Jan. 19, 1971 S. BELLO 3,555,850

SLIDABLE CLASP WITH LATCHING ACTION FOR FOLDABLE CONNECTOR, AND CLASP-BRACELET COMBINATION

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FIG. 1

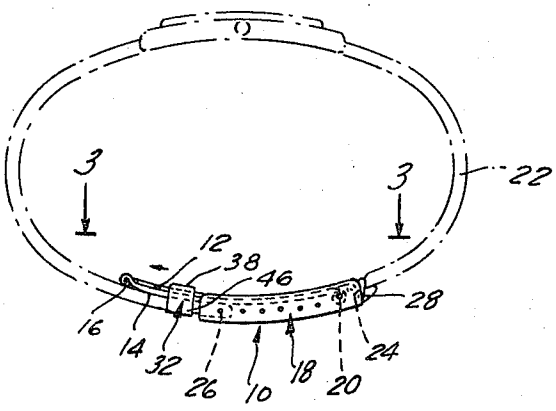



FIG. 2

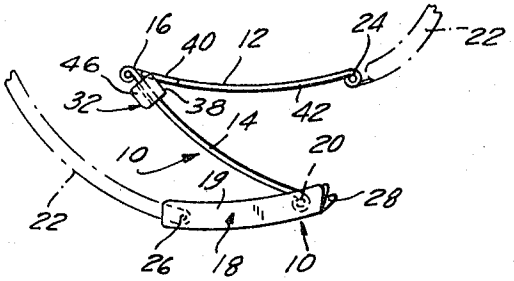
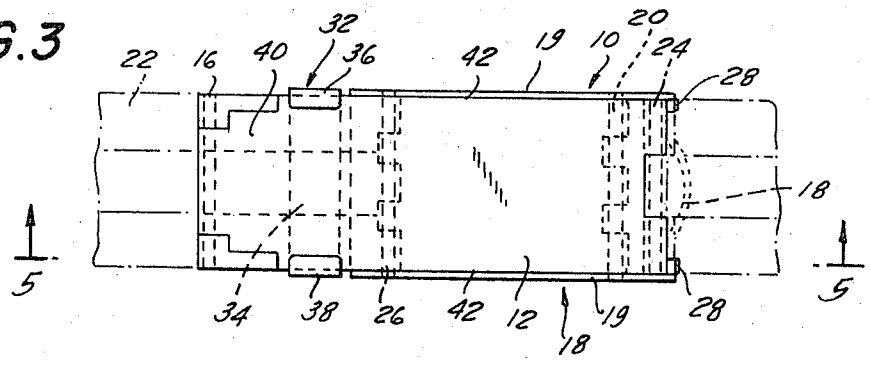



FIG. 3



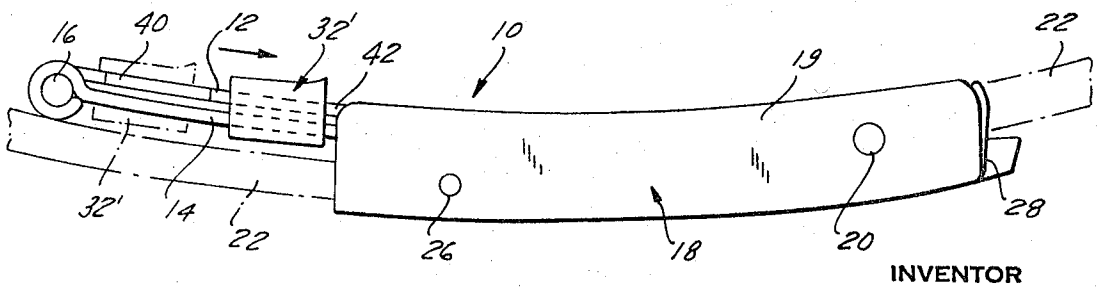




FIG. 8

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SLIDABLE CLASP WITH LATCHING ACTION FOR FOLDABLE CONNECTOR, AND CLASP-BRACELET COMBINATION

Filed Jan. 15, 1969 2 Sheets-Sheet 2

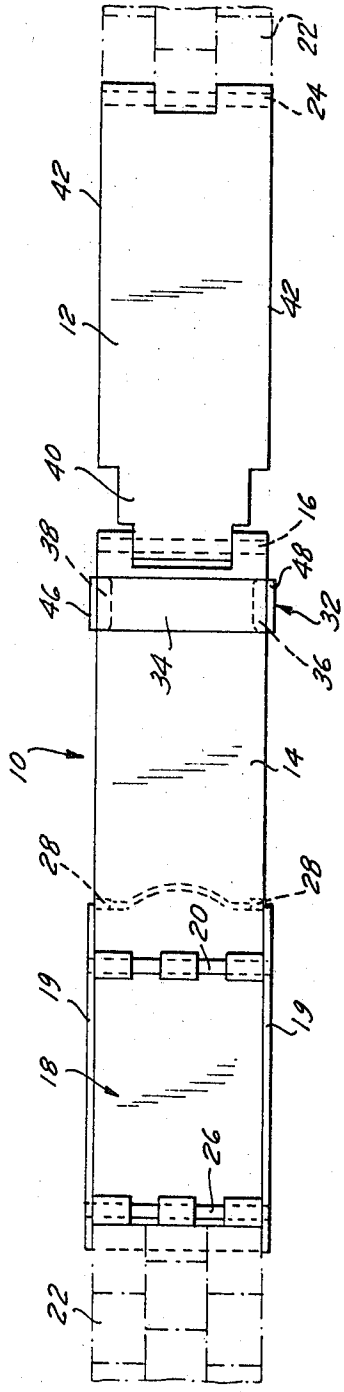

FIG. 4

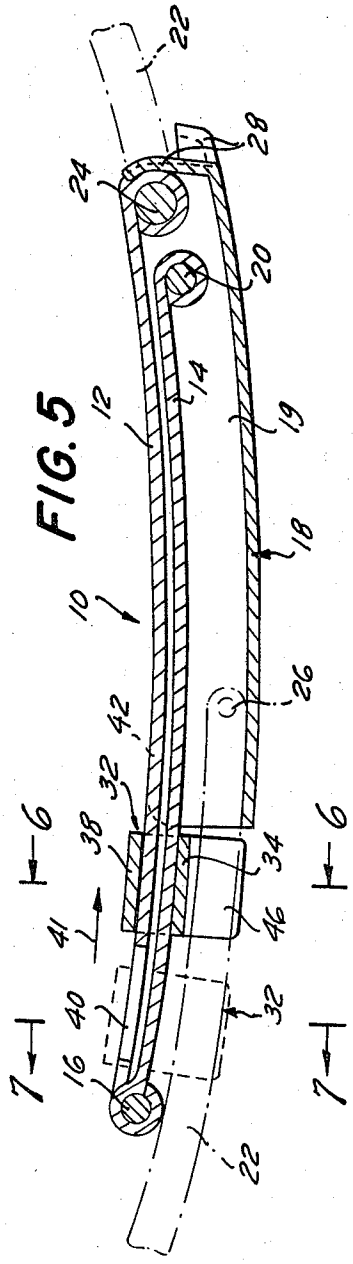

FIG. 5

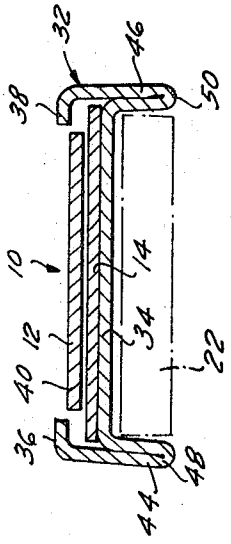

FIG. 7

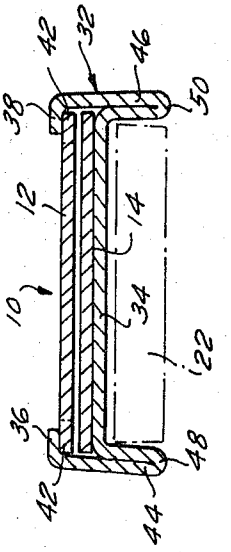

FIG. 6

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# SLIDABLE CLASP WITH LATCHING ACTION FOR FOLDABLE CONNECTOR, AND CLASP-BRACELET COMBINATION

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U.S. Cl. 63—3 14 Claims

## ABSTRACT OF THE DISCLOSURE

A slidable clasp is carried on a first panel of a folding connector of the type adapted to be secured to the ends of a bracelet or the like. When a second panel is folded over the first panel, the slidable clasp is moved into a position in which it engages the second panel, thereby to latch the first and second panels in their folded condition. The slidable clasp may include upstanding parts which straddle the bracelet and are readily engageable to move the slidable clasp.

The present invention relates to connectors, and particularly to a connector adapted to be attached to the ends of a bracelet, identification band, watchband, or the like.

The ends of bracelets are commonly secured to one another by a folding connector which comprises first and second panels or leaves hingedly connected to each other at adjacent ends. The other end of the first panel may be connected to one end of the bracelet, and the other end of second panel carries a clasp housing to which the other end of the bracelet is secured.

When the bracelet is worn about the wrist, the second panel is swung about its connection with the first panel to overlie the latter and the clasp housing is brought directly over the connection between the first panel and the bracelet. A part of the clasp housing is snapped into locking engagement with that connection, thereby to lock the two panels in their folded condition at one of their ends. The circumferential length of the bracelet and connector assembly when the panels are folded and locked in this manner is sufficiently small to prevent the bracelet from falling from the wearer's wrist.

To remove the bracelet from the wrist, the clasp housing is snapped out of engagement with the first panel, and the second panel is moved away from its position overlying the first panel, until the panels are unfolded to a substantially end-to-end longitudinal relationship at which time the circumferential length of the bracelet and connector assembly is sufficiently large to permit the bracelet to be readily passed over the wearer's hand and removed therefrom.

It has been found that the snap engagement between the clasp housing and the first panel often fails, particularly when the wearer is engaging in physical activity, such as manual labor or athletics, in which the connector and bracelet are subjected to shocks, jolts and pulls. The external forces acting on the bracelet and connector as well as the force on the connector due to the weight of the bracelet itself, may create a resultant force operating on the second panel and on the clasp housing carried thereby which is effective to urge the clasp housing out of its snap engagement with the first panel, that engagement heretofore having been the sole means provided to maintain the panels in their folded or latched position. When that force is sufficient to disengage the clasp housing from the first panel, the connector will eventually unfold so that the circumferential length of the bracelet becomes enlarged and the bracelet will tend to slide off the wearer's wrist.



This is at least an irritation to the wearer as it requires him to stop his activity, reposition the bracelet and reengage the clasp housing and the first panel in their snap engagement. Moreover, as is common, a timepiece may be secured to the free ends of the bracelet, and the failure of the connector may cause that timepiece to fall to the ground, thereby possibly causing serious damage to that timepiece.

It is an object of the present invention to provide a clasp for use on a folding bracelet connector which provides a more secure and reliable retention between the connector elements.

It is a further object of the present invention to provide a clasp for a folding bracelet connector which is readily manipulated into and out of locking position.

It is yet another object of the present invention to provide a supplemental clasp for a folding bracelet connector of the type described which is inconspicuous and artistically cooperates with the decorative effect of the bracelet to which the connector is secured.

To these ends, the present invention provides a supplementary slidable clasp carried on one of the panels of the folding connector. When the panels are not overlying one another, the slidable clasp is loosely carried on one of the panels, and when the panels are folded and locked at their ends by the conventional clasp housing, the slidable clasp is moved to a position at which it grasps the other of the panels, thereby to latch the panels to one another at the end where the slidable clasp is carried. The supplemental latching action obtained in this manner is effective to improve the reliability of the latching engagement of the two panels, and thus the retention of the bracelet on the wearer's wrist.

The slidable clasp may comprise a strip extending across said one panel. A pair of tabs depend from that strip and extend around the side edges of the panel which carries it, those tabs being adapted also to releasably engage the side edges of the other panel. A pair of upstanding parts may project from the ends of that strip to facilitate manually grasping the slidable clasp and moving it along the panel on which it is mounted between its latching and non-latching positions.

The upstanding parts, when present, are transversely separated across said one panel by a sufficient distance so that when the panels and clasps are in their latching positions, a portion of the bracelet is received therebetween. These upstanding parts may be formed of a material having a similar appearance to the material of the bracelet so that the visible parts of the slidable clasp blend into the decorative scheme of the bracelet and are substantially inconspicuous when viewed by the casual observer.

To the accomplishment of the above, and to such other objects as may hereinafter appear, the present invention relates to a folding connector having novel clasping means, as defined in the accompanying claims and as described in this specification, taken together with the accompanying drawings in which:

FIG. 1 is a side elevational view of a connector of the present invention in folded and latched condition, a typical watch and bracelet adapted to be used with said connector being shown in broken lines;

FIG. 2 is a view of the connector of FIG. 1 in an unlatched and partially unfolded condition;

FIG. 3 is a plan view, on an enlarged scale, of the latched and folded connector of FIG. 1 as viewed in the direction of the line 3—3 of FIG. 1;

FIG. 4 is a plan view similar to FIG. 3 but showing the connector in its fully unfolded condition;

FIG. 5 is a cross sectional view taken along line 5—5 of FIG. 3;

FIG. 6 is a cross sectional view taken along line 6—6 of FIG. 5 with the sliding clasp in its solid line position in FIG. 5;

FIG. 7 is a cross sectional view taken along line 7—7 of FIG. 5 but with the sliding clasp in its broken line position in FIG. 5; and

FIG. 8 is a view similar to FIG. 1, but on an enlarged scale, of a second embodiment of the folding connector of this invention.

The present invention provides a supplemental clasp for use with a folding type connector generally designated **10** of the type commonly used to secure the ends of bracelets, identification bands and the like. That connected to the other end of panel **14** by a pin **20** extending leaf panel **14**, each articulately connected at one of their ends to a pin **16**. A clasp housing **18** is articulately connected to the other end of panel **15** by a pin **20** extending between the side walls **19** of clasp housing **18**. The bracelet-watch combination, shown in broken lines and generally designated **22**, is attached at one of its ends by pin **24** to the free end of panel **12**, and at its other end by pin **26** to the free end of clasp housing **18**, the pin **26** also extending between the side walls **19** of clasp housing **18**. When the bracelet is worn around the wearer's wrist as shown in FIG. 1, panel **14** is pivoted around pin **16** and placed over panel **12**, and the clasp housing **18** is then pivoted about pin **20** until fingers **28**, provided at one end of clasp housing **18**, snap around the end of panel **12**.

When connector **10** is in its folded and latched position, the panels **12** and **14** are latched to one another only at one of their ends by means of the snap engagement of clasp housing **18** and panel **12**. During normal usage, the weight of the bracelet (and timepiece, if one is secured to the bracelet) produces a force on panel **14** and clasp housing **18**, which tends to move the clasp housing **18** out of its snap engagement with panel **12**. This tends to loosen the engagement between clasp housing **18** and panel **12**, and thus weakens the latched retention of panels **12** and **14** in their folded condition. When the wearer of the bracelet is engaged in strenuous physical activity, additional forces may be developed on the clasp housing **18** to further loosen that snap engagement. When those forces are sufficient to cause the disengagement of clasp housing **18** and panel **12**, panel **14** will be free to swing outwardly about pin **16** and away from its folded position overlying panel **12** to an end-to-end relationship therewith. The overall circumferential length of the bracelet and connector assembly will then be increased to an extent permitting the bracelet to readily slide over the wearer's hand and, if not quickly caught, to fall onto the floor.

In accordance with the present invention, a supplemental clasp means generally designated **32** provides additional security to the latching between panels **12** and **14** when they are in their folded or latched position. That clasp is loosely carried on one of the panels, and as described herein is loosely carried on panel **14**. Sliding clasp **32** comprises, as seen best in FIGS. 4 and 5, a strip **34** extending transversely across panel **14** and having a pair of tabs **36** and **38** at its ends. Tabs **36** and **38** extend downwardly (upwardly as viewed in FIG. 1) past the side edges of panel **14** and are then bent into partially overlie the undersurface of panel **14** and to be spaced from that undersurface by a distance somewhat greater than the thickness of the side edge portions **42** of panel **12**, those side edge portions **42** terminating short of the panel end nearest pin **16** to define a narrow panel section **40**. The bent-in parts of the tabs **36** and **38** are short enough so as not to reach the section **40** of panel **12** when they are in registration therewith. Thus tabs **36** and **38** mount clasp **32** on panel **14** for slidable movement therealong.

When fastener **10** is first moved to its folded position—when the panel **14** is folded over panel **12**—the sliding clasp **32** is initially positioned adjacent pin **16** as shown by the dashed line position in FIG. 5 and the solid line



position in FIG. 2, so that the taps **36** and **38** register with the reduced width section **40** of panel **12** (FIG. 7). To engage tabs **36** and **38** of clasp **32** with panel **12**, the clasp **32** is moved along panel **14** in the direction of the arrow **41** in FIG. 5 from the broken line to the solid line position, until tabs **36** and **38** move out of registration with the reduced width section **40** of panel **12** and slide under and engage the under surface of the side edge portions **42** of panel **12** (FIG. 6) to thereby effectively fasten the panels **12** and **14** to one another near their ends at which they are respectively articulately secured to pin **16**. (Clasp housing **18** is preferably snapped into engagement with the other end of panel **12** prior to the movement of clasp **32** into its latching position.) As a result, panels **12** and **14** are locked at respective ones of their ends by the clasp housing **18**, as is conventional, and they are also locked at their other ends by the slidable clasp **32**, thus providing an appreciable degree of added security to the connector. Moreover, the type of force which would be effective to unsnap clasp housing **18** from panel **12** would have no effect on slidable clasp **32**.

When the connector **10** is in its folded position (see FIG. 5) appreciable lengths of panels **12** and **14** adjacent the connecting pin **16** extend out beyond the end of clasp housing **18**, the thus extending portion of panel **12** including the reduced width portion **40** thereof and a part of the side edge portions **42**. It is on this outwardly extending part of panel **14** that clasp **32** is mounted and slidable between its operative (clasping) and inoperative (releasing) positions. Hence the clasp **32** is accessible for manual manipulation when the connector is folded as well as when it is unfolded.

When it is desired to remove the bracelet **22** from the wearer's wrist, clasp **32** is moved back towards pin **16** until the tabs **36**, **38** pass beyond the side edge portions **42** and register with the reduced with section **40** of panel **12**, at which time the tabs **36** and **38** will no longer engage panel **12**. The clasp housing **18** may then be unsnapped from panel **12** and the panels **12** and **14** may be moved away from one another to unfold the connector.

To facilitate the movement of the slidable clasp **32** between its two operative (i.e. latching and non-latching) positions, a pair of parts **44** and **46** may be provided to extend upwardly from the end of strip **34**. When the clasp **32** is to be moved from one operative position to the other, the user grasps the two upstanding parts **44**, **46** and moves the clasp **32** to its desired position. As may perhaps best be seen in FIGS. 6 and 7, the space between the upstanding parts **44** and **46** is sufficient to receive the end portion of bracelet **22**. The material from which the slidable clasp **32** and particularly parts **44** and **46** is formed preferably is similar to or blends in appearance with the material from which the bracelet **22** is formed so that the clasp **32** is substantially inconspicuous, and hence does not detract from the overall decorative appearance of the bracelet. However, a contrast in appearance between the various parts might be desired to produce special appearance effects.

Sliding clasp **32** may be formed from a single piece of sheet metal which is folded upwards and then reversely bent at **48** and **50** (FIGS. 6 and 7) to form the upstanding parts **44** and **46**. The free ends of the strip **34** are then folded inwardly to form the tabs **36** and **38**.

The embodiment of FIG. 8 is similar to that of FIGS. 1–7 except that the slidable clasp, there designated **32'**, does not have the upstanding parts **44**, **46**. It is therefore somewhat less convenient to manipulate, but has the advantage that it is more unobtrusive.

The present invention has thus provided a supplemental clasp which provides additional latching between the folding panels of a folding connector of the type commonly used to secure the ends of a bracelet. That connector is inexpensive and easy to manufacture in large quantities and may be readily used by the wearer of the bracelet with only a minor additional effort required of him to

perform the additional latching operation. When the connector is in its locked position, that is, when the bracelet is worn about the wearer's wrist, the supplemental clasp is inconspicuous and blends into the overall decorative scheme of the bracelet. The connector of this invention provides a more secure retention of the bracelet on the wearer's wrist even when the wearer is engaged in activities which would, in the absence of the additional security provided by the slidable clasp **32** or **32'** of this invention, tend to break the latched engagement of the folding panels of the connector and cause the connector to unfold and the bracelet to fall from the wearer's wrist.

While only a limited number of embodiments of this invention have been herein specifically disclosed, it will be apparent that many variations may be made thereto without departing from the spirit and scope of the invention as defined in the following claims.

I claim:

**1.** A connector adapted to be secured to the ends of a bracelet of the type adapted to be worn about the wrist of the wearer, said connector comprising first and second members articulately connected to one another at first ends thereof, said first member being adapted to have its second end secured to the bracelet, first clasp means operatively secured to said second member, adapted to be secured to the other end of the bracelet, and effective when said second member is articulated into adjacent relationship with said first member to clasp the second ends of said first and second members to one another, and second clasp means normally loosely carried on one of said first and second members and effective when moved along said one of said members and when said members are in adjacent relationship to engage the other of said members near said first end thereof, thereby to clasp said first ends of said members.

**2.** The connector of claim **1**, in which said second clasp means comprises a strip extending transversely across said one of said members, and first and second tabs respectively depending from the ends of said strip and extending around the longitudinal edges of said one of said members.

**3.** The connector of claim **2**, in which said other of said members comprises a reduced width section near its said first end communicating with a wider section, said tabs lying adjacent said reduced width section when said second clasp means is in its said first position, and overlying said wider section when in its said second position.

**4.** The connector of claim **2**, in which said second clasp means is movable on said one of said members from a first non-engaging position with respect to said other of said members, to a second position in which it engages the other of said members in clasping relationship.

**5.** The connector of claim **4**, further comprising means extending from said strip and adapted to be manually engaged for moving said second clasp means from its said first position to its said second position.

**6.** The connector of claim **5**, in which said moving means comprise a pair of upstanding parts projecting from the ends of said strip.



**7.** The connector of claim **6**, in combination with a bracelet secured to said first clasp means, said first and second members adjacent their said first ends extending out longitudinally beyond said first clasp means when said first clasp means is operatively claspingly engaged, said upstanding parts being transversely separated by a space wider than said bracelet, said bracelet being received in said space.

**8.** The connector of claim **6**, in which said other of said members comprises a reduced width section near its said first end communicating with a wider section, said tabs lying adjacent said reduced width section when said second clasp means is in its said first position, and overlying said wider section when in its said second position.

**9.** The connector of claim **1**, in which said second clasp means is movable on said one of said members from a first non-engaging position with respect to said other of said members, to a second position in which it engages the other of said members in clasping relationship.

**10.** The connector of claim **9**, further comprising means extending from said strip and adapted to be manually engaged for moving said second clasp means from its said first position to its said second position.

**11.** The connector of claim **10**, in which said moving means comprise a pair of upstanding parts projecting from the ends of said second clasp means.

**12.** The connector of claim **11**, in combination with a bracelet secured to said first clasp means, said first and second members adjacent their said first ends extending out longitudinally beyond said first clasp means when said first clasp means its operatively claspingly engaged, said upstanding parts being transversely separated by a space wider than said bracelet, said bracelet being received in said space.

**13.** The connector of claim **11**, in which said other of said members comprises a reduced width section near its said first end communicating with a wider section, said second clasp means overlying said reduced width section when said second clasp means is in its said first position, and overlying said wider section when in its said second position.

**14.** The connector of claim **1**, in which said second clasp means is movable on said one of said members from a first non-engaging position with respect to said other of said members, to a second position in which it engages the other of said members in clasping relationship by sliding over and extending around the longitudinal edges of the other of said members.

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