United States Patent

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[72] Inventor **Kouzo Namiki**
Noda, Japan

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[73] Assignee **Tonan Kinzoku Kogyo Kabushiki Kaisha**
Tokyo, Japan
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[33] **Japan**
[31] **43-7399**

[54] **FASTENING DEVICE FOR A WRISTWATCH BAND AND THE LIKE**
4 Claims, 5 Drawing Figs.

[52] **U.S. Cl.** **24/265**
[51] **Int. Cl.** **A44c 5/18**
[50] **Field of Search** ..... 24/265 (WS), 230 (RCF), 206

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Primary Examiner—Stanley N. Gilreath
Attorney—Blum, Moscovitz, Friedman and Kaplan

ABSTRACT: A fastening device for a wristwatch band and the like comprising an upper arcuate plate member secured to one half-portion of said band and a lower arcuate plate member connected to said upper plate member, said upper plate member having elastic band engaging and holding means and said lower plate member having guides for the other half-band section.

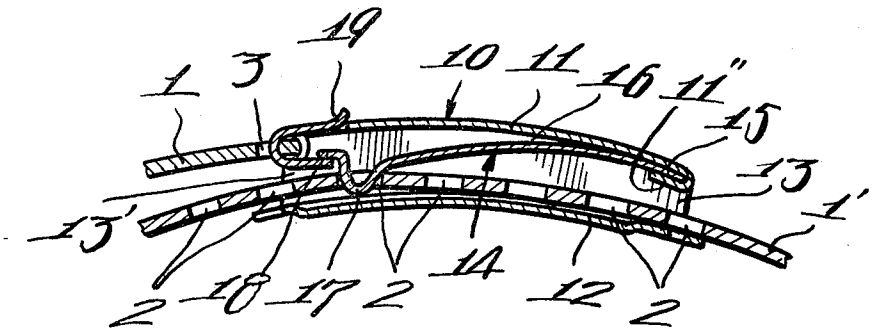


FIG. 1

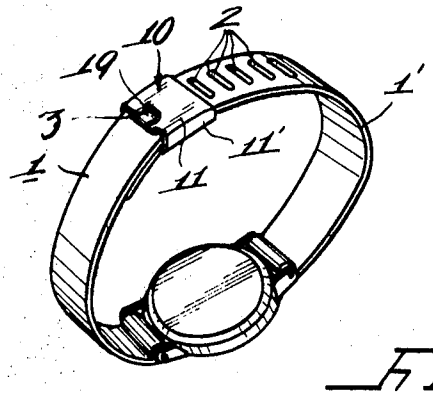


FIG. 2

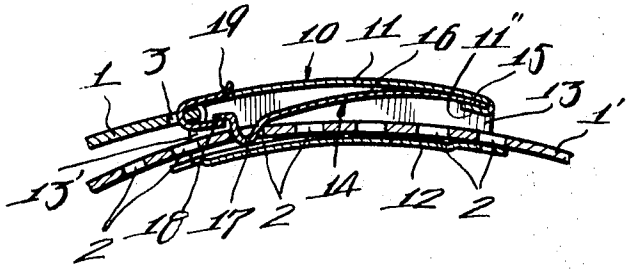


FIG. 3

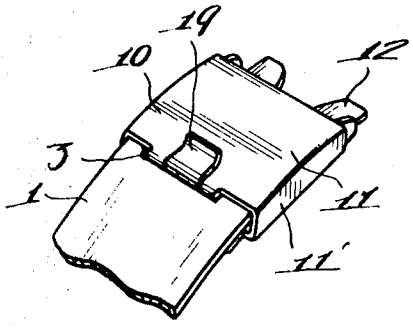


FIG. 4

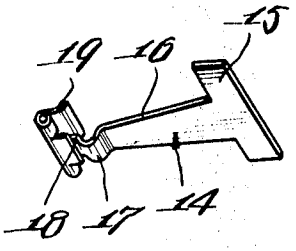
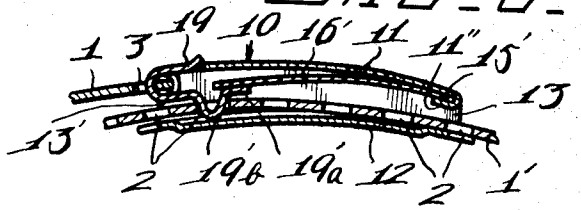


FIG. 5



FASTENING DEVICE FOR A WRISTWATCH BAND AND THE LIKE

BACKGROUND OF THE INVENTION

There have been proposed various types of fastening means for wristwatch bands and the like and according to one of such conventional fastening means, one half-section of the band is provided with a plurality of keyhole-shaped engaging holes and the other half-band section is provided with a pin having a reduced diameter neck portion projecting on one side thereof. When the band sections are to be connected to each other the neck portion of the above-mentioned pin is first inserted in a selected one of the keyhole-shaped engaging holes at the largest dimension portion of the selected hole and then the pin neck portion is slid in the hole from the largest dimension portion to the smallest dimension portion of the hole. However, such an arrangement is rather troublesome in connecting and disconnecting the band sections. In addition, this arrangement would not always ensure a positive fastening and the band sections would very often be disconnected from one another in use.

SUMMARY OF THE INVENTION

The present invention relates to a fastening device for a wristwatch band and the like and more particularly, to a fastening device suitably used in connection with a wristwatch band and the like which comprises a pair of similar arcuate band sections having a plurality of equally spaced holes in the longitudinal direction thereof.

One object of the present invention is to provide a fastening device for a wristwatch band and the like which comprises a pair of similar arcuate band sections one of which has a plurality of equally spaced holes in the longitudinal direction, said fastening device comprising an arcuate upper plate member secured to said one band section having no hole and having a substantially inverted U-shape configuration, a similarly arcuate lower plate member secured to said upper plate member in a spaced relation to the inner surface of the upper plate member so as to define an opening through which the holed band section may move relative to the band section having no hole, said upper and lower plate members being formed of a sheet metal or any other suitable rigid material, a leaf spring pawl member received in said opening defined by said upper and lower plate members and having a band engaging end portion and a leaf spring stopper member having one end engaged by said band engaging end of the pawl member and the other end projecting above said upper plate member and the band section having no hole to which the upper plate member is secured for manually operating the band engaging end of the pawl member between a band engaging position and a band releasing position.

According to the present invention, there is provided a fastening device for use in connection with a wristwatch band and the like which band comprises a pair of partially overlapping rigid similar first and second arcuate band sections, the latter having a plurality of equally spaced holes in the longitudinal direction thereof and said first band section having a slit adjacent to one end, said fastening device comprising an upper rigid arcuate plate member of a substantially inverted U-shape adapted to be secured to said first band section and having a lip bent downwardly at one end engaging in said slit in the first band section and another lip bent downwardly and then inwardly at the other end in a slight spaced relation to the inner surface of the upper plate member, a similarly arcuate lower rigid plate member unitarily secured to said upper plate member in a spaced relation to the inner surface of the latter and having guide lips at the opposite ends over which the second band section may slide, an elongated leaf spring pawl member having one end received in the space defined by said inner surface of the upper plate member and the downwardly and inwardly bent lip at the other end of the upper plate member and the other end bent into a substantially V-shape with the apex adapted to

be selectively inserted in one of the holes in the first band section, the tip of the outer leg of said V-shape bent end of the pawl member extending forwardly and horizontally, and a leaf spring stopper member having one end engaging and held by the undersurface of said forwardly and horizontally extending tip of the V-shape bent end of the pawl member and the other end projecting upwardly through said slit of the first band section.

According to the present invention, there is also provided a fastening device for use in connection with a wristwatch band and the like which band comprises a pair of partially overlapping rigid similar first and second arcuate band sections, the latter having a plurality of equally spaced holes in the longitudinal direction thereof and said first band section having a slit adjacent to one end, said fastening device comprising an upper rigid arcuate plate member of a substantially inverted U-shape adapted to be secured to said first band section and having a lip bent downwardly at one end engaging in said slit in the first band section and another lip bent downwardly and then inwardly at the other end in a slight spaced relation to the inner surface of the upper plate member, a similarly arcuate lower rigid plate member unitarily secured to said upper plate member in a spaced relation to the inner surface of the latter and having guide lips at the opposite ends over which the second band section may slide, an elongated leaf spring pawl member having one end received in the space defined by the inner surface of the upper plate member and the downwardly and inwardly bent lip at the other end of the upper plate member and the other end extending forwardly and substantially horizontally, and a leaf spring stopper member having an upper end portion extending upwardly through said slit in the first band section and a lower end portion bent into a substantially V-shape with the apex of the V-shape adapted to be inserted in a selected one of said plural holes in the second band section, the extreme end of the lower end portion of the stopper member normally abutting against and being held by the lower surface of said forwardly and horizontally extending other end of the pawl member.

The above and other objects and advantages of the present invention will be more clearly apparent to those skilled in the art from a reading of the following description in conjunction with the accompanying drawings in which preferred embodiments of band fastening devices according to the present invention are shown.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of said band fastening device showing the fastening device as being applied to a wristwatch band;

FIG. 2 is a fragmentary longitudinally sectional view on an enlarged scale taken along the longitudinal axis of said fastening device;

FIG. 3 is a fragmentary perspective view of the main body of said fastening device on an enlarged scale;

FIG. 4 is a fragmentary perspective view of a leaf spring type stopper member; and

FIG. 5 is a fragmentary longitudinally sectional view of a modified fastening device on an enlarged scale taken along the longitudinal axis of said modified device.

PREFERRED EMBODIMENTS OF THE INVENTION

The present invention will be described referring to the drawings and particularly, to FIGS. 1 to 4 inclusive in which a preferred embodiment of band fastening devices according to the present invention is illustrated as being used in connection with a wristwatch band unit which comprises a pair of sheet metal or any suitable rigid material first and second band sections 1 and 1′ which are substantially the same in construction each having an arcuate shape of the same curvature. The band sections 1 and 1′ are adapted to be disposed in a partially overlapping relation with each other when the band unit is in its operative position with the first

section 1 superimposed on the second section 1'. The second band section 1' is provided with a plurality of equally spaced elongated holes 2 in the longitudinal direction with longitudinal axis disposed normal to the longitudinal axis of the band unit. The first band section 1 is provided at a point adjacent to one end with an elongated slit 3 extending transversely of the associated band section for the purpose to be described hereinbelow. The outer ends of the two band sections 1 and 1' are adapted to be connected to a wristwatch 20 in the conventional manner, for example. The novel band fastening device is generally shown with reference numeral 10 and generally comprises an upper plate members 11 and 12 and the upper plate member 11 is secured to the band section 1 in the manner as described hereinbelow and has opposite sidewalls 11' which are bent at substantially right angles with respect to the top wall of the plate member 11 so as to embrace the first section 1 on both the side edges of the band section. Each of the upper plate member sidewalls 11' is provided at the opposite lower edges with lips (not shown) which are bent substantially at right angles with respect to the respectively associated sidewalls 11' and substantially in parallel to the top wall of the upper plate member 11. The top wall and the lower edges of the sidewalls 11' of the upper plate member 11 have a curvature substantially corresponding to the curvature of the band sections 1 and 1' for the purpose to be described hereinbelow. The lower plate member 12 of the fastening device 10 comprises a simple plate member which also has a curvature substantially corresponding to that of the band sections 1 and 1' and is provided with lips at four corners (only two lips are shown in FIG. 3) which serve as guides along which the second band section 1' may slide in the manner as will be described hereinbelow. The above-mentioned lips at the lower edges of the sidewalls 11' of the upper plate member 11 are caulked against the bottom surface of the lower plate member 12 so as to provide a box-shaped construction having a rectangular cross section with the opposite ends 13 and 13' open. One end edge of the upper plate member 11 of the fastening device 10 is inwardly bent in a spaced relation to the inner surface of the top wall of the upper plate member 11 so as to form a lip or pawl member seat 11'' in cooperation with the plate member inner surface. The other end edge of the upper plate member 11 of the fastening device 10 is formed with a narrow lip (not shown) bent inwardly and inserted through the slit 3 in the first band section 1 so that the upper plate 11 may be secured to the band section 1. A pawl member 14 in the form of a substantially T-shape leaf spring is received at its laterally extending base 15 in the pawl seat 11''. The pawl member 14 has a shank 16 extending forwardly from the base 15 at right angles with respect to the latter and the shank tapers toward the free end where the pawl member 14 is bent into a substantially V-shape. The apex 17 of the V-shape free end of 172 pawl member 14 is adapted to be received in a selected one of the plural elongated holes 2' in the second band section 1' and the extreme end 18 or the outer leg of the V-shape of the pawl member 14 extends forwardly and horizontally to engage and hold the lower end of a finger-operated elastic stopper member 19 in a substantially U-shape leaf spring and and upper end of the stopper member which projects upwardly through the slit 3 of the first band section 1 is adapted to be operated by a human fingertip in the manner as mentioned hereinbelow. The upwardly projecting end of the stopper member 19 normally abuts against the upper surface of the top wall of the upper plate member 11 to urge the apex 17 of the V-shape free end of the pawl member 14 into a selected one of the holes 2 in the band section 1' whereby the two band sections 1 and 1' may be firmly held together with each other.

The operation of the novel fastening device 10 will be now described assuming that the fastening device is employed in connection with a wristwatch band as shown in FIG. 1. After the user has worn the band to which the wristwatch is connected on one of his wrists in the usual manner, he inserts the end of the second band section 1' remote from the end to which the watch is connected into the fastening device 10 at the open end 13 and slides the band section end along the inner surface of the lower plate member 12 while upwardly pushing the projecting upper end of the stopper member 19 to a substantially upright position away from the top wall of the upper plate member 11 by his one fingertip until the circular configuration defined by the two band sections 1 and 1' will substantially conform to the contour of the wrist whereupon he releases the projecting upper end of the stopper member 19 to allow the projecting end to return to the normal position where the upper end of the stopper member abuts against the top wall of the upper plate member 11. As soon as the projecting upper end of the stopper member 19 has been released in the manner mentioned above, the pushing-up force which is now applied on the undersurface of the outer leg of the V-shape free end of the pawl member 14 by the lower end of the stopper member 19 is also released thereby to allow the apex 17 of the V-shape free end of the pawl member 14 to engage in one selected or the nearest hole 2 of the second band section 1' and as the result, the band can be positively held on the user's wrist. Alternatively, the user may initially connect the two band sections together in a partially overlapping relation to such a degree that the circular configuration defined by the two band sections may be substantially larger than the contour of the wrist so that he may easily wear the band on the wrist. When the user wishes to remove the band to which the wristwatch is connected from the wrist, he pushes the projecting upper end of the stopper member 10 upwardly to a substantially upright position away from the top wall of the upper plate member 11 and slides the second band section 1' over the lower plate member 12 in the opposite direction to pull the band section out of the opening defined by the upper and lower plate members 11 and 12 the fastening device 10 while holding the projecting upper end of the stopper member 19 in the substantially upright position until the two band sections are separated from each other or the circular configuration defined by the band sections become substantially larger than the contours of the wrist.

Referring now to FIG. 5 in which a second or modified embodiment of the present invention is shown, the modified fastening device 10 is substantially the same as the embodiment of FIGS. 1 to 4 inclusive except for the construction and arrangement of the pawl member and stopper member. Therefore, the parts of the modified embodiment which are identical with those of the first embodiment are shown with the same reference numerals and explanation will be made on only the parts which are peculiar to the modified embodiment and the parts which are related to the peculiar parts.

A pawl member 14' in the form of a substantially T-shape leaf spring is received at its laterally extending base 15' in the pawl seat 11'' which is defined by the inwardly-bent one edge of the upper plate member 11 and the inner surface of the top wall of the plate member which is spaced from the bent edge. The pawl member 15' has a shank 16' extending forwardly from the base 15' at right angles with respect to the base and terminating short of the slit 3 in the first band section 1. A finger-operated elastic stopper member 19' in the form of a leaf spring is provided with the upper end portion projecting upwardly through the slit 3 formed in the first band section 1 as in the case of the first embodiment described herein above. The other or lower end portion of the stopper member 19' is bent into a substantially V-shape and the extreme end 19'*a* of the stopper member lower end portion is adapted to normally abut against and held by the lower surface of the fore or free end of the pawl member 14'. The apex 19'*b* of the V-shape lower end portion is adapted to be inserted in a selected one of the plural holes 2 in the second band section 1'.

The manner in which the modified embodiment is secured to the band and operated for fastening the two band sections together will be understood from that described in connection with the first embodiment and therefore, description of the same will be omitted herein.

While only two preferred embodiments of the invention have been shown and described in detail it will be understood that the same are for illustration purposes only and are not to be taken as a definition of the invention, reference being had for this purpose to the appended claims.

I claim:

1. A fastening device for use in connection with a wristwatch band and the like which band comprises a pair of partially overlapping rigid similar first and second arcuate band sections, the latter having a plurality of equally spaced holes in the longitudinal direction thereof and said first band section having a slit adjacent to one end, said fastening device comprising an upper rigid arcuate plate member of a substantially inverted U-shape adapted to be secured to said first band section and having a lip bent downwardly at one end engaging in said slit in the first band section and another lip bent downwardly and then inwardly at the other end in a slight spaced relation to the inner surface of the upper plate member, a similarly arcuate lower rigid plate member unitarily secured to said upper plate member in a spaced relation to the inner surface of the latter and having guide lips at the opposite ends over which the second band section may slide, an elongated leaf spring pawl member having one end received in the space defined by said inner surface of the upper plate member and the downwardly and inwardly bent lip at the other end of the upper plate member and the other end bent into a substantially V-shape with the apex adapted to be selectively inserted in one of the holes in the other unslitted band section, the tip of the outer leg of said V-shape bent end of the pawl member extending forwardly and horizontally, and a leaf spring stopper member having one end engaging and held by the undersurface of said forwardly and horizontally extending tip of the V-shape bent end of the pawl member and the other end projecting upwardly through said slit of the first band section.

2. A fastening device as set forth in claim 1, in which said upper plate member further has the opposite sidewalls bent substantially at right angles with respect to the top wall thereof and each of said sidewalls is provided at the lower edge with extensions bent substantially at right angles with respect to the associated sidewall and in parallel to said top wall of the associated plate member, said extensions being caulked against the bottom surface of said lower plate member thereby to form a box shape unit having a substantially rectangular cross section opening between the upper and lower plate members through which said second band section may pass slidably.

3. A fastening device as set forth in claim 1, said other end of the stopper member projecting upwardly through said slit in the first band section normally abuts against the top wall of said upper plate member so as to hold said apex of the V-shape bent end of the pawl member in a selected one of the plural holes in the unslitted band section and when the upwardly projecting end of the stopper member is raised by a human fingertip away from the top wall of the upper plate member, the lower end of the stopper member which engages the undersurface of said forwardly and horizontally extending outer leg of the V-shape bent end of the pawl member pushes the leg upwardly thereby to pull the apex of the V-shape out of said selected hole in the second band section.

4. A fastening device for use in connection with a wristwatch band and the like which band comprises a pair of partially overlapping rigid similar first and second arcuate band sections, the latter having a plurality of equally spaced holes in the longitudinal direction thereof and said first band section having a slit adjacent to one end, said fastening device comprising an upper rigid arcuate plate member of a substantially inverted U-shape adapted to be secured to said first band section and having a lip bent downwardly at one end engaging in said slit in the first band section and another lip bent downwardly and then inwardly at the other end in a slight spaced relation to the inner surface of the upper plate member, a similarly arcuate lower rigid plate member unitarily secured to said upper plate member in a spaced relation to the inner surface of the latter and having guide lips at the opposite ends over which the second band section may slide, an elongated leaf spring pawl member having one end received in the space defined by said inner surface of the upper plate member and the downwardly and inwardly bent lip at the other end of the upper plate member and the other end extending forwardly and substantially horizontally, and a leaf spring stopper member having an upper end portion projecting upwardly through said slit in the first band section and a lower end portion bent into a substantially V-shape with the apex of the V-shape adapted to be inserted in a selected one of said plural holes in the second band section, the extreme end of the lower end portion of the stopper member normally abutting against and being held by the lower surface of said forwardly and horizontally extending other end of the pawl member.