United States Patent

Paulsen

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[45] **Sept. 26, 1972**

[54] **WRIST BAND WITH HIGH RESISTANCE TO EXPANSION AND RELATIVELY LOW CONTRACTIVE FORCE**

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[52] **U.S. Cl.** .....**63/5 R,** 224/4 D
[51] **Int. Cl.** **A44c 5/04**
[58] **Field of Search** .....63/5 A, 5 R; 224/4 D

[56] **References Cited**

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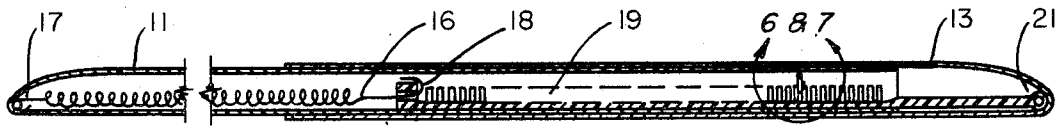
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Attorney—Flehr, Hohbach, Test, Albritton & Herbert

[57] **ABSTRACT**

An expansible wrist band having first and second telescoped sections with spring means for contracting said band on the wrist with low tension and means providing a high resistance to expansion of said band to maintain the band securely on the wrist.

3 Claims, 7 Drawing Figures



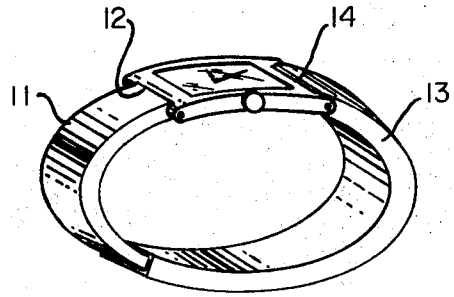


FIG. 1

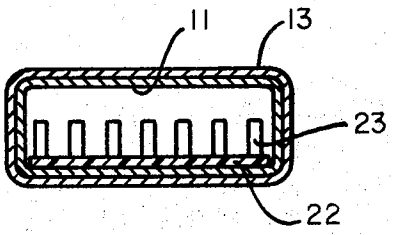


FIG. 2

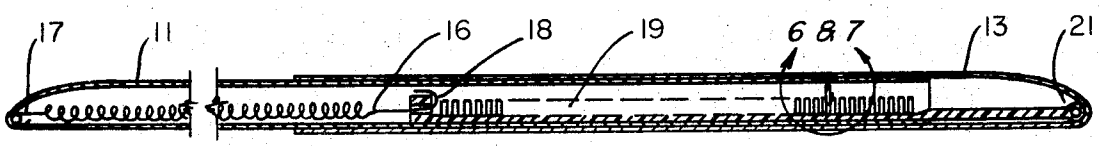


FIG. 3

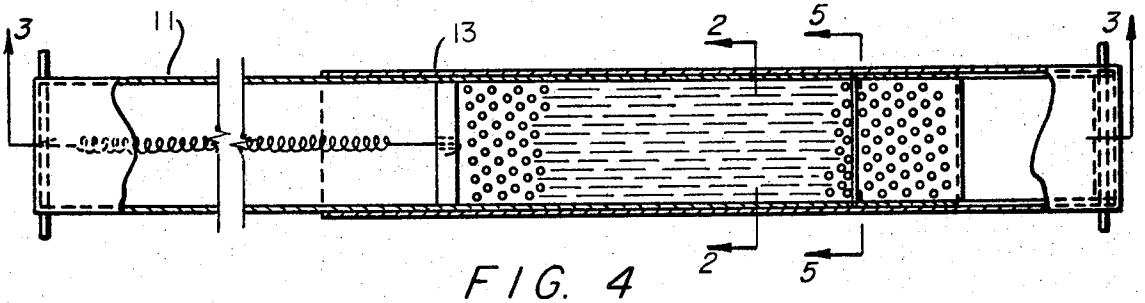


FIG. 4

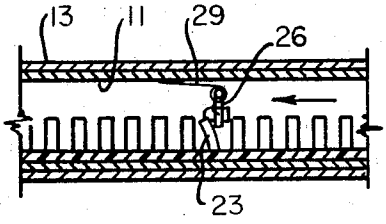


FIG. 6

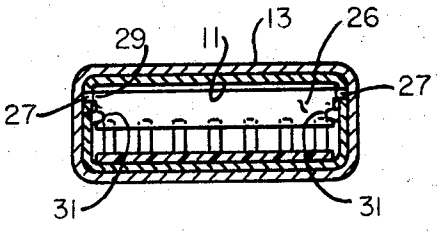


FIG. 5

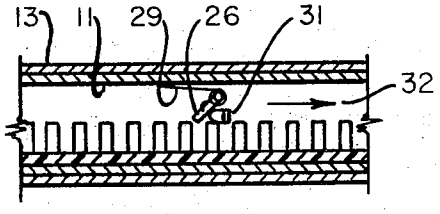


FIG. 7

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WRIST BAND WITH HIGH RESISTANCE TO EXPANSION AND RELATIVELY LOW CONTRACTIVE FORCE

BACKGROUND OF THE INVENTION

This invention relates generally to an expansible wrist band and more particularly to an expansible wrist band which exerts low pressure on the wrist but affords high resistance to expansion.

As used herein, an expansible band is one which can be slipped on and off the wrist without disconnecting the sections. Such bands have included foldable spring-loaded links and retracting springs. In the prior art watch bands, the spring tension must be such as to hold the band securely on the wrist and not allow it to expand during movement of the arm. The spring tension acts continuously on the wrist and renders the band uncomfortable.

OBJECTS AND SUMMARY OF THE INVENTION

It is a general object of the present invention to provide an improved expansible wrist band particularly suitable for use in connection with wrist watches and bracelets.

It is another object of the present invention to provide a wrist band which has minimum tension whereby to exert low forces on the wrist and yet affords a high resistance to loosening to thereby securely hold the band on the wrist of the wearer.

The foregoing and other objects of the invention are achieved by an expansible band comprising first and second telescoped sections with an elongated member extending into said sections and having one end secured to the first section and a spring extending into said sections having one end secured to the other section and its other end secured to said elongated member whereby to draw the first and second sections together to contract the band, and means cooperating between one of said sections and said elongated members to provide a relatively low resistance to contraction of said band under spring tension and a substantially high resistance to expansion of said band whereby the force required to contract the band is substantially less than the force required to expand the band.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view showing an expansible wrist band in accordance with the invention associated with a watch.

FIG. 2 is a sectional view taken generally along the line 2—2 of FIG. 4.

FIG. 3 is a side elevational view in section showing the telescoping sections and associated means for tensioning and retaining the band on the wrist taken along the line 3—3 of FIG. 4.

FIG. 4 is a plan view, partly in section, of the band shown in FIG. 3.

FIG. 5 is a sectional view taken along the line 5—5 of FIG. 4.

FIGS. 6 and 7 are enlarged views of the portions 6 and 7 of FIG. 3.

DESCRIPTION OF PREFERRED EMBODIMENT

The band is herein described in connection with a wrist watch. However, it will be apparent that this is merely for purposes of illustration and that the watch may be omitted and the ends of the band joined to form a continuous band or bracelet.

Referring to FIG. 1, the band includes a first flat hollow section 11 having one end 12 secured to the watch by means of a conventional pin and a second section 13 having its end 14 secured to the other side of the watch by conventional means such as a pin. Sections 11 and 13 are telescoped one within the other as shown in the various figures. The exterior surface of the sections 11 and 13 may be embossed with a decorative design, they may be provided with a coating to simulate leather or other material, or they may be provided with an expansible band which has very low or no spring resistance.

Within the hollow portion of the bands there is disposed a spring element 16 which is adapted to provide tension between the sections whereby the section 11 is telescoped into the section 13. One end of the spring 16 is suitably secured to the end of the band as shown at 17. The spring is secured to the pin receiving opening formed on the end of the band. It is, of course, understood that the end 17 may otherwise be suitably secured to the section 11. The other end 18 of the spring is secured to one end of elongated flat member 19 which extends along the hollow portion of the watch sections 11 and 13 and has its other end suitably secured to the end of the section 13 as, for example, by encircling the pin receiving opening formed on the end of the band. It is understood that the end of the band 19 can otherwise be secured to the end of the hollow portion 13. The elongated flat member 19 may be formed of a base 22 with a plurality of spaced upstanding projections 23. For example, the band may be cast or formed of plastic or other resilient material. As will be apparent, the upstanding projects 23 may be in other form as, for example, teeth, narrow bands and the like.

The hollow portion 11 includes a pivoted ratchet member 26 shown in FIGS. 5, 6 and 7. The ratchet member 26 is in the form of a flat leaf or band which extends across the hollow portion of the section 11 and which includes ears or pins 27 at opposite ends. The pins allow the member to pivot within the section 11 whereby the member 26 may rotate downwardly and engage the upstanding projections 23. A spring 29 acts on the member 26 to urge it in its downward direction as shown more particularly in FIG. 6. A stop 31 is provided at each side of the section 11 to limit the rotation of member 26 under the urging of spring 29.

Operation of the band is essentially as follows. When the band is expanded, the ratchet member 26 abuts the stop 31 and is in its vertical position whereby it engages the individual upstanding members 23. Thus, the force required to open the band must overcome the spring tension of the spring 16 and also must bend the upstanding members 23 as shown in FIG. 6. The members are selected to offer the desired resistive force. When the band is opened, it can be removed from the wrist.

To replace the band on the wrist, it is again expanded and placed on the wrist. When the band is released, the spring 16 serves to draw the telescoped sections together and the ratchet member rotates out of engagement with stops 31 because it is pushed by the members 23. The inner telescoped section moves in the direction shown by the arrow 32 in FIG. 7 and the ratchet 26 is pushed by members 23 so that it rotates against the

slight tension of the spring **29** into the position shown in FIG. **7** and the band closes under the force of the spring **16**. By selecting the spring **16** with relatively low tension, the tension on the wrist is minimal. However, immediately upon stopping of the motion, ratchet **26** moves downwardly into the position shown in FIGS. **3** and **6**. In summary, the band includes an internal means which provides relatively low resistive forces in contraction of the band but offers a relatively high resistance to opening of the band. As a result, the band is held securely with low tension on the wrist.

It is apparent that other types of bands **19** and latches or ratchets may be employed, the primary purpose of the arrangement being to provide a low resistive force in the direction of closure of the band while providing a relatively high resistive force to opening of the band whereby to securely hold the band on the wrist with low tension on the wrist.

Although there have been described different desirable embodiments, it is understood that this disclosure is for the purpose of illustration and that various changes and modifications may be made without departing from the spirit and scope of the invention as set forth in the appended claims.

I claim:

1. An expansible band comprising first and second hollow telescoping sections, an elongated member extending into said sections and having one end secured to said first section, a spring extending into said sections having one end secured to said other section and its other end secured to said elongated member whereby to draw the first and second sections together to contract the band, first means mounted on one of said sections and second means mounted on said elongated member, said first and second means cooperating to provide low resistance for contraction of said band and a relatively high resistance to expansion of said band whereby the forces on contracting of said band are substantially less than the force required to expand the band.

2. An expansible band as in claim **1** wherein said elongated member comprises a flat member and said second means comprises upwardly resilient projections thereon, and wherein said first means cooperates with said projections.

3. An expansible band as in claim **2** wherein said first means comprises a rotatable member adapted to rotate into engagement with said projections when the band is expanded and is adapted to ride over said projections when the band is contracted.

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