

Automated Invalidation Report

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1.1 Objective

The objective of the automated search is to conduct a Patent and Non-patent literature search and to identify the references that belong to substantially the same technical field and subject to adequate legal review, may be constructed as prior art for the input patent.

Our Ref: 64099fdabbf64188bff570b7

Your Ref: NA

Search concluded on : 2023-03-08

Report generated on : 2023-03-09

1.2 Key Features

The key features are prepared based on the Input Patent claims and information provided by the client. The analysis of the references has been done based on one or more features overlapping with the key features of the patent to form a relevant prior art.

Key Features of the Invention Based on Information

KF1	Watchband link assembly
KF2	.1.A link assembly for linking two segments of a band, the link assembly comprising:
KF3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,
KF4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;
KF5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,
KF6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,
KF7	a hollow interior and a slot extending along said longitudinal length thereof,
KF8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;
KF9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;
KF10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;
KF11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,
KF12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.

1.3 Summary

Based on the details of the Input patent, relevant patent citations are mapped. Only one patent per family is being mapped and other family members of the family are incorporated by reference. Summary of the citations is presented in the tables below. Clicking on the hyperlinks (Citation No. Column) will open the patent record in Xlpat with e.g. full text, family and legal data and the possibility to download the original document.

S.No.	Citation No.	Title	Publication Date
1	US-5724708-A	End Connector Assembly For Watchband	19980310
2	US-5197274-A	Link Assembly For A Watch Bracelet	19930330
3	US-5914913-A	Interchangeable Watchband And Watchcase Attachment Assembly	19990622
4	US-4008632-A	Watch Band Link Connecting Device	19770222
5	EP-1175844-B1	Watchband With Hinged Chain Links	20041006
6	US-5927577-A	Foldover Buckle Extender	19990727
7	US-5272683-A	End Connector Assembly For Watch Band	19931221
8	EP-1169935-A1	Watchband With Hinged Chain Links	20020109
9	US-6308382-B1	Locking Assembly For A Metal Watchband	20011030
10	US-6272836-B1	Adjustable Linkage For A Watchband	20010814

1.4 Key Feature Analysis

The key features are prepared based on the Input Patent claims and information provided by the client. The analysis of the references has been done based on one or more features overlapping with the key features of the patent to form a relevant prior art.

Citation No.	KF1	KF2	KF3	KF4	KF5	KF6	KF7
US-5724708-A	78.48%	45.85%	42.15%	45.79%	42.24%	50.04%	50.58%
US-5197274-A	72.05%	62.71%	46.99%	47.72%	47.42%	37.13%	40.67%
US-5914913-A	76.41%	41.70%	34.58%	37.80%	34.21%	41.34%	36.49%
US-4008632-A	62.52%	49.97%	46.09%	64.93%	47.00%	47.05%	46.19%
EP-1175844-B1	65.16%	30.63%	26.06%	29.27%	26.55%	11.90%	18.78%
US-5927577-A	65.04%	56.35%	58.05%	56.00%	58.90%	50.14%	43.54%
US-5272683-A	67.46%	48.24%	40.94%	47.16%	41.61%	46.12%	49.19%
EP-1169935-A1	65.16%	30.63%	30.95%	48.59%	31.10%	26.61%	40.56%
US-6308382-B1	68.55%	45.61%	32.21%	47.39%	33.40%	34.18%	35.81%
US-6272836-B1	64.37%	52.73%	44.96%	41.96%	45.37%	43.71%	40.67%

Citation No.	KF8	KF9	KF10	KF11	KF12
US-5724708-A	53.63%	51.00%	55.09%	66.96%	63.70%
US-5197274-A	50.03%	41.07%	49.37%	55.10%	59.51%
US-5914913-A	36.98%	43.65%	33.25%	41.84%	58.89%
US-4008632-A	50.77%	46.32%	55.15%	51.54%	55.77%
EP-1175844-B1	22.42%	16.72%	25.01%	40.73%	36.36%
US-5927577-A	48.88%	56.19%	54.48%	52.17%	58.56%
US-5272683-A	56.91%	54.53%	50.30%	59.74%	54.81%
EP-1169935-A1	32.34%	30.55%	40.02%	43.20%	44.86%
US-6308382-B1	35.32%	39.12%	35.11%	38.98%	52.52%
US-6272836-B1	50.88%	44.19%	43.10%	44.59%	49.14%

02 Citations Details

The following citations are only for personal use.

All the results are mapped based on the key features of the input patent and as per the information provided by the client.

2.1 Details of Relevant Patent Citations

Reference 1: US-5724708-A			
Publication No:	US-5724708-A	Publication Date:	19980310
Application No:	US-75872696-A	Application Date:	19961203
Priority No:	US75872696	Priority Date:	19961203
Inventor(s)	BERT STEPHEN F BERT; STEPHEN F. Bert		
Family Member(s)	US-5724708-A CN-1183934-A EP-0853263-A2 EP-0853263-A3		
Title	End Connector Assembly For Watchband		
Abstract	<p>A connector for joining an end of a watchband to a watch case, the end of the watchband having a terminal link and the watch case having first lugs separated by first sockets with first apertures extending through the first lugs. The connector includes metal bottom and top components. The bottom component has a rear end configured to underlie the terminal link of the watchband, and a front end with mutually spaced projections, at least two of which define hollow guides. The top component has a rear end configured to overlie the rear end of the bottom component, and a front end with mutually spaced flanges aligned with and bent around the projections on the bottom component to form second lugs separated by second sockets. The top component is joined to the bottom component with the terminal link of the watchband captured therebetween. The first and second lugs are adapted to be received respectively in the second and first sockets. A pin is axially inserted through the apertures in the lugs of the watch case and the hollow guides of the bottom component to establish a pivotal connection between the watch case and the end connector.</p>		
S.No	Key Features	Identified Patent Number : US-5724708-A	
IN1	Watchband link assembly	Similarity Score - 78.48% end connector assembly for watchband	
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	Similarity Score - 45.85% end connector assembly for watchband	
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	Similarity Score - 42.15% means for fixedly interconnecting said top component to said bottom component, said first and second lugs being adapted to be received respectively in said second and first sockets, with said hollow guides aligned with said apertures; and	
IN4	each of said arms including a transverse	Similarity Score - 45.79%	

Reference 1: US-5724708-A

	opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	a pin axially inserted through said aligned guides and apertures to establish a pivotal connection between said watch case and said end connector, said pin having a reduced diameter portion mechanically interengaged by said spring member.
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	Similarity Score - 42.24% means for fixedly interconnecting said top component to said bottom component, said first and second lugs being adapted to be received respectively in said second and first sockets, with said hollow guides aligned with said apertures; and
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 50.04% 5. The connector as claimed in claim 4 wherein said pin has a reduced diameter portion mechanically interengaged by said spring member.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 50.58% a pin axially inserted through said aligned hollow guides and apertures to establish a pivotal connection between said watch case and said end connector, said hollow guides having reduced diameter portions contacting said pin and enlarged diameter portions contacting said flanges.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 53.63% means for fixedly interconnecting said top component to said bottom component, said first and second lugs being adapted to be received respectively in said second and first sockets, with said hollow guides aligned with said apertures; and
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 51.00% a pin axially inserted through said aligned hollow guides and apertures to establish a pivotal connection between said watch case and said end connector, said hollow guides having reduced diameter portions contacting said pin and enlarged diameter portions contacting said flanges.
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 55.09% means for fixedly interconnecting said top component to said bottom component, said first and second lugs being adapted to be received respectively in said second and first sockets, with said hollow guides aligned with said apertures; and

Reference 1: US-5724708-A

<p>IN11</p>	<p>and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,</p>	<p>Similarity Score - 66.96%</p> <p>a pin axially inserted through said aligned guides and apertures to establish a pivotal connection between said watch case and said end connector, said pin having a reduced diameter portion mechanically interengaged by said spring member.</p>
<p>IN12</p>	<p>wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.</p>	<p>Similarity Score - 63.70%</p> <p>5. The connector as claimed in claim 4 wherein said pin has a reduced diameter portion mechanically interengaged by said spring member.</p>

Reference 2: US-5197274-A

Publication No:	US-5197274-A	Publication Date:	19930330
Application No:	US-77585891-A	Application Date:	19911015
Priority No:	US77585891	Priority Date:	19911015
Inventor(s)	BRAUN REFAEL BRAUN; REFAEL Braun		
Family Member(s)	GB-9221663-D0 US-5197274-A GB-2260478-A GB-9512963-D0 GB-2288967-A GB-2288967-B GB-2260478-B		
Title	Link Assembly For A Watch Bracelet		
Abstract	<p>A link assembly for a watch or other type of link bracelet is described. The link assembly includes a first link member having a first bore running therethrough and a second link member having a second bore running therethrough axially aligned with the first bore. A longitudinal pin having a non-threaded portion is extended through the first bore and a portion of the second bore for enabling the first link member to pivotally rotate with respect to the second link member. A threaded screw is used to occupy at least some of the remaining portion of the second bore for maintaining the non-threaded pin within the two bores.</p>		

S.No	Key Features	Identified Patent Number : US-5197274-A
IN1	Watchband link assembly	<p>Similarity Score - 72.05%</p> <p>link assembly for a watch bracelet</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 62.71%</p> <p>In an alternative embodiment, the inventive link assembly may also be used to connect three rows of links.</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 46.99%</p> <p>22. The assembly of claim 15, wherein said second link member further includes a threaded opening leading to said third bore and perpendicular thereto and wherein said third link member further includes a threaded opening leading to said fourth bore and perpendicular thereto.</p>
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	<p>Similarity Score - 47.72%</p> <p>30. The assembly of claim 29, wherein a portion of said threaded member extends into said second bore for preventing movement of said pin in an axial direction.</p>
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 47.42%</p> <p>22. The assembly of claim 15, wherein said second link member further includes a threaded opening leading to said third bore and perpendicular thereto and wherein said third link member further includes a threaded opening leading to said fourth bore and perpendicular</p>

Reference 2: US-5197274-A

		thereto.
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 37.13% a longitudinal pin extending through said first bore and rotatable therein, said pin also extending through a first portion of said second bore and at least a portion of said third bore for enabling said first link member to pivotally rotate with respect to said second link member; and
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 40.67% In assembly, bores 225, 221 and 223 are aligned to form a continuous longitudinally extending opening. Similarly, bores 231, 227 and 229 are also aligned to form a second continuous longitudinally extending opening. A pair of pin members 215 are inserted respectively into the two openings defined by the bores in the manner described below. Each of pin members 215 comprises an upper smooth cylindrical portion 216 and a lower threaded portion 217. Furthermore, each of pin members 215 includes a head 219 having a slot 220 sized for receiving the head of a screwdriver.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 50.03% 7. The assembly of claim 6, wherein a portion of said threaded member extends into said second bore for preventing movement of said pin in an axially direction.
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 41.07% 33. The assembly of claim 25, wherein said second bore includes an annular lip and wherein said pin includes a head which abuts against said annular lip when said pin is extended through a portion of said second bore.
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 49.37% 22. The assembly of claim 15, wherein said second link member further includes a threaded opening leading to said third bore and perpendicular thereto and wherein said third link member further includes a threaded opening leading to said fourth bore and perpendicular thereto.
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotally join said first and second segments,	Similarity Score - 55.10% 30. The assembly of claim 29, wherein a portion of said threaded member extends into said second bore for preventing movement of said pin in an axial direction.
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	Similarity Score - 59.51% 30. The assembly of claim 29, wherein a portion of said

Reference 2: US-5197274-A

		threaded member extends into said second bore for preventing movement of said pin in an axial direction.
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Reference 3: US-5914913-A

Publication No:	US-5914913-A	Publication Date:	19990622
Application No:	US-97546497-A	Application Date:	19971121
Priority No:	US97546497	Priority Date:	19971121
Inventor(s)	SHRIQUI DAVID M SHRIQUI; DAVID M. Shriqui		
Family Member(s)	US-5914913-A		
Title	Interchangeable Watchband And Watchcase Attachment Assembly		
Abstract	<p>An interchangeable attachment assembly for a wristwatch having a removable and interchangeable watchband and watchcasing. The interchangeable attachment assembly includes a watchcasing having a housing with first and second attachment modules that include first and second pairs of attachment pin assemblies located on opposite sides of the housing. The interchangeable attachment assembly further includes a watchband having first and second ends with first and second attachment members, respectively, for removably attaching the watchband to the first and second pairs of attachment pin assemblies, respectively, of the watch casing. An alternate embodiment discloses the attachment assembly for removably connecting a bracelet to a jewelry attachment, such as a setting for a gem stone.</p>		

S.No	Key Features	Identified Patent Number : US-5914913-A
IN1	Watchband link assembly	<p>Similarity Score - 76.41%</p> <p>interchangeable watchband and watchcase attachment assembly</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 41.70%</p> <p>interchangeable watchband and watchcase attachment assembly</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 34.58%</p> <p>FIG. 6 is an enlarged front perspective view of the interchangeable attachment assembly of the present invention showing the first and second attachment members and their component parts contained thereon in relationship to the first and second ends of the watchband attachment;</p>
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	<p>Similarity Score - 37.80%</p> <p>b) said bracelet having first and second ends including first and second attachment members, respectively, for removably attaching said bracelet to said first and second pairs of attachment pin assemblies, respectively, of said jewelry attachment;</p>
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse	<p>Similarity Score - 34.21%</p> <p>11. A jewelry attachment and bracelet in accordance with</p>

Reference 3: US-5914913-A

	opening extending therethrough, said receiver portion having two spaced apart parallel arms,	claim 10, wherein first and second attachment members each include a connecting bar having an opening formed therein, a pair of connecting members attached to opposite sides of said connecting bar, a band retaining member having side walls, said side walls being connected to said pair of connecting members, and a watchband retaining bar connected to said side walls for receiving the end of a watchband.
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 41.34% d) each of said pairs of attachment pins and housings having a pull knob, an attachment pin, a retention spring surrounding said attachment pin, and an attachment housing for receiving said attachment pin and said retention spring therein for providing positive locking of said attachment pin within one of said first and second attachment modules.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 36.49% The pin shaft tips 68at and 68bt interfit with and snap into the hole openings 104a and 104b on each side 103a and 103b of the connecting bar 102, such that the second attachment module 60 is removably connected to the second attachment member 100 so as to remove or connect the second end 16 of watchband 12 to the bottom side 28 of housing 24 of watch casing 22, as shown in FIGS. 1, 2, 3 and 4A of the drawings.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 36.98% FIG. 6 is an enlarged front perspective view of the interchangeable attachment assembly of the present invention showing the first and second attachment members and their component parts contained thereon in relationship to the first and second ends of the watchband attachment;
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 43.65% The pin shaft tips 48at and 48bt interfit with and snap into the hole openings 84a and 84b on each side 83a and 83b of the connecting bar 82, such that the first attachment module 40 is removably connected to the first attachment member 80 so as to remove or connect the first end 14 of watchband 12 to the top side 26 of housing 24 of watchcasing 22, as shown in FIGS. 1, 2, 3 and 4A of the drawings.
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-	Similarity Score - 33.25% 15. A jewelry attachment and a bracelet in accordance with claim 11, wherein said bracelet is a link chain such

Reference 3: US-5914913-A

	axially aligned with said parallel arm transverse apertures;	as a single link chain, a double link chain or a multi-link chain, said link chain having said first and second ends connected to said retaining bars, for holding said first and second ends of said bracelet to said first and second attachment members.
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,	<p>Similarity Score - 41.84%</p> <p>12. A jewelry attachment and bracelet in accordance with claim 11, wherein each of said pin tips are received within said openings of said connecting bars.</p>
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	<p>Similarity Score - 58.89%</p> <p>d) each of said pairs of attachment pins and housings having a pull knob, an attachment pin, a retention spring surrounding said attachment pin, and an attachment housing for receiving said attachment pin and said retention spring therein for providing positive locking of said attachment pin within one of said first and second attachment modules.</p>

Reference 4: US-4008632-A

Publication No:	US-4008632-A	Publication Date:	19770222
Application No:	US-63221575-A	Application Date:	19751117
Priority No:	US63221575	Priority Date:	19751117
Inventor(s)	DENNEY JOE W DENNEY; JOE W. Denney		
Family Member(s)	US-4008632-A		
Title	Watch Band Link Connecting Device		
Abstract	<p>A tool to connect a pair of watch band link members of a band in which pairs of links are in overlapping relation, each link having a connection member at one end thereof and a channel opening at its other end adjacent the connection member of the other of a pair of said links. Said connecting members and said channel openings being inter-connected. The tool herein carries said pair of link members, holding one link thereof in stationary position and having the other link mounted thereon to be moved thereon in the direction of said first mentioned link, said tool holding the connection members in alignment with their respective adjacent channel openings for simultaneous disposal of said connection members into their respective channel openings.</p>		

S.No	Key Features	Identified Patent Number : US-4008632-A
IN1	Watchband link assembly	<p>Similarity Score - 62.52%</p> <p>watch band link connecting device</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 49.97%</p> <p>A tool to connect a pair of watch band link members of a band in which pairs of links are in overlapping relation, each link having a connection member at one end thereof and a channel opening at its other end adjacent the connection member of the other of a pair of said links. Said connecting members and said channel openings being inter-connected. The tool herein carries said pair of link members, holding one link thereof in stationary position and having the other link mounted thereon to be moved thereon in the direction of said first mentioned link, said tool holding the connection members in alignment with their respective adjacent channel openings for simultaneous disposal of said connection members into their respective channel openings.</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 46.09%</p> <p>an elongated arm extending at right angles to one side of said body portion,</p>
IN4	each of said arms including a transverse opening extending therethrough such that	<p>Similarity Score - 64.93%</p>

Reference 4: US-4008632-A

	said arm openings are disposed in co-axial alignment with one another;	an elongated arm extending at right angles to one side of said body portion, and
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	Similarity Score - 47.00% a flange in the plane of said arm extending along said body portion, said flange being wedge like of a relatively narrow width and tapering to a point at its free end.
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 47.05% Extending from said arm portion to the end 17 of said body portion and at right angles to said body portion and of relatively narrow width is a tapered flange 20 forming a wedge, the same tapering substantially to merge into said point 17 at the end of said wall 16 as shown. Adjacent said arm portion, said flange has a portion 23 of reduced width formed as a notch. Said tool is formed preferably of a substantially rigid metal material. It will be understood that the general configuration of said tool may be varied.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 46.19% Extending from said arm portion to the end 17 of said body portion and at right angles to said body portion and of relatively narrow width is a tapered flange 20 forming a wedge, the same tapering substantially to merge into said point 17 at the end of said wall 16 as shown. Adjacent said arm portion, said flange has a portion 23 of reduced width formed as a notch. Said tool is formed preferably of a substantially rigid metal material. It will be understood that the general configuration of said tool may be varied.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 50.77% Extending from said arm portion to the end 17 of said body portion and at right angles to said body portion and of relatively narrow width is a tapered flange 20 forming a wedge, the same tapering substantially to merge into said point 17 at the end of said wall 16 as shown. Adjacent said arm portion, said flange has a portion 23 of reduced width formed as a notch. Said tool is formed preferably of a substantially rigid metal material. It will be understood that the general configuration of said tool may be varied.
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 46.32% a flange in the plane of said arm extending along said body portion, said flange being wedge like of a relatively narrow width and tapering to a point at its free end.

Reference 4: US-4008632-A

IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 55.15% an elongated arm extending at right angles to one side of said body portion,
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,	Similarity Score - 51.54% an elongated arm extending at right angles to one side of said body portion,
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	Similarity Score - 55.77% a flange in the plane of said arm extending along said body portion, said flange being wedge like of a relatively narrow width and tapering to a point at its free end.

Reference 5: EP-1175844-B1

Publication No:	EP-1175844-B1	Publication Date:	20041006
Application No:	EP-00202549-A	Application Date:	20000719
Priority No:	EP00202549	Priority Date:	20000719
Inventor(s)	GUENSTER ARMIN GUENSTER, ARMIN Günster, Armin BACH MICHAEL BACH, MICHAEL BACH, MICHAEL BOLZT SEBASTIEN BOLZT, SEBASTIEN Bolzt, Sébastien GUERRY CHRISTOPHE GUERRY, CHRISTOPHE GUERRY, CHRISTOPHE		
Family Member(s)	EP-1175844-A1 EP-1175844-B1 AT-278336-T DE-60014624-D1 DE-60014624-T2		
Title	Watchband With Hinged Chain Links		
Abstract	<p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>		

S.No	Key Features	Identified Patent Number : EP-1175844-B1
IN1	Watchband link assembly	<p>Similarity Score - 65.16%</p> <p>watchband with hinged chain links</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 30.63%</p> <p>watchband with hinged chain links</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 26.06%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	<p>Similarity Score - 29.27%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>

Reference 5: EP-1175844-B1

IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 26.55%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	<p>Similarity Score - 11.90%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	<p>Similarity Score - 18.78%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	<p>Similarity Score - 22.42%</p> <p>The features and advantages of the invention will become apparent from the description which follows, given with reference to the appended drawing and giving by way of explanation, but in no way limiting, an advantageous embodiment of the invention, drawings in which: FIG. 1 is a perspective view of the bracelet of the invention, and Figure 2 is a sectional plan view of a portion of the bracelet shown in Figure 1.</p>
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	<p>Similarity Score - 16.72%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10)</p>

Reference 5: EP-1175844-B1

		<p>with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
<p>IN10</p>	<p>said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;</p>	<p>Similarity Score - 25.01%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
<p>IN11</p>	<p>and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,</p>	<p>Similarity Score - 40.73%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>
<p>IN12</p>	<p>wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.</p>	<p>Similarity Score - 36.36%</p> <p>The bracelet is made up of two rows (2, 4) of outer links and a row (6) of central links which are staggered by half the width of a link from those in the outer rows. Each central link (7) is connected to two links in each outer row (3, 5, 17, 18) by one threaded rod (19) and one rod (10) with sprung ends. Each rod is fitted into a bore across the total width of the central link and fits into bores in the outer links. An Independent claim is included for a method for assembling a bracelet as described above.</p>

Reference 6: US-5927577-A

Publication No:	US-5927577-A	Publication Date:	19990727
Application No:	US-85735397-A	Application Date:	19970516
Priority No:	US85735397	Priority Date:	19970516
Inventor(s)	BRAUN RAFAEL BRAUN; RAFAEL Braun		
Family Member(s)	US-5927577-A		
Title	Foldover Buckle Extender		
Abstract	<p>An improved extender device for adjusting the length of a watch or bracelet band is provided. The extender element of the invention comprises a body having a width no greater than the distance measured between the sidewalls of the main watch link and shell, a coupling member formed at one end of the body and having a width substantially equal to the width of the shell, and at least one guide element formed at the other end of the body for accommodating a spring-loaded pushpin. The pin is received between the corresponding sidewall openings of the shell as the shell overlies and otherwise receives the body of the extender element.</p>		

S.No	Key Features	Identified Patent Number : US-5927577-A
IN1	Watchband link assembly	<p>Similarity Score - 65.04%</p> <p>1. A watch assembly comprising:a case and a pair of ends of a watch band of substantially equal and uniform width oppositely depending therefrom;</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 56.35%</p> <p>2. The assembly of claim 1, further including a pivotal closure member connected between one of said bands and said shell.</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 58.05%</p> <p>wherein the other of said watchband ends is coupled to an extender element, said extender element comprising an extending body having a width no greater than said sidewalls' inside width, and a member for coupling said extender to the other band at one end thereof having a width substantially equal to said shell width;</p>
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	<p>Similarity Score - 56.00%</p> <p>7. The assembly of claim 1, wherein said each of said pair of legs has an annular configuration for defining an opening through which said pushpin selectively passes.</p>
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart	<p>Similarity Score - 58.90%</p> <p>wherein the other of said watchband ends is coupled to an extender element, said extender element comprising an extending body having a width no greater than said</p>

Reference 6: US-5927577-A

	parallel arms,	sidewalls' inside width, and a member for coupling said extender to the other band at one end thereof having a width substantially equal to said shell width;
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 50.14% 10. The assembly of claim 9, wherein said other of said watchband ends is formed with a tube-shaped tongue for selectively wrapping about said second spring-loaded pushpin.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 43.54% wherein said extending body of said extender element comprises a body member having sides and an extending shelf and is formed with a longitudinally extending rib centrally running along said body member and said shelf; said body also including a pair of forwardly located substantially longitudinally aligned legs depending from the sides of said member body for selectively accommodating said pin received between a selected pair of corresponding holes of said plurality of pairs of corresponding aligned holes, such that said extending rib runs continuously longitudinally along said body member and onto said shelf past where said legs depend from the sides of said body member and said extending body of said extender element is sized for selective penetration between the sidewalls of said shell at various lateral locations along substantially the entire length thereof.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 48.88% 7. The assembly of claim 1, wherein said each of said pair of legs has an annular configuration for defining an opening through which said pushpin selectively passes.
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 56.19% a first spring-loaded pushpin selectively receivable between any pairs of corresponding aligned holes at a desired lateral location along said shell and between said walls;
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 54.48% wherein said extending body of said extender element comprises a body member having sides and an extending shelf and is formed with a longitudinally extending rib centrally running along said body member and said shelf; said body also including a pair of forwardly located substantially longitudinally aligned legs depending from the sides of said member body for selectively accommodating said pin received between a

Reference 6: US-5927577-A

		<p>selected pair of corresponding holes of said plurality of pairs of corresponding aligned holes, such that said extending rib runs continuously longitudinally along said body member and onto said shelf past where said legs depend from the sides of said body member and said extending body of said extender element is sized for selective penetration between the sidewalls of said shell at various lateral locations along substantially the entire length thereof.</p>
<p>IN11</p>	<p>and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,</p>	<p>Similarity Score - 52.17%</p> <p>a first spring- loaded pushpin selectively receivable between any pairs of corresponding aligned holes at a desired lateral location along said shell and between said walls;</p>
<p>IN12</p>	<p>wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.</p>	<p>Similarity Score - 58.56%</p> <p>9. The assembly of claim 8, wherein said holes of said coupling member receive a second spring- loaded pin therebetween for facilitating the coupling of said other of said watchband ends to said coupling member of said extender element.</p>

Reference 7: US-5272683-A

Publication No:	US-5272683-A	Publication Date:	19931221
Application No:	US-88677392-A	Application Date:	19920520
Priority No:	US88677392	Priority Date:	19920520
Inventor(s)	JACKL WERNER JACKL; WERNER Jackl		
Family Member(s)	EP-0570639-A1 US-5272683-A JP-H0634769-A JP-H0783723-B2 EP-0570639-B1 DE-69214799-D1 ES-2093207-T3 DE-69214799-T2 HK-95397-A		
Title	End Connector Assembly For Watch Band		
Abstract	<p>An end connector has a plastic outer shell pivotally coupled to a plastic watch case by means of a metallic cross pin. The outer shell has a recess in its bottom surface which is configured and dimensioned to receive at least one and preferably two of the end most top links of a respective end of the band. A metallic insert is interposed between the outer shell and the thus received top links. The insert is mechanically inter engaged with both the cross pin and the thus received top links, thereby establishing a secure coupling of the band of the watchcase.</p>		

S.No	Key Features	Identified Patent Number : US-5272683-A
IN1	Watchband link assembly	<p>Similarity Score - 67.46%</p> <p>end connector assembly for watch band</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 48.24%</p> <p>end connector assembly for watch band</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 40.94%</p> <p>a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.</p>
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	<p>Similarity Score - 47.16%</p> <p>a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.</p>
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 41.61%</p> <p>a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.</p>
IN6	a spring tube disposed within said	<p>Similarity Score - 46.12%</p>

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	extension portion opening, said spring tube having a longitudinal length,	a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 49.19% A metallic insert 54 is interposed in the recess 38 between the plastic outer shell 36 and the end most top links 18 received therein. The insert 54 has a rear wall 56, side tabs 58, and forwardly protruding hook-shaped extensions 60 spaced on either side of an intermediate forwarding protruding keeper flange 62.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 56.91% a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 54.53% a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 50.30% a metallic insert interposed in said recess between said plastic outer shell and the said at least one top link, said insert having hook-shaped extensions protruding into at least some of said second sockets to coact in mechanical interengagement with the thus inserted metallic pin.
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,	Similarity Score - 59.74% a metallic pin inserted through said aligned first and second apertures to establish a pivotal connection between said watch case and said plastic outer shell; and
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	Similarity Score - 54.81% 2. The combination of claim 1 wherein said insert is further provided with a keeper flange extending into one of said second sockets said flange being resiliently deflected by and in frictional contact with the thus inserted pin.

Reference 8: EP-1169935-A1

Publication No:	EP-1169935-A1	Publication Date:	20020109
Application No:	EP-00114286-A	Application Date:	20000704
Priority No:	EP00114286	Priority Date:	20000704
Inventor(s)	BUISE PIERRE DR BUISE, PIERRE, DR. BUISE, PIERRE, DR. ZORZAN M PAOLO ZORZAN, M. PAOLO ZORZAN, M. PAOLO		
Family Member(s)	EP-1169935-A1		
Title	Watchband With Hinged Chain Links		
Abstract	Watchstrap made up of hinged links and pins. The links are made up of inner (10) and outer (12) plates with gaps or interstices (11, 13, 15) between them. Interstices of a first type (11, 13) have a width of greater than 0.15 mm, while the width of the second type is less than 0.05 mm. The first interstices are transverse, while the second interstices are longitudinal.		

S.No	Key Features	Identified Patent Number : EP-1169935-A1
IN1	Watchband link assembly	Similarity Score - 65.16% watchband with hinged chain links
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	Similarity Score - 30.63% watchband with hinged chain links
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	Similarity Score - 30.95% The lateral faces 10d each have a groove 18, of rectangular section, which extends from one to the other of the longitudinal faces 10c and forms a female member. Each groove 18 comprises a bottom 18a and two walls, one upper 18b, the other lower 18c, the function of which will be specified below. It has a width L , measured between the walls 18b and 18c,
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	Similarity Score - 48.59% Bracelet according to one of claims 1 and 2, characterized in that the interstices of the second type (15) are arranged perpendicular to the axes of said joints.
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	Similarity Score - 31.10% The lateral faces 10d each have a groove 18, of rectangular section, which extends from one to the other of the longitudinal faces 10c and forms a female member. Each groove 18 comprises a bottom 18a and two walls, one upper 18b, the other lower 18c, the function of which will be specified below. It has a width L , measured between the walls 18b and 18c,
IN6	a spring tube disposed within said	Similarity Score - 26.61%

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	extension portion opening, said spring tube having a longitudinal length,	Watch strap comprising pins (14) and plates (10, 12) of rigid material arranged side by side, in which each plate (10; 12) is provided with two cylindrical holes (16; 20) whose axes are parallel, arranged so that the holes (16; 20) of two contiguous plates (10; 12), coaxial, define a housing in which a pin (14) is arranged and axially positioned to form a hinge, said plates (10; 12) form, between them, interstices (11, 13, 15) defined by the spaces which separate them, characterized in that said bracelet is arranged so that said interstices are of two types, including those of the first type (11, 13) have a width which is permanently greater than 0.15 mm and of which those of the second type (15) have a width, in the zones forming the outer surfaces of the bracelet which is, permanently less than 0,05 mm.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 40.56% The lateral faces 10d each have a groove 18, of rectangular section, which extends from one to the other of the longitudinal faces 10c and forms a female member. Each groove 18 comprises a bottom 18a and two walls, one upper 18b, the other lower 18c, the function of which will be specified below. It has a width L, measured between the walls 18b and 18c,
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 32.34% Bracelet according to one of claims 1 to 3, characterized in that said first type interstices (11, 13) are arranged substantially parallel to the axes of said joints.
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 30.55% The lateral faces 10d each have a groove 18, of rectangular section, which extends from one to the other of the longitudinal faces 10c and forms a female member. Each groove 18 comprises a bottom 18a and two walls, one upper 18b, the other lower 18c, the function of which will be specified below. It has a width L, measured between the walls 18b and 18c,
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 40.02% Bracelet according to one of claims 1 and 2, characterized in that the interstices of the second type (15) are arranged perpendicular to the axes of said joints.
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,	Similarity Score - 43.20% Bracelet according to one of claims 1 and 2, characterized in that the interstices of the second type

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		(15) are arranged perpendicular to the axes of said joints.
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	Similarity Score - 44.86% Bracelet according to one of claims 1 and 2, characterized in that the interstices of the second type (15) are arranged perpendicular to the axes of said joints.

Reference 9: US-6308382-B1

Publication No:	US-6308382-B1	Publication Date:	20011030
Application No:	US-40556399-A	Application Date:	19990924
Priority No:	CN99200269	Priority Date:	19990104
Inventor(s)	TAKAHASHI KOICHIRO TAKAHASHI KOICHIRO Takahashi HO KAI CHEUNG HO KAI CHEUNG Ho		
Family Member(s)	CN-2358729-Y JP-3065102-U US-6308382-B1 CH-693554-A5		
Title	Locking Assembly For A Metal Watchband		
Abstract	<p>The present invention provides a clasp assembly for a metallic watch chain, mainly comprising: an inner bend plate, an outer bend plate, and a clasp cap. Said inner bend plate can fit into the narrow groove of the outer bend plate. A convex clasp is disposed on the inner bend plate and corresponds to a concave clasp disposed on the outer bend plate in shape, position and size, and the two clasps engage with each other. The lock and release of the convex and concave clasps causes the lock and release of the watch chain. The clasp cap pivotably connects with the inner bend plate through screws. The hole of the clasp cap connects with the watch chain, and the outer bend plate connects with the watch chain through the cylindrical bodies at the left end. The structure of the clasp assembly is simple and is easy to use.</p>		

S.No	Key Features	Identified Patent Number : US-6308382-B1
IN1	Watchband link assembly	<p>Similarity Score - 68.55%</p> <p>locking assembly for a metal watchband</p>
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	<p>Similarity Score - 45.61%</p> <p>1. A clasp assembly for a metallic watch chain comprising:</p>
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 32.21%</p> <p>3. The clasp assembly for a watch chain as claimed in claim 1, characterized in that the convex clasp (1-4) is of a rectangular shape with a corner cut away.</p>
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	<p>Similarity Score - 47.39%</p> <p>2. The clasp assembly for a watch chain as claimed in claim 1, characterized in that said convex clasp (1-4) and said concave clasp (2-4) as disposed on the distal ends relative to the hole engaging with the shaft (5).</p>
IN5	a second segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	<p>Similarity Score - 33.40%</p> <p>FIG. 9 illustrates the shape and structure of the rising portion and the concave clasp 2-4 shown at the left side of the FIG. 8. The rising angle from the point F2 toward the upper and outside direction is $\Phi 7$. The position of the</p>

Reference 9: US-6308382-B1

		rectangle of the concave clasp 2-4 corresponding to the convex clasp 1-4 still has the angle $\Phi 2$ relative to the x-axis. The length L2 and the width W2 in the FIG. 9 are a little longer than the length L1 and the width W1 of the convex clasp 1-4 on the plate body 1-1 of the FIG. 5 so as to receive the convex clasp 1-4 and engage tightly with the convex clasp 1-4. The sizes of other unengagement parts can be selected by a designer according to the FIG. 9.
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 34.18% 2. The clasp assembly for a watch chain as claimed in claim 1, characterized in that said convex clasp (1-4) and said concave clasp (2-4) as disposed on the distal ends relative to the hole engaging with the shaft (5).
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 35.81% The plate body 1-1 shown in the FIG. 6 is substantially a U-shaped with the opening towards the left. The figure clearly shows that there are two convex clasps 1-4 equally protruding outwards whose protruding height are T1.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 35.32% 2. The clasp assembly for a watch chain as claimed in claim 1, characterized in that said convex clasp (1-4) and said concave clasp (2-4) as disposed on the distal ends relative to the hole engaging with the shaft (5).
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 39.12% FIG. 7 is a structural view of the cylindrical body of the inner bend plate of the clasp assembly for a watch chain according to the invention;
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 35.11% 2. The clasp assembly for a watch chain as claimed in claim 1, characterized in that said convex clasp (1-4) and said concave clasp (2-4) as disposed on the distal ends relative to the hole engaging with the shaft (5).
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,	Similarity Score - 38.98% 6. The clasp assembly for a watch chain as claimed in claim 1, characterized in that the arcuate sections of the inner bend plate (1) and the outer bend plate (2) are the same in shape and size.
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	Similarity Score - 52.52% 2. The clasp assembly for a watch chain as claimed in

Reference 9: US-6308382-B1

		claim 1, characterized in that said convex clasp (1-4) and said concave clasp (2-4) as disposed on the distal ends relative to the hole engaging with the shaft (5).
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Reference 10: US-6272836-B1

Publication No:	US-6272836-B1	Publication Date:	20010814
Application No:	US-62745900-A	Application Date:	20000728
Priority No:	US62745900	Priority Date:	20000728
Inventor(s)	FAT CHEUNG YAT FAT CHEUNG YAT Fat		
Family Member(s)	US-6272836-B1		
Title	Adjustable Linkage For A Watchband		
Abstract	<p>A removable link for use in an arrangement comprising a plurality of interlocking links is provided. In a preferred embodiment, the removable link is used in a watchband and preferably comprises a link body having a first end and a second end; a hand portion having a bar receiving region formed at the first end of the body; a bar coupled to the second end of the body, for coupling to the decoupling link; a retractable retaining pin having a first end within the link body and a second end extending from the link body into the bar receiving region, the retractable retaining pin being slideable within a bore provided in the link body, the retaining pin for retaining a retainable bar in the bar receiving region and a biasing member, coupled to the retaining pin, for biasing the retaining pin towards the bar receiving region; whereby the retainable bar is retained within the bar receiving region by the retaining pin, and where the retainable bar is decoupled from the removable link by causing the retracting of the retaining pin away from the bar receiving region sufficiently to allow the retainable bar to be removed therefrom.</p>		

S.No	Key Features	Identified Patent Number : US-6272836-B1
IN1	Watchband link assembly	Similarity Score - 64.37% adjustable linkage for a watchband
IN2	.1.A link assembly for linking two segments of a band, the link assembly comprising:	Similarity Score - 52.73% 1. A removable link for use in an arrangement comprising a plurality of interlocking links, wherein the plurality of interlocking links includes at least one decoupling link that is decouplable from the removable link, the removable link comprising:
IN3	a first segment having an extension portion and a receiver portion, said extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	Similarity Score - 44.96% integrally formed, spaced apart first and second shoulders;
IN4	each of said arms including a transverse opening extending therethrough such that said arm openings are disposed in co-axial alignment with one another;	Similarity Score - 41.96% integrally formed, spaced apart first and second shoulders;
IN5	a second segment having an extension portion and a receiver portion, said	Similarity Score - 45.37%

Reference 10: US-6272836-B1

	extension portion having a transverse opening extending therethrough, said receiver portion having two spaced apart parallel arms,	integrally formed, spaced apart first and second shoulders;
IN6	a spring tube disposed within said extension portion opening, said spring tube having a longitudinal length,	Similarity Score - 43.71% 7. The removable link as claimed in claim 1, wherein the retainable bar is a springbar coupled between a pair of lugs which themselves are part of a watch casing.
IN7	a hollow interior and a slot extending along said longitudinal length thereof,	Similarity Score - 40.67% wherein the bar is secured to and between the first and second shoulders.
IN8	said slot defined by spaced apart first and second edges to allow expansion and contraction of said tube within said extension portion opening;	Similarity Score - 50.88% integrally formed, spaced apart first and second shoulders;
IN9	said first edge of said spring tube slot including a detent protruding inside said hollow interior;	Similarity Score - 44.19% 7. The removable link as claimed in claim 1, wherein the retainable bar is a springbar coupled between a pair of lugs which themselves are part of a watch casing.
IN10	said first segment extension portion being adapted to be inserted between said arms of said second segment so that said extension portion transverse opening is co-axially aligned with said parallel arm transverse apertures;	Similarity Score - 43.10% integrally formed, spaced apart first and second shoulders;
IN11	and a pin adapted for insertion into said aligned extension portion and arm apertures to thereby pivotably join said first and second segments,	Similarity Score - 44.59% More specifically, to insert link D into link E, links D and E are preferably rotated relative to each other so as to be perpendicular thereto, as illustrated in the simplistic diagram of FIG. 4. By then lightly forcing links D and E together, pin 36 will compress so as to allow bar 16 to pass thereby. Upon the clearing of bar 16 passed pin 36, pin 36 will securely retain bar 16 within gap 34.
IN12	wherein said pin is held in a fixed relation to said extension portion and arms by said spring tube.	Similarity Score - 49.14% 2. The removable link as claimed in claim 1, wherein the second end of the retaining pin has a surface shape to facilitate the sliding of the retainable bar along the surface of the retaining pin this causing the retaining pin to retract within the bore away from the bar receiving region.

2.2 Details of Relevant Non-Patent Citations

Note: Below are the list of non-patent citations.

S.No.	Title	Date	Source
1	Stainless Steel Watch Band Links	NA	Epicwatchbands
2	Watch Bands - Types Of Watch Bands - The Watch Bands Wiki	NA	Strapcode
3	Watch Band Instructions	NA	Elementcase
4	Casio Watchband Link Replacement/repair	Mar 1, 2016	Ifixit
5	How Do I Adjust The Size Of My Iconic Link Watchband?	NA	Danielwellington zendesk
6	Strap Link Pin Assembly Installation Tool For Steel Watch Bracelet Band Repair Ebay	NA	Ebay
7	Watch Band Specialist - Individual Links For Metal Watch ...	NA	Watch-band-center
8	Metal Replacement Watch Bands With Removable Links Tech Swiss	NA	Techswiss
9	Watch Band Link Removal Tool	NA	Abingdonco
10	Watch Band Installation Guide	NA	Allwatchbands

2.3 List of Other Shortlisted Citations

Note: Below list of citations are not mapped in detail since they are broadly related to the domain of invention. These citations are provided for reference as they can be useful.

S.No.	Citation No.	Title	Family Member(s)
1	US-6418706-B1	Watchband Link Assembly	US-6418706-B1 HK-1047859-A2 EP-1316269-A1 CN-1429514-A CN-1255065-C
2	US-4321734-A	Clasp Assembly	US-4321734-A
3	JP-2000279216-A	Connecting Structure Of Watchband Link	JP-2000279216-A
4	US-6328188-B1	Adjustable Linkage For A Watchband	WO-2001032045-A1 AU-1228001-A US-6328188-B1
5	US-5235567-A	Quick Release Watchband	US-5235567-A
6	US-4770008-A	Plastic Watchband	JP-S62182613-U EP-0247715-A1 US-4770008-A EP-0247715-B1 DE-3760896-D1 JP-H0414017-Y2
7	US-4000542-A	Device For Adjusting The Length Of A Watchband	JP-S50128073-U DE-2514687-A1 FR-2266472-A1 ES-211292-U ES-211292-Y US-4000542-A GB-1493320-A CA-1037729-A IT-1032430-B JP-S5438952-Y2 FR-2266472-B1
8	US-6195977-B1	Watchband With Articulate Links	CA-2258942-A1 WO-1998048657-A1 TW-350766-B ID-21036-A CN-1224337-A EP-0979046-A1 KR-20000022170-A JP-2001502223-A US-6195977-B1
9	EP-0229908-B1	Link Strap	DE-3600590-A1 JP-S62164404-A EP-0229908-A2 EP-0229908-A3 JP-S63113229-U DE-3600590-C2 DE-3644941-C2 EP-0229908-B1 DE-3673625-D1
10	US-4266326-A	Watchband Connector	US-4266326-A

03 Assignee

CITIZEN WATCH

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SEIKO INSTR

RADO MONTRES

EBAUCHESFABRIK ETA

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