 to 9.

11. A mounting structure of wristband sport watch, substantially as herein described with reference to, Figures 1 and 3 to 6.

12. A wristband sport watch comprising the mounting structure substantially as herein described with reference to, Figures 1 and 3 to 6.

Patents Act 1977

Examiner's report to the Comptroller under Section 17 (The Search Report)

Application number 9024721.4

Relevant Technical fields

(i) UK Cl (Edition K) A3H

(ii) Int Cl (Edition 5) A44C

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

R C Squire

Date of Search

23 January 1991

Documents considered relevant following a search in respect of claims 1 to 12

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 1242693 Piquerez See particularly figure 9	1,3,4,5, 7,10
X	GB 1228413 Omega	1,3,4,5, 7,10
X	GB 1156894 Gisiger-Lusa	1,5
X	US 4958279 Proellochs	1,5
X	US 4645102 Proellochs	1, 3-5, 7-10

SF2(p)

Published 1992 at The Patent Office, Concept House, Cardiff Road, Newport, Gwent NP9 1RH. Further copies may be obtained from Sales Branch, Unit 6, Nine Mile Point, Cwmfelinfach, Cross Keys, Newport, NP1 7HZ. Printed by Multiplex techniques ltd, St Mary Cray, Kent.