PATENT SPECIFICATION

784,470

Date of Application and filing Complete Specification Nov. 23, 1955.
No. 33598/55.
Application made in Germany on Dec. 8, 1954.
Application made in Germany on Jan. 12, 1955.
Application made in Germany on June 8, 1955.
Complete Specification Published Oct. 9, 1957.

Index at Acceptance:—Class 43, L1.
International Classification: —A44c.

COMPLETE SPECIFICATION

Improvements in or relating to Bracelets for Wrist-Watches

I, ERICH MÜLLER, a citizen of the German Federal Republic, trading as Firma Wilhelm Kolb, of 5 Industrieviertel, Birkenfeld, near Pforzheim, Germany, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to bracelets for wrist-watches, and is particularly directed to bracelets of the clamping-arm type adapted to embrace the arm of the wearer through the medium of clamping springs.

The principal object of the invention is to provide a bracelet of the aforesaid type with means permitting a simple and reliable connection of a wrist-watch to the bracelet, as well as a quick and simple exchange of the bracelet.

The present invention is, for attachment to a wrist-watch provided with lateral fastening means, a bracelet comprising a band-like sheath of suitable material provided in its outer surface with a pair of slot-like openings extending transversely of said sheath one to each side of the wrist-watch accommodating length thereof and with a central longitudinal slit extending between said slot-like openings thereby to form, between the latter, a pair of elongated flaps, confronting one another at the slit and adapted for opening and closing as required; at least one leaf-spring (hereinafter called "first leaf-spring") suitably curved clampingly to embrace the wrist of the wearer of the wrist-watch and inserted into said sheath via said pair of slot-like openings and said flaps in the opened condition and concealed from view between said two openings after its insertion into the sheath by closure of said flaps; and a pair of spring-arms suitably curved clampingly to embrace the wrist of the wearer and each having one of its ends inserted into said sheath via a separate one of said pair of slot-like openings, the projecting ends of said spring-arms being provided with fastening means adapted for fastening to said lateral fastening means of the wrist-watch and to be concealed from view by suitable covering material.

The spring-arms are preferably likewise curved leaf-springs which have one of their ends secured to the wrist-watch and their other free ends inserted into the sheath via the openings provided in the latter on both sides of the wrist-watch. It instead of the first-mentioned curved leaf-spring a plurality of such leaf-springs are arranged in the sheath on top of each other the elasticity of the bracelet will be increased and the danger of spring fractures practically eliminated.

For fastening the leaf-springs positioned on both sides of the wrist-watch to the fastening means of the latter, the two leaf-springs may be provided at their fastening ends with a folded down end portion adapted to embrace in hook-like fashion the fastening pins or arms of the watch, and the portions of the leaf-springs projecting from the sheath through the aforesaid openings in the sheath likewise provided with coverings of leather or of plastic.

It is also possible to fasten the fastening ends of the two leaf-springs positioned on both sides of the watch to the latter by means of cord-loops extending through bores in the lateral fastening portions of the watch, as frequently is the practice in case of wrist-watches for ladies.

A further improvement resides in the feature that according to the invention the clamping pressure of the leaf-spring as well as of the two leaf-spring arms positioned on both sides of the watch is rendered more elastic at the ends of the leaf-springs by a reduction in width or

[Price 3s. 6d.]

thickness thereof at the ends or by lesser tempering of said ends relative to the intermediate lengths of the leaf-springs.

Additional features and advantages of the invention will be understood from a consideration of the following detailed description taken in connection with the accompanying drawings, forming a part of this specification and in which several embodiments of the invention have been shown by way of example. However, I wish to say that the invention is not confined to any strict conformity with the showing of the drawings, but may be changed or modified, so long as such changes or modifications mark no material departure from the scope of the invention as defined in the appended claims.

In the drawings:—

Fig. 1 is a side-view, partly in section, of a first form of construction of a bracelet according to the invention, with the wrist-watch fastened to the pair of lateral leaf-spring-arms;

Fig. 2 is a top view of the portion of the bracelet on which the wrist-watch is fastened;

Fig. 3 is a side-view, parlty in section, of the bracelet, with one of the lateral leaf-spring-clamping arms inserted into the leather-sheath of the bracelet.

Fig. 4 is a side-view, partly in section, of a modified bracelet construction;

Fig. 5 is a top view of the portion of the bracelet of Fig. 4 on which the wrist-watch is adapted to be fastened;

Figs. 6 to 8 are a side-view, a fractional view of the underside and a front view, respectively, of one of the pair of leaf-spring-arms of the bracelet construction of Fig. 4;

Figs. 9 to 11 are a side-view, a fractional view of the underside, and a front-view, respectively, of one of the pair of lateral fastening arms of the watch, where these consist of hair-pin-like wires.

Figs. 12 to 14 are a side-view, a fractional view of the underside, and a front-view, respectively, of another modification in which the lateral leaf-spring-arms are fastened to the watch by means of a spring-ring;

Figs. 15 to 17 are a side-view, a fractional view of the underside, and a front-view, respectively, of another modification in which the lateral leaf-spring-arms are fastened to the watch by means of a cord-loop;

Fig. 18 is a side-view, partly in section, of another modified form of construction;

Fig. 19 is a top-view of the portion of the bracelet of Fig. 18 on which the wrist-watch is adapted to be fastened;

Figs. 20 and 21 are a side-view, and a front-view, respectively, of the leaf-spring of the modification of Fig. 18; and

Figs. 22 and 23 are a side-view, and a front-view, respectively, of the two leaf-spring arms of the modification of Fig. 18.

Referring firstly to the bracelet construction illustrated in Figs. 1 to 3 inclusive, the bracelet consists of a leaf-spring 1 (steel spring) enclosed in a sheath-like casing which is of leather or plastic and consists of inner and outer band-like portions 2 and 3 respectively. In order to dispose the leaf-spring 1 in its position within the sheath-like casing the ends thereof are pushed into the sheath 2, 3 via two slot-like openings 4. A longitudinal slit 5 is provided in the outer cover portion 3 between the two openings 4, so that the leaf-spring 1, after opening of the two lateral flaps formed by the slit and subsequent closing of same when the leaf-spring is in position, is completely concealed by the outer cover portion 3 also at this portion of the bracelet. The invention further includes two leaf-springs or leaf-spring-arms 6 each terminating in a hook-shaped end portion 7 both likewise enclosed in leather coverings 8 and serving as means for fastening the bracelet to the fastening bows 9 of the watch case 10. The free ends of the leaf-spring-arms 6 are then inserted via the openings 4 into the sheath 2, 3 and are thus reliably secured in position within the sheath.

It will be seen that in such a construction the two leaf-spring-arms 6, after their insertion into the sheath 2, 3, serve additionally as a springy clamping means, so that the leaf-spring 1 can be thinner and more flexible than would otherwise be necessary and will moreover be more resistant to strain than has been the case hitherto.

Instead of arranging a single leaf-spring 1 within the sheath 2, 3 as above described, it is also possible to provide the sheath with a plurality of leaf-springs 1, whereby the springiness of the bracelet will be further augmented.

In the second embodiment of the invention illustarted in Figs. 4 to 8 inclusive, the leaf-spring 11 (see Fig. 4) is likewise positioned in a sheath of leather or plastic consisting of an inner sheath-portion 12 and an outer sheath-portion 13. The openings 14 and the longitudinal slit 15 serve for the insertion of the leaf-spring 11 into the sheath whereby, here again, the leaf-spring 11, after its insertion into the sheath, is covered up by the elongated leather flaps on both sides of the slit 15 (see Fig. 5).

In the form of construction of Figs. 4 to 8 the watch is secured to the bracelet

by means of two leaf-spring-arms 16 which at their fastening ends have two lateral flaps 17 provided with prongs by means of which the cord-loops 18, after having been pulled through bores in the lateral fastening portions 19 of the wrist-watch 20, are secured to the leaf-spring-arms 16. After this the wrist-watch is secured to the bracelet by insertion of the spring-arms 16 into the openings 14 of the sheath 12, 13. The lateral flaps 17 are preferably tempered after the hardening of the arms 16, so that they can easily be bent around the cord-loops 18 and secured in position. The fastening ends of the spring-arms 16 are preferably enclosed in coverings 21 of leather or plastic preferably of the same colour as the cord-loops 18.

In the modification illustrated in Figs. 9 to 11, inclusive, the spring-arms 22 consist of wires of hair-pin-like formation which at their fastening ends are likewise concealed by coverings 23 of leather or plastic, and in similar manner as hereinbefore described serve as a means for securing a lady's wrist-watch to the bracelet. For this purpose one end 24 of each spring-arm 22 is simply pulled each through one of the transverse bores in the lateral fastening portions of the wrist-watch, whereupon the wrist-watch is secured to the bracelet in the aforedescribed manner through insertion of the arms 22 into the openings 14 of the bracelet.

Figs. 12 to 14, inclusive, show a modification in which the fastening ends 26 of the leaf-spring-arms 25 are folded down upon themselves in such manner that an eye 26*a* is formed and that a spring-ring 27, after having been pulled through a bore in the fastening portions of the wrist-watch, can be secured in the eye. After this the spring-arms 25 are again pushed into the openings 14 of the sheath and thus secured in position in the bracelet. Here again the fastening ends of the spring-arms are concealed by coverings 28 of leather or artificial material. Manifestly, the spring-ring 27 might also be omitted, in which case the folded down ends 26 would simply be hooked up in the lateral fastening bows of the wrist-watch.

In the modification of Figs. 15 to 17, inclusive, the wrist-watch is secured to the bracelet by means of leaf-spring-arms 29 having their fastening ends provided with lateral folded down flaps 30 which form an eye in such manner that the ends 32 of the cord-loops 31 can easily be secured in position by inserting same through the eye and folding same back, as shown in the drawings. In this way there is avoided the necessity of again rendering the spring-arms 29 flexible by tempering after their having been hardened. Furthermore, the cord-loops 31 may be of such length that the spring-arms 29, after their insertion into the openings of the sheath of the bracelet, completely disappear in the sheath, so that the fastening ends of the spring-arms need not be covered up with leather or the like.

A variety of different fashionable effects can be produced through use of differently-coloured leather for the sheath and for the coverings of the fastening ends of the spring-arms. Furthermore, the bracelet of the invention can easily be exchanged for another one, so that the desire of the ladies for fashionable appearance, that is to say, the desire to match the colour of the bracelet with the colour of the dress, can easily be taken care of.

In a further form of construction illustrated in Figs. 18 to 23, inclusive, the leaf-spring 33 is likewise positioned in a sheath consisting of an inner covering portion 34 and an outer cover portion 35 of leather or plastic. Openings 36 and a longitudinal slit 37 (see Figs. 18 and 19) serve in the manner aforedescribed for the insertion of the spring 33 into the sheath, whereby, after the insertion of the spring, the lateral flaps formed by the slit are again used as a covering means for the spring 33.

The two additional leaf-spring-arms 38 each terminate in a hook-shaped end 39 concealed by a covering 40 of leather or plastic. The hook-shaped ends 39 are hooked up at the fastening arms 41 of the watch-case 42, whereupon the watch is secured to the bracelet through insertion of the spring-arms 38 into the openings 36 of the bracelet.

As shown in Figs. 20 and 21 the leaf-spring 33 reduced in width or tapers at 43 (see Fig. 21) and is therefore of reduced width at its ends; or the thickness of the leaf-spring 33 is relatively greater at its centre than at its ends and tapers from its centre to its ends at 44 (see dot-and-dash line in Fig. 20). In either of these ways the ends of the spring are rendered more elastic, so that the bracelet is more conveniently carried on the arm of the wearer. Instead of reducing the width or thickness of the ends of the leaf-spring 33 it is also possible to render the spring more elastic at its ends through a lesser degree of tempering thereat. In Figs. 22 and 23 the appertaining leaf-spring-arms 38 are shown which may likewise have their width reduced at their free ends.

What I claim is:—

1. For attachment to a wrist-watch provided with lateral fastening means, a

by means of two leaf-spring-arms 16 which at their fastening ends have two lateral flaps 17 provided with prongs by means of which the cord-loops 18, after having been pulled through bores in the lateral fastening portions 19 of the wrist-watch 20, are secured to the leaf-spring-arms 16. After this the wrist-watch is secured to the bracelet by insertion of the spring-arms 16 into the openings 14 of the sheath 12, 13. The lateral flaps 17 are preferably tempered after the hardening of the arms 16, so that they can easily be bent around the cord-loops 18 and secured in position. The fastening ends of the spring-arms 16 are preferably enclosed in coverings 21 of leather or plastic preferably of the same colour as the cord-loops 18.

In the modification illustrated in Figs. 9 to 11, inclusive, the spring-arms 22 consist of wires of hair-pin-like formation which at their fastening ends are likewise concealed by coverings 23 of leather or plastic, and in similar manner as hereinbefore described serve as a means for securing a lady's wrist-watch to the bracelet. For this purpose one end 24 of each spring-arm 22 is simply pulled each through one of the transverse bores in the lateral fastening portions of the wrist-watch, whereupon the wrist-watch is secured to the bracelet in the aforedescribed manner through insertion of the arms 22 into the openings 14 of the bracelet.

Figs. 12 to 14, inclusive, show a modification in which the fastening ends 26 of the leaf-spring-arms 25 are folded down upon themselves in such manner that an eye 26*a* is formed and that a spring-ring 27, after having been pulled through a bore in the fastening portions of the wrist-watch, can be secured in the eye. After this the spring-arms 25 are again pushed into the openings 14 of the sheath and thus secured in position in the bracelet. Here again the fastening ends of the spring-arms are concealed by coverings 28 of leather or artificial material. Manifestly, the spring-ring 27 might also be omitted, in which case the folded down ends 26 would simply be hooked up in the lateral fastening bows of the wrist-watch.

In the modification of Figs. 15 to 17, inclusive, the wrist-watch is secured to the bracelet by means of leaf-spring-arms 29 having their fastening ends provided with lateral folded down flaps 30 which form an eye in such manner that the ends 32 of the cord-loops 31 can easily be secured in position by inserting same through the eye and folding same back, as shown in the drawings. In this way there is avoided the necessity of again rendering the spring-arms 29 flexible by tempering after their having been hardened. Furthermore, the cord-loops 31 may be of such length that the spring-arms 29, after their insertion into the openings of the sheath of the bracelet, completely disappear in the sheath, so that the fastening ends of the spring-arms need not be covered up with leather or the like.

A variety of different fashionable effects can be produced through use of differently-coloured leather for the sheath and for the coverings of the fastening ends of the spring-arms. Furthermore, the bracelet of the invention can easily be exchanged for another one, so that the desire of the ladies for fashionable appearance, that is to say, the desire to match the colour of the bracelet with the colour of the dress, can easily be taken care of.

In a further form of construction illustrated in Figs. 18 to 23, inclusive, the leaf-spring 33 is likewise positioned in a sheath consisting of an inner covering portion 34 and an outer cover portion 35 of leather or plastic. Openings 36 and a longitudinal slit 37 (see Figs. 18 and 19) serve in the manner aforedescribed for the insertion of the spring 33 into the sheath, whereby, after the insertion of the spring, the lateral flaps formed by the slit are again used as a covering means for the spring 33.

The two additional leaf-spring-arms 38 each terminate in a hook-shaped end 39 concealed by a covering 40 of leather or plastic. The hook-shaped ends 39 are hooked up at the fastening arms 41 of the watch-case 42, whereupon the watch is secured to the bracelet through insertion of the spring-arms 38 into the openings 36 of the bracelet.

As shown in Figs. 20 and 21 the leaf-spring 33 reduced in width or tapers at 43 (see Fig. 21) and is therefore of reduced width at its ends; or the thickness of the leaf-spring 33 is relatively greater at its centre than at its ends and tapers from its centre to its ends at 44 (see dot-and-dash line in Fig. 20). In either of these ways the ends of the spring are rendered more elastic, so that the bracelet is more conveniently carried on the arm of the wearer. Instead of reducing the width or thickness of the ends of the leaf-spring 33 it is also possible to render the spring more elastic at its ends through a lesser degree of tempering thereat. In Figs. 22 and 23 the appertaining leaf-spring-arms 38 are shown which may likewise have their width reduced at their free ends.

What I claim is:—

1. For attachment to a wrist-watch provided with lateral fastening means, a

bracelet comprising a band-like sheath of suitable material provided in its outer surface with a pair of slot-like openings extending transversely of said sheath one to each side of the wrist-watch-accommodating length thereof and with a central longitudinal slit extending between said slot-like openings thereby to form between the latter a pair of elongated flaps confronting one another at the slit and adapted for opening and closing as required; at least one leaf-spring (hereinafter called " first leaf-spring ") suitably curved clampingly to embrace the wrist of the wearer of the wrist-watch and inserted into said sheath via said pair of slot-like openings and said flaps in the opened condition and concealed from view between said two openings after its insertion into the sheath by closure of said flaps; and a pair of spring-arms suitably curved clampingly to embrace the wrist of the wearer and each having one of its ends inserted into said sheath via a separate one of said pair of slot-like openings, the projecting ends of said spring-arms being provided with fastening means adapted for fastening to said lateral fastening means of the wrist-watch and to be concealed from view by suitable covering material.

2. A bracelet as claimed in Claim 1, in which the material of said sheath and the covering material of the projecting ends of said spring-arms is leather.

3. A bracelet as claimed in Claim 1, in which the material of said sheath and the covering material of the projecting ends of said spring-arms is plastic.

4. A bracelet for wrist-watches as claimed in any of Claims 1 to 3, in which said spring-arms are leaf-springs, (hereinafter called " second leaf-springs ").

5. A bracelet as claimed in any of Claims 1 to 4, in which said fastening means of said spring-arms are of hook-like formation and are adapted to be hooked on to said lateral fastening means of the wrist-watch.

6. A bracelet as claimed in any of Claims 1 to 4, in which said fastening means of said spring-arms are cord-loops adapted to be pulled through bores provided in the lateral fastening means of the wrist-watch and having their ends suitably secured to the projecting ends of said spring-arms.

7. A bracelet as claimed in Claims 4 and 6, in which the ends of the cord-loops are secured to the projecting ends of said second leaf-springs by means of bendable lateral flaps and prongs provided at the projecting ends of said second leaf-springs.

8. A bracelet as claimed in Claim 7, in which the ends of the cord-loops are inserted into said lateral flaps and the latter folded to secure said ends in position.

9. A bracelet for wrist-watches as claimed in Claim 4, in which said fastening means of said second leaf-springs are spring-rings adapted to be pulled through bores provided in the lateral fastening means of the wrist-watch and be anchored to the projecting ends of said second leaf-springs by folding over the latter.

10. A bracelet as claimed in any of Claims 1 to 4, in which said spring-arms are of hair-pin-like formation and the closed projecting ends thereof are adapted to engage in a bore provided in the lateral fastening means of the wrist-watch.

11. A bracelet as claimed in Claim 4, in which the ends of said first and second leaf-springs are reduced or tapered in width.

12. A bracelet for wrist-watches as specified in Claim 1, in which the ends of said first and second leaf-springs are reduced or tapered in thickness.

13. A bracelet for wrist-watches as specified in Claim 1, in which the ends of said first and second leaf-springs are tempered to a lesser degree than the intermediate lengths thereof thereby to increase the flexibility of said ends relative to said intermediate lengths.

14. A bracelet for wrist-watches substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 3, or Figs. 4 to 8, or Figs. 9 to 11, or Figs. 12 to 14, or Figs. 15 to 17, or Figs. 18 to 23 of the accompanying drawings.

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Leamington Spa: Printed for Her Majesty's Stationery Office, by the Courier Press,—1957.
Published at the Patent Office, 25, Southampton Buildings, London, W.C.2, from which copies may be obtained.

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