Jan. 21, 1969 HIDEO IKEDA 3,422,507

BAND PROVIDED WITH A BUCKLE FOR LOOSE AND TIGHT FASTENING

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FIG. 1

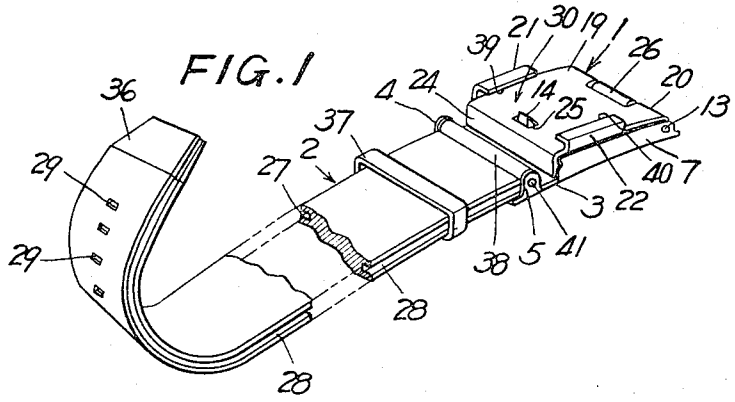

FIG. 2

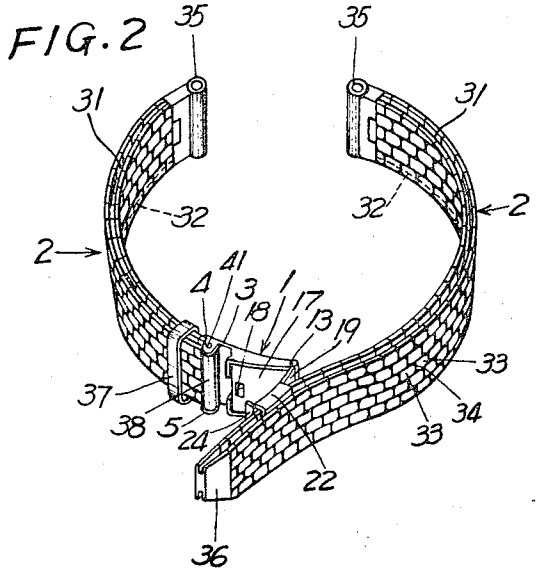

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FIG. 3

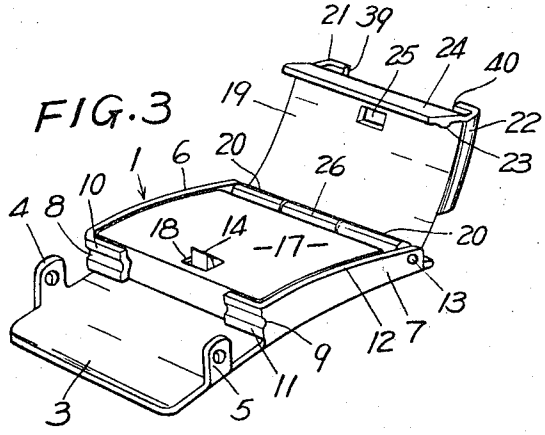


FIG. 4

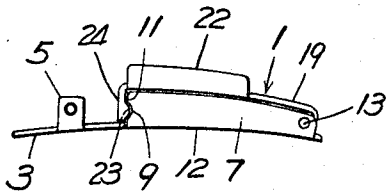


FIG. 5

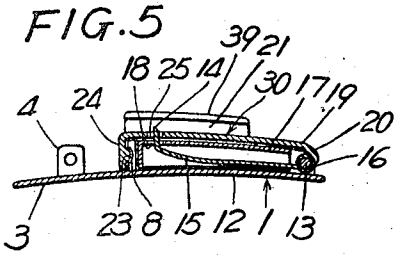
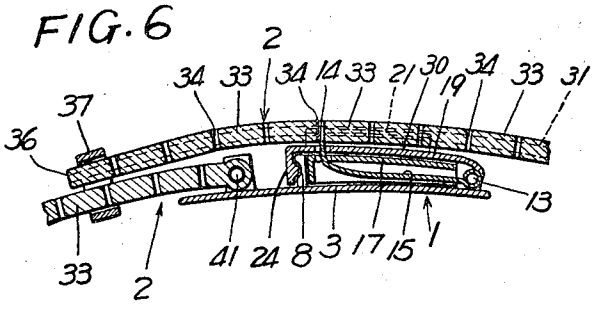


FIG. 6



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3,422,507

BAND PROVIDED WITH A BUCKLE FOR LOOSE AND TIGHT FASTENING

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U.S. Cl. 24—265 2 Claims
Int. Cl. A44b 11/22; A44c 5/18

ABSTRACT OF THE DISCLOSURE

A band provided with a buckle for loose and tight fastening, said band being capable of being fastened by (1) inserting check pieces provided, facing opposite to each other, along the edges at both sides of an openable plate fitted openably to said buckle into grooves provided in the edges at both sides of said band so that said check pieces can slide along said grooves, (2) setting a supporting plate formed by bending an end of said openable plate into depressions of the base plate of said buckle and (3) thrusting a click at the top of a spring plate fitted to said base plate into one of said tightening grooves of said band through the small hole provided in said openable plate.

Background of the invention

This invention relates to a band with a buckle used as a wrist watch bracelets or a waist belt.

There have been conventional types of waist belts with buckles capable of freely loosening and fastening the bands at an optional place. These belts are so designed as to be fastened and made stationary at an optional place by bending both edges of the buckles in a U shape, inserting the bands into these bent parts and pressing the reverse side of the belts with the protruding part of a fastening piece loosely fitted to an end of the buckles. These buckles, however, have the defect that in proportion as said protruding part of the fastening piece is worn out, the fastening tends to become loosish, thus making it impossible to obtain perfect fastening. Again in the case of wrist watch bracelets, there have been various conventional types of bands such as those fastened by preparing holes in the bands themselves and simply inserting the check bar of the clasps into one of said holes (this system has long been in use also in the case of waist belts), and those fastened by the expansibility of the bands themseleves. However, the former cannot be made stationary at other optional places where there are no such holes prepared, and the latter gradually lose said expansibility and easily become unusable.

Summary of the invention

This invention eliminates the defects of such conventional types of bands. A band of this invention has a pair of check pieces facing opposite to each other and shaped like U by bending the edges at both sides of an openable plate loosely fitted to the base plate of the buckle and the edges of said check pieces are inserted into grooves provided in the edges at both sides of said belt so that said edges of the check pieces may freely slide along said grooves in the longitudinal direction. When said openable plate is shut, a supporting plate formed by bending an end of said openable plate engages with supporting pieces provided to said base plate of the buckle, and at the same time a click at the top of a spring plate provided to said base plate of the buckle is thrust into a groove of the joint of said band or into a fastening hole of said band after passing through the hole made in the lid of said base plate and also the hole made in said openable plate,

respectively, thus fastening and making stationary said band. When said openable plate is opened said click is removed to loosen said band.

Brief description of the drawing

FIG. 1 is a perspective view of the whole of a belt of this invention shown with a part cut off.

FIG. 2 is a perspective view of a wrist watch bracelet, comprising two bands.

FIG. 3 is a perspective view of a buckle with its openable plate open.

FIG. 4 is a side view of the buckle with its openable plate shut.

FIG. 5 is a side view of a longitudinal section of the buckle shown in FIG. 4.

FIG. 6 is a side view of a longitudinal section of the buckle with the band inserted under its openable plate.

Description of preferred embodiments

FIG. 1 shows a waist belt and FIG. 2 shows a wrist watch bracelet. The main bodies of these two bands consist of buckles **1** and belts **2**. Said buckle **1** is provided with the connecting pieces **4** and **5** protruding on the edges at both sides near the end of the base plate **3** for connecting the belt **2**, and with the side plates **6** and **7** standing along both sides of said base plate **3**, the ends of said side plates **6** and **7** which extend in the direction of said connecting pieces **4** and **5** being bent toward the inside to form the depressions **8** and **9** in the side thus formed, and these parts acting as the supporting pieces **10** and **11** which, together with said side plates **6** and **7**, form the supporting part **12** of said base plate **3**.

At the other ends of the side plates **6** and **7** there is provided the shaft **13**, on which the base **16** of the spring plate **15** is loosely fitted with the click **14** facing upward, said spring plate **15** being slightly bent in arc shape and the top thereof forming said click **14**. The spring plate **15** is provided in the interior of the box formed by the supporting part **12** and the lid **17** covering it, said lid **17** having the hole **18** out of which the click **14** of the spring plate **15** is sticking. The base **26** of said lid **17** is loosely fitted on the shaft **13** so as to make the lid **17** openable.

The shaft **13** loosely fixes the base **20** of the openable plate **19**. Said openable plate **19** is provided with the U-shaped check pieces **21** and **22** along the edges at both sides of its back, said check pieces **21** and **22** facing opposite to each other as integral parts of said openable plate **19** and serving as the sliding surface **30**. The front edge of the openable plate **19** is bent to form the supporting plate **24** provided with a protruding strip **23** on its inside. Near said supporting plate **24**, the openable plate **19** has the hole **25** which is loosely passed through by the click **14**. This openable plate **19** is so designed as to be able to rise and fall (i.e., open and close) with the shaft **13** as the fulcrum and when the openable plate **19** is closed it covers the surface of the supporting part **12** so that the protruding strip **23** of the supporting plate **24** of said openable plate **19** may engage with the depressions **8** and **9** of the supporting pieces **10** and **11** of the supporting part **12** to support said openable plate **19** with said supporting part **12**. At that time the tip of the click **14** of the spring plate **15** is pushed out of the hole **25** prepared in the openable plate **19** toward the sliding surface **30**.

An end of the band **2** is fastened to the connecting pieces **4** and **5** of the buckle of the above-mentioned construction as shown in FIG. 1 or FIG. 2 and connected with the shaft **41**. The belt may be provided with the grooves **27** and **28** in the edges at both sides thereof in the longitudinal direction for increasing the effect of the function of this buckle, and therefore it is advisable to provide such grooves as occasion demands. Also the band

2 may be provided with the fastening holes 29 along the center on the inside thereof as shown in FIG. 1 or with the grooves 31 and 32 along the edges at both sides thereof as shown in FIG. 2 for obtaining the same effect. However, since the band 2 shown in FIG. 2 is composed of each of the connecting pieces 33, it is not particularly necessary to provide said fastening holes 29 as shown in FIG. 1, if the clearances between said multitude of connecting pieces 33 are utilized as the fastening grooves 34. Incidentally, the FIGS. 1 and 2 show that the fixing part 38 of the band 2 is fixed to the connecting pieces 4 and 5. In FIG. 2, 35 are the fixing parts of the watch, 36 is the inserting part at an end of the band, and 37 is the loop for fastening said inserting part 36, respectively.

FIG. 6 shows the longitudinal section of the band body with the band 2 composed of the multitude of connecting pieces 33 explained in FIG. 2 fixed to the buckle 1, and, as is seen also from FIG. 2, if the inserting part 36 is inserted into the recess formed by the U-shaped check pieces 21 and 22 of the openable plate 19 of the buckle 1, the band 2 is able to slide in said recess as the surface at this part of the openable plate 19 is the sliding surface 30. In case the inside of said check pieces 21 and 22 is larger than the thickness of the band 2, the grip is weak and the band 2 becomes shaky in the recess. Therefore, in order to achieve a smooth and stable sliding of the band 2 on the surface of the openable plate 19 with only slight clearances between said inside of the check pieces 21 and 22 and said thickness of the band 2 by almost equalizing them both, the ends 39 and 40 of the check pieces 21 and 22 are so designed that they can loosely fit in the grooves 27 and 28 provided in the edges at both sides of the band 2.

As seen from FIGS. 2 and 3, when the openable plate 19 in open, the band 2 may be freely moved since there is no obstacle there, but when the openable plate 19 is closed and the protruding strip 23 of the supporting plate 24 is pushed into the depressions 8 and 9 of the supporting pieces 10 and 11 which are the integral parts of the base plate 3 with the band 2 inserted under the openable plate 19, the openable plate 19 comes in tight contact with the base plate 3. At that time the click 14 coming out of the hole 18 of the lid 17 is pushed out of the hole 25 of the openable plate 19 toward the back (i.e., the sliding surface) thereof. If the band 2 is pulled, said band slides forward (i.e., in the direction of the arrow shown in FIG. 6) eliminating the elasticity of the spring plate 15, but does not slide backward (i.e., in the opposite direction) since the click 14 is caught into one of the fastening holes 29 or fastening grooves 34. In other words, because the spring plate 15 is bent forward in arc shape, if the band 2 is pushed forward in the direction of the arrow or if the inserting part 36 is pulled, the multitude of connecting pieces 33 comprising the rear side or the whole of the band 2 push in the click 14 of the spring plate 15 against the elasticity of said spring plate 15 which otherwise comes out of the holes 25 of the openable plate 19 and is constantly repelling upward, and slide in this state. On the other hand, if the band 2 is pulled backward in the opposite direction, the click 14, by its own elasticity, comes into one of the fastening holes 29 or fastening grooves 34 formed by the clearances between the connecting pieces of the band 2, and the spring plate 15, in the rising state, comes against the wall of the hole 25 of the openable plate 19 to make the band 2 immovable. So the belt is surely fastened at any optional position. While the belt is in service the openable plate 19 is kept closed like this and the extruding strip 23 of the supporting plate 24 is kept engaging with the depressions 8 and 9 of the supporting pieces 10 and 11, thus completely eliminating the fear for getting loose. To unfasten the band 2 from the buckle 1, pull the band by holding the tip or the inserting part thereof, and the supporting plate 24 of the openable plate 19 will come off the supporting pieces 10 and 11 of the supporting part 12 to allow the openable plate 19 to rise, so that the click 14 may also come off the band, thus regaining the free move of the band 2.

As explained above, a band of this invention is not only easy to remove and adjust the fastening, but also is free from the fear for being caught in by other objects or becoming obstructive to the wearer as the buckle 1 is hidden behind the band 2 when the belt or bracelet is worn round the waist or wrist. Furthermore, the band is smart to look at because the buckle 1 itself is hardly noticeable from outside.

What I claim is:

1. A band provided with a buckle for loose and tight fastening, comprising a buckle base plate provided with band connecting pieces and side plates as their integral parts at both sides thereof; a supporting part formed by standing supporting pieces formed by bending the ends at the connecting piece side of said side plates; a shaft provided at the other ends of said side plates, on said shaft being fitted the base of a spring plate bent in arc shape and having a click at the top thereof and the base of an openable plate provided with U-shaped check pieces, facing opposite to each other, along the edges at both sides thereof, the inside of said openable plate serving as a sliding surface, and also with a supporting plate at the front side thereof, near said supporting plate there being a hole made in said openable plate; and a lid provided in the interior of the supporting part formed by said supporting pieces and side plates, so that said click of the spring plate may be pushed out of a hole made in said lid and said hole in the openable plate and engage with one of the fastening holes prepared in the band fixed to the connecting pieces of said buckle base.

2. A band provided with a buckle for loose and tight fastening as set forth in claim 1 wherein the band is composed of connecting pieces, the clearances between said connecting pieces serving as fastening grooves.

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