

Description

The present invention relates to a double-safety fastener or clasp for connecting the two portions of a bracelet, in particular for a wristwatch.

In addition to the fact that a fastener which is referred to as a safety must be such that it can be easily operated, it must also comply with at least two basic conditions. Firstly, it must be such as to permit the bracelet first to be easily fixed on the wrist in such a way that there is no danger of its being dropped during that operation. Then, once the bracelet has been definitively closed, any movement of the wrist or the hand or the action of clothes covering the wrist must not in any circumstance result in untimely opening of the fastener.

The former of these conditions is met by means of a fastener which is referred to as a flap-over fastener wherein each of the portions of the bracelet is joined to the other by two pivotally connected segments which can be folded over one onto the other. The second of the above-indicated conditions is generally fulfilled by using various forms of pawl-type fasteners or claps.

Such a construction which fulfills the above-mentioned conditions is described in French utility certificate application FR-A-2 478 970. That construction comprises two segments which are pivotally connected together and which can be folded one onto the other, with the free ends of each of the segments being attached to respective ones of the portions of the bracelet. After the two segments have been brought into a superposed position relative to each other, a latching hook which is fixed with respect to one of the free ends is forced to engage into a locking device which is fixed with respect to the other free end. That device comprises a manually actuable detent member slidable in a housing against the return force of a spring. The housing

and the detent member each comprise a hole, with the holes being slightly offset with respect to each other. When the latching hook engages into the holes, it displaces the detent member until the face of the latter is disposed facing the notch defined by the latching hook. At that moment, the detent member is returned to the position in which it locks the latching hook. To free the latching hook, simply acting on the detent member by means of a finger can cause the fastener to open. In that respect, the above-described arrangement meets the safety requirement which has been set as an aim to be achieved, as any untimely movement will not result in the fastener opening. However, it suffers from the disadvantage of using two more or less rigid segments, which is rather uncomfortable on the wrist, which is not aesthetically attractive, while at the same time being poorly suited to a bracelet of refined design, which is often made of precious metal.

To remedy the above-indicated disadvantages, the fastener according to the present invention avoids using the two segments referred to above, while enjoying an excellent safety action.

To accomplish this, the end of the first strand of the bracelet includes a tongue pivoted around a first axis perpendicular to the longitudinal direction of the bracelet in order to be folded back against the first strand of said bracelet in the closed position, said tongue being adapted in open position to be introduced into an opening borne by the end of the second strand in order to fasten said second strand to the first strand when said tongue is in the closed position. The end of the first tongue furthermore includes a plate pivoted around a second axis extending in the longitudinal direction of the bracelet and adapted to be folded back over said tongue when said tongue is in the closed position.

A fastener exhibiting certain of the characteristics hereinabove is described in the Swiss patent CH-A-332 930.

Therein is found in effect, fixed to the end of a first strand of the bracelet, a fastening arrangement including a rectangular element equipped with a tongue pivoted around an axis parallel to the longitudinal direction of the bracelet, said axis being located on one of the edges of the element, said tongue being adapted to be latched on the opposite edge of said element. This element bears a pin which is covered over by the tongue in latched position, said pin being arranged so as to receive one of the holes borne by a second strand of the bracelet and to maintain the second strand attached to the element when the tongue is in the closed position. On the same element is further mounted a buckle pivoted around an axis perpendicular to the longitudinal direction of the bracelet such buckle being arranged to be folded back on the element in a manner to cover the tongue. The pivoting axis of the buckle coincides with the fastening position of the first strand on the rectangular element.

Thus the cited fastener likewise exhibits a double security since if the buckle should come open, the second strand of the bracelet is retained by the tongue and the pin. However, this construction presents several disadvantages. In particular, it renders difficult and inconvenient the closing of the bracelet. In effect, it requires introduction of the second strand which presents a longitudinal series of holes, into the buckle, then into the following loop and thereafter introduction of one of the holes of the strand onto the pin. These operations are awkward and to the extent that the tongue is not folded back on the strand, there is always the risk of dropping the strand which one wishes to attach which can lead to falling of the watch. A similar risk exists upon opening the bracelet when the tongue is disengaged from its latch. At this moment effectively the strand bearing the holes may escape from the pin in an undesired manner and this may likewise again lead to falling of the watch.

To overcome the difficulties which have just been mentioned, it will be seen, following reading of the description to follow, that in the present invention the end of one of the strands is provided with an opening intended to be introduced onto a tongue which constitutes the first security fastener of the system. It is this tongue alone which retains the strand without requiring a pin. This arrangement facilitates greatly the closing of the bracelet.

Furthermore, since this tongue cannot be reversed and on the other hand it may bear a catch forming a hook, it will not be possible for the strand to escape suddenly from the tongue onto which it has been introduced.

The invention will now be understood with the aid of the description to follow and the drawings which illustrate it by way of example.

Figure 1 shows a perspective view of the fastener according to the invention in the open condition, a metal link-type bracelet being attached thereto.

Figure 2 is a view of the locking device in section taken along line II-II in Figure 1.

Figure 3 is a view of the closure element in section taken along line III-III in Figure 1.

Figure 1 is a perspective view of the fastener or clasp according to the invention. The bracelet comprises two portions 1 and 2 which are each formed by a succession of links which are pivotally connected together. The end 5 of the first portion 1 carries a system 3 comprising a first closure element 10 which is mounted pivotably about a first axis 7 which is perpendicular to the longitudinal direction of the bracelet. That element is so arranged as to trap the end 4 of the second portion 2 of the bracelet. The system 3 further comprises a second closure element 20 which is pivoted about a second axis 8 extending in the longitudinal direction of the bracelet.

A preferred construction of the invention, which is based on the above-indicated principle, will now be described.

The first closure element comprises a tongue portion 10 which is pivoted about a hinge 7 disposed perpendicularly to the longitudinal direction of the bracelet. The tongue portion and the hinge are so designed that the tongue portion cannot be turned round towards the rear, its open angular position being approximately that shown in Figure 1. The hinge 7 is fixed with respect to the end 5 of the portion 1 of the bracelet. At its free end 11, the tongue portion 10 has a small fastener portion 12. After the tongue portion has been pivoted towards the portion 1 of the bracelet, the fastener portion 12 cooperates with a rib 13 which is carried by the end of the bracelet, thereby to latch the tongue portion in the closed position, by notch engagement. The tongue portion further carries an edge portion 15 which will be used for releasing it, for example by means of a finger nail.

As will be seen from Figure 1, the end 4 of the second portion 2 of the bracelet is provided with a rectangular opening 17 which is intended to be fitted over the tongue portion 10. The opening 17 will be made of lengths 18 and widths 16 such that the end 4 is perfectly centered about the hinge 7. Once the end 4 has been set in position, the tongue portion is pivoted over it, whereby the first portion of the bracelet is held connected to the second portion; that constitutes the first safety closure afforded by the fastener. As the tongue portion cannot pivot round to the rear and as on the other hand it carries the fastener portion 12 referred to above, it will be appreciated that, once the opening 17 has been fitted over the tongue portion 10, it will no longer be possible for the opening 17 to slip off its position of engagement on the tongue portion.

The second closure element comprises a plate 20 which is pivoted about a hinge 8 disposed in the longitudinal direction of the bracelet or, if it is preferred, disposed perpendicularly to the hinge 7. When the tongue portion 10 has been pivoted about the hinge 7, the plate 20 can then be pivoted down over the top of the tongue portion 10.

Figure 1 shows that the plate 20 is provided with a recess 21 in which the tongue portion 10 is housed, in order thereby to minimize the height of the fastener. In addition, at its free end, the plate 20 carries a latching hook 22 which is capable of notching engagement on a locking device 6.

The locking device 6 may take different forms. A preferred embodiment is shown in Figures 1, 2 and 3. In this embodiment, the locking device 6 comprises a detent member 25 which is manually actuatable and which is subject to the action of a spring 26. The device 6 and the member 25 are each provided with a respective hole 23 and 24. In the rest position, the holes are slightly offset, as indicated by the axes designated by a and a_1 . The hook 22 firstly engages into the hole 23 in relation to which it is centered. When it reaches the hole 24 in the member 25, the nose portion 27 thereof causes the member 25 to slide towards the right until the edge of the member 25 is disposed facing the notch 28 defined by the hook 22. At that moment, the member 25 engages into the notch 28, being urged in that direction by the return spring 26. The closure arrangement is thus locked. From that time on, only an operating movement performed with the finger can re-open the fastener. That is the second safety closure means afforded by the fastener.

It will be noted that, when the fastener is re-opened, the first operation, which could be performed inadvertently, does not involve any danger of the bracelet dropping off since it is still necessary to release the tongue portion 10

in order to separate the two portions 1 and 2 of the bracelet. There is therefore proposed a fastener which affords a maximum guarantee in regard to safety of closure, while being freed of the need to use rigid segments in respect of which it has been said that they lack aesthetic appeal and are disagreeable.

It will also be mentioned that the upper face 29 of the plate 20 may bear decorative patterns or motifs such as a monogram or precious stones, in order to personalize and to improve the look of the bracelet.

C L A I M S

1. Bracelet fastener with double security means for coupling two strands (1, 2) of a bracelet, in particular a watch bracelet, the end of the first strand (1) including a tongue (10) pivoted around a first axis (7) perpendicular to the longitudinal direction of the bracelet so as to be folded back against the first strand of said bracelet in the closed position, said tongue being adapted in the open position to be introduced into an opening (17) borne by the end (4) of the second strand (2) in order to fasten said second strand to the first when said tongue is in the closed position, the end of the first strand (1) furthermore including a plate (20) pivoted around a second axis (8) extending in the longitudinal direction of the bracelet and adapted to be folded back over said tongue when said tongue is in the closed position.

2. Bracelet fastener with double security means according to claim 1 characterized by the fact that the tongue (10) bears at its free end (11) a catch (12) arranged to be latched by a rib (13) borne by the end of the first strand (1) and that the plate (20) bears at its free end a hook (22) arranged to be brought into a latching position with a blocking arrangement (6) borne by the end of the first strand.

3. Bracelet fastener with double security means according to claim 2 characterized by the fact that the blocking arrangement (6) comprises a manually operable release (25) subjected to the thrust of a spring (26) said release including a hole (24) in which the hook is brought to be latched.

4. Bracelet fastener with double security means according to claim 1 characterized by the fact that the upper face (29) of the pivoted plate (20) bears decorative patterns.

