

Feb. 3, 1970

A. GISIGER-LUSA

3,492,809

WRIST WATCH MOVEMENT AND WRISTBAND COMBINATION

Filed Feb. 8, 1968

4 Sheets-Sheet 1

FIG. 1

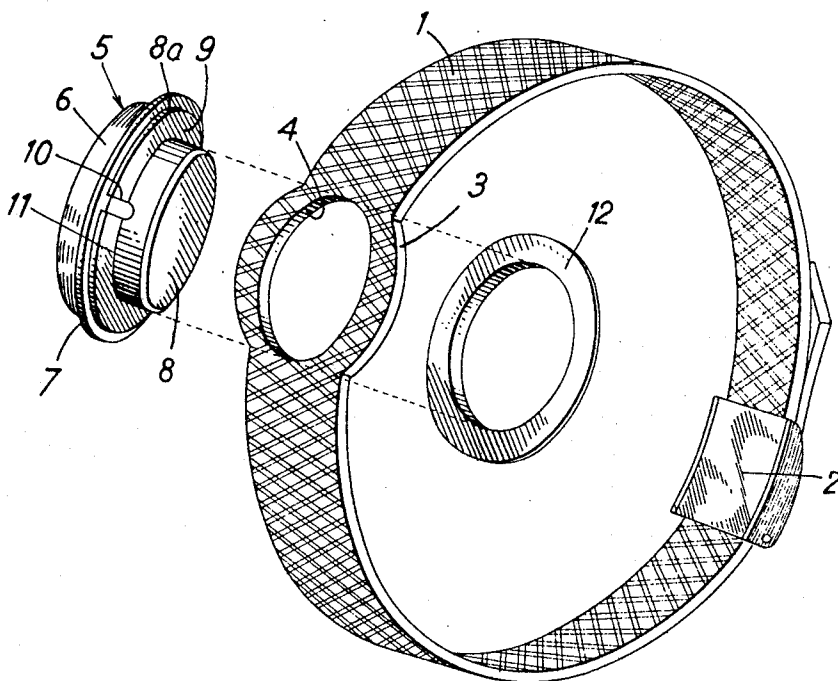
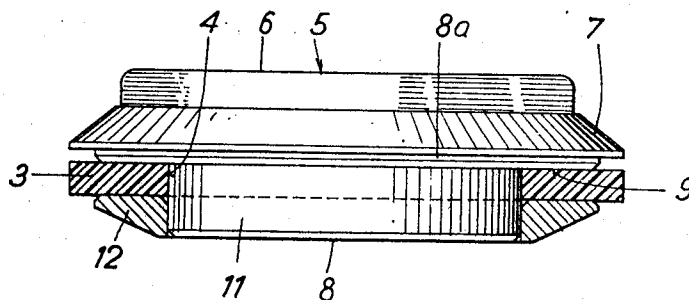


FIG. 2



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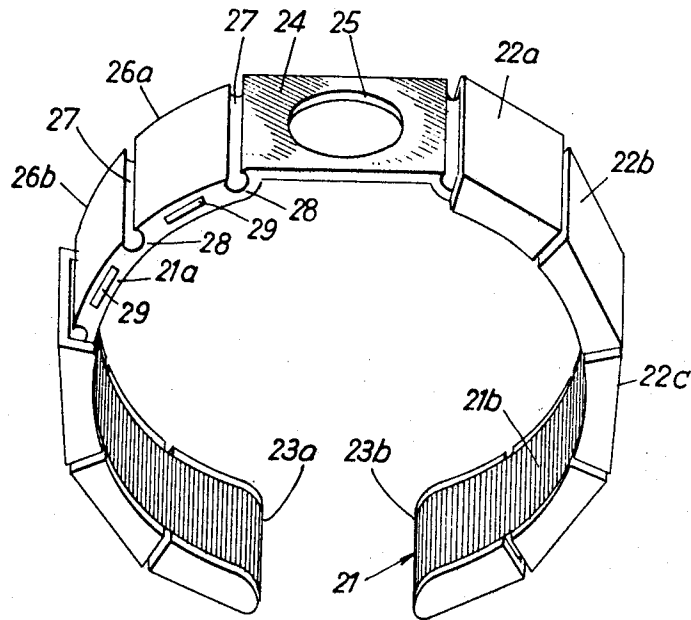


FIG. 3

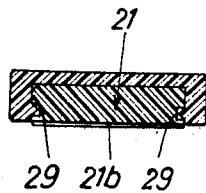


FIG. 4

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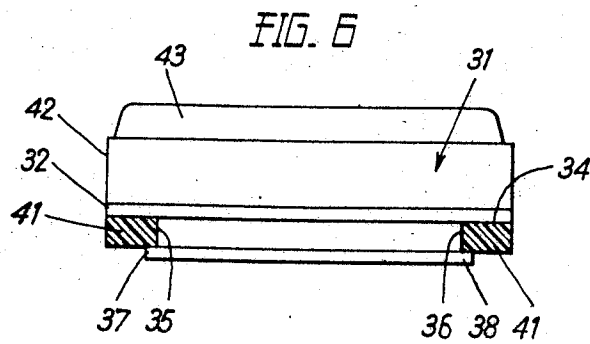
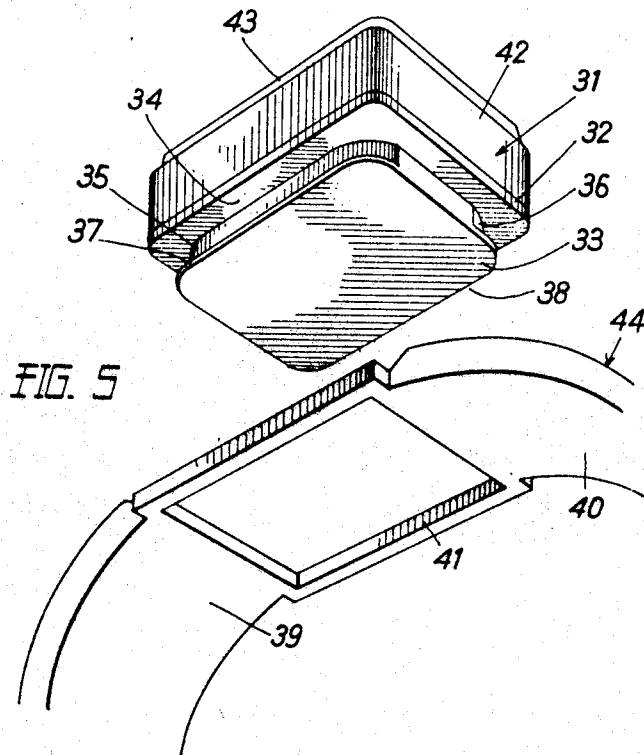
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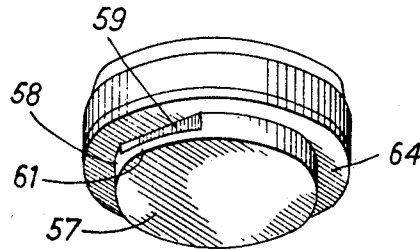


FIG. 7

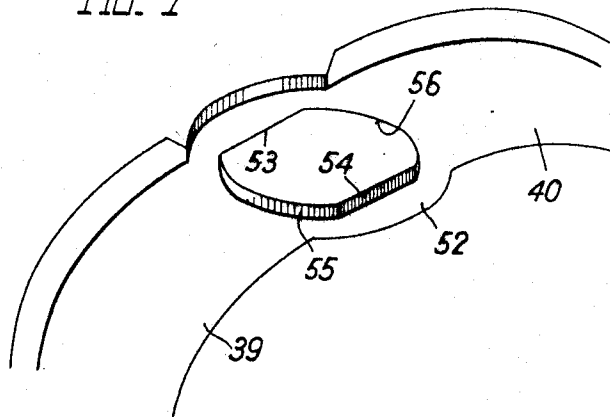
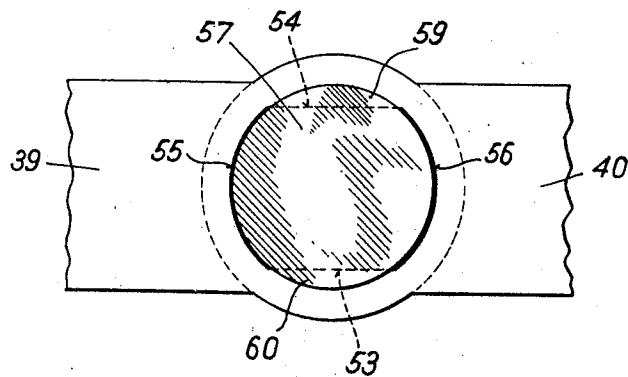


FIG. 8



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WRIST WATCH MOVEMENT AND WRISTBAND COMBINATION

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15,528/67

Int. Cl. A44c 5/14

U.S. Cl. 58—88

21 Claims 10

ABSTRACT OF THE DISCLOSURE

A wrist watch wherein the wristband comprises a through opening through which extends a portion of the watchcase, said case being secured to the band by means of elements which are rigid with the case and which respectively overlap the inner and outer faces of the band in the region thereof surrounding said opening.

This invention relates to a novel and improved arrangement for mounting a wrist watch movement on a wrist band.

Specifically, the invention relates to watches wherein the wristband, for aesthetic reasons, is attached to the watchcase in such a manner as to avoid the appearance of any fastening means such as horns or bows which extend outwardly from the watchcase itself. Such arrangements are generally known; however, the known arrangements are such that, when the wristband is of a flexible metallic construction such as a wire gauze band, it is necessary to provide a reinforcement in the band at the points at which it is fastened to the watchcase, such reinforcement decreasing the flexibility of the band and creating a source of incipient cracking therein.

It is, therefore, an object of this invention to provide an improved arrangement for mounting a wrist watch movement on a flexible wrist band in a manner so as to achieve an aesthetically pleasing result.

A specific object of the invention is to provide an arrangement for mounting a watchcase on a wristband without recourse to conventional horns or bows or analogous elements on the watchcase.

It is a further object to provide an arrangement for mounting a watchcase on a flexible wristband in a manner so as not to reduce the flexibility of said band at those points at which the band is attached to the watchcase.

It is a further object of the invention to provide an arrangement for mounting a watchcase on a flexible wristband in a manner which permits very simple adaptation to various shapes of watchcases such as circular, square, rectangular, etc.

It is a further object to provide an arrangement for mounting a watchcase on a flexible wristband wherein said band may be of the resiliently flexible, one piece, open-ended type or wherein the band may be of one piece but of a non-resilient construction whereby it also includes a clasp or buckle means for fastening together its free ends located oppositely to the watchcase.

Other objects are those which are inherent in the invention as disclosed herein.

Following is a detailed description of various preferred embodiments of the invention, reference being had to the accompanying drawings wherein:

FIGURE 1 is a pictorial view of a first embodiment of the invention;

FIGURE 2 is a vertical front view showing the watchcase and only a portion of the wristband of FIGURE 1 on an enlarged scale;

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FIGURE 3 is a pictorial view of only a wristband according to a second embodiment of the invention;

FIGURE 4 is an end cross-sectional view taken through the band of FIGURE 3;

FIGURE 5 is a pictorial view of a watchcase and a band according to a third embodiment of the invention;

FIGURE 6 is a vertical end view of the embodiment of FIGURE 5 taken in a plane which is perpendicular to the longitudinal extent of the wristband;

FIGURE 7 is a pictorial view of an arrangement according to a fourth embodiment of the invention; and,

FIGURE 8 is a partial bottom view of the arrangement shown in FIGURE 7.

In FIGURE 1, the wristband 1 constitutes a one-piece length of wire gauze, flat ribbon having opposite free ends which are detachably fastened together by a clasp or buckle means 2. Such a band is very flexible but not resilient and the clasp means 2 makes it possible to adjust the circumferential extent of the band to suit various wrist sizes. If desired, the band 1 can be sheathed on either or both its faces with a decorative cover such as an engraved metallic film.

The mesh of the band 1 is relatively high, that is, the metal strands are very close together, so as to impart sufficient strength to the band.

Intermediate its ends the band 1 comprises a circular opening 4 which is laterally defined by arcuate segments 3. The opening 4 and the segments 3 can be conveniently formed by first subjecting the band 1 to a hammering action so as to spread it in the area in which the opening 4 is to be made. Such spreading results in a thinning of the thickness of the band and a spreading out thereof so as to result in the arcuate sides 3. Finally, the circular opening 4 can be obtained by a conventional stamping out of the spreads band portion with a circular stamping tool.

A watchcase 5, which houses a watch movement, comprises a back cover 8 which constitutes the main structural element, said cover 8 including a circular flange 8a to which is removably fastened a bezel 7 which in turn fastens the glass 6 through which one can view the dial face of the movement.

Flange 8a is formed so as to provide a flat lower surface 9 which constitutes a shoulder which is adapted to seat against the upper surface of band 1 in the region surrounding opening 4, said surface 9 extending inwardly up to the upper edge of cylindrical wall 11 which constitutes a side wall of cover 8 which extends axially between the lower face of said cover and flange 8a. The diameter of circular wall 11 is such that it can be freely received within opening 4 and the axial height of wall 11 is such that when the case 5 is seated on band 1, its lower end extends sufficiently below the lower surface of band portion 3 so as to permit securing ring 12 to be engaged about wall 11. Ring 12 is of such an internal diameter that it frictionally engages about wall 11 and thereby holds case 5 securely in place on band 1.

Cover 8 also includes a slot 10 which extends through the side wall 11 to permit passage therethrough of the movement winding stem (not shown), flange 8a being cut away in correspondence to the circumferential extent of slot 10 so that said winding stem can be located above the outer surface of band 1 when the case 5 is secured onto the band 1.

It is seen from the foregoing that the case 5 is secured to the band 1 only by means of ring 12 and that thereby there is eliminated the need to braze or solder the band 1 to the case 5 as is quite common in heretofore known arrangements, such soldering or brazing usually diminishing the band flexibility by virtue of the soldering or brazing metal seeping into the wire mesh of the band.

FIGURES 3 and 4 illustrate a second embodiment according to the invention, wherein the wristband is of the one-piece resiliently flexible type which is self-clamping about a person's wrist and, therefore, does not require any buckle or clasp means at its free ends.

The band comprises an inner support member 21 having a series of decorative elements 22a, 22b, 22c, etc. removably mounted over the outer surface of the inner member 21.

The support 21 consists of a single piece of plastic material, for instance, of nylon or polyvinyl chloride, and it comprises two symmetrical branches 21a and 23b of arcuate shape, each having a free end 23a and 23b and connected together by an intermediate portion 24 which has the shape of a flat plate defining a circular opening 25 which serves for fastening the case 5 of FIGURE 1 thereto.

Each of the branches 21a and 21b of the support 21 consists of a series of circumferentially successive elements 26a, 26b, etc., having a curved upper surface of rectangular shape, said elements being separated by grooves 27 which are defined by thin transition or connecting walls 28 which provide the support 21 with sufficient flexibility to permit its being resiliently flexed to be placed on or removed from a person's wrist.

It will be noted that the last connecting wall 28 is curved upward and connects with the plate 24 which will therefore be spaced slightly away from the person's wrist so as to provide sufficient space between the wrist and plate 24 for the bottom of the watchcase and the ring 12.

The inner faces of the branches 21a and 21b of the support 21 are grooved transversely in order to provide a gripping action on the wrist and thereby prevent the band from slipping on the wrist.

The side faces of each of the elements 26a, 26b, etc., are provided with lateral grooves 29 which permit the removable attachment thereto of the decorative elements 22a, 22b, 22c, etc. The latter have the form of stirrups and are provided on the inner face of their side wall with protruding ribs (not shown) but which are capable of fitting elastically into the grooves 29 so as to secure them to the support 21.

In order to avoid any play, the lower faces of the decorative elements 22a, 22b, 22c, etc., may be curved in accordance with the curvature of the upper surfaces of the elements 26a, 26b, 26c, etc.

As a variant, these surfaces may also be flat.

If it is desired that the decorative parts be fastened permanently they can be glued to the support elements 26a, etc.

The decorative elements 22a, 22b, 22c, etc., can be made of any solid material so as to have the desired shape. They may, for instance, be of colored rigid plastic. Thus, these elements may alternately be of two different colors, such as yellow and red.

Due to the features described above, there is obtained a wristband of extremely simple construction, the appearance of which can be changed as desired.

In another variant, one could also, instead of forming the support 21 as a single piece, make it out of two rigid branches such as 21a and 21b connected to the intermediate plate 24 by articulations and spring elements which normally would maintain the branches in positions such that their free ends 23a and 23b are located in the vicinity of each other.

The branches 21a and 21b of the band need not necessarily be symmetrical with respect to the intermediate element 24. Thus, the wristband may be in the form of a single elastically deformable curved branch connected at one end to the plate 24, the connecting walls 28 assuring a sufficient resilient deformation despite the presence of the decorative parts 22a, etc. The latter, in fact, are so dimensioned that they do not abut directly against each other in the normal position of the band, thereby allowing the necessary flexing of the band.

FIGURES 5 to 8 show two further embodiments of the invention, in which the watchcase is prevented from turning about the axis of the opening in the band when it is fastened to the latter, this possibility being not completely eliminated by the arrangements of FIGURES 1 to 4.

In FIGURE 5 there is shown a watchcase 31 whose back 32 has a central portion 33 which protrudes downward. The general shape of the case 31 is rectangular, although, as a variant, this case could also be square or round. The central portion 33 which is radially indented or set back from the side faces of the case 31 is also rectangular and thereby the back 32 defines an annular shoulder 34. The corners of the central portion 33 of the case are rounded, and in the two side faces which correspond to the longer sides of the rectangle there are provided two grooves 35 and 36 of the same shape and depth, limited by two lateral rims 37 and 38 which are formed by the central portion 33 of the case.

A back 32 having this shape can be produced by cupping from a thin sheet the central part 33 forming a recess intended to receive the movement. The upper part of the case consists of a caseband-bezel 42 bearing a glass 43. The joint between the back 32 and the caseband-bezel 42 is located at the upper level of the back and it is at this level that the winding stem (not shown) is located.

The band 44 which is intended to be fastened to the case 31 consists of a single piece of plastic, for instance, of polyvinyl chloride, which is sufficiently thick to present a certain amount of resistance to deformation. This single piece band comprises two symmetric branches 39 and 40 connected together by a frame portion 41 comprising four linear sides whose inner dimensions are adapted to the dimensions of the periphery of the protruding part 33 of the case. This frame portion 41 will preferably be of smaller thickness than the branches 39 and 40 and will thus be capable of deforming elastically without it being necessary to exert any great force on the band.

On the other hand, the two branches 39 and 40, both of which terminate in free ends (not shown), have sufficiently great rigidity of shape, although they are resiliently flexible to securely maintain the watch on the wrist of the wearer due to their resistance to deformation.

In the branches 39 and 40 of the band there can be provided circumferentially spaced apart transverse grooves which enhance the resilient deformation of the band. Of course, the branches 39 and 40, and in particular their upper faces, may be provided with a decoration or with decorative pieces of any shape and dimensions, analogous to the bands of FIGURES 1 and 3.

In FIGURE 6 there can be noted the lateral sides of the frame 41 engaged in grooves 35 and 36 and held in place between the shoulder 34 of the back 32 and the rims 37 and 38.

In the fourth embodiment, shown in FIGURES 7 and 8, the branches 39 and 40 of the band are developed in the same manner as in FIGURE 6. On the other hand, the frame 52 includes sides of circular shape and defines a central opening which has two rectilinear portions 53 and 54 which are diametrically opposite each other and two portions 55 and 56 in the form of a circular arc which connect the linear portions 53 and 54 together.

In this embodiment, the central portion 57 of the case is limited laterally by a cylindrical face 58 whose diameter corresponds to that of the rounded portions 55 and 56 and in which there are provided two flat-bottom grooves 59 and 60 (FIGURE 8), the planes which define the bottom of these grooves being parallel and corresponding to the linear sides 53 and 54 of the opening of the frame 52.

From FIGURE 7 it can be seen that the groove 59 defines a rim 61 for underlying the frame 52. The same is true on the opposite side with respect to the groove 60.

Here also, the securing of the case on the band 39, 40 is effected by engaging the part 57 in the opening of the frame 52. The linear parts 53 and 54 fit in the grooves 59

and 60 and assure fastening while preventing the watch from turning. The shoulder 64 of the case 57 is of circular shape and it hides the frame 52 as in the third embodiment.

It should be noted that the means described permit a considerable simplification of the manufacture of wrist watches while making it possible to produce aesthetically attractive assemblies in which the watchcase does not comprise any protruding portion which changes its general shape.

The wristband can consist of a single piece of metal gauze or of plastic. The band may be removable so that it can be changed, which is not true when its parts are directly soldered to the watchcase.

If desired, however, one can also fasten the band of this invention to the case by soldering.

Finally, the fastening means described make it possible to produce watches of an extremely low price. The backs of the cases can be entirely machined independently of the wristband by rational means. In particular, the absence of horns or bows considerably facilitates manufacture. The fastening of the band to the watchcase is effected very rapidly and at the same time provides complete security.

The herein disclosed details of various preferred embodiments are presented for illustrative purposes only and are not intended to be limitative of the scope of the invention, the scope of the invention being intended to cover all modifications, substitutions, or equivalents which are obvious or well within the purview of one skilled in the art.

What is claimed is:

1. A wrist watch comprising a watchcase and a wristband having an inner and outer face, respectively, the wristband having an opening extending therethrough from the outer to the inner face thereof, said watchcase including a body portion extending through said opening to beyond the inner face of said band, securing means for securing said case to said band comprising a first element secured to said body portion and radially overlapping the inner face of said band and a second element secured to said case and radially overlapping the outer face of said band, said band being held between said first and second elements with said elements respectively bearing against said inner and outer faces of said band.

2. The watch of claim 1, said band being of a one-piece wire gauze construction, said opening being located intermediate the free ends of said band and including a clasp means for adjustably securing said free ends together.

3. The watch of claim 1, wherein said first element is removably attachable to said body portion whereby said case can be detached from the band by detachment of said first element from said body portion.

4. The watch of claim 3, wherein said body portion and said first element are of the same shape and said first element is frictionally engageable about said body portion.

5. The watch of claim 4, said body portion being cylindrical and having a watch movement and said first element being a ring.

6. The watch of claim 1, said opening being bounded on all sides by a portion of said band which is compressed to a thinner thickness than the remaining portion of the band.

7. The watch of claim 6, said opening constituting a cut-out area of said compressed portion.

8. The watch of claim 7, said compressed portion of said band defining segments which project laterally outward beyond the side edges of said band.

9. The watch of claim 1, wherein said first and second

elements both constitute rigid integral parts of said case.

10. The watch of claim 9, said opening being bounded by elastically deformable bounding walls whereby said first element may be forced in either direction through said opening pursuant to deformation of said bounding walls.

11. The watch of claim 9, said first and second elements comprising rigid first and second flanges extending radially from said case and spaced apart from each other a distance substantially equal to the thickness of the band portion surrounding said opening therein, said flanges being of a radial extent so as to overlap the inner and outer faces respectively of said band.

12. The watch of claim 11, said first element comprising a flange extending radially from said body portion at two opposite sides thereof and thereby defining respective opposite grooves in said portion between said first and second flanges.

13. The watch of claim 12, said body portion being circular and said grooves comprising opposite flat portions along the circular extent of said body portion.

14. The watch of claim 1, said band being of resiliently flexible construction comprising a watchcase mounting portion having said opening extending therethrough and a wrist gripping portion which extends from said mounting portion and is connected thereto by means of a resiliently flexible joint.

15. The watch of claim 14, said band being of one-piece construction and said joint comprising a relatively thin arcuate transition wall connecting said mounting portion with said gripping portion.

16. The watch of claim 14, said gripping portion comprising two branches, each respectively extending from an opposite end of said mounting portion, said branches being of rigid arcuate shape in general conformity with a person's wrist but being resiliently flexible so as to provide elastic gripping of a wrist.

17. The watch of claim 16, said branches and said mounting portion constituting an integral one-piece construction.

18. The watch of claim 14, said gripping portion comprising a one-piece resiliently flexible construction and including a series of circumferentially successive link elements integrally joined together by relatively thinner, arcuate shaped connecting walls.

19. The watch of claim 18, including a decorative cover element fixedly mounted on each of said link elements with a spacing between successive cover elements so as to not impede flexing of said gripping portion.

20. The watch of claim 17, said cover elements being of resiliently flexible construction and being resiliently gripped upon the respective link elements.

21. The watch of claim 20, said cover elements being removably mounted on said link elements.

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