United States Patent [19]

Bornor et al.

[11] **3,710,458**

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[54] **SPRING BAR ASSEMBLY**

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[52] **U.S. Cl.** .....**24/265 B,** 267/63

[51] **Int. Cl.** **A44c 5/18**

[58] **Field of Search** 24/265.2; 16/86; 267/63

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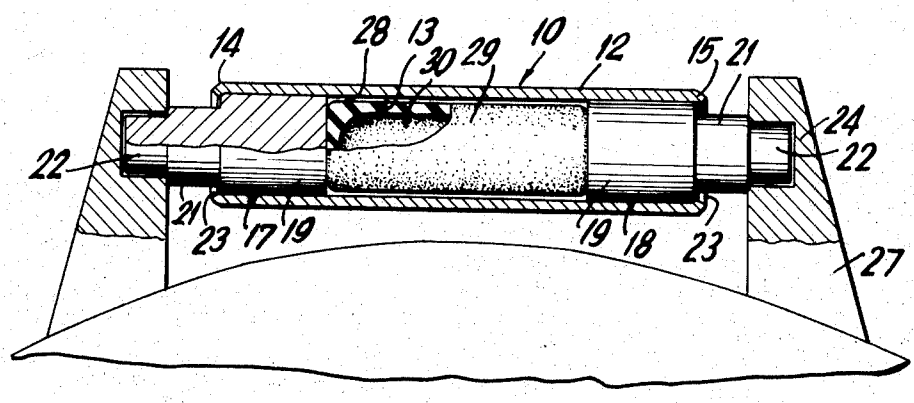
[57] **ABSTRACT**

A spring bar assembly for mounting watch bands or straps to watches comprises a hollow body portion having resiliently backed protruding members extending outwardly from both ends to engage the watch bezel lugs. A resilient material such as silicon rubber is assembled within the body portion to urge the protruding members outwardly therefrom.

1 Claim, 5 Drawing Figures



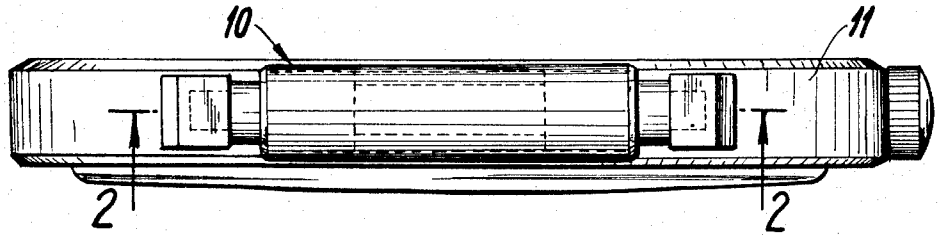


FIG. 1

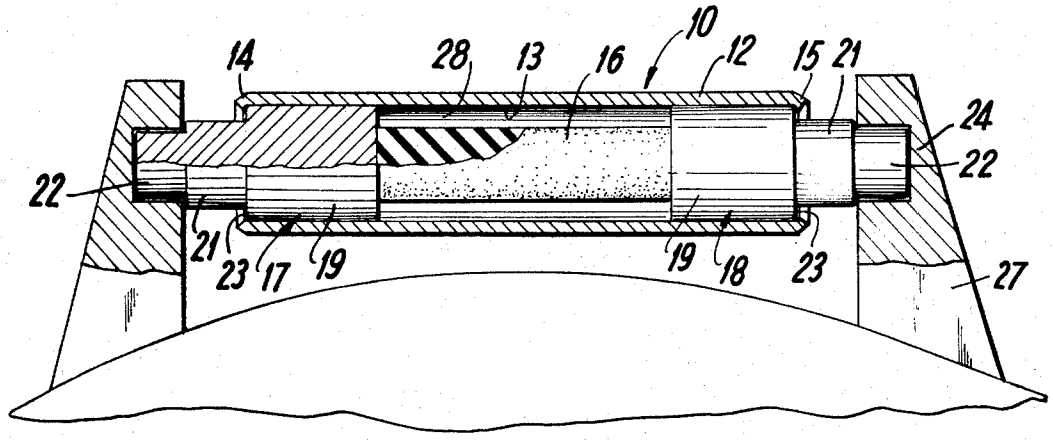


FIG. 2

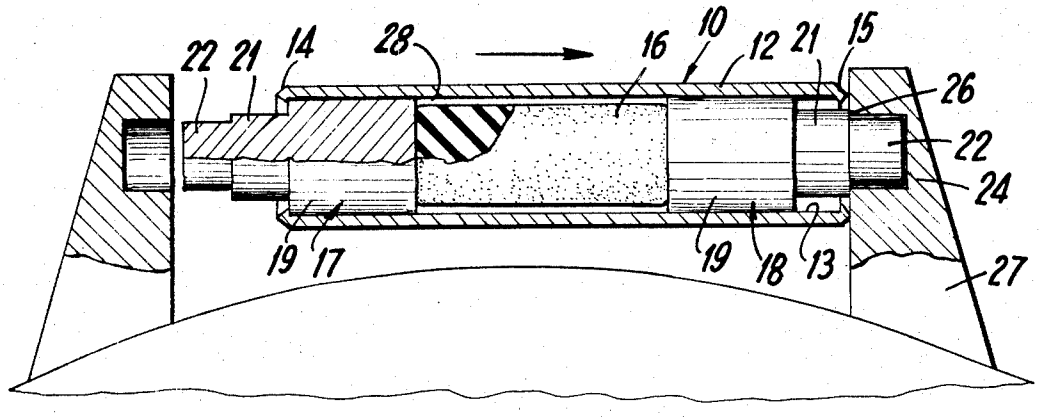


FIG. 3

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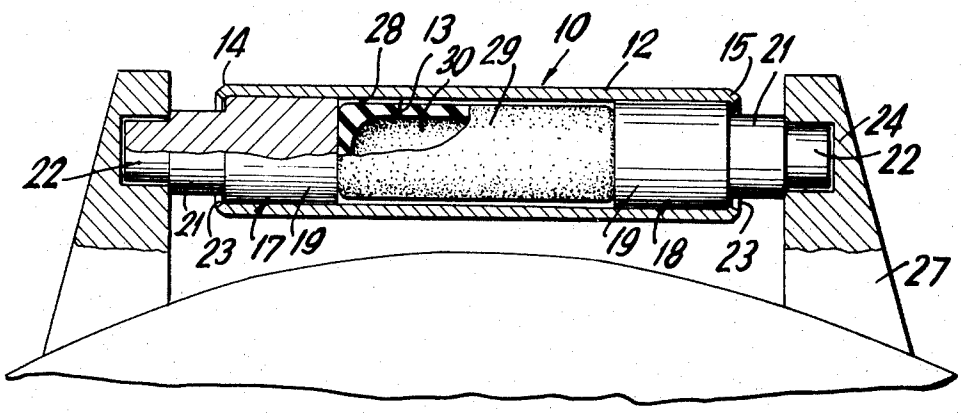
14
28
13
30
29
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12
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24
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FIG. 4

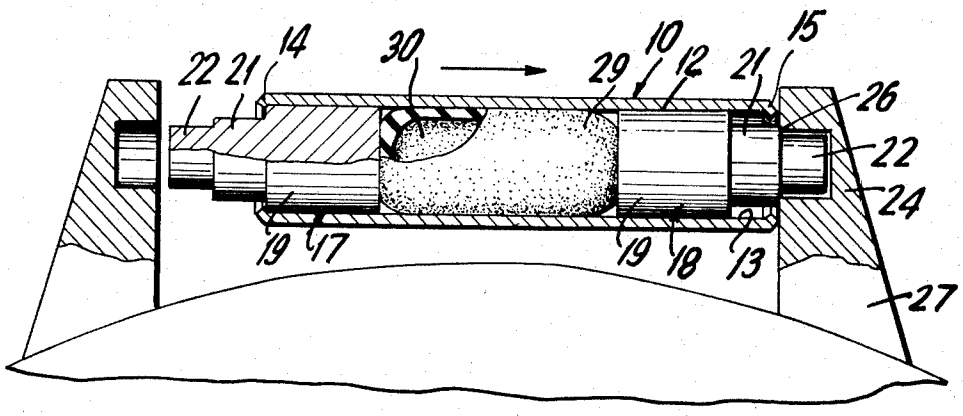
22
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FIG. 5

SPRING BAR ASSEMBLY

BACKGROUND OF THE INVENTION

The present invention relates to watches and more particularly to a spring bar assembly for watches.

Conventional spring bars which are used to join bands or straps to watches have been a source of numerous problems. The spring bar must have outwardly extending projecting members or pins at each end which are readily compressible to facilitate assembly to the watch bezel lugs. On the other hand, the pins must be urged against the bezel with sufficient force to provide a secure mounting for the watch. The general solution has been to mount a coiled spring within the body of the assembly to provide a backing for the projecting pins.

Since the coiled spring for such assemblies is rather small, it gives rise to problems during assembly of the spring bar and often does not provide sufficient holding force. Furthermore, failures may occur in the future due to the corrosion of the coiled spring.

The following patents represent some of the prior art pertinent to the field of the present invention: U.S. Pat. Nos. 2,574,671; 2,871,653, 2,891,785 and 3,264,820. Other patents may, of course, exist and be relevant to the present invention.

SUMMARY OF THE INVENTION

It is an object of this invention to provide a new and improved spring bar assembly for watches.

This object is attained by the present invention which employs a resilient material to provide the urging behind the spring bar pins. The assembly comprises a main body portion having a predetermined amount of shaped resilient material, such as silicon rubber, mounted therewithin and pins extending outwardly from each end of the body portion. The pins are slideably mounted for movement within the body portion and are backed by the resilient material. The resilient material is suitably arranged within the hollow body to permit expansion in a direction transverse to the axis of the assembly as the pins are placed under compression.

The spring bar assembly as disclosed above eliminates the use of extremely small coiled springs which gave rise to assembly difficulties and ultimately to many corrosion failures. The resilient material provides sufficient holding force even in quite small spring bars.

Other objects and advantages of the present invention will be more clearly seen when viewed in conjunction with the accompanying drawings wherein:

FIG. 1 is a side view of a watch showing the spring bar assembly of the present invention;

FIG. 2 is cross-sectioned view of the spring bar assembly prior to assembly to a watch showing the resilient material in a non-crompressed state,

FIG. 3 is a view of the invention taken along the line 3—3 of FIG. 1, and,

FIG. 4 and FIG. 5 represent another embodiment of the invention showing the spring bar in an un-compressed and a compressed state.

DETAILED DESCRIPTION OF THE INVENTION

Referring now to the drawings, the invention comprises a spring bar assembly **10** which is used to secure a watch band or strap (not shown) to the watch **11**. The spring bar assembly **10** comprises a substantially cylindrical body portion **12** having a hollow interior **13** and inwardly extending rim **14** and **15** at each end. A resilient member **16** of a material as silicon rubber or a suitable plastic is positioned within the body portion **12**. The amount and shape of the resilient material forming the member **16** is carefully selected to provide the necessary holding force to secure a watch band to the watch **11**. Preferably the member **16** is positioned within the substantially cylindrical interior **13** to permit room for uniform expansion during compression.

A pair of spring bar pins **17** and **18** are slideably mounted at the ends of the body portion **19**, and intermediate portion **21** of lesser diameter and an outer portion **22** of a still smaller diameter. The rear portion **19** of pins **17** and **18** is backed by resilient member **16** while the outer walls thereof are mounted for movement along the interior surface of the body **12**. In the extended or uncompressed positon of FIG. **2**, the pins **17** and **18** are retained within the body by the ledge **23** which abuts to engage the bezel lugs **24** with the ledge **26** bearing against the bezel **27**.

As may be seen from FIG. **2**, the resilient member **16** is mounted within the body portion **12** of the assembly **10** leaving a clearance **28**. Upon compression, when the pins **17** and **18** are forced inwardly to permit assembly to the bezel **27**, the member **16** expands into the clearance space **28**. The resilient member **16** urges the pins **17** and **18** outwardly with sufficient force to securely hold the watch band which is assembled about the spring bar **10** to the watch **11**. This overcomes a serious difficulty with small size spring bars of conventional design wherein coiled springs are unable to provide adequate holding force. On the other hand, the member **16** must be designed so that compression thereof does not distort the tubular body **12**. In another embodiment of the invention, the resilient member **16** may be a hollow slug which is intended to provide stability and eliminate forming while retaining the necessary pressure and resilience characteristics. This embodiment is shown in FIGS. **4** and **5** wherein the slug **29** has a hollow interior **30**. The spring bar is shown both in a compressed and non-compressed state.

The above-described invention also facilitates construction of the spring bar assembly **10** by eliminating the difficulty experienced in handling small coiled springs. The member **16** in the form of a resilient slug may be readily inserted within the tubular body **12**, the pins **17** and **18** placed thereagainst and the ends of the tube crimped over to hold the assembly **10** together.

It is to be understood, of course, that the arrangements discussed above are merely illustrative in nature. Numerous other arrangements may be readily devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof.

We claim:

1. A spring bar assembly for watches comprising:

a tubular body having inwardly extending edges at both ends,

a member consisting of a resilient mass of substantially cylindrical configuration mounted within the tubular body, said member being of a smaller diameter than the tubular body to permit expansion thereof when said resilient member is placed under compression, and the resilient member comprising a hollow slug of resilient material which is dimensionally stable and corrosion resistant, and,

a pin slideably mounted and retained within each end of the tubular body by the inwardly extending edges, said pins abutting against opposite faces of the resilient member, and,

comprising an enlarged rear portion slideably engaging the walls of the tubular body and contacting the resilient member, an intermediate portion of lesser diameter forming a ledge with the rear portion to engage the inwardly extending edges of the tubular body in order to retain the pins within the assembly in an un-compressed state, and an outer portion of still smaller diameter forming a ledge with the intermediate member, said outer portion being designed to engage the bezel lugs in a watch.

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