

SPECIFICATION

Buckle for Watch Bands

The present invention relates to a buckle for watch bands, and more particularly to a buckle of which position on the band may be adjusted according to the wrist of the wearer.

Such an adjustable buckle comprises an engaging member slidably attached to one of the watch bands to be coupled, a clamping member for securing the engaging member to the band, and a clasp provided on the end of the other band, whereby the clasp may be snapped into the engaging member to couple the opposite bands with each other. This buckle has an advantage that available length of the band may be adjusted. However, if the clasp accidentally disengages from the engaging member, the opposite bands are separated. As a result, the wrist watch falls from the wrist, so that the watch will be damaged.

Therefore, it is an object of the present invention to provide a buckle which may securely couple the opposite bands with each other to prevent the fall of the watch.

In a broad aspect, the present invention provides a buckle for the watch bands, which comprises an engaging member slidably attached to one of said watch bands, said engaging member comprising a frame having opposite side plates and lateral pins provided between the side plates, means for securing said engaging member to said watch band, a clasp provided on an end of the other watch band, said clasp comprising a pivotally mounted clasp member adapted to be engaged with one of said lateral pins of said frame, and a holding member pivotally mounted on one of said lateral pins and adapted to be abutted on said clasp member in the coupling state.

In such a buckle, if the holding member swings freely, it is difficult to engage the clasp with the engaging member due to the obstruction by the holding member.

Therefore, another object of the present invention is to provide a buckle in which a holding member may be frictionally maintained in an open position.

Other objects and features of the present invention will become apparent from the following description of an embodiment of the present invention and with reference to the accompanying drawings, in which:

Fig. 1 is a sectional side view of a buckle according to the present invention,

Fig. 2 is a perspective view showing a frame of an engaging member and a holding member,

Fig. 3 is a plan view showing the holding member and a part of the frame in the open state,

Fig. 4 is a perspective view showing a pressure plate,

Fig. 5 is a perspective view showing a clamping member,

Fig. 6 is a sectional view showing a part of a clasp,

Fig. 7 is a perspective view showing a frame of the clasp,

Fig. 8 is a perspective view showing a hook of the clasp,

Fig. 9 is a perspective view showing a clasp member, and

Fig. 10 is a perspective view showing a part of the clasp.

Referring to the drawings, the buckle of the present invention comprises an engaging member 1, a clasp 2, a holding member 3, a pressure plate 5, and a clamping member 6. The clasp 2 comprises a frame 7, a hook 8 and a clasp member 10.

The engaging member 1 comprises a frame 4 comprising a pair of side plates 11, a bottom plate 12 and three lateral pins 13, 14 and 15 provided between the side plates 11. The bottom plate 12 is provided with four projections 16. The projections are adapted to engage with notches 21 formed on the underside of a watch band 20 as shown in Fig. 1. Each of notches being formed by adjacent links which are component of the watch band. The pressure plate 5 is rotatably mounted on the lateral pin 14 at a pair of arms 17 and comprises a bent portion 18, a resilient portion 22 engaging the pin 15, and bottom 24 pressed against the band 20.

Referring to Fig. 5, the clamping member 6 comprises a rounded portion 25, a pressure applying edge 26 and end portions 27 and 28 which are separated from each other so as to permit the engagement of a tool such as a screwdriver and a tweezers. The clamping member is rotatably mounted on the pin 14 at the rounded portion 25.

Referring to Figs 6 and 7, the frame 7 of the clasp 2 is secured to the end of another band 30 of a pair of watch bands by brazing or spot welding. The frame 7 comprises a pair of side plates 31 and a pin 32 secured between the plates, each of the plates having a projection 33. Referring to Fig. 8, the hook 8 comprises a hook portion 34 to be engaged with the pin 15, a pair of rounded portions 35 rotatably mounted on the pin 32 of the frame 7, and a pair of projections 36. The projections 36 is adapted to engage with the projections 33 of the frame 7, so that the hook 8 may be stopped at a proper open position as hereinafter described. The rounded portion 35 has a shoulder 37. The clasp member 10 comprises a grasping end 38 to be engaged with the pin 13 of the frame 4, a rounded portion 40 rotatably mounted on the pin 32, and an opening 41, as shown in Fig. 9. The rounded portion 40 has a pair of shoulders 42 which engage the shoulders 37 of the hook 8.

Referring to Figs 1, 2 and 3, the holding member 3 comprises a pair of side plates 44 and a snapping end 45 to be engaged with the opening 41 of the clasp member 10. The holding member is rotatably mounted on the pin 13 at the end portion of each side plate 44 and adapted to be abutted on the clasp member 10. Each of the side plates 44 is provided with a

protuberance 46 each of which may be brought into frictional engagement with the outside of the side plate 11 of the frame 4 in the closed position to thereby prevent the holding member 3 from opening. Further, each side plate 11 is provided with a protuberance 47 at the end portion near the pin 13 so that the protuberance may be brought into frictional engagement with the side plate 44 to maintain the holding plate 3 in the open position.

Describing the use of the buckle, the holding member 3 is opened as shown by dotted line in Fig. 1 and maintained in the open position by the frictional engagement between the protuberance 47 and the side plate 44. The clamping member 6 is positioned in a loose position to free the pressure plate 5. Thus, the engaging member 1 may be moved along the band 20. At a proper position fitted for the wrist of the wearer, the clamping member 6 is rotated to the clamp position to press the pressure plate 5 against the band 20, so that the engaging member 1 is secured to the band. Thereafter, the clasping member 10 is opened and the hook 8 is also opened by the engagement between the shoulders 37 and 42. When the projections 36 of the hook 8 engages with the projections 33, the rotation of the clasping member 10 is stopped and the hook is held in a position suited for coupling manipulation. Under such an open condition, the hook portion 34 is engaged with the pin 15, and then the clasping member 10 is rotated to engage the grasping end 38 with the pin 13. Further, the holding member 3 is rotated onto the clasping member 10 causing the snap engagement between the end 45 and the opening 41, whereby the clasping member 10 is held in the clasping engagement.

In this buckle, if the holding member 3 swings freely, it is difficult to engage the clasp 2 with the engaging member 1. A usual technical method of keeping the holding member in the open position is to provide a frictional engagement between the pin 13 and the side plate 44. To this end, generally, the opposite ends of the pin are expanded by caulking to increase the friction between the pin and the side plates. However, it is difficult to provide a proper friction. It will be seen that, if friction is excessive, the holding member 3 can not be rotated. In accordance with the present invention, friction may be easily and properly obtained by the engagement between the protuberances 47 and the side plates 44.

It will be understood that the engagement between the snapping end 45 and the opening 41 is not necessarily provided, and that protuberances 46 and 47 may be provided in the

opposite members, respectively.

From the foregoing, it will be understood that the present invention may provide a buckle which may securely couple the opposite bands because the holding member holds the clasp in the coupling condition.

Claims

1. A buckle for coupling a pair of watch bands comprising an engaging member slidably attached to one of said watch bands, said engaging member comprising a frame having opposite side plates and lateral pins provided between the side plates, means for securing said engaging member to said watch band, a clasp provided on an end of the other watch band, said clasp comprising a pivotally mounted clasping member adapted to be engaged with one of said lateral pins of said frame, and a holding member pivotally mounted on one of said lateral pins and adapted to be abutted on said clasping member in the coupling state.

2. A buckle for coupling a pair of watch bands according to Claim 1 in which said clasping member has an opening and said holding member has a snapping end adapted to be engaged with the opening.

3. A buckle for coupling a pair of watch bands comprising an engaging member slidably attached to one of said watch bands, said engaging member comprising a frame having opposite side plates and lateral pins provided between the side plates, means for securing said engaging member to said watch band, a clasp provided on an end of the other watch band, said clasp comprising a pivotally mounted clasping member adapted to be engaged with one of said lateral pins of said frame, a holding member pivotally mounted on one of said lateral pins and adapted to be abutted on said clasping member in the coupling state, and means for increasing the friction between said holding member and said frame of said engaging member at an open position of said holding member in which it does not cooperate with said clasping member.

4. A buckle for coupling a pair of watch bands according to Claim 3 in which said holding member has opposite side plates and said means for increasing the friction is a protuberance provided on each of the side plates of said frame, which may be frictionally engaged with a respective one of said side plates of said holding member.

5. A buckle for coupling a pair of watch bands substantially as hereinbefore described with reference to the accompanying drawings.

protuberance 46 each of which may be brought into frictional engagement with the outside of the side plate 11 of the frame 4 in the closed position to thereby prevent the holding member 3 from opening. Further, each side plate 11 is provided with a protuberance 47 at the end portion near the pin 13 so that the protuberance may be brought into frictional engagement with the side plate 44 to maintain the holding plate 3 in the open position.

Describing the use of the buckle, the holding member 3 is opened as shown by dotted line in Fig. 1 and maintained in the open position by the frictional engagement between the protuberance 47 and the side plate 44. The clamping member 6 is positioned in a loose position to free the pressure plate 5. Thus, the engaging member 1 may be moved along the band 20. At a proper position fitted for the wrist of the wearer, the clamping member 6 is rotated to the clamp position to press the pressure plate 5 against the band 20, so that the engaging member 1 is secured to the band. Thereafter, the clasping member 10 is opened and the hook 8 is also opened by the engagement between the shoulders 37 and 42. When the projections 36 of the hook 8 engages with the projections 33, the rotation of the clasping member 10 is stopped and the hook is held in a position suited for coupling manipulation. Under such an open condition, the hook portion 34 is engaged with the pin 15, and then the clasping member 10 is rotated to engage the grasping end 38 with the pin 13. Further, the holding member 3 is rotated onto the clasping member 10 causing the snap engagement between the end 45 and the opening 41, whereby the clasping member 10 is held in the clasping engagement.

In this buckle, if the holding member 3 swings freely, it is difficult to engage the clasp 2 with the engaging member 1. A usual technical method of keeping the holding member in the open position is to provide a frictional engagement between the pin 13 and the side plate 44. To this end, generally, the opposite ends of the pin are expanded by caulking to increase the friction between the pin and the side plates. However, it is difficult to provide a proper friction. It will be seen that, if friction is excessive, the holding member 3 can not be rotated. In accordance with the present invention, friction may be easily and properly obtained by the engagement between the protuberances 47 and the side plates 44.

It will be understood that the engagement between the snapping end 45 and the opening 41 is not necessarily provided, and that protuberances 46 and 47 may be provided in the

opposite members, respectively.

From the foregoing, it will be understood that the present invention may provide a buckle which may securely couple the opposite bands because the holding member holds the clasp in the coupling condition.

Claims

1. A buckle for coupling a pair of watch bands comprising an engaging member slidably attached to one of said watch bands, said engaging member comprising a frame having opposite side plates and lateral pins provided between the side plates, means for securing said engaging member to said watch band, a clasp provided on an end of the other watch band, said clasp comprising a pivotally mounted clasping member adapted to be engaged with one of said lateral pins of said frame, and a holding member pivotally mounted on one of said lateral pins and adapted to be abutted on said clasping member in the coupling state.

2. A buckle for coupling a pair of watch bands according to Claim 1 in which said clasping member has an opening and said holding member has a snapping end adapted to be engaged with the opening.

3. A buckle for coupling a pair of watch bands comprising an engaging member slidably attached to one of said watch bands, said engaging member comprising a frame having opposite side plates and lateral pins provided between the side plates, means for securing said engaging member to said watch band, a clasp provided on an end of the other watch band, said clasp comprising a pivotally mounted clasping member adapted to be engaged with one of said lateral pins of said frame, a holding member pivotally mounted on one of said lateral pins and adapted to be abutted on said clasping member in the coupling state, and means for increasing the friction between said holding member and said frame of said engaging member at an open position of said holding member in which it does not cooperate with said clasping member.

4. A buckle for coupling a pair of watch bands according to Claim 3 in which said holding member has opposite side plates and said means for increasing the friction is a protuberance provided on each of the side plates of said frame, which may be frictionally engaged with a respective one of said side plates of said holding member.

5. A buckle for coupling a pair of watch bands substantially as hereinbefore described with reference to the accompanying drawings.

